

BGA glider data sheet - DG 505 Elan Orion (17.2, 18 & 20 meter un-flapped)

Data source: Manufacturer's flight & maintenance manuals Date of issue: 1995

Manufacturer: Glaser-Dirks Flugzeugbau GmbH Web site dgflugzeugbau.de

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Link to mandatory mods:

Weighing Data:

	Kg	Pounds
Max weight (take off & landing)	750	1653
Fully aerobatic max weight	625	1378
Max weight (dry) 17.2 Meter	645	1422
Max weight (dry) 18 Meter	650	1434
Max weight (dry) 20 Meter	657	1448
Max weight of non lifting components (everything except wings)	445	981
BGA concession non-aerobatic max weight of non lifting components [+5%]	467	1030
Max front pilot (seat load)	110	242
Max combined front and rear pilot weights (seat loads)	210	463

mm Inches

Forward C of G limit (aft of datum)	185	7.28
Aft C of G limit (aft of datum)	480	18.9
Front pilot position (forward)	1350	53.15
Rear pilot position (forward)	240	9.45

Control deflections in mm

	Up	Down	Distance - hinge to measuring point	Max free play
Ailerons	75 ± 3	38 ± 3	144	± 1.5
Elevator	99 ± 1	91 ± 1	227	± 2
Rudder	Left & Right 217 to 212		420	1 top hinge
The aileron free play is measured at the aileron root with the stick locked. The elevator play is measured at the stick with the elevator locked.				
Controls Moments & weights				
			Moment cm Kg	Weights Kg
Rudder			7 - 10	4.4 - 5.1
Elevator			13 - 16	4.3 - 5.1
Inner aileron			5 - 7.08	4.0 - 5.0
Outer aileron			0.8 - 1.2	0.4 - 0.6

Weighing Longitudinal datum: Wing root LE. Horizontal datum: Top of rear fuselage 1000: 33 tail down. The fin battery weighs 4,3 kg & is 5306mm aft of datum. The 3 nose ballast weights weigh 2,2 kg each and are 1920mm forward of datum, each reduces min front cockpit load by 2,9 kg. Tail tank A (wing water compensation) is 5032mm aft of datum, it holds 6.6 kg. Tail tank B (pilot weight compensation) is 5160mm aft of datum, it holds 12,3 kg.

Maximum speeds

	Knots	Kph
VNE	146	270
Rough air	103	190
Manoeuvre	103	190

	Knots	Kph
Aerotow	103	190
Winch / auto tow	76	140
U/C down	103	190

VNE at altitude	Knots	Kph
0-6600 feet	146	270
6600-10 000	138	256
10 000-13 000	131	243
13 000-16 000	124	230
16 000-20 000	117	218

Notes :-

Max winch weak link: 1000 Kg (black)

Tyre pressures: Nose wheel 2.5 bar, 36 psi. Main wheel 3 bar, 44 psi. Tail wheel 4 bar, 58 psi

Semi aerobatic ("utility") Cloud flying permitted, 750 Kg AUW (+5,3, -2,65 G at V_A & +4 & -1.4 G at V_{NE}).

Aerobatic (Inverted flight) +7, -5 G at all speeds. Max AUW 625 Kg, 17.2 & 18M only, no water ballast.

Max 3,5 G with airbrakes extended in all configurations.

Replace the elevator rubber cord (bungee) every 5 years. Replace the brake fluid every 4 years with DOT 3, DOT 4 or SAE J 1703 fluid. Annual leak check of wheel brake system - hold full brake for 2 minutes.

German (LBA) Type certificate number 348

This sheet compiled by: Tim Macfadyen

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