0 Revisions

0.1 Record of revisions

Any revision of the present manual, except actual weighing data, must be recorded in the following table and in case of approved sections endorsed by the responsible airworthiness authority.

The new or amended text in the revised page will be indicated by a black vertical line in the right hand margin, and the Revision No. and the date will be shown on the bottom left hand of the page.

Rev. No.	Affected Pages/ section	Description	Issue Date	EASA Approval Date	Inserted Date Signature
1	0.5, 7.14, 7.15	TN1000/09	October 2006	12.12.2006	
2	0.3-0.5, 1.5, 1.6, 2.5, 2.11, 2.12, 2.14, 2.15, 3.3, 4.13, 4.16-4.18, 4.21, 4.24, 4.25, 5.3, 5.5-5.8, 6.6, 6.8	TN1000/10 Manual revision	January 2007	March 27. 2007	

0.2 List of effective pages

Section		page	issued	replaced/	replaced/
0		0.0	July 2005		
		0.1	see manual amendments		
		0.2	"		
		0.3	"		
		0.4	"		
		0.5	"		
		0.6	July 2005		
1		1.1	"		
		1.2	"		
		1.3	"		
		1.4	"		
		1.5	"	Jan. 07	
		1.6	"	Jan. 07	
2	App.	2.1	July 2005		
	"	2.2	"		
	"	2.3	"		
	"	2.4	"		
	"	2.5	"	Jan. 07	
	"	2.6	"		
	"	2.7	"		
	"	2.8	"		
	"	2.9	"		
	"	2.10	"		
	"	2.11	"	Jan. 07	
	"	2.12	"	Jan. 07	
		2.13			
		2.14		Jan. 07	
		2.15		Jan. 07	
3	"	3.1	July 2005		
	"	3.2	"		
	"	3.3	"	Jan. 06	
	"	3.4	"		
	"	3.5	"		
	"	3.6	"		
	"	3.7	"		
	"	3.8	"		

0.2 List of effective pages (cont.)

Section		Page	issued	replaced/	replaced/
4	App.	4.1	July 2005		
	"	4.2	"		
	"	4.3	"		
	"	4.4	"		
	"	4.5	"		
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	"	4.18	"	Jan. 07	
	"	4.19	"		
	"	4.20	"		
	"	4.21	"	Jan. 07	
	"	4.22	"		
	"	4.23	"		
	"	4.24	"	Jan. 07	
	"	4.25	"	Jan. 07	
	"	4.26	"		
	"	4.27	"		
	"	4.28	"		
	"	4.29	"		
5	"	5.1	July 2005		
	"	5.2	"		
	"	5.3	"	Jan. 07	
	"	5.4	"		
	App.	5.5	"	Jan. 07	
		5.6	"	Jan. 07	
		5.7	"	Jan. 07	
		5.8	"	Jan. 07	
		5.9	"		

0.2 List of effective pages (cont.)

Section	Page	issued	replaced/	replaced/
6	6.1	July 2005		
	6.2	"		
	6.3	"		
	6.4	"		
	6.5	"		
	6.6	"	Jan. 07	
	6.7	"		
	6.8	"	Jan. 07	
	6.9	"		
	6.10	"		
	6.11	"		
7	7.1	July 2005		
	7.2	"		
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	7.14	"	October 2006	
	7.15	"	October 2006	
	7.16	"		
	7.17	"		
	7.18	"		
	7.19	"		
	7.20	"		
	7.21	"		
	7.22	"		
	7.23	"		
	7.24	"		

Powerplant and powerplant controls

- Retractable powerplant with air- cooled Solo 2350C two stroke engine and CFRP-Composite propeller DG-P001-1
- Electrical engine extension-retraction, operated automatically with the ignition switch or manually as back-up, electronic safety devices to avoid misoperation.
- Engine control instruments with digital LCD indication (Microprocessor technology) DEI-NT including stall warning, outside air thermometer, landing gear warning and canopy warning.

Technical data

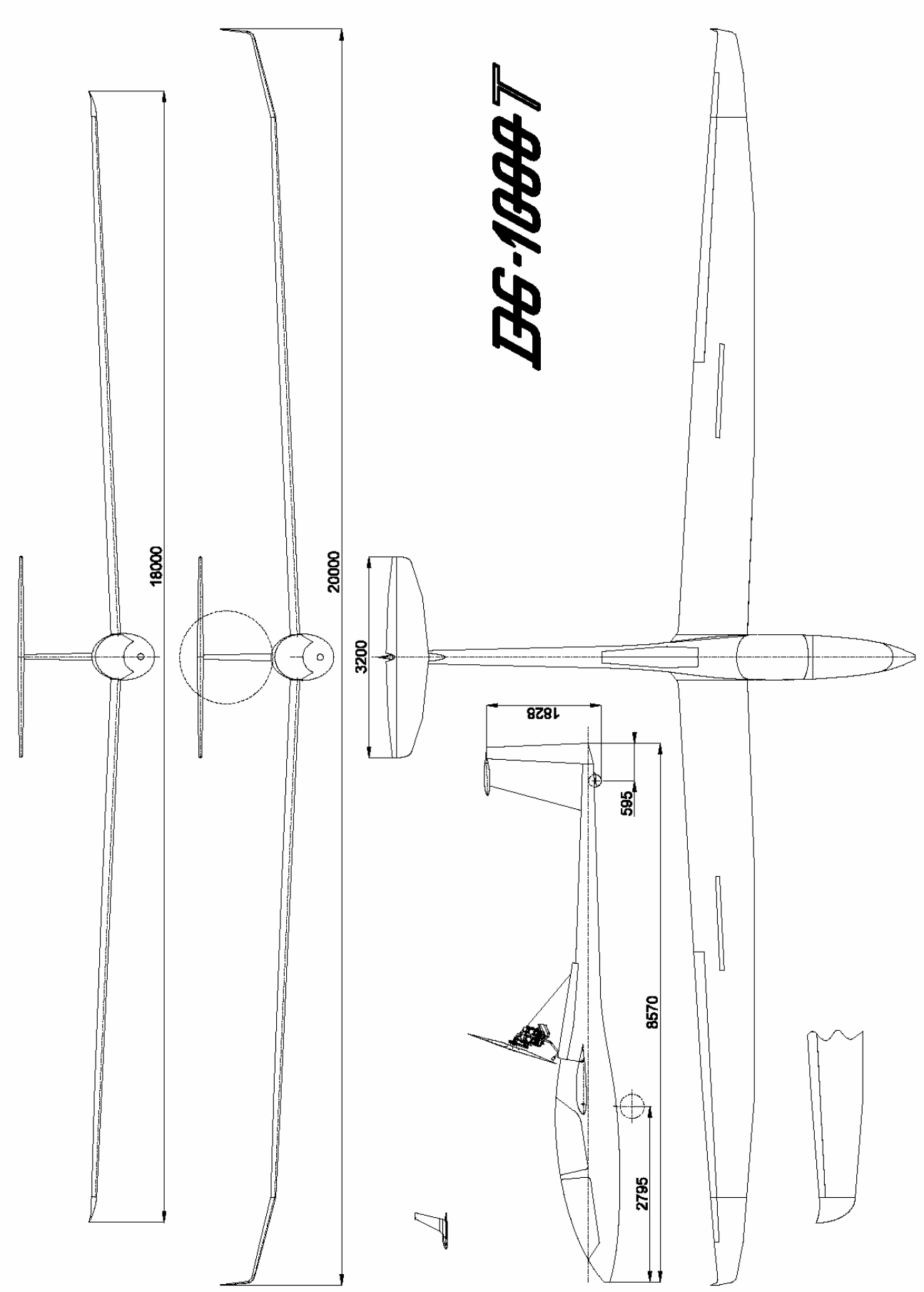
Span		m / ft	18 / 59.1	20 / 55.62
Wing area		m² / ft²	16,72 / 180	17,53 / 189
Aspect ratio		/	19,38	22,82
Length		m / ft	8,57 / 28.12	
Fuselage height		m / ft	1,0 / 3.28	
Fuselage width		m / ft	0,73 / 2.4	
Span of the horizontal tailplane		m / ft	3,2 / 10.5	
Waterballast Wings	max.	kg (l) / US.gal	160 / 42.3	160 / 42.3
Waterballast fin	max.	kg (l)/ US.gal	6,2 / 1.64	
Trim ballast fin	max.	kg / lbs	12 / 26.5	
Empty mass with basic instruments*	approx.	kg / lbs	461 / 1016	465 / 1025
Wing loading (with one Pilot 80kg / 176 lbs)	approx.	kg/m² / lbs/ft²	32,4 / 6.64	31,1 / 6.37
max. take-off mass (max. TOW)		kg / lbs	750 / 1653	750 / 1653
max. wing loading		kg/m² / lbs/ft²	44,9 / 9.2	42,8 / 8.77
Aerobatics			unlimited Category „A“	simple
max. TOW for aerobatics		kg / lbs	630 / 1389	/
max. speed		km/h /kts	270 / 146	270 / 146

Powerplant

engine	Solo 2350C two-cylinder-two-stroke-engine	
power	KW / hp	22 / 30
Reduction gear		1:2,3
Fuel tank capacity	Liter / US.gal	22 / 5.81
Propeller	DG-P001-1	CFRP-Composite
Propeller diameter	m / ft	1,48 / 4.86

*Options will increase the empty mass accordingly!

1.5 **Three view drawing** (dimensions in mm)



2.4 Power plant

Engine manufacturer:	Solo Kleinmotoren Sindelfingen/Maichingen Germany		
Engine model:	Solo 2350C 2 cylinder air-cooled two stroke engine		
Maximum power:	Take off:	22 kW	(30 hp)
	continuous:	20 kW	(27 hp)
Max. engine RPM:	6500 RPM		
Max. continious RPM:	6100 RPM		

Max. cylinderhead temperature: 270°C (518°F)
With Poly-V belt reduction gear 1:2,3

Propeller:	Diameter 1.48 m (4.86 ft)
Manufacturer:	DG Flugzeugbau GmbH, Germany
Model:	DG-P001-1

2.5 **Power plant instrument markings** (on DEI-NT, DEI=digital engine indicator)

Power plant instrument markings and their significance are shown below:

Engine speed indicator:
On centre of the DEI-NT display, indication digital with 4 digits, limitation data printed above display:

green	6100	max. continuous RPM
yellow	6100 – 6500	caution range
red	6500	max. RPM

Max. continuous RPM:
When exceeding this RPM a blinking "Hi" appears at the left hand side of the RPM.

Max. RPM:
When exceeding this RPM a full screen warning "Engine Speed" appears, when this warning has been confirmed (by pushing the selector knob at the right hand side of the display) the engine speed display is blinking whilst the engine speed is above max. RPM..

2.13 Minimum equipment

As minimum equipment only the instruments and equipment specified in the equipment list (see maintenance manual) are admissible.

Note: The actual equipment list is filed in the enclosures of the maintenance manual.

Normal operation
Airspeed indicator Range: 0-300 km/h (0-165kts.);
Speed range markings see sect. 2.3
Altimeter Range: 0 – min. 10.000 m,
Altimeter with fine range pointer, 1 turn max. 1000 m (3000 ft.)
Magnetic compass (compensated in the aircraft)
Four piece symmetrical safety harness
VHF - transceiver (ready for operation)
Engine speed indicator, Fuel quantity indicator, Cylinder head temperature indicator, Engine elapsed time indicator (counts as long as the engine is running):
These 4 indicators are incorporated in the DEI-NT. Markings and display of the limitations see sect.2.5
Outside air temperature gauge: with probe in the fuselage nose, also incorporated in the DEI-NT.
Rear view mirror
Parachute automatic or manual type or a suitable firm back cushion approximately 8 cm (3 in.) thick for the front seat and 3 – 8 cm (1 – 3 in.) thick for the rear seat
Required placards, check lists
Flight and maintenance manual.

a) **In addition for cloud flying**
(Not permitted in Canada and Australia)
Variometer
Turn and bank indicator

b) **In addition for aerobatics** (Category Aerobatic)
Accelerometer capable of retaining max. and min. g-values with markings red radial lines at +7 g and -5 g.
Safety bows at the rudder pedals (standard equipment)

Remark:
Experience has shown that the installed airspeed indicator system may be used for cloud flying.

2.14 Aerotow, winch and autotow launching

2.14.1 Weak links in towing cables

max. 10000 N $\pm$ 10%
max. 2200 lbs. ± 10%

2.14.2 Towing cables (for aerotow only)

Length: 30-70 m (100 - 230 ft)
Material: hemp- or plastic fibres

2.14.3 Max. towing speeds

		maximum	maximum
Aerotow	V_T =	185km/h	100 kts.
Winch- and autotow	V_W =	150 km/h	81 kts.

2.14.4 Tow Release

The C.G. tow release (installed in front of the main wheel) is suitable only for winch- and auto launching..
The nose hook is to be used only for aerotow.

2.15 Crosswinds

The demonstrated crosswind velocity is 15 km/h (8 kts.) according to the airworthiness requirements.

2.20 Other limitations

2.20.1 Approach and landing

Landing with the engine extended and running is prohibited, except in an emergency.

Always land in the gliding configuration, engine retracted.

2.20.2 Warning: Self-launching is not permitted

2.21 Limitations placards

DG Flugzeugbau GmbH
Type: DG – 1000T Serial No.: 10- T
Year of construction:

Maximum airspeeds	km/h	kts.
Winch launching	150	81
Aero-tow	185	100
Manoeuvring V_A	185	100
Rough air	185	100
Maximum speed V_{NE}	270	146
Powerplant extended	185	100
Powerplant extension-retraction	100	54

Approved aerobatic manoeuvres, only without waterballast:
Pos. Loop, Chandelle, Spin, Stall turn
In addition Category A:
Only with 18 m span without waterballast, engine retracted or removed:
Half loop and half roll, half roll and half loop, slow roll, inverted flight, half positive flick roll from normal flight with half loop, half negative flick roll from inverted flight
Maximum mass:

Category A	630 kg	1389 lbs.
Category U	750 kg	1653 lbs.
Category U without waterballast	kg	lbs.

Loading chart

Cockpit load	front seat		rear seat		(Parachute
maximum	110 kg	242 lbs.	90 kg	198 lbs.	included)
or maximum	105 kg	231 lbs.	105 kg	231 lbs.	
minimum	kg	lbs.	/	/	without fin battery
minimum	kg	lbs.	/	/	With fin battery

With lower pilot weight necessary ballast must be added.

Cockpit Check

1. Lead ballast (for under weight pilot)?
2. Parachute worn properly?
3. Safety harness buckled?
4. Front seat: pedals adjusted?
   Rear seat: seating height adjusted?
5. All controls and knobs in reach?
6. Altimeter?
7. Dive brakes cycled and locked?
8. Positive control check ? (One person at the control surfaces).
9. Fin ballast tank emptied or correct amount filled in?
10. Trim ballast box in the fin, correct amount filled in? Locking device completely engaged?
11. Battery in the fin? Loading chart regarded?
12. Trim?
13. Fuel level?
14. Fuel cock open?
15. Both canopies locked?
16. Runway free?

limits for use of the waterballast tank

minimum ground temperature	°C	13.5	17	24	31	38
	°F	56	63	75	88	100
maximum flight altitude above GND	m	1500	2000	3000	4000	5000
	ft.	5000	6500	10000	13000	16500

Altitude in [m]	0-3000	4000	5000	6000	7000	8000
V_{NE} IAS km/h	270	256	243	230	217	205
Altitude in [ft]	0-10000	13000	16000	20000	23000	26000
V_{NE} IAS kts.	146	138	131	124	117	111

Other cockpit placards see section 7

Gepäck max. 15 kg
baggage max. 33 lbs.

Sollbruchstelle 10000 N
rated load 2200 lbs.

Reifendruck 4 bar
Tyre pressure 58 psi
Tail wheel

Reifendruck 2,5 bar
Tyre pressure 36 psi
Main wheel

Reifendruck 2,5 bar
Tyre pressure 36 psi
Nose wheel (if installed)

Ballast box in the fin
Min. load in the front seat
kg box empty

kg box filled

At the control-light in the front instrument panel

Warning:
Rigging of the horizontal tailplane is only permitted with nose down trim-setting!

at the upper left hand side of the fin

3.5 Spin Recovery

Apply full opposite rudder against direction of the spin, pause.

Then ease stick forward until the rotation ceases, centralize the controls and carefully pull out of the dive.

The ailerons should be kept neutral during recovery.

Caution: To prevent unintentional spinning do not stall the motorglider. Fly with enough speed reserve especially in gusty conditions and in the landing pattern.
Intentional spins with waterballast are not permitted.

Height loss during recovery	ca. 50-100 m (160-320ft)
max. speed during recovery	max. 200 km/h (108 kts.)

3.6 Spiral dive recovery

Apply rudder and aileron in opposite direction and carefully pull out of the dive.

Spiral dive occurs only when spinning more than 2 turns with medium C.G. positions, see section 4.5.11.
To prevent spiral dives intentional spinning should only be executed at aft C.G. positions.
Recovery from unintentional spinning should be done immediately.

3.7 Recovery from unintentional cloud flying

Spins are not to be used to reduce altitude. In an emergency, pull out the dive brakes fully before exceeding a speed of 200 km/h and fly with max. 200 km/h (108 kts.) until leaving the cloud.
At higher speeds up to V_{NE} pull out the dive brakes very carefully because of high aerodynamic and g-loads.

4.5.1.2 Winch launch

Winch launch is only allowed using the C.G. tow hook!
Set the trim to neutral for winch launch.

Caution: During ground roll and initial take-off (especially when flying solo) push the control stick to a forward position to prevent excessive nose-up pitching rotation during initial take-off.

After reaching safety altitude gradually pull back on the stick, so that the glider will not pick up excessive speed. Don't pull too hard.
After reaching release altitude pull the tow release knob.

Recommended winch launch airspeed 110-120 km/h (60-65 kts.).

Caution: Do not fly at less than 90 km/h (49kts.) or not more than 150 km/h (81 kts.).
Warning: Winch launch with high take-off weight requires a powerful winch!

4.5.2 Free flight

Stalling characteristics (level and turning flight)
When stalled the DG-1000T will warn by buffeting. If the stick is pulled further the DG-1000T will drop one wing.
Only at forward C.G. positions the DG-1000T can be flown in stall without wing dropping, maintain control during stalled flight only with the rudder, holding the ailerons neutral.
With stick forward and opposite rudder if required, the DG-1000T can be recovered without much loss of height. Rain does not influence this behaviour noticeably. The loss of height is approx. 50 m (160 ft).
Stall airspeeds see section 5.2.2.

Caution: Flights in conditions conducive to lightning strikes must be avoided.

4.5.4.3 Starting problems

The engine is equipped with electric fuel injection (primer) instead of a choke valve. The automatic control of the primer enables engine starting with little risk of misoperation.

To inspect the correct functions of the primer the DEI-NT displays a syringe symbol as long as fuel is injected (primer valve open). With a cold engine fuel will also be injected after releasing the starter button. The duration of the injection is dependent on the cylinder head temperature. With CHT above 40°C (104°F) no fuel will be injected during engine start.

a) If you suspect that the engine is flooded, e.g. CHT just below 40°C (104°F) and primer working, you should switch off the primer and try to start the engine with full throttle. If the engine starts, wait until 3000 RPM are reached, then reduce throttle to keep approx. 3000 RPM.
If the engine is flooded excessively you may close in addition the fuel cock. As soon as the engine starts open the fuel cock again.

b) If with normal CHT (+5°C (41°F) up to +38°C (100°F)) the engine does not fire this may be a hint that the fuel filter is dirty and so the amount of fuel injected is reduced.
The filter has to be cleaned or replaced before take off.

4.5.5 Approach and landing

Note: Always land in the gliding configuration, engine retracted, except in an emergency.

4.5.5.1 Normal landing

It is recommended to dump the waterballast before landing even on airfields. Dump the ballast before an outlanding in any case.

Abeam the landing point extend the landing gear. In calm weather approach with approx. 100 km/h (54 kts.) (ballast dumped!). With strong wind and / or waterballast fly faster! The very effective Schempp-Hirth dive brakes make a short landing possible.

Slipping may be used as additional landing aid.

Caution: While side-slipping the rudder is held in its deflected position by the airflow. So it is recommended to practice slipping at a higher altitude.

The slip can be introduced at the recommended approach speed see above.
To recover from the slip neutralize the aileron control first, this will reduce the force which sucks the rudder in it's displaced position.
During the slip the airspeed indicator shows airspeed values which are too low, so the slip must be executed with regard to the position of the horizon.
No influence on the slipping characteristics when slipping with partially filled waterballast is noticeable.

Strong crosswind offers no problem.

Do not approach too slowly with fully extended airbrakes otherwise the aircraft may drop during flare out. When flaring out keep the airbrake setting you were using, opening them further may drop the motorglider!

You can land the DG-1000T on soft fields with the landing gear extended, as there is no tendency of nosing over. During touch down pull the stick completely to avoid the fuselage nose touching the ground.

After landing in a muddy field clean the landing gear and tow releases.
Dirt in the front strut can keep the landing gear from locking over centre next time. Simply hosing with water is the best cleaning method.

4.5.5.2 Landing with the engine extended and stopped

See emergency procedures sect. 3.18.
Land with the engine extended only if the engine can't be retracted.

4.5.5.3 Landing with the landing gear retracted

Wheel-up landing is not recommended see emergency procedures section 3.10.

After wheel-up landing check the fuselage belly and the tow hook for damage.

4.5.5.4 Landing with asymmetric waterballast

See emergency procedures section 3.8

4.5.6 Engine retraction on the ground

Caution:
After ground test runs don't retract the powerplant immediately. Allow the engine to cool down several minutes.
For retraction turn the propeller by hand into position, don't use the starter motor.
The engine will be retracted automatically. To interrupt the retraction procedure proceed as follows:
Push the manual switch up or down to switch off the automatic system. Further retraction via the manual switch or by switching the ignition on and off.

4.5.7 Flight with water ballast

4.5.7.1 Wing tanks

Recommended ballast for smooth thermals:

	rate of climb		ballast	
	m/s	fpm	litres	U.S. gallons
below	1,5	300	None	
	1,5 – 3	300-600	40	10
more than	3	600	max. ballast	

Do not exceed the maximum gross weight when loading the water ballast. The maximum quantity of water allowed is dependent on the empty weight and the cockpit load (see section 6.8.5).
In flight the water drains at approx. 0.5 lt./sec. (1.1 lbs./sec).

4.5.9 Flight in rain and thunderstorms

With light rain the stall speed and the sink rate increases slightly and the approach speed has to be increased.

Warning: Flights and especially winch launches in the vicinity of thunder storms should be avoided. Due to lightning discharge, carbon fibre structures may be destroyed.

4.5.10 Cloud flying

Cloud flying is only permitted without waterballast. Take care to fly smoothly and coordinated. It is prohibited to use a spin as a method for reducing altitude in cloud. In case of emergency, pull out the dive brakes fully before exceeding a speed of 200 km/h and dive with max. 200 km/h (108 kts.) to leave the cloud.

Warning: Flying in or near thunderstorm-clouds is prohibited.

Note: Cloud flying is not permitted in Canada and Australia.

Stall turn

To fly a stall turn safely, proceed as follows:
Don’t choose an entry speed of less than 200 km/h (108 kts.).
During the pull out, when reaching the vertical flight path initiate rotation at min. 150 km/h (81 kts.) with the rudder. Push the rudder quickly, but not abruptly. During the turn apply a little aileron against the direction of turn and full forward stick deflection to execute the turn correctly in one plane.
As soon as you reach the vertical dive, start to pull out of the dive to minimize the increase of airspeed and the g-loads.

Be careful not to exceed the airspeed for max. control surface deflection as indicated in section 2.2.

Caution: A classical stall turn with almost no airspeed at the highest point of the turn is very difficult to fly with a glider with larger wingspan, due to the high moment of inertia.

This effect is taken into account when using the above mentioned procedure.

Only a pilot who is trained in the technique to execute during the pull up a slight side-slip (with a little aileron deflection in the intended turn direction and appropriate rudder deflection against turn direction) can start to initiate the rotation at a lower speed of 120 km/h (65 kts.) with fast rudder deflection. The turn will look nicer and be narrower than with the method described above.

Warning: If the rudder is applied too late and the rotation is insufficient, it is possible that the glider tailslides (falls tailwards) or falls sideways.
If this happens it is important to hold all controls firmly, preferably at one of the stops, until the nose swings down. Then, immediately perform a flare out. Otherwise, due to the reverse airflow, the control surfaces may flap against their stops and be damaged. In addition holding the control stick at the stop prevents the stick from making unnecessary movements due to the massbalance weights in the elevator control system.

4.5.11.2 Category A, Aerobatic

Only approved with 18m span, powerplant retracted or removed and without waterballast, max. mass 630 kg (1389 lbs.) and with the weight of the rear pilot compensated by ballast in the ballast box in the fin see section 6.8.7 and with the required equipment installed see section 2.13.
Execute only the approved manoeuvres.
Don't execute aerobatics below the safety altitude required by national law.

Approved manoeuvres (Category A, Aerobatic):
All manoeuvres approved for category U, Utility and additionally:

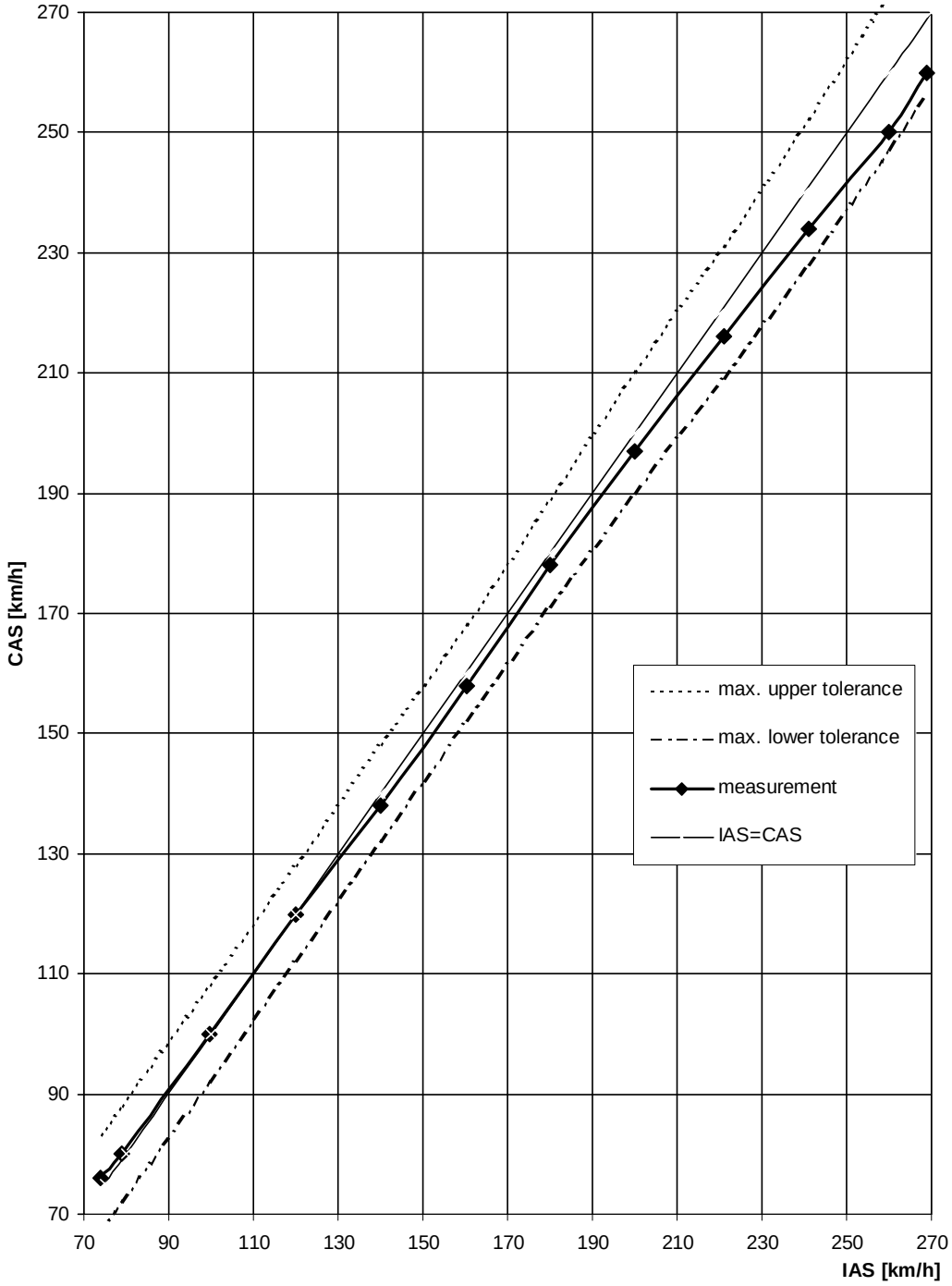
Approved manoeuvres	**recommended airspeed**	**g-load**
Inverted flight	120 - 200 km/h (65-108 kts.)	-1
Approved manoeuvres	**entry speeds**	**g-loads**
half loop and half roll	220 km/h (119 kts.)	+5.0
half roll and half loop	180 – 200 km/h (97-108 kts.)	+4.5
slow roll	180 - 200 km/h (97-108 kts.)	+/-1.5
half positive flick roll from normal to inverted flight with half pos. loop	120 - 140 km/h (65 - 76 kts.)	+4.0
half negative flick roll from inverted to normal flight	130 – 150 km/h (70 - 81 kts.)	-3.5
Combinations of the approved manoeuvres		

Caution: the DG-1000T is equipped with a powerful longitudinal trimming device. In addition the mass balance weight of the elevator is incorporated in the elevator control system. Due to these facts the elevator control forces during inverted flight change considerably with trim position.
It is strongly recommended to trim the glider to approx. 140 km/h (76 kts.) in horizontal flight prior to executing aerobatics, especially prior to inverted flight.

5.2 Approved data

5.2.1 Airspeed indicator system calibration

IAS = indicated airspeed
CAS = calibrated airspeed



1 kts = 1 km/h / 1.852

Caution: The airspeed indicator is to be connected to the static ports and pitot probe in the fuselage nose.

5.3 Additional Information

5.3.1 Demonstrated crosswind performance

The demonstrated crosswind velocity is 15 km/h (8 kts) according to the airworthiness requirements.

5.3.2 Gliding performance

1 kts= 1 km/h / 1.852, 1 m/s= 197 ft/min.= 1.94 kts, 1 kg/m²= 0.2048 lbs/ft²

Performance data with **20 m** span (S = 17,53 m²)

wing loading	kg/m²	28	35	42
minimum sink	m/s	0,51	0,56	0,62
at	V [km/h]	79	88	98
best glide ratio	/	45,9	46,3	46,6
at	V [km/h]	93	104	120

Performance data with **18 m** span (S = 16,72 m²)

wing loading	kg/m²	30	36	45
minimum sink	m/s	0,60	0,65	0,72
at	V [km/h]	84	90	100
best glide ratio	/	41,5	41,7	42
at	V [km/h]	100	110	123

A variation in speed by ± 10 km/h (5 kts.) from the above will decrease the best glide angle by 0.5 glide points and increase the min. sink rate by 1 cm/sec. (2 ft/min).
The polar curves can be seen on the next page.

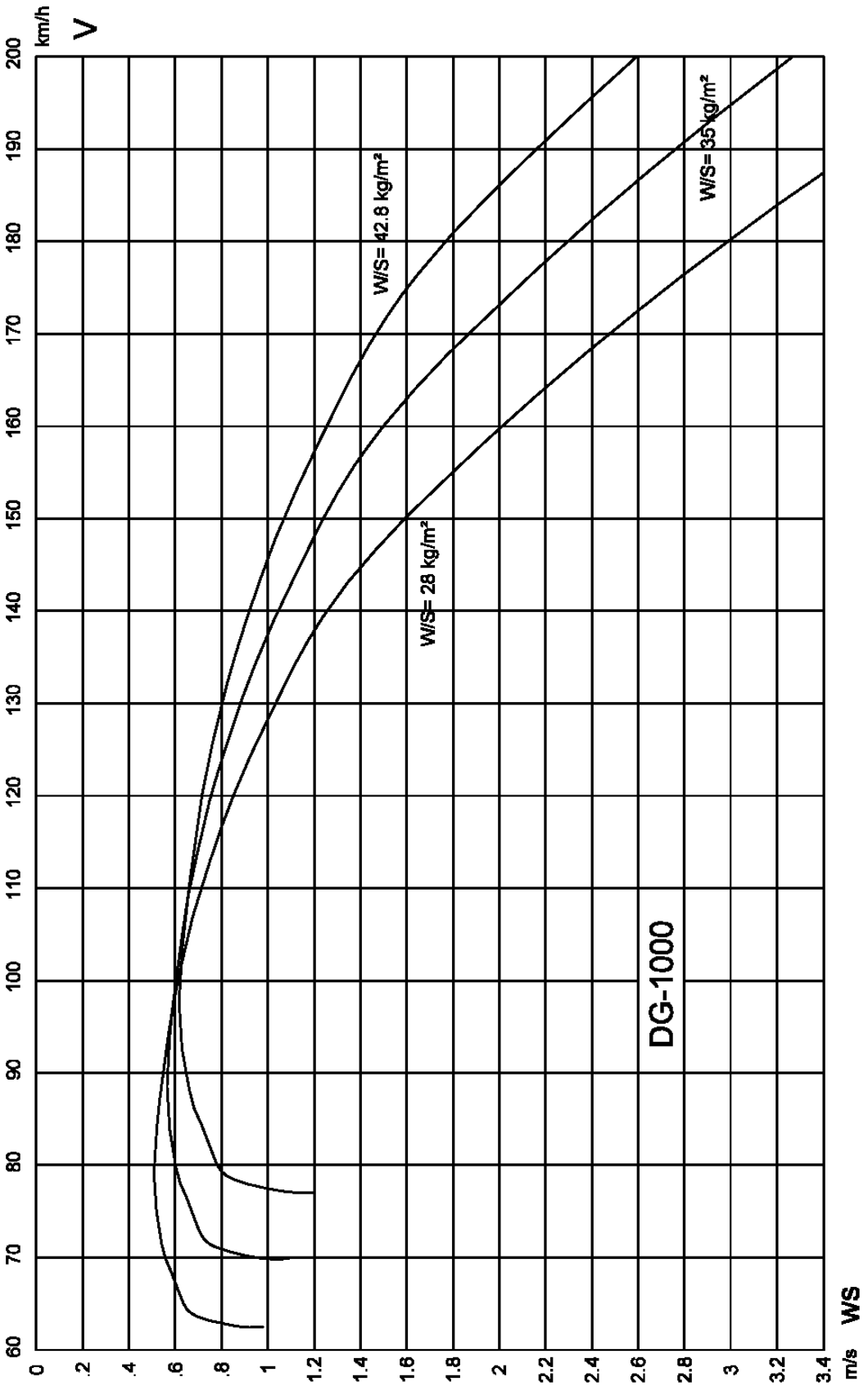
For optimum performance, the aircraft should be flown with a C.G. towards the rear of the allowable range. This especially improves thermalling performance. However the aircraft will be more pitch sensitive.

The wing fuselage joint, wing parting and the tailplane fin joint should be taped up and the aircraft thoroughly cleaned to obtain maximum performance.

The polars apply to a "clean" aircraft.
With dirty wings or flight in rain, the performance drops accordingly.

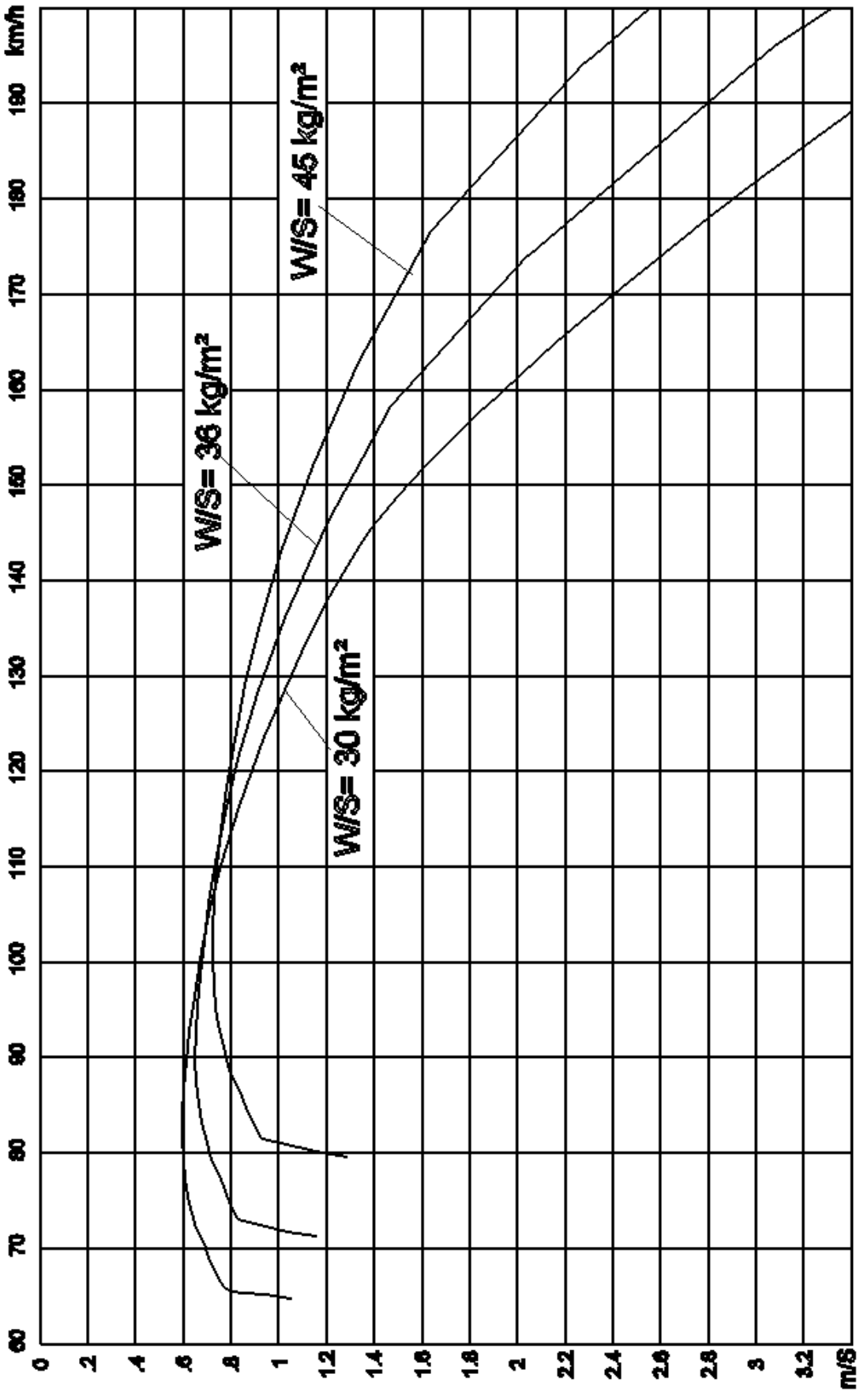
5.3.3 Flight polar with 20 m wing span

1 kts= 1 km/h / 1.852, 1 m/s= 197 ft/min.= 1.94 kts, 1 kg/m²= 0.2048 lbs/ft²



5.3.4 Flight polar with 18 m wing span

1 kts= 1 km/h / 1.852, 1 m/s= 197 ft/min.= 1.94 kts, 1 kg/m²= 0.2048 lbs/ft²



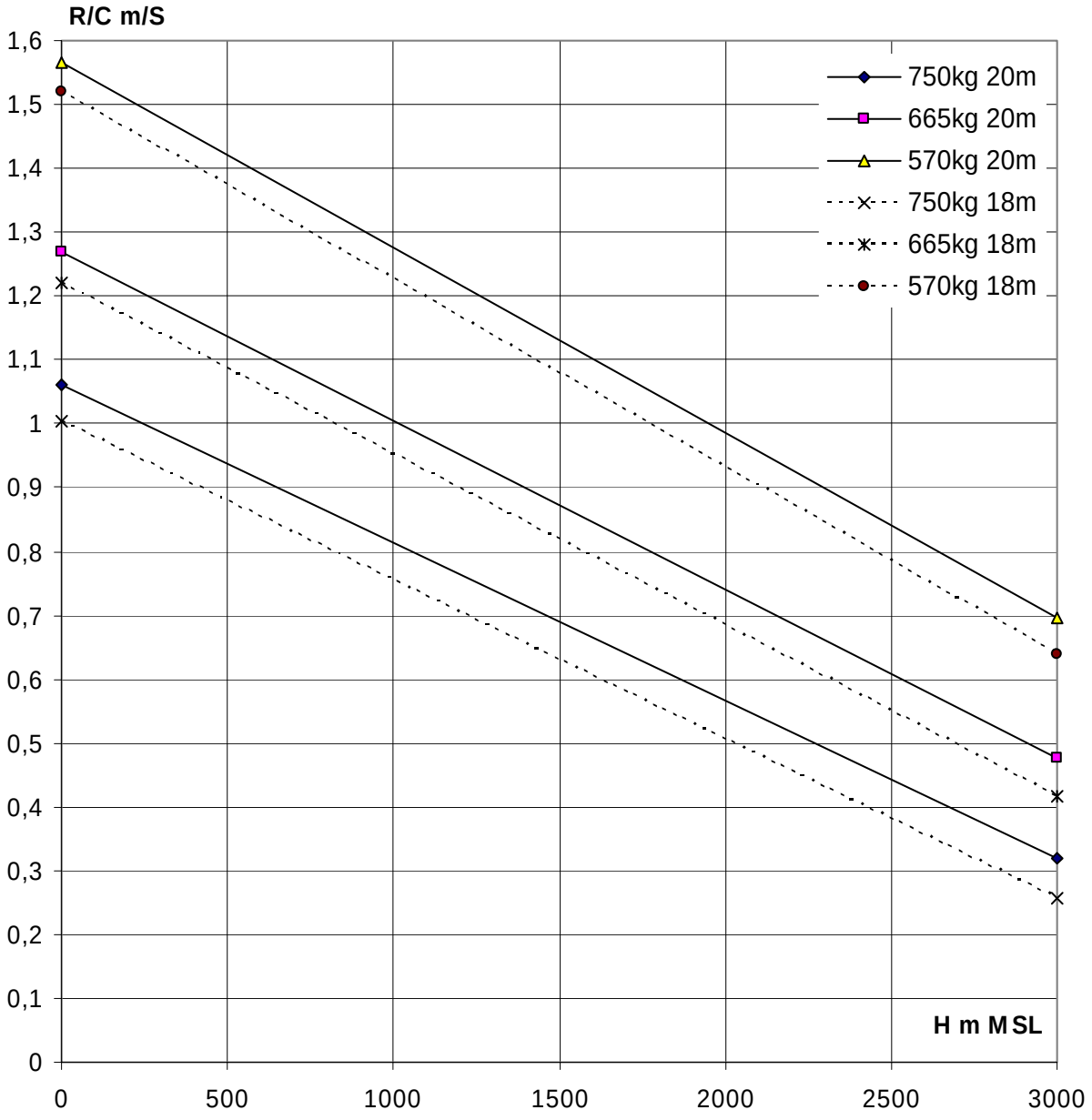
5.3.5 Performance under power

5.3.5.1 Rate of climb

Measured rates of climb for 15°C (59°F) at MSL.
15°C increase in temperature reduces the rate of climb by ca. 0.2 m/s (40 ft/min.).

R/C = climb rate at Vy = 90 km/h (49 kts.) and with flap setting +8°
H = altitude above sea leve

1 m/s= 197 ft/min. .= 1.94 kts,, 1 m= 3.2809 ft, 1 kg= 2.2046 lbs



6.8.7 Ballast box in the fin

a) Compensation of the C.G. shift due to the rear pilot:
The ballast box can accommodate max. 4 weights of 2,4 kg mass (heavy weight) and 2 weights of 1,2 kg mass (light weight), so the max. mass is 12 kg.

The number of weights can be determined by the following table:

Mass of rear pilot		Number of trim weights	Number of blinks of the lamp in the front instrument panel see section 4.2.4
kg	lbs.		
55	121	2 heavy + 1 light	5
65	143	3 heavy	6
75	165	3 heavy + 1 light	7
85	187	4 heavy	8
95	209	4 heavy + 1 light	9
105	231	4 heavy + 2 light	10

Warning: When flying solo the ballast box must be emptied, except see b)! Otherwise you will fly with a dangerous C.G. position.
If the ballast box is filled up, the min. cockpit load in the front seat is raised by 35 kg (77 lbs.).
The resulting value (min. cockpit load in front seat from weighing without ballast + 35 kg) must be entered in the table on page 6.7 as value XX and also on the placard at the indication lights for the fin tank on the front instrument panel.
When using the trim weights make sure not to exceed the max. weight of 750kg (1167 lbs.) Category „U" or 630kg (1653 lbs.) Category „A" and Category „U" with fixed undercarriage.

b) Trim-possibility for heavy pilots:
The ballast box may be used for this purpose too.
One trim weight of 1.2 kg raises the min. load in the front seat by 3.5 kg (7.7 lbs.).
One trim weight of 2.4 kg raises the min. load in the front seat by 7 kg (15.4 lbs.).
Example (1 kg= 2.2046 lbs):

Min. cockpit load of the glider:	70 kg	permissible amount of trim weights
Mass of the front pilot:	84 kg	2 x 2.4 kg
Mass of the rear pilot:	65 kg	3 x 2.4 kg or 2 x 2,4 kg and 2 x 1,2 kg
Total amount of trim ballast:		12 kg

This means that the ballast box can be filled completely for this example.
Higher pilot masses can't be compensated.

6.8.9 Empty weight C.G. limits (for 6.4)

x_S mm 1 mm=1 in./25.4, 1 kg= 2.2046 lbs

