

Translation of the testreport THEMA 2 in the magazine THERMIK, issue July 2011

With the Thema 2 the Austrian manufacturer has released the new version of the basic Sports-class glider Thema. But now with EN-B classification on the higher level as a Performance Intermediate ...

PRO-DESIGN THEMA 2

Testpilot: Andi Pfister

Pictures: Andi Pfister, Pro Design

As one of the oldest paraglider manufacturer Pro Design, located in the Tyrol/Austria, has undergone several turbulent and exciting periods of time. Starting with the first model Combi-Cut 11 (first series glider in 1986) and f.e. with the world championship glider High 68 (1995) the innovative company was always ambitious to go new directions in terms of materials and technical solutions. Some years ago, Herbert Hofbauer, the owner and man of the first hours of paragliding, changed the way of designing the range of paragliders. Also the change of the board of designers in that time brought a fresh breeze to the company. Alexandre Paux realized the philosophy and the aims of that time together with the testing team in a good manner. Pro Design could also realize and change to the trend for light weight constructions and the resulting simple launch characteristics and in-flight handling. At the time of closure of the press deadline the new Jalpa 2 got certified in 3 sizes in classification LTF 2. This glider model is following the trend in it's class with Rigifoil sticks on the profile nose sections.

Construction, finishing

It is not secret that the selection of materials and the usage of those in the gliders was always Herbert Hofbauer's passion. Therefore also in the early times Pro Design intensively worked on fabric and line material conceptions. By the cooperation with the line manufacturer Edelrid since 2001 Pro Design could adopt their special needs to the particular glider models. On the Thema 2 the lines of the upper cascades and brake lines are made from Dyneema whilst the other lines are made with Aramide cores. Also for the cloth Pro Design cooperates since long time with Porcher Marine. The cloth used on the Thema 2 is the fabric 9017 E38 with a weight of 40g/m². The time period for development was about 1 year for the Thema 2, after 3 prototypes until the time of certification only final trimming was made. Typical features of a High Performance gliders were left aside intentionally when deciding for the development features of the Thema 2. In place of that, the aim was to keep construction simple and easy similar to f.e. the model Accura 2. Well proven features such as the Ram-Air pockets (stabilizing the air intake leading edge, especially in accelerated flight), the TETS brake line attachments (optimizing the tension of the outer trailing edge by shortening it span wise) and the special V-rib technology giving an optimized load distribution to the upper sail, all these features certainly not missing in the new Thema 2. Last but not least, the glider got a very nice and cool canopy design, at least according to my opinion. As the target group, Pro Design has developed the Thema 2 especially for pilots who flying regularly and aiming for distance flights.

Launch behavior

Pro Design has made extensive efforts in the short past to improve the glider designs for an easy take off. In the time of the "original" first Thema to many (and to heavy) features were built in the canopy. Following the motto "less is more" the company developed particularly on the material choice and canopy construction to achieve a nice launch behavior. This succeeded already perfectly on the Accura 2 and therefore also now the

Thema 2 has an easy and good controllable take off behavior. After placing the canopy on the ground for take off, the sorting of the lines is easy, the Dyneema (upper cascades) and Aramide (main lines) lines are easy to layout and disentangle. The Thema 2 is easy to fill with air by only a short pull on the A- lines. In the following, the canopy raises up without any further need of input overhead the pilot. With the need of only small corrections the Thema 2 can be stabilized overhead the pilot, even change of take off directions can be handled easily. I was especially pleased about the reverse-take off behavior. Such as on the normal take off, the canopy only needs a short impulse and guidance during the filling and raising up overhead. Even playfully the glider can be held overhead with brakes or back riser handling. Neither tendency to shoot over nor to fall backwards, so the canopy stays overhead even in the lightest wind and this makes the reverse launch a great enjoyment.

technical data	(acc. to manufacturer)		
manufacturer/sales	PRO-DESIGN GmbH. Zimmeterweg 4, A-6020 Innsbruck Tel: +43 (0) 512 546444 Fax: +43 (0) 512 546445 www.pro-design.at		
production	own production loft in China		
designer	Alexandre Paux		
test pilots	team Pro Design, Alexandre Paux and Jürgen Stock		
sizes	65	80	95
number of cells	53	53	53
take off load (kg)	65-85	80-100	95-120
area layout (m ²)	22,67	24,53	26,53
area projected (m ²)	20,3	21,95	23,75
span layout (m)	10,91	11,35	11,8
span projected (m)	9,14	9,51	9,89
aspect ratio layout	5,25	5,25	5,25
aspect ratio projected	4,12	4,12	4,12
canopy weight (kg)	4,9	5,2	5,5
full line length (m)	6,9	6,9	6,9
V-minimum (km/h)	24	24	24
price incl. sales tax	3264.-	3300.-	3342.-
certification LTF	B	B	B
certification EN	B	B	B
upper sail/lower sail	Porcher Marine Skytex 9017 E38 40gr/m ²		
cascade lines	Edelrid Dyneema 1.2 – 1.6mm		
main lines	Edelrid Aramides 1.9mm		
content of delivery	packing strap, inner bag, speed-system, promo bag (DVD, advertising material), outer bag		

In-Flight behavior

Right after take off the Thema 2 gives a stable and solid impression. This proves then after my roll and pitch tests. Therefore the Thema 2 is among the top field of overall stability in its class. Neither in bank nor in pitch the glider feels nervous but in opposite, the Thema 2 giving you the feeling to be in a lower class behavior. Nevertheless the glider is agile to fly. Wing overs and sharp opposite turns prove a precise and agile handling (if wished and with an according brake input). The brake pressure is in comparison to same gliders in its class in the middle field, the pilot is getting a constantly clear feed back from the brakes. Furthermore the reaction to brake input is promptly, i.e. in the working range in thermals every pull of each cm results in a more bank. The glider reacts very good to lifts, the Thema 2 flies right into the thermal without any over pitching. When circling in the thermal there is only need of a few brake line pull in order to center the glider. Also here again the glider proves its exact handling. Whether in turbulent conditions or in bumpy thermal conditions, you have always the impression that design wise the glider has not been brought to the limit of its classification. Because even in turbulent air the canopy always stays solid over you not working in itself. Because of this feature you can fully concentrate on the lift or thermal and all other flying belongings. The behavior after intentionally initiated side collapses perfectly fits in its certified class. The Thema 2 only surges forward a bit, turns in an easy controllable manner and is easy to stop by the brakes. Even side tucks in fully accelerated flight are easy controllable by the brakes with much safety margin left. Frontal tucks open symmetrically and quick, also here I could not find any difficulties. Pulling close to the stall point is remarkable and easy to feel. The brake pressure growing linear to the range of pull and getting high right before the stall point so you get a clear warning before entering the stall. The speed system works with easy pressure and is efficient to use. The pressure to keep the accelerated position is low and the canopy looks clean at full speed. Also you have a good feeling for stability at highest speed.

Means of decent

Big Earing:

The Thema 2 is equipped with an additional A- riser for pull down of the ears which can be clipped to the main A- riser by magnet. This additional webbing is long enough and can be reached by smaller pilots easily as well. Certainly it has been mentioned that you have to grasp the riser as high as possible to have enough range to pull down. As an optimum point here I consider the point where is the A- riser line link. By pulling down, the ears fold in in sufficient way and the sink rate is in the middle range then. The canopy stays solid and with only small pressure the ears can be hold in. With folded ears the glider reacts good for weight shift turns and after release of the additional A- risers the canopy opens quickly.

B-Stall:

With the in color separated riser the glider can be pulled into B-Stall with average pull force. The canopy loses pressure over a large area and accordingly the sink rate is high (9-10m/sec) during this maneuver. The canopy stays very quiet and therefore this maneuver can be exercised in a good way. After release of the risers and due to the high sink rate achieved, the canopy takes some to resume flying. To touch the brakes whilst recover is not recommended.

aims of development
easy handling (launch, thermal flying), highest stability in all flight situations, high safety tolerance despite higher LTF 1-2 classification
Used methods; moderate aspect ratio, well designed line conception

Spiral dive:

Also the entry to the spiral dive is easy to achieve with the Thema 2 and results in an easy maneuver. The glider getting quickly into high bank and speed and even after a few turns the glider well stabilizes in the spiral. The rates of sink are easy controllable by brake pull. Even after hard spirial turns the exit to normal flight is easy.

Summary

With the Thema 2, Pro Design has succeeded to achieve a real improvement to the former Thema. The launch behavior now is perfect and gives real fun at reverse take off procedure. The way the glider flies in thermals is in comparison to competitor gliders really good due to the exact brake handling together with the high overall in-flight stability leaving the pilot room to concentrate on all other flight belongings. In terms of grading the critical flight behaviors, the Thema 2 is very good, here the design is not sharp on the edge of its classification. All means of descent work perfectly, only the glider takes some time after B-line stall recover (but this due to the very effective achieved sink rate). The target group for the Thema 2 is a broad range, from the local thermal pilot who is looking for an agile glider with good handling but stable in-flight behavior, up to the pilot who wants to seek for distance flights.

testing conditions
Late winter plus spring thermal flights with partly flights in windy and turbulent conditions

Usability					
school use	entry level	fun pilot	experienced	distance	competition

measuring data	
canopy weight	5,2
measuring altitude	1400
V-trim (km/h)	37
V-max with speed-system (km/h)	50
take off weight test pilot (kg)	98
area loading (kg/m ²)	3,9

design details	
riser sections	4
line sections	4
line galleries	1
feature for big ears (devided A- risers)	yes
canopy openings for dirt	yes

materials / stitchings	
pulleys	brake plastic / speed system metal
brake handle fixing	press button, swivel on main brake line
brake handle	very comfortable with Neopren covered handle
line fixing in rapid links	plastic inserts
stitchings	inside, nicely stitched
line end sewing	clean with no fraying ends
line attachment points	reinforcement webbings and more-layer stitchings

judgement		
materials and workmanship	materials *****	high quality material selection
	workmanship *****	exact and clean workmanship
take off characteristic	launch *****	easy and moderate quick climb, no surge, easy controllable
	reverse launch *****	easy canopy handling, climbs perfectly with easy control overhead
flight behavior	agile ****	generally agile without being nervous
	brake handling *****	balanced handling, exact brake handling, fine thermal handling
	behavior in collapse ****	moderate behavior in comparison to other same class gliders, low surge and dive, brake travel for corrections long
	speed-system ****	light push easy to do, low pressure to hold speed, leading edge with only small deformation, stability at top speed is high
means of decent	big ears *****	split A-riser, pull in of ears easy, reacts good in weight shift, after release selfrecovery
	B-stall ****	risers separated by color, pull in moderate, high deformation at stall, easy to hold, quiet stall sink, after release some time for recovery
	spiral dive *****	easy and quick to initiate, sinkrate easy to control, recovery easy even after hard turns
technical specials		Ram-Air pockets and TEST brake attachments
usability		regularly flying thermal pilots and distance
judgement		*poor **average ***good ****very good *****excellent

test written by Andi Pfister
see original scan of magazine!