



Jochen Ewald tries out the ASG 29 from Alexander Schleicher and the (pictured in the

From W to G

WITH THE ASW 27, Schleicher has a really successful flapped 15-metre glider, and the company's ASH 26 is well established in the flapped 18 metre self-launcher market. Now Schleicher's new engineer, Michael Greiner, who took over from Gerhard Waibel on the latter's retirement, has "filled the gap" between these two types with his ASG 29.

The ASW 27 is uncompromisingly a pure FAI 15-Metre Class competition glider, and the ASH 26 is optimised as an 18-metre self-launcher, requiring more wing surface to carry the extra weight of the engine. So Michael Greiner's design aim was to make the ASG 29 the ultimate flapped 18-metre glider, which can be flown in the FAI 15-Metre Class using interchangeable outer wing sections, or equipped with a sustainer engine.

The ASG 29's 18-metre four part wing is only 10.5m² and has an aspect ratio of more than 30. It uses the latest Delft University aerofoils from Loek MM Boermans. A serial production empty weight of 280kg (the prototype, at 284kg, is very close), would give a minimum wing loading of 33kg/m². In 15-metre mode, its wing area of 9.2m² is slightly more than the 27, its empty weight is 270kg and the minimum wing loading 36m².

Rigging the 18-metre wing with tongue-fork spar connection, two main bolts and fully automatic Hanle control connections for ailerons, flaps and airbrakes is fast, easy and follows the well-known Schleicher system. Waterballast tanks in the inner wing take 80 litres each and there's a five-litre fin tank. The winglets (used in both modes) connect automatically, thanks to spring-loaded snap-in

bolts. Fuselage and tail unit origin from the ASW 27, albeit with a slightly increased rudder size. The cockpit incorporates the latest crash-worthiness developments, using composites with energy-absorbing Dyneema fibres. The positioning of the aerotow hook is new, in the tip of the fuselage, as is the 35-litre fuselage waterballast tank above and behind the main spar. The resultant lost stowage capacity is compensated for by a lower compartment on the left behind the backrest (similarly, on the right, there is space for oxygen). The base of the backrest can be adjusted on the ground and a new crank on the right of the cockpit makes adjusting the top easier.

Waterballast allows a very wide range of wingloadings: at the 575kg max AUW of the 18-metre version, 54.7kg/m² is possible, while the 15-metre outer wings reduce the max





ASG 29, the new 15/18-metre offering
the first designed by Michael Greiner
the cockpit above)

AUW to 510kg, which permit a maximum wing loading of 55.4kg/m².

Because the Poppenhausen factory airfield was too muddy I flew the ASG 29 prototype at the Wasserkuppe. Fitted with three batteries (two in the baggage compartment behind the backrest, one in the tailfin), parachute and me, it weighed about 375kg and the c of g was central. The cockpit is really comfortable, with everything where I like it. Although the cockpit walls appear high, small steps in the floor easily allow you to push yourself out. The instrument panel is fully enclosed, and there is enough room even for tall pilots. The canopy opens so wide that you cannot reach its handles when strapped in, but a hole in the bottom of the panel serves to pull it (and the attached canopy) down, and it can be closed without external help. The flap lever shows no 'XX°'



Photographs, this row from left: The ASG 29 being flown by Michael Greiner, who is the G of ASG and successor of Gerhard Waibel in Schleicher's engineering team and (above) the ASG 29 on the ground at the Wasserkuppe

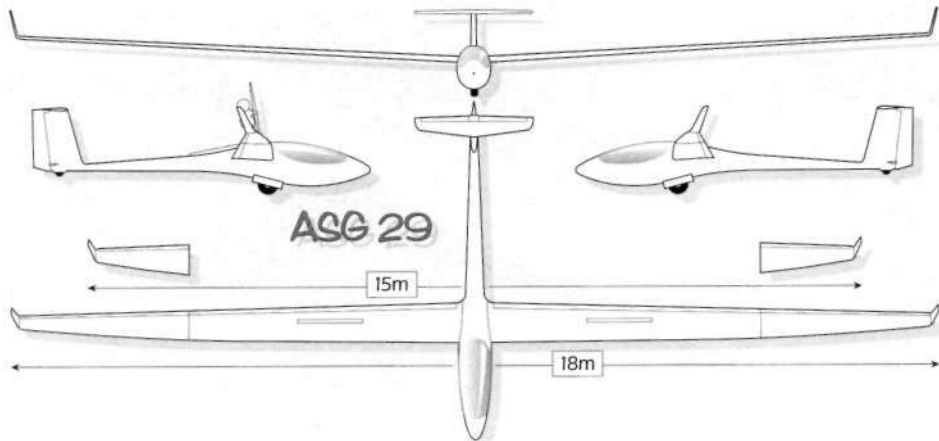
Below, from left. On the left of the cockpit are the flap lever (black, top), cable release knob (yellow, front), airbrake lever (blue, below) and trim position indication and setting button (out of shot, below). The instrument panel, in flight. The ailerons of the outer wing sections interconnect automatically via tongues, the main spar connection is secured by an integrated bolt, which is inserted by screwing the red handle in - here seen closed. Schleicher's Uli Kremer with the 15-metre outer wing. The winglets's tongues are pushed into the upturned end of the wing until a snap-in bolt connects

markings, but is labelled with numbers from 1 to 6 and 'L'. These mean: 1=-2.5°, 2=0°, 3=5°, 4=12°, 5=20°, 6=24°, while selection of the landing position 'L' brings the inner flaps down to 47° and, at the same time, increases the washout by lifting the ailerons back up to 12°. This improves control and reduces the risk of a wingdrop during slow approaches and on the ground.

At the Wasserkuppe, I had a gusty 10kt/90° crosswind and set the flaps to the standard take-off position, 4. The ailerons were effective immediately, and after a short ground run the ASG lifted off. A little bit of friction could be felt in the ailerons, but this is quite normal given the long flaps and ailerons with brand-new seals. Control was direct and stable with comfortably low, unambiguous forces, and even the heavy gusts you always find under

crosswind conditions when passing along the trees besides the runway did not cause any problems. The undercarriage was very light to operate, and its locking positions could clearly be seen and felt. Setting the trim correctly needed only light pressure on the lever in front of the stick, 'support' by moving the button on the left console in the desired direction was required only when setting the trim to higher speeds. The cockpit was very comfortable, with good fresh air supply and visibility. At a towing speed of 110km/h the tug was clearly visible above the instrument panel. For even better visibility on slower tows, the flaps could be set to 5, which lowers the nose. I also checked the behaviour on tow with the flaps set to 6 or even L, and found no significant tendency to 'go out of control' and overclimb the tug even at high towing speeds. Stall behaviour was





Left: ASG 29 three-view. Below: ASG 29 polar curve
Above: the winglets for 15- and 18-metre modes
(Diagrams: Steve Longland)

docile: with the flaps set to 4, buffeting began at 68km/h indicated. Soon afterwards the speed indication dropped due to the vortex of the wingroot hitting the pitot tube. Pulling the stick back to its stop resulted in a stable, buffeting stall. Flap setting 6 resulted in the same behaviour at 3km/h slower speeds, now with a bit of staggering after the stick had been kept fully back for some time. Setting the flaps to L allowed me to fly another 5km/h slower, with the full stall being stable again. Opening the very efficient airbrakes resulted in the stall speed increasing by 8km/h with again a very stable, buffeting stall. As the previously trimmed speed increased also by about the same amount after opening the airbrakes, there were no trim changes required on approach. There influence from the flap setting on the trim speed could be slightly more, with the trim set to 80km/h and the flaps set to 6, the 29 accelerated to 125km/h after setting flaps to 1, so it does not (yet) 'follow the flaps' automatically.

Roll-rate was excellent: at 100km/h, I measured 3.6 seconds for a 45° to 45° bank change with the flaps set to 4, and at 3.7 seconds nearly the same time at 6. Michael Greiner has developed a really fine drive system for flaps and aileron, which barely affects the roll-rate when the flaps are set to thermalling. This excellent feature makes it very easy to centre even when the flaps are in their fully positive thermalling position - also a safety factor when close to other gliders. Control harmonisation is best at 100km/h with the flaps set to 4; at slower speeds or higher flap settings, a bit more rudder than aileron is required.

This all makes thermalling easy, efficient and fun: circling at 30° in smooth thermals at 75km/h, or, in narrower, gusty thermals with 45° bank and 85km/h, demonstrated that this glider is an excellent climber and offers very relaxed flying. Once trimmed, I could even let it thermal 'hands off! At higher speeds, the slim wing proved comfortable and the glide angle appeared stunning.

The ASG 29 offers real relaxed flying fun, and a performance range that some years back you'd have expected in the Open Class. But those 'big ships' were much less easy to rig, handle and fly.

Landing was as easy as can be: the flap setting L reduces the required approach speed very efficiently with the inner flaps going to +47°, and at the same time gives excellent manoeuvrability because the ailerons move back up to 12°. Under normal conditions, an approach speed of 85km/h appears appropriate; in the gusty crosswind at the Wasserkuppe I chose 95km/h. The three-bladed Schempp-Hirth-airbrakes make an extremely steep approach angle possible; and if you want even more, sideslipping is easy and effective. Fully held off, it touches down in a perfect two-point attitude. The undercarriage with its big wheel is well sprung, the wheelbrake (on the final inch of the airbrake lever) works well and is easy to close. The ailerons work until you stop.

With the ASG 29, Michael Greiner has completed the Schleicher production range with a flapped 18-metre glider that seems to me to not only be 'on top of its class', but also easy to fly, making it ideal for club use, too. Optimised for 18 metres, it can also be flown in FAI 15-Metre Class competitions. If you want to avoid long road retrieves, you can swap the fuselage waterballast tank for Schleicher's sustainer engine installation, already familiar from the ASW 28e.

This is a glider that is really fun to fly, and I think it soon will prove its performance in competitions.

Text and photos: Jochen Ewald

TECHNICAL DATA		
Wingspan	18-metre	15-metre
Wing area:	10.5m ²	9.2m ²
Wing aspect ratio:	30.4	24.4
Empty weight:	280kg	270kg
Max take-off weight:	575kg	510kg
Min wingloading:	33kg/m ²	36kg/m ²
Best glide (37kg/m ²):	52 (at 90km/h)	50 (at 100km/h)
Length:	6.585m	
Height:	1.3m	
Max waterballast		
- wing tank:	160 litres	
- fuselage tank:	35 litres	
VNE	285km/h	
Max manoeuvring speed	210km/h	
Option available with retractable Solo 2350 sustainer engine, 18hp with 1.2m diameter two-bladed AS propeller		
Data: Alexander Schleicher GmbH & Co		

