Pipistrel Virus SW 127

FULL-FAT SPECIAL

With seven European countries set to approve a 600kg microlight weight limit, we look at what the future holds if the UK follows suit. Adrian Jones and John Hunt take to the air in two aircraft that could be part of our future if the weight limit is raised – both of them, incidentally, approved via the BMAA Technical Office – while Paul Dewhurst explains the regulations and discusses the implications of the change for the UK market.

A Virus worth catching

Adrian Jones flies the latest Pipistrel – and contemplates taking a second mortgage

FOLLOWING on from the Alpha review in October 2017 *MF*, we present the Pipistrel Virus SW 127, apparently pronounced Veeroos.

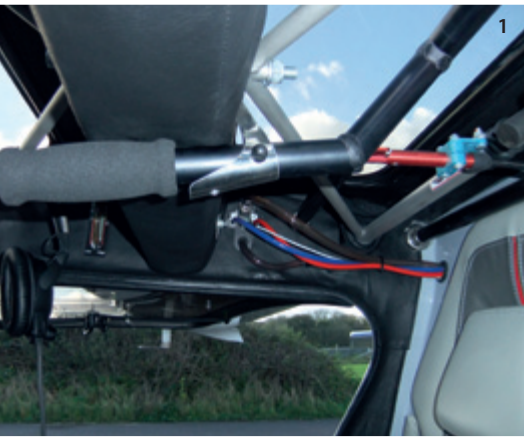
This is another immaculate conception from Pipistrel, perfect in almost every way. It oozes quality and has OCD levels of attention to detail.

Unfortunately there are no plans to introduce a microlight version of the Virus in the UK because of empty weight – unless of course the microlight weight is increased.

For the moment, the Virus is essentially a non-microlight version of the Alpha, and as such has an all-up weight of 600kg.

The SW stands for short wing, the same wing as the Alpha, although it still has quite a high aspect ratio at 11.3:1. The span is 10.70m compared to 12.46m for the standard Virus. It is also a pure cantilevered wing, made like a composite glider with no lift struts, therefore saving a considerable amount of drag.

You may remember that Paul Bennett flew a French-registered Virus for the magazine back in December 2015. The one in this review is the first UK-registered example, and is based on the ready to fly EASA-certified Light Sport Aircraft or / page 20 ▷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▷ LSA. It is, however, an amateur-built aircraft, so it is non-EASA and operated as a permit aircraft in this country, just like a microlight.

It is owned by Hitesh Sanganee and Edward Farmer, and is usually based in Bedfordshire. However, one sunny day, we met up at Membury airfield in Wiltshire, which is closer to me in Dorset.

It was my first visit by air in my Shadow, although I have often flown past it just next to Membury Services on the south side of the M4. A glider repair centre, it used to be the home of the Chevvron microlight motorglider. Nowadays there are also wind turbine blades being made there.

The Virus SW 127 has a design empty weight of 349kg, which gives it a useful 251kg payload, making it a practical tourer for two.

Although the airframe is almost identical in appearance to that of the Alpha, some structural changes have been made to cope with the extra all-up weight and yet retain the +4g, –2g design load factors.

The most obvious of these is a change to sandwich construction for the fuselage skin, rather than single carbon skin with intermediate frames. This accounts for part of the empty weight increase, but there are various additions and improvements which also raise it.

Photos
1 Spoiler control is overhead between the seats
2 Seats are nicely trimmed in leather and comfy
3 Fitting wing tanks has made space for this baggage hatch
4 Instrument panel wants for nothing
5 Rudder pedals feature glider-style adjustment

Most of the comments that I made about the Alpha are also valid here, so I will concentrate on the differences.

The most important of these is a 100hp 912S with a variable pitch propeller. This makes up for the increase in all-up weight and helps to maintain the takeoff and climb performance at microlight levels.

With the propeller set to fine pitch, the quoted takeoff ground run is 160m, while climb rate is 1050ft per minute at MTOW. It certainly felt sprightly.

The pitch is adjusted manually with a large knob in the centre of the instrument panel and is easy to use, but does require many turns to cycle it between fine and coarse. You wouldn't want to forget to select fine pitch for a landing and then decide to go around while frantically twiddling the knob on the climbout.

With the pitch on its coarsest setting, it is possible to cruise at around 100kt on 4000rpm and with great fuel economy.

With 100 litres of fuel in the two wing root tanks, the range on 65% power is listed as 642nm with a 30min reserve.

That works out at 28nm per gallon at 116kt true airspeed. Very impressive. At low speed it should be possible to get down to well under 10 l/h, beating many 912-powered microlights.

From the ASI calibration that Hitesh and I carried out, it appears that the pitot static head on the starboard wing works well. It is a better engineered device than that fitted to the Alpha, but I expect it is heavier and more expensive, so in this case you get what you pay for.

It under-read by 3kt at the stall and over-read by 6kt at 120kt, about half the error of the Alpha.

It is difficult to say what the maximum level speed is, as we stopped at 130kt indicated, or 123kt true.

With the flaperons set at high-speed cruise deflection of –5° reflex, and a bit of juggling of the propeller pitch so / page 22 ▷

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▷ that maximum revs coincide with maximum airspeed, I think Pipistrel's claim of 148kt (138kt true) would be possible. For a side-by-side two seater on 100hp, that is remarkable.

As already mentioned, the twin wing tanks have twice the capacity of the Alpha's 50-litre single fuselage tank. Sight gauges are visible at the wing roots in the cabin, and a tank selector valve is located on the centre console.

The space freed up in the fuselage is used by the carbonfibre luggage compartment, which is accessed by a hatch in the port side of the fuselage. There is a generous 25kg allowance.

Another useful improvement is the mechanically operated upper surface wing spoilers rather than the Alpha's lightweight electrically operated system. The lever is located overhead between the seats and allows very quick deployment and retraction, enabling the approach glide angle to be continually adjusted.

The best glide ratio is a very slippery 15:1 clean, and not much less with the flaperons deployed. This can be considerably steepened in an instant. However, by reducing the lift of the wing, the stall speed must consequently increase, which is something to bear in mind.

The flaperons have a maximum deflection of 19°, compared to 25° on the Alpha. When this is combined with a higher MTOW, the Virus has a higher landing speed than the Alpha, stalling at just below 45kt true with full flap.

Without the use of the spoilers, this results in a very flat approach. While this is perfectly fine for the average airfield, you are going to need those spoilers to get into short strips.

It should be remembered, though, that this is not a microlight, and it does require a bit more circumspection. Having said that, the stall is quite benign and gentle, although I have been told that it does drop a wing if stalled under full power.

A conventional mechanical ASI and altimeter were fitted to this example rather that the lightweight electronic analogue ones in the Alpha. A Dynon EFIS supplies all the normal digital flight and engine instruments. As in the Alpha, a ballistic parachute is also fitted.

Elsewhere, all the normal Pipistrel refinements are noticeable: Mylar gap seals on the close-fitting control surfaces; perfectly smooth exterior and interior carbonfibre surfaces with no undulations; wheel spats as standard; leather seats with adjustable headrests; elegant secondary control levers; tasteful cockpit layout and colour scheme; clever glider-style rudder pedal adjustment; hydraulic disc brakes; electric pitch trim; and USB sockets.

The handling was very similar to the Alpha, despite the extra mass. All the controls were nicely balanced and effective, although it had the same adverse yaw generated by the full-span flaperons.

This is difficult to avoid with this type of control surface, but it is easily counteracted with a little rudder input. Rudder on its own gives some secondary roll effect, so it is possible to steer while your hands are occupied folding a map.

Visibility is good for a high-wing aircraft. There is a good view forward over the panel and past the tightly cowled engine, the doors are almost entirely window surface, and there are windows in the roof.

Finally I should mention that it costs a reassuringly expensive €132,000, or £115,500 at time of writing. While this would be dear for a microlight, what we are dealing with here is a very capable two-seat light aircraft.

It's a fast grand tourer that trounces many more expensive models. I only wish I could afford to buy one. □

Above Steve Ridge's SkyRanger Swift VLA in action