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Let's do the Twist

SILENCE TWISTER: THE LITTLE SINGLE SEATER THAT GROWS ON YOU

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Love not lust...

Is the Silence Twister single-seater a mini Spitfire? We fly a UK Twister that does actually spit fire…

WORDS Ian Seager. PHOTOGRAPHY Ed Hicks

Tim gave me three bits of advice before I closed the canopy and started the Twister's engine: Remember the tailwheel steering is geared, take off with one stage of flap, and enjoy the experience. At least I nailed two out of three…

Back in the late 1990s Matthais Streiker was enjoying considerable competition success with a radio controlled model aircraft. The story goes that the little aircraft handled really well, and after many friends suggested scaling it up to a full-size single seater, Matthias and elder brother Thomas did just that, creating the Silence Twister, which they went on to market as a kit.

The prototype flew with a Mid West Wankel Engine (maybe 50ish hp on a good day), but that was replaced by the Jabiru 2200, which is said by some to produce 85hp. Quite a few Twisters now fly with the ULPower UL260i which apparently delivers 107hp, albeit at 3,300rpm.

As well as producing an efficient aeroplane the Streiker brothers set about producing an efficient kit so, for example, there are only moulds for one wing and one tailplane (the wings have a symmetrical aerofoil). Obviously once built the wings aren't interchangeable thanks to internal wing differences like the 40 litres per side fuel tanks. The original Twister had retractable gear, operated by a single electrically driven screw jack. The wheels didn't fully retract and the mechanism added weight. All of which means that those Twisters that fly with fixed-gear are both lighter and faster than the retract version.

You can argue all day about which looks the best, but I'm going to sit on the fence and say that aesthetically they're both cracking aeroplanes, thanks in no small part to that gorgeous and evocative elliptical wing. A couple of people have tried to explain that it wasn't inspired by the Supermarine Spitfire, but I'm not buying that for one second!

The kit comes with all the structural elements built but not finished. The underside of the fuselage is covered by a large composite panel (also built but not finished), so you can get easy access to everything before finally bonding it on. I'm not qualified to judge the quality of a kit, but those who are tell me the Germans have done a very impressive job.

G-TWSS is one of two Twisters owned by Tim Dews. If the name's familiar, it's probably because Tim runs a two-ship Grob 109 display team with his son Tom, as well as heading up a glider repair and maintenance company – Airborne Composites – with another son Ben.

Above Sleek, well proportioned and with that gorgeous elliptical wing
Left TWSS occasionally flies displays at dusk and is fitted with LED lights
Below Fixed gear Twister is faster and lighter than the retractable gear version

Tim's first Twister was bought as a kit but thanks to the pressures of work and displaying the Grobs (as far away as New Zealand!), that Twister remains configured as a kit (i.e., the build hasn't yet started and it's still a collection of parts). In 2016 G-TWSS came onto the market as a completed and flying example, so Tim bought it with the intention of displaying the aeroplane while Twister number two was being built…

Tim was also kind enough to bring the aeroplane over to the strip at Lydeway, to put me on the insurance, and to let me take the aircraft for a flight.

I've loved the small amount of flying I've done in single-seaters but I do find the first flight a bit of a challenge, so try to spend as much time as is available getting familiar. There does come a time, for me at least, when you either have to get in and go, or scrub for the day, as happened on a couple of occasions when I flew the Sport Performance Aviation Panther.

Geared tailwheel steering

We started off with a good look around the aeroplane with Tim explaining some of its quirks, or features, as marketeers like to call them. One thing I don't think I've encountered before was geared tailwheel steering. The wheels aren't independently braked in the Twister (they are on newer kits, just not on G-TWSS), so using differential braking to improve the turning circle is not an option. To get around this and still achieve a small turning circle, the tailwheel is geared so that it turns maybe twice as much as you'd expect. Tim warned that it was common for first Twister flights to start off with an

unintentional weave as you accelerate down the runway. I made a mental note.

Although the Streiker brothers do not come from the sailplane industry, I thought there were more than a few passing nods in that direction. The aircraft can be rigged and de-rigged by a single person using the appropriate aids. The seat/tub is easily removed to facilitate rigging. It's not fixed in place and just sits in the fuselage, a side effect of which we'll come back to. To demonstrate Tim showed just how easy it was to remove and refit the tailplane and rudder, taking care to ensure that all clips were in place, and double checking by giving it a good pull to make sure that it doesn't come off in your hands. Now that would spoil your day…

Road transport

Just like a sailplane it can be easily loaded onto a trailer for road transport, and while most of us won't have the space for a competition glider on our drives, a few more will have room for a Twister trailer.

Trimming the aeroplane is by use of a spring rather than aerodynamics, and for this there's either a trigger on the stick to set the tension at your desired speed or a small slider by your left leg. Tim advised that it flies beautifully and rarely needs trimming. The composite honeycomb with carbon fibre spars structure is good for +6/-4g, and although not fitted to TWSS, there's an optional ballistic chute.

It was a hot day, so we pulled the aeroplane into the shade so that I could sit in the cockpit (you need to wear the parachute or it's an awkward fit) and get familiar. For a single-seater the space is pretty generous, and by sitting on the wing it is not too

Top It's a pretty spacious single seater, note FLARM display at top of panel **Above** Easy access for rigging with the seat removed. Wing pins lock into place with an over centre twist motion. Note also trim lever on the stick **Right** Here lies fire! Buttons to set the wingtip pyros off when fitted for a display

difficult to get in and slide your legs down to the rudder pedals under the panel. The seat is not adjustable but the pedals are (another sailplane thing), basically by pulling a handle and putting them where you want them. There's a minimum seat weight of 70kg, not that it bothered me. Sadly.

I think you'd describe TWSS as a functional working aeroplane. It's got a small Dynon screen, the usual collection of steam gauges, and a few extra bits and pieces – some that work the smoke system and others that fire the pyrotechnic charges when fitted. I was hoping for nothing to go off with a bang. Flaps are electric and operated by a rotary knob on the panel and there's even a decent-sized reminder label on the other side of the panel saying 'FLAPS?'. Which can only be for idiots who seem to forget. Gawd… There was also a tiny FLARM screen fitted top and centre. I thought it was utterly brilliant.

Muscle memory

After a period of trying to generate a bit of muscle memory for various controls (not sure I managed that), we pushed the aeroplane back into position. I checked the parachute straps, climbed in, did up the harness, closed the canopy and started the Jabiru engine, mentally reminding myself of the geared tailwheel steering and determined not to depart the runway in anything but a straight line. The Twister should be up and clearing that 50ft high obstacle within 300m. With about 800m to play with I figured I could afford to ease in the throttle very gently, and to be ready with my dancing feet to keep an arrow-straight line.

I rolled forwards a bit to make sure the tailwheel was straight, made a radio call, took a final look around and got a thumbs up from Tim. Easing the throttle forwards gently we moved. Slowly. A bit more power. I was tracking pretty straight and wondering if the mighty Jab2200 would change that once I went to full power. I pushed the throttle forwards only to find that I was already at full power.

This is not an aeroplane that will surprise you with its acceleration, at least not on the ground. The ground run was taking a bit longer than I expected, but as per the manual, holding neutral elevator would see it fly off somewhere just south of 50kt.

There was no time to feel vaguely smug about keeping it in what passes for a straight line because I was consumed with embarrassment after having forgotten… the flaps. Bloody idiot. Lesson learned.

I climbed away to the north for a bit of general handling where the Twister proved itself to fly every bit as well as its looks suggested. The view of that beautiful wing to the right and left was classic and I snapped a quick iPhone pic in case I needed to pinch myself later. Being a hot day I wanted to make sure the temps were kept within limits so I climbed out at about 600fpm – nice cooling air, great view over the nose, what's not to like?

The controls were light and responsive and the sluggishness on the ground replaced by harmonised eagerness. Not your 400° a second, smack you round the face with 300+ hp, kind of eagerness you get with the gyromonstervomit machines... no, this was a much kinder eagerness.

Before going much further I wanted to take a quick look at the stall. I'd read previous reports of the Twister dropping a wing which it did with a bit of gusto. Nothing scary but we're not talking Cessna mushing either. Flying steeper turns and a few wingovers I noticed a noise coming from the seat pan. As I mentioned earlier this just sits in the fuselage, and I was pretty sure that it was being caused by a little movement. I was pretty sure that it was OK but decided that this was another reason not to start exploring the aerobatic qualities of the aeroplane. If you want to know more about those

Pete Wells: voice of experience

Pete Wells of ***Zulu Glasstek*** is the UK importer for Twister kits and also probably the world's most experienced Twister pilot. I spoke to Pete when researching some background for this feature and his love, respect and enthusiasm for the aeroplane shows through.

With something like 2,500 hours on type and about 650 displays in his logbook (plus a bunch of experience flying other aerobatic single seaters for comparison) Pete's not only explored the corners of the flight envelope, but done it so often that he might as well have pitched a tent and moved into some of them.

It was Pete's thoughts about the aeroplane that gave rise to this article's *Love not Lust* title. When he first flew the aeroplane he liked it well enough but after investing large amounts of time and effort into getting to know it well under all circumstances he clearly came to love the aeroplane. If there's ever the likelihood of a Twister in your future, then talking to Pete will not be time wasted!

Above Hmm, I may be wrong about the no lust thing...
Right Rudder and tailplane can be easily and quickly removed and fitted
Below Honestly, I think the fixed mains look just as good as the retracts
Left Tailwheel has geared steering as there's no differential braking

Above Approach speed is 60kt with full flap. Some prefer a bit of forward slip
Left With a bit of practice, the Twister can be single handedly rigged or de-rigged
Below left Getting familiar with the cockpit during ground briefing
Below Lovely Lydeway, flying somewhere familiar for a first flight reduces the variables

from people who know more than me, talk to Tim Dews or Pete Wells.

Apart from Andy McKee's epic cross-country (see boxout, p34), I can't imagine there are many who would want to use the Twister as a regular cross-country machine, although I guess there's a fair amount of transit work involved in displaying the aircraft (do we have much of a display industry left after Covid?), so I thought I'd better take a quick peek at the cruise performance. To cut a long story short, the sweet spot for this particular engine seems to be somewhere between 110 and 120kt and that'll see you burning maybe 12 to 15 litres per hour. Eight of the 80 litres are unusable and I'd want to be adding fuel and stretching my legs after three hours. There's actually quite a bit of space behind the seat, so no reason not to take a weekend bag providing you respect the w&b.

I'd followed two-thirds of Tim's advice. I'd kept it straight and enjoyed my flight immensely, but we'll gloss over the flap issue. Now all I had to do was get it back on the ground without breaking it.

Taking a conservative approach I gave myself enough time to slow down and get the flaps out (I remembered). I lined up and flew a longer than usual but pretty stable final approach at 60kt. Visibility remained great, speed was stable and the flare came at the right time. The Twister settled and I let it roll out on the grass, only really using the brakes out of curiosity (you move the lever backwards while making sure to close the throttle with the heel of your hand). I taxied back, shut down and Ed took a picture, hopefully of me with a Twister grin.

Flying machine

Should you want to build one of your own, I'm going to estimate that you'll have to spend £100k on it before it's a fully fledged and beautiful flying machine. You could probably do it for a bit less if

Twister to Oshkosh

You read that right. Andy McKee flew his Twister, G-FUUN, from the UK to Oshkosh in 2017. Not put off by the experience of getting there, and after some local flying, he turned around and flew it back again! Andy wrote about the epic adventure in our November 2017 edition (available shortly online to *FLYER* Club members), but a few facts to put the trip into some kind of context...

Cruise speed was 125ktas, fuel burn was 14.5 litres/hr with total fuel used being 1,737 litres. Andy flew for 120 hours which was split over 51 flights, travelling for 12,370nm (not including the local flights).

There's also an impressive collection of 'firsts'. G-FUUN was the first Twister (and so far only) Twister to cross the Atlantic, it was the first Atlantic crossing powered by a UL engine, the first by a Hercules propeller and Andy was also the first Kiwi to fly a homebuilt they built themselves across the Atlantic. Oh yes, and he did all of that with a grand total of just 350 hours on his PPL at the time.

You can take a look at Andy's build by going to his blog *here*.

Yup, that's the Twister grin. A bit like the RV grin...

you wanted to cut some non-essential corners, and you might find an older, perhaps less polished one on the used market for anything from £65k upwards. Either way the Twister can't really be considered cheap, but as an old colleague used to say, cheap things are rarely valuable and valuable things are rarely cheap.

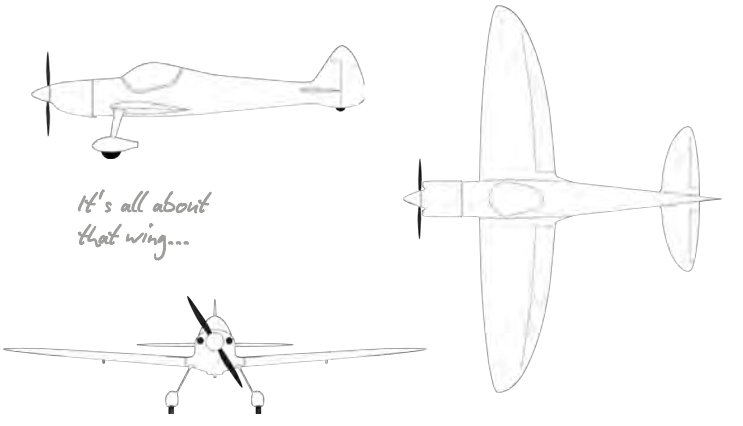
The bottom line is that single-seat aircraft are gloriously selfish. The good ones concentrate and heighten the fun. They reduce the compromises. I can imagine how the Twister's lack of raw power grows on you, challenges you to better manage your energy, better plan your routine, to become a better pilot and all with next to no fuel costs when compared to the fire breathers.

Ultimately I understand lusting after a GameBird or a Spitfire, but I can also see how you'd fall in love with a Twister.

TECH SPECS

Silence Twister FG

Single-seat aerobatic kitplane



Performance
Max speed (Vne) 165kt
Cruise speed 110-120kt
Stall speed (full flap) 44kt
Take-off distance 300m
Rate of climb 1,000fpm+

Weights & loading
Seats One
Max take-off 410kg
Empty 269kg
Payload 141kg

Dimensions
Wingspan 24ft 7in
Wing area 93.6sq ft
Length 20ft 3in

Spec
Airframe Honeycomb composite
Engine Jabiru 2200A
Max power 85hp

Manufacturer
Silence Aircraft
www.silence-aircraft.de

Contact
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Price
Aircraft approx £100,000 complete

Highish cost of acquisition offset by low DOCs (Direct Operational Costs)