

Silence Twister

Bruce Hutton samples the German kitplane whose lines are strongly reminiscent of R J Mitchell's great WWII fighter. Boy, has it performance and handling to match those svelte looks!



“It’s like a little Spitfire,” he said. “A bit smaller, but a single seater with that characteristic elliptical wing and Spitfire tail-end.”

So said this friend of mine when he rang and asked if I would like to test the Silence Twister on his behalf – he was considering buying one.

“Beautiful aeroplane,” he added.

With that encouragement, all it took was a quick phone call when the awful weather cleared a few days later, and the trip was on.

When the Twister duly arrived at White Waltham, had it not been for the engine noise, people could be forgiven for imagining that the 2006 airshow season had started early: From the ground, the Twister really does have a perfect resemblance to that shape we all know so well.

Twister importer Peter Wells taxied in, shut down and climbed out... or tried too. The interest was so great that the tiny machine was instantly surrounded by a knowledgeable multitude. The clocks yet having to go back, there wasn’t a lot of time before dark – so I abandoned Peter to photographer Aussie and the enquiring crowd whilst I strapped on the parachute and starting familiarising myself with the aeroplane.

First impressions were that the cockpit is neat and well thought out, with all the knobs and tits comfortably to hand. The single seat – leather covered and well upholstered, I note – has a considerable rake to it, much like to most modern sailplanes or even the Sukhoi 29. This is a very good design touch, as the semi-reclined position will enable even the tallest pilot to sit comfortably without the problem of cracking his head on the canopy. Pulling on a toggle at the base of the panel

to release them, the rudder pedals can easily be adjusted to

compensate for long or short legs.

A very useful feature too is the large zipped map stowage, within easy reach on the starboard cockpit wall. Further considerable stowage space is accessed behind the pilot seat.

Foolproof undercarriage

Having satisfied his interrogators, Pete was now free to complete a thorough rundown on the controls and speeds. A number of cues were noted on the knee-pad and the concentration was then on completing my familiarity with the cockpit and starting up.

First check the undercarriage is locked down: the selector is straight in front of you, a prominent red lever mounted centrally on the instrument panel. Virtually foolproof, I would say – and, in the circuit, it would be impossible to confuse the undercarriage control with the electrical flap selector. The latter takes the form of a rotating knob mounted next to the undercarriage lever, which is turned through detents to the flap selection required.

The sideways-hinged canopy (another sailplane touch) closes and locks easily, affording great visibility, and is fitted with a neat sliding direct-vision window/ventilator. A check on the parking brake takes the hand to the large black brake knob high on the panel, just below the cockpit combing – given the prominence of this item, there’s very little danger of starting the engine with the brakes off.

The control column is quite short and perfectly placed, with the throttle lever on the left cockpit wall falling easily to hand.

Just left of the throttle lever we are now confronted with an interesting facet that will seem alien to all but our gliding friends again. Pitch (elevator) trim is accomplished by holding the control column in the required position and pulling, then releasing, the green trigger

button at the base of the grip. For fine trim control in flight, the green button alongside the throttle is slid along its cable whilst the trigger on the stick is held back. Rather than operating on a moveable surface, the trim mechanism simply applies a bias to the elevator pushrod. It’s easier to operate than describe, but will require little practise once airborne.

The instrumentation fit is comprehensive on this demonstration aircraft. All the engine instruments accessible, and the neat electrical HSI a comforting touch in what is essentially a Day VFR machine.

Time to get started so Pete can get back before dark and before the forecast showers set in.

This proves easy: just a touch of choke is needed for the still-warm 85 hp Jabiru 2200 engine to burst into life, then you set the throttle for 1,300 rpm and make quick check on the Ts and Ps. ▶



Arriving by Twister – a sure way to get noticed (and quizzed) by all

Snug cockpit still manages to allow for map stowage, bags (behind seat) and parachute

Mainly Spitfire, part sailplane – there's even a hint of Messerschmitt in the Twister's looks

I had been briefed to keep an eye on the cylinder head temperature: on a hot day the tightly cowled engine can be a slight problem on the ground and you must beware the possibility of overheating (a bit like the real thing!) However, if you maintain awareness and sufficient attention is paid to the CHT during extended taxiing in Summer and the in the climb, for example, then there should be no cause for concern.

Clearance for taxi is obtained on the very neat Becker radio installation and the toebrakes and castoring tailwheel make the process of actually reaching the runway a non-event. All that was needed now was to take careful note of the aircraft ground attitude so that I had a good reference for the landing on my return.

Power checks and vital actions were completed, and we were ready to go.

Slight swing on takeoff

The takeoff was well mannered: heels on the floor, a touch of right rudder to counteract the slight swing, the aircraft found its own attitude without too much forward stick and flew off beautifully at about 60 knots. I would estimate the takeoff roll to have been about 300 metres.

The Twister was then climbed initially at

Flush-mounted tip strobes are a nice, no-drag touch on Zuluglastek's demonstration aircraft



70 kt, until the gear and flap was up. It was then accelerated to 100 kt, keeping a close eye on the CHT – not that this was ever actually a problem.

Even at this comfortable speed a rate of climb of 1,000 fpm was achieved – this with a heavyish bloke and nearly full fuel. 1,500 fpm can be achieved with a reduced climbing speed, albeit paying due respect to CHT limitations.



Hard to credit that an aircraft can perform like the Twister does on just 80 hp – it really does go!

Once at altitude, it becomes apparent just what a nicely balanced aeroplane the Twister really is. The controls are light and responsive and the aircraft is very easy to fly.

Let's explore the envelope a little more: HASELL checks first and a few manoeuvres to get the feel. A couple of steep turns to clear the area and then a look at the stall characteristics.

The clean, power-off stall occurs at about 51 kt IAS and is pretty benign although there is quite a pronounced left wing drop – which one might expect with the elliptical wing. Similarly, the power-on stall in the approach configuration produced the same degree of wing drop but, in both cases, this was both limited and easily contained. Flaps down, the stalling speed was some 4 kt less; approximately 47 kt.

What about aerobatics, you ask?

Well, at the moment, the Twister has been approved in the USA under the Experimental/Sport Aero Category, up to +6 and -3G. The importer is pursuing this with the PFA: there would appear to be no issue likely to cause any problem in clearing the Twister for

'Twister' isn't a bad name for an aircraft that begs to be flown through aerobatics

aerobatics, but neither can the Association's busy engineering department offer any timescale for completing their analysis and any further flight testing that may be required.

So, choosing my words with care, let's just say I am reliably informed that the aircraft has been flown through most of the standard aerobatic figures and other pilots have rated its aerobatic performance as excellent – and leave it at that.

You will understand that the time to return to base seemed to come all too quickly.

Back to the circuit

With the throttle set to give 2,800 rpm (the maximum engine speed is 3,300 rpm) I sped back at 140 kt for the rejoin, slowing to 100 kt at the field and about 70 kt (flaps limiting speed) downwind. Here another nice touch makes itself apparent: a very obvious, red U/C WARNING caption lights up when the first 10° of flap is selected. The only excuse you might have for failing to put the undercarriage down is total electrical failure, when flap cannot be selected and the warning is not activated. (In such an emergency, the



gear can, of course, be extended by other means without difficulty.)

The Twister is very clean and quite slippery in the circuit but, with the wheels and flaps down, reveals itself to be a predictable performer – quite within the capabilities of an average PPL with taildragger experience, I would suggest.

For an extra steep approach, the aircraft can be sideslipped on the approach at 60 kt with no problem. Trimmed correctly for speed, the Twister is easy to control in the approach, and just as easy to land and bring to a halt. The only unusual precaution, because of that tightly-cowled air-cooled engine, is remembering to allow the temperatures to stabilise at idle for at least one minute before closing down.

Reflecting on my all-too-brief flight, I would say the Twister is nice, sensitive and predictable aeroplane. In handling terms, the one thing to note is that it needs to be trimmed carefully. Its

Your pilot for today is...



Bruce Hutton's first job was flying strike/ground attack fighters in the Royal Navy, finishing up on the Supermarine Scimitar having worked his way up through Jet Provost, Vampire and Hunter GA.11.

After leaving the Service, Bruce obtained a CPL/IR and did a stint as a flying instructor at Oxford Air Training School, in the early seventies.

Bruce then "had to join the airlines to earn some decent money" and ended up with a nascent BMA. His commercial flying career involved such aircraft as the venerable prop-jet Viscount (on which he got his first command) followed by twelve years on the DC-9 and finally another decade driving various versions of the B737.

Retirement loomed and necessitated the renewal of Instructor ratings etc., the acquisition of an examiner approval and – a most useful extra qualification – CAA approval for maintenance test flying.

Bruce currently flies the Extra 300 with Ultimate High and Fun Flight, Pitts Special (for Alan Cassidy), Harvard (for Classic Aero), Tiger Moth (with Delta Aviation) and "anything with wings", particularly Russian or tailwheel at the West London Aero Club.

Bruce has built up just over 20,000 hours TT over 45 years.

'With wheels and flaps down, the Twister is a predictable performer – quite within the capabilities of the average taildragger PPL'



Peter Wells getting very bored, having to stay right way up and s-l-o-w for Cub air-to-air

well-thought-out undercarriage and flap selection systems provide clear tactile cues and visual warnings that effectively prevent mishandling, and are as near foolproof as these things can be.

The Twister has the special draw of being a very attractive looking aircraft, which will always ensure attention on a land-away, and it offers excellent range and low fuel consumption.

If I do have reservations, they are essentially confined to concerns that the small, partly shrouded main wheels and spatted tailwheel may be prone to collecting mud if the Twister is operated from damp grass strips.

But back to the initial reason for my flight. "What did you think?" asked my friend.

"Beautiful aeroplane," said I.

The 'toy airplane' legacy

You remember that line from *The Flight of the Phoenix* – the famous one where an incredulous James Stewart, playing pilot Frank Towns, says to the German who has devised an aircraft from the salvage of their wrecked transport plane "You design... toy airplanes?" Well, here's an instance where fact matches fiction: the German brothers behind the Silence Twister were not only 'toy airplane' designers – they actually developed the Twister from one of their models.

Neither of the pair had any experience of building full-size aircraft: older brother Matthias Strieker had been national aerobatic radio-control model champion several times over, and his younger brother, Thomas, had designed the models for him. Thomas didn't even have any kind of aeronautical engineering degree and had not previously flown an aeroplane when he started developing the brothers' best radio model into the aircraft you see today.

Stretching credulity still further, it only took one flight in the Strieker brothers' prototype to convince the man who would become UK importer, Peter Wells, to abandon his much-loved Fournier RF-4 and take on the relatively unproven German machine. This was in 2003, after Peter had first seen at Friedrichshafen what was then simply called the Silence. However, that decision was an informed one: as well as being a very experienced pilot, Peter was, and still is, the UK agent for sailplane manufacturer Alexander Schleicher – he knew all about composite structures and he liked what he saw in the Strieker's design.

Peter returned to England armed with the drawings and supporting stress calculations, which he put to the Popular Flying Association's Francis Donaldson. After flying to Germany to inspect the manufacturing facility and fly the prototype, Francis confirmed that he'd not seen any bar to PFA acceptance of the aircraft and Peter set out to collect the first kit.

Given the way radio controlled models have to be de-rigged for transport and storage, it should be no surprise to discover that the Twister is designed to come apart in much the same way. Peter had ordered a bespoke,

German-made Cobra trailer, which served both to transport the largely prefabricated kit and the finished aircraft.

Build time was relatively short – Peter is not only a glass fibre expert, but had already constructed a Vans RV-8 and was thus a veteran homebuilder.

The one major problem he encountered was misalignment of the wing spar-tube, which is built into the fuselage structure. During manufacture, the wings are offered up to the fuselage and thickened resin is injected to fill the clearance between the loosely fitting spar ends and the tube into which they fit. Today this is done with the whole assembly locked in jigs – for Peter's early kit the wings were supported on trestles and weighted down (insufficiently, as it turned out) to counter the hydraulic effect of injecting the resin.

Peter had to cut the spar tube out and take fuselage and wings back for another shot at getting them aligned correctly. As he puts it himself "I went to Germany wanting to kill someone, but came away having learned a lot and gained even more respect for the Striekers."

Construction took just over a year... and then Peter suffered the further huge setback of suffering engine failure just after takeoff and damaging the aircraft – and his back – in a heavy downwind forced landing. (Peter's very honest account of this mishap is given in the January 2006 edition of the PFA's *Popular Flying magazine*.) The engine problem was traced to debris from one of the composite fuel tanks blocking the main supply pipe – and this time the fault lay in poor manufacturing technique on the part of a subcontractor.

As a result of the accident, the Twister's tanks are now manufactured to a higher standard and the fuel supply plumbing has been completely redesigned: extra filters have been mounted between the tanks and selector, and an extra fuel pump, complete with bypass line has been fitted. The further benefits of Peter's 'crash testing exercise' are a far stronger seat structure (the original failed badly, contributing to Peter's back injury) which now has a recess to take a back-pack parachute.

SILENCE TWISTER

KIT (EXC ENGINE & VAT) 27,000 EUROS



DIMENSIONS

Wing span 7.5 m
Wing area 8.72 m²
Length 6.18 m

WEIGHTS/LOADINGS

Empty weight 500 lb
Max all-up weight 880 lb
Fuel capacity 21 US gal

PERFORMANCE

Vne 196 kt
Cruise speed 120 kt
Stalling speed, flaps 30 deg 41 kt
Stalling speed, clean 49 kt
Rate of climb, sea level 1,683 fpm
Range (approximate) 700 nm

UK IMPORTER

Zulugastek, tel: 01844 208157,
web: www.silence-aircraft.co.uk

We like

- Whole idea of a personal 'mini Spitfire'
- Superb handling, aerobatic potential
- 10 minute, one-man rigging/de-rigging
- Zero-cost hangarage on trailer

We Don't like

- Not being able to share the fun with PX