Get your Czechbooks out

David Bremner is mightily impressed with the stylish Skyleader J400

THOSE who remember back to 1996 may remember pictures of an all-metal two-seat low-wing microlight from Czech manufacturer Kappa that was distinguished by its retractable undercarriage and staggered side-by side-seating.

Called the KP-2U Sova, it never reached our shores, but proved popular elsewhere in Europe. Kappa was taken over by Jihlavan and Jihlavan became Skyleader, and the Sova (Czech for Owl) was widened to allow full side-by-side seating. It is now marketed as the Skyleader 200.

Currently there are no less than seven variants of the original concept, all of which are approved by the excellent Czech airworthiness authorities, and the first of these to apply for UK approval is the Skyleader J400, which I was privileged to test recently with the UK agent, Ashok Aliseril, at his base at North Weald airfield in Essex.

Also with him were Andrzej Migus, Skyleader's Commercial Director. and Radim Štěrba, Head of Customer Support and Chief Test Pilot.

Marketed as a 600kg mid-range model, it bears a strong family resemblance to the original Sova, but has fixed undercarriage, normal side-by-side seating and gullwing canopy doors. A ballistic parachute comes as standard (fitted just behind the engine).

Even though it's a newish design, 21 have already been sold in Europe, and production is ramping up.

> "This is one of the most sophisticated microlights I've come across

Style and elegance

On first approach, it's a stylish design, with generous wing root fillets and featuring a rather complex-looking but sturdy undercarriage with rubber suspension. The test aircraft was beautifully finished in Post Office red.

Standard engine fit is a Rotax 912, either 80hp or 100hp, fitted into a sleek cowling. The propeller on this example is a ground-adjustable E-Prop, though an in-flight adjustable is an alternative, and 60 litre tanks in each wing give a quoted endurance of 6.5 hours and a 650nm range.

It's not approved in the UK yet, and approval for two models (this and the J600) is being sought through the BMAA. Factory approval of manufacturer Skyleader is being sought from the CAA.

As a result, the example I flew was Polish-registered with their Czech test pilot Radim.

Andrej Migus was keen to point out that every part of the airframe is of fully traceable aircraft-quality materials. All load-bearing parts are corrosion-protected aluminium or steel, with composite only used for fairings.

Control surfaces are generally conventional, with good sized fin and tailplane and unbalanced ailerons, elevators and rudder. Ailerons and elevators are pushrod-operated; the rudder is cable operated.

The electric flaps are mounted on hinge points well below the wing, so that when deployed they increase the effective wing area considerably.

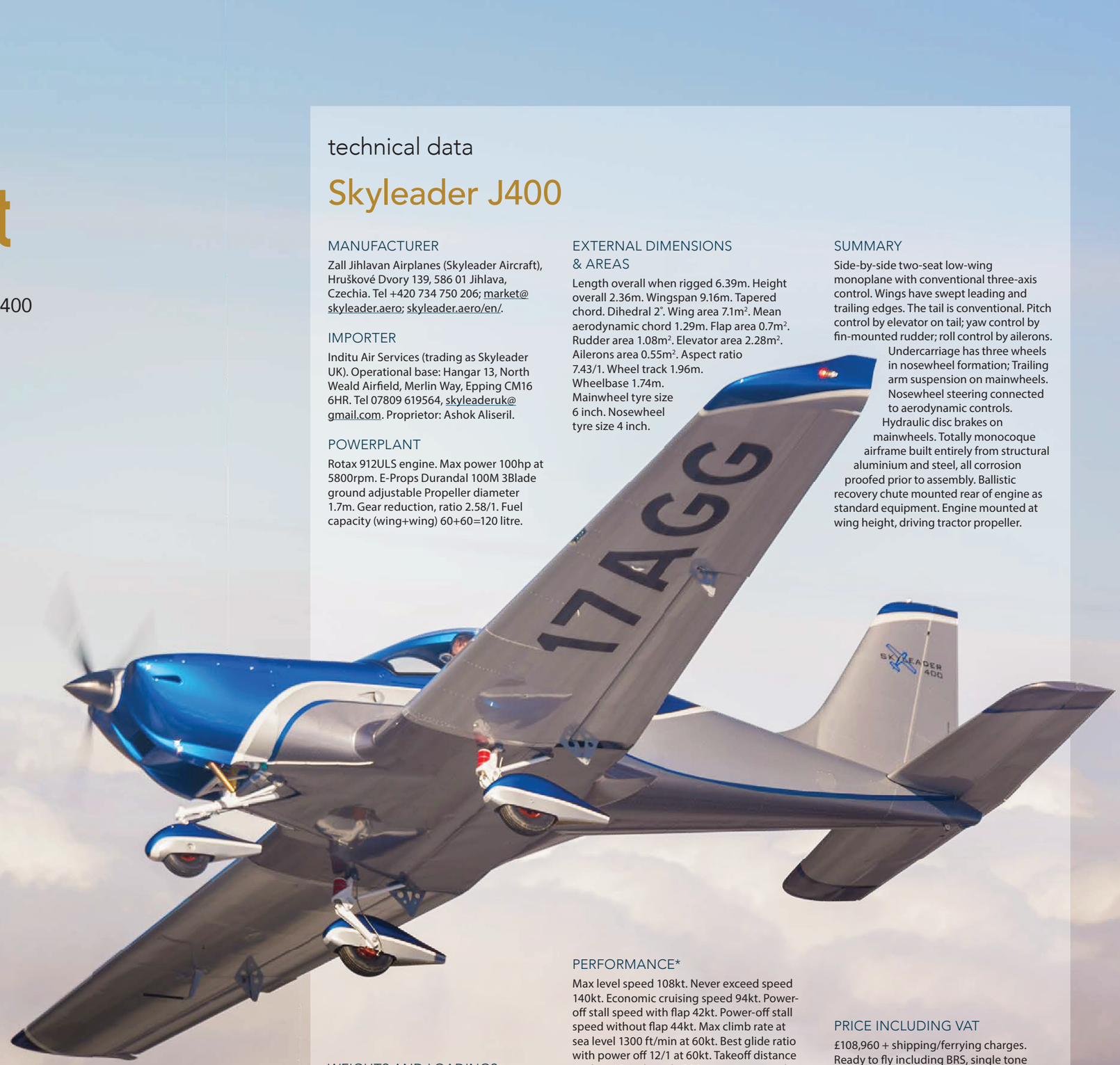
Easy access

I was particularly impressed with the large inspection openings on each side of the engine cowling, allowing a thorough inspection of the engine compartment by undoing just three Dzus-type fasteners each side.

There are inspection hatches to give access to control linkages and so on, but I suspect it's not an airframe that most owners will fancy working on themselves beyond routine maintenance.

Access is relatively easy: there's a gap between wing root and flap so that the walkway extends to the trailing edge, and the gullwing doors require a minimum of ducking and diving to get in.

Once you're ensconced, the immediate impression is of well-appointed comfort. The seats ▷



technical data

Skyleader J400

MANUFACTURER

Zall Jihlavan Airplanes (Skyleader Aircraft), Hruškové Dvory 139, 586 01 Jihlava, Czechia. Tel +420 734 750 206; market@skyleader.aero; skyleader.aero/en/.

IMPORTER

Inditu Air Services (trading as Skyleader UK). Operational base: Hangar 13, North Weald Airfield, Merlin Way, Epping CM16 6HR. Tel 07809 619564, skyleaderuk@gmail.com. Proprietor: Ashok Aliseril.

POWERPLANT

Rotax 912ULS engine. Max power 100hp at 5800rpm. E-Props Durandal 100M 3Blade ground adjustable Propeller diameter 1.7m. Gear reduction, ratio 2.58/1. Fuel capacity (wing+wing) 60+60=120 litre.

EXTERNAL DIMENSIONS & AREAS

Length overall when rigged 6.39m. Height overall 2.36m. Wingspan 9.16m. Tapered chord. Dihedral 2°. Wing area 7.1m². Mean aerodynamic chord 1.29m. Flap area 0.7m². Rudder area 1.08m². Elevator area 2.28m². Ailerons area 0.55m². Aspect ratio 7.43/1. Wheel track 1.96m. Wheelbase 1.74m. Mainwheel tyre size 6 inch. Nosewheel tyre size 4 inch.

SUMMARY

Side-by-side two-seat low-wing monoplane with conventional three-axis control. Wings have swept leading and trailing edges. The tail is conventional. Pitch control by elevator on tail; yaw control by fin-mounted rudder; roll control by ailerons. Undercarriage has three wheels in nosewheel formation; Trailing arm suspension on mainwheels. Nosewheel steering connected to aerodynamic controls. Hydraulic disc brakes on mainwheels. Totally monocoque airframe built entirely from structural aluminium and steel, all corrosion proofed prior to assembly. Ballistic recovery chute mounted rear of engine as standard equipment. Engine mounted at wing height, driving tractor propeller.

WEIGHTS AND LOADINGS

Empty weight 320kg. Max takeoff weight 600kg (with ballistic parachute). Payload 280kg. Max wing loading 53.19kg/m². Max power loading 6kg/hp. Maximum load factors +4g, -2g.

PERFORMANCE*

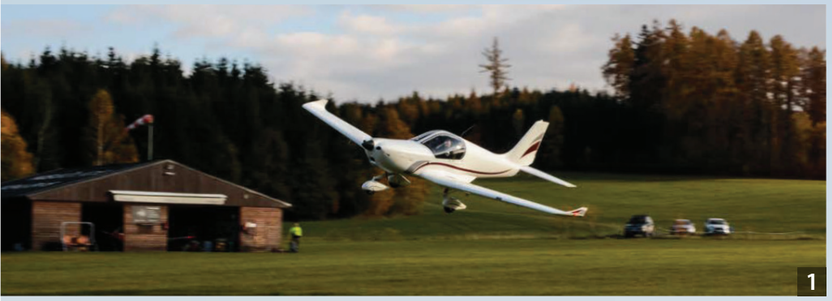
Max level speed 108kt. Never exceed speed 140kt. Economic cruising speed 94kt. Power-off stall speed with flap 42kt. Power-off stall speed without flap 44kt. Max climb rate at sea level 1300 ft/min at 60kt. Best glide ratio with power off 12/1 at 60kt. Takeoff distance to clear 15m obstacle 300m on grass. Landing distance to clear 15m obstacle 300m on grass. Service ceiling 12,500ft. Range at average cruising speed 650 miles.

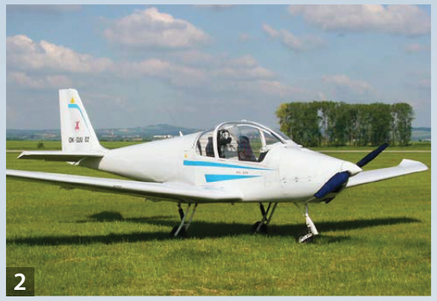
** Under ISA conditions at sea level and 600kg MTOW*

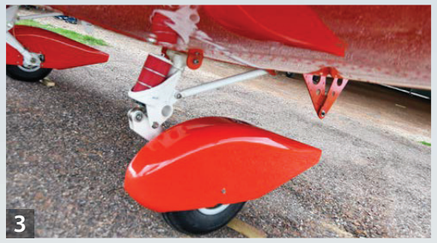
PRICE INCLUDING VAT

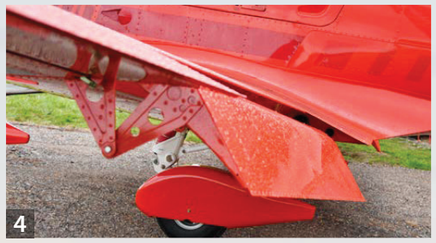
£108,960 + shipping/ferrying charges. Ready to fly including BRS, single tone paint and VFR avionics.

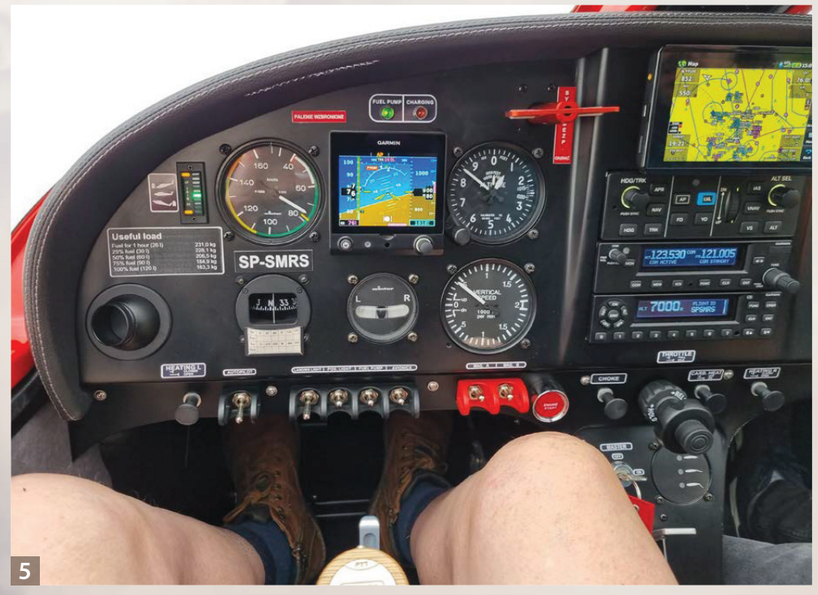
n/a = not available
Data above provided by manufacturer/importer
Data in text is tester's experience.

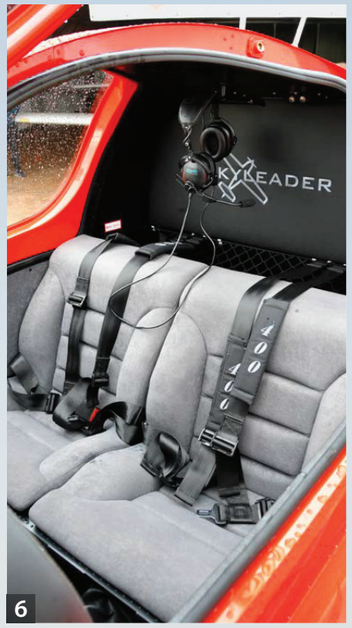


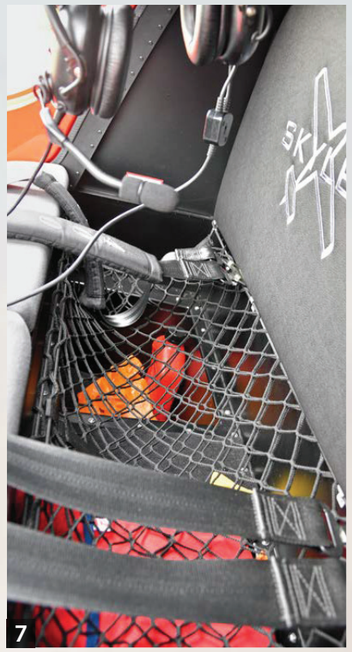


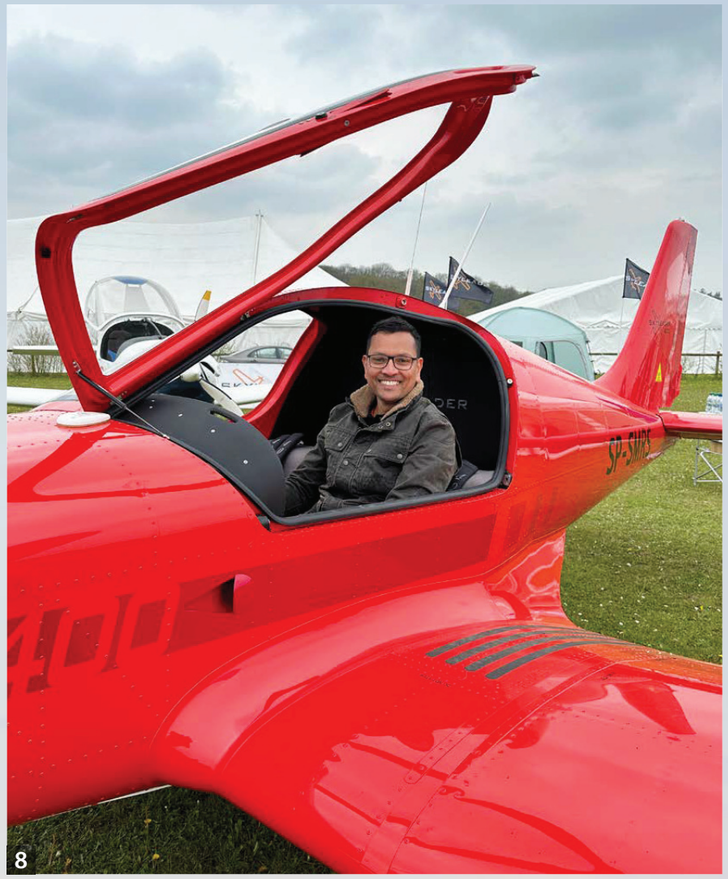


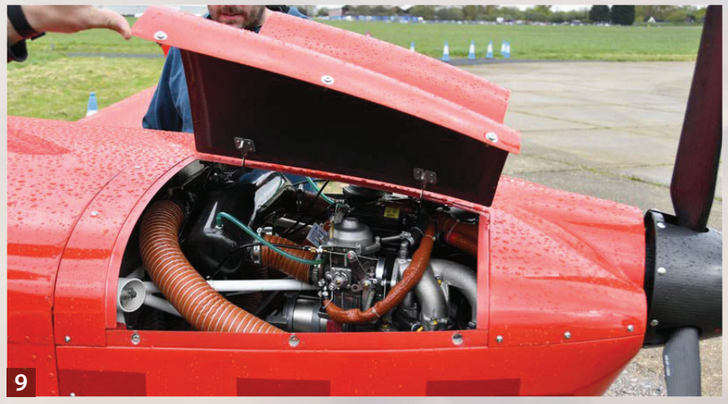












▷ are an excellent shape and fit with loads of elbow room, and the rudder pedals can be adjusted for optimum reach. There is a relatively generous baggage space, allowing up to 30kg of gear for those long touring trips – not easy to access in flight, but it could probably be arranged with a little thought. There are small side pockets for folded-up maps, but after that it's floor space, and stuff can very easily roll out of reach.

There are twin floor-mounted sticks with a central push-pull throttle and – in the test aircraft – a panel of analogue instruments supplemented by a small Garmin GPS and panel-mounted radio, transponder and autopilot.

Autopilot? Good grief, in my day…

"Autopilot?" I hear you ask. Yes, a very fancy autopilot that will maintain course and height, and even follow a route for you.

Of course, true microlight pilots will eschew such luxuries, but for those who want to cross the Sahara, say, it might be handy.

Flap control and indicator are centrally placed. The panel layout can be altered to the customer's requirements, so I won't go into detail on this example, except to say that brakes can be hand- or toe-operated.

The canopy door has a single latch with a handle that sits flush with the frame. At 1.9m tall, I appreciate headroom, and the 400 has it in spades.

So, the overall impression on the ground is of a very well-appointed conventional aircraft ideally suited for long distance touring.

Up, up and away

So what's it like in the air?

Starting is faster than usual thanks to an oil thermostat in the circuit, and we taxied to the hold. The ride is comfortable, the brakes effective up to full power, and steering (via cables to the nosewheel) positive. The turning circle is more than adequate.

I had heard that the E-Prop had the remarkable ability to act like a variable-pitch propeller, allowing the engine to spin up to full revs on the ground, yet not exceed it in the air – and so it proved. It's a bit of a mystery how it achieves that with a very narrow-chord rigid blade, but the facts speak for themselves.

The air was particularly turbulent, so there was no point in trying to validate the performance figures, but by the time it's approved this will all have been confirmed by the BMAA testing regime.

Suffice to say that the takeoff roll with one stage of flap and the climb rate with a 100hp 912S seemed entirely normal. The nose is above the horizon, so you need to make occasional dips to check ahead.

Once settled into the cruise, the view was better than I expected. The downward view is pretty good and the view upwards is only obstructed slightly by ▷

1 It's so good you just have to do a low pass to impress your mates

2 The Skyleader's predecessor, the 1996 Kappa KP-2U Sova, which never made it to the UK

3 The undercarriage is complex-looking but sturdy

4 The electric flaps increase the effective wing area considerably

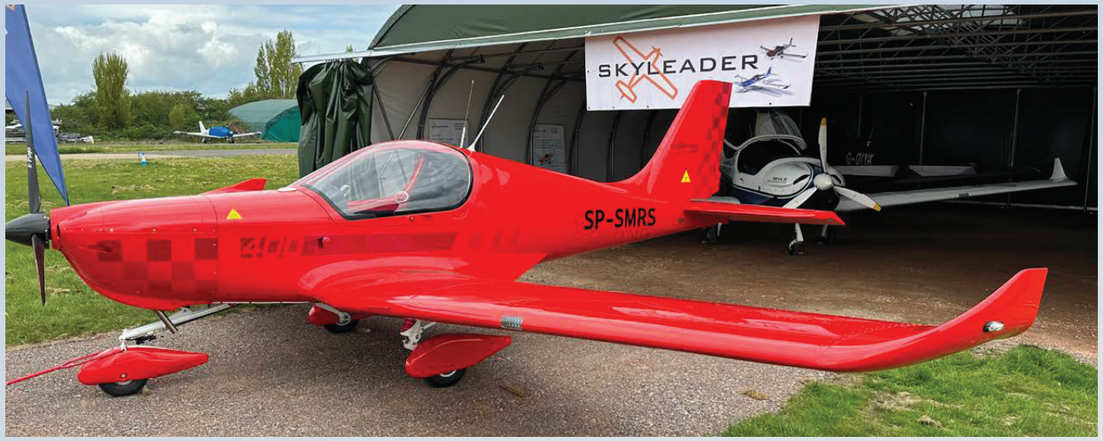
5 Young Bremner's knees only slightly blocking the pilot's eye view. He could at least have worn proper trousers

6 The seats are an excellent shape and fit with loads of elbow room

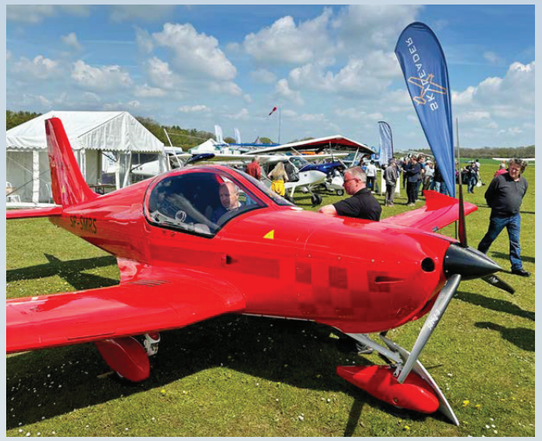
7 Room for 30kg of baggage

8 The gullwing doors mean minimal ducking and diving to get in. Enjoying the view is Skyleader UK agent Ashok Aliseril Thamarakshan

9 Access to the engine is by undoing just three Dzus-type fasteners each side



Stylish and beautifully finished from any angle


It attracted lots of attention at Popham

▷ the frame. There's no rearward view, of course, so you need to check movement of the tail surfaces before shutting the door.

With no opening window, the opportunity for high-quality photography is limited, although I did try pointing my phone camera out of the fresh air vent, which gave limited opportunities. It would be interesting to know if a larger opening panel could be fitted, if that's your interest.

There are fresh-air vents in the canopy doors, and additional air vents in the instrument panel which can be heated if necessary.

They all do that, sir

Like the Eurostar, the top wing skins wrinkle slightly under load, but that's quite normal.

Turns require little or no rudder input – something microlight pilots trading up will need to get used to, but rate one turns are very straightforward.

The aircraft is admirably stable in all three axes – pitch, roll and yaw – and this too is an improvement on most older microlight models.

The electric pitch trim is pretty powerful. If you apply full trim at cruise speed the stick forces are very heavy.

The airworthiness standards all require that it can be flown hands off in every combination of flap and power, and no doubt this is why it needs to be so effective, but I would prefer to have the trim switches on the stick so that you get immediate feedback.

The factory quotes a cruise speed of 94kt, which seemed entirely plausible. At that speed the cockpit is relatively quiet. Even without the autopilot, I would have been quite happy to sit there all day watching the miles slip by.

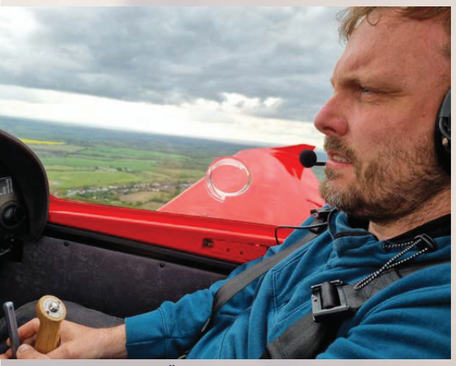
Operating the flaps is straightforward. There's a large central lever which operates the electric switch, and an electric position indicator that confirms the position. Or you could look out of the window…

The trim change isn't massive and is easily balanced with the trimmer. In fact, it's perfectly possible to fly the approach without altering the trim, so that if you need to go around, you don't need to readjust the trim.

Next we tried the stall, and thanks to the stall warning strips on the wing leading edges, you get an unmistakable stick shake as the flow starts to break away.

At this point the stick isn't fully aft, and if you persist and pull the stick fully back you will get a very pronounced wing drop that will require prompt action to bring the horizon back to level.

More experienced brains than mine will have determined its propensity to spin, and we certainly weren't going to try it ourselves. As normal, the stall was rather more benign with the flaps down.


Radim Štěrba, Head of Customer Support and Chief Test Pilot

The circuit and landing held no surprises, though Radim surprised me with the steepness of his approach, which he was able to control with great ease, showing how suitable it would be for short field operations.

Conclusions

This is one of the most sophisticated microlights I've come across. From the overall sleek look to the first-class paint finish (I'm told metallic paint is available for the ultimate bling) to the civilised canopy doors to the comfortable seating and good baggage allowance, well positioned controls and good view, comprehensive instrument fit to your own specification (including that autopilot) and ballistic chute – it has all the bells and whistles.

A basic weight of 320kg is claimed, which includes the chute. Clearly the individual aircraft empty weight will vary depending on the options chosen, but assuming this basic weight you can fill the tanks and have two 100kg pilots – or 30kg of baggage with a corresponding reduction of pilot weight of fuel.

That's excellent by any standard, and with all the variable loads very close to the CG, you're unlikely to have any problems on that score.

I particularly liked the large inspection panels for the engine compartment and the wing root walkways extending to the trailing edge, making stepping up so much easier.

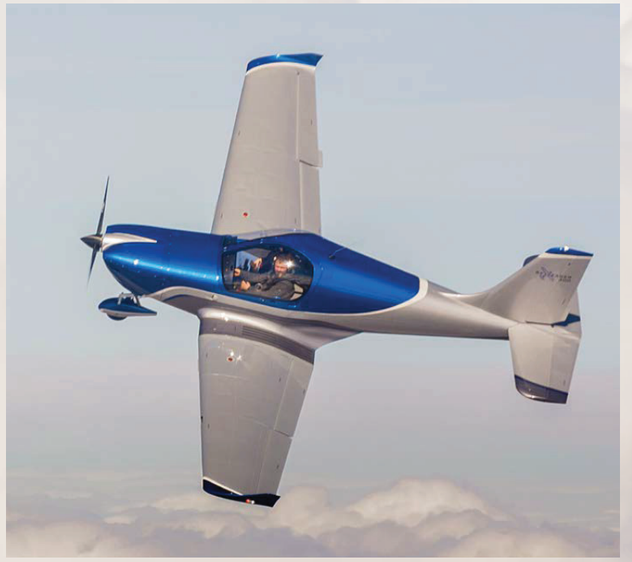
At a predicted base price tag of £108,960 including VAT, the J400 sits plumb between the current crop of high-end microlights designed around the 450/472.5kg weight limit and the heavier two-seat GA market, and has a good chance of grabbing market share from both, with its combination of straightforward handling, good performance and well-appointed cockpit.

For those who want to explore Europe, it should be possible to get from London to Barcelona on a single tankful (bladder permitting!).

For those who like to explore the many small farm strips in the UK, its short-field performance should prove quite adequate. For instructors, its timeless good looks and comfortable interior will appeal to potential students.

Ashok hopes that the approvals of both aircraft and factory will be in place by the autumn, and if so, I predict the J400 could become a frequent sight in UK skies. While many traditional microlighters enjoy operating at minimum cost and DIY, there are plenty who wish to take advantage of the simpler regulatory regime with a more expensive and capable machine, and the J400 fits that description to a tee.

• PS: And what of the autopilot? Ah, you'll have to wait until next month, when I review the Skyleader J600… □


It really is stunning, especially in that colour scheme