Sport Pilot FOR RECREATIONAL PILOTS (September 2013)

What is it about the Czech Republic?

Here's a country which is about the size of a stamp. Seriously. A total land area of just 78,000 km²? There are Aussies with bigger backyards than that. Yet they still somehow manage to jam 10 ½ million people in there.

And despite their runty square meterage and sweaty, jammed-in masses (134 people per square kilometre - compared with Australia's roomy 2.8), the Czechs somehow keep turning out bucket loads of light aircraft designs from a seemingly endless number of factories.

It's embarrassing when you consider how much more well-endowed Australia should be in aviation, yet we don't have anything like an aviation industry to match them. According to the Aero News network, there are 22 members of the Czech Sport Aircraft Manufacturer's Association and more than 7000 members of the Czech Light Aircraft Association (pilots, builders, designers, manufacturers and operators).

Their factories turn out more than 70 different aircraft, nine different engines, 36 para-gliders, 10 para-motors, parachutes and a large assortment of aviation services. They manufacture 400 aircraft every year and earn for their country more than $51 million in export sales.

What's going wrong with Australian sport aviation that we can't do better than a tiny, overcrowded and landlocked country in central Europe? We should be kicking sand in their faces.

But going by the number of us who own and fly Czech aircraft (hands up everyone) we obviously can't argue that they know how to make aircraft we want (One in every four light sport aircraft sold in the world is either designed or built in the Czech Republic).

Which brings me to the latest Czech design to land on our shores - the Skyleader 500, in which I recently had the chance to fly . . . . . The Skyleader 500, one of five models in the range produced by the Czech Jihlavan Airplanes factory, is an all-metal, two seat, low wing aircraft designed for training and cruising.

The look

For an aeroplane that weighs just 335kg, the Skyleader sits on the ground like a much bigger aircraft. That probably has to do with the high set, solidly built, trailing link undercarriage which keeps the whole package a reasonable height off the ground. The undercarriage, by the way, has suspension which makes landing a pleasure - but more boasting from me about this in a moment.

The most obvious feature of the aircraft are the 9.9m wings which have a noticeable dihedral. Having been brought up on a Piper Archer, I happen to love wings like this. The dihedral allows the aircraft to act as if it is sitting at the bottom of a large pendulum.

It makes it very stable and allows the pilot to control much of the flight using just the rudder. I once flew from Bankstown to Archerfield in an Archer and only touched the yoke on take-off and landing.

The wing on the Skyleader 500 also features an optional electric Fowler flap which gives the pilot a lot more options for approach and landing. The flap and trim are also electric.

This aircraft was fitted with two 32 L fuel tanks, but two 45 L tanks are also available and would be the natural choice for most owners.

Inside

The build quality is what we have come to expect from Czech aircraft. The seats are comfortable, attractive and look hard wearing. The panel layout is clean and features a Dynon MFD as standard as well as the usual analogue gauges. The panel is, of course, customisable. There is space behind the seats for 30kg of luggage. There are air vents in the canopy and sides of the panel, so keeping cool in the Aussie summer shouldn't be a problem. The 1.18m wide cabin was just enough for the two of us 'solidly-built' gentlemen to sit comfortably side by side.

I like to fly with bare feet, or just in socks. But in the Skyleader that's not going to be possible. I had to exert a lot of pressure on the rudder pedals during taxiing and my tender feet started complaining straight away. Using a lot more leg power for steering the nosewheel is not a big problem, though, and I stopped thinking about it after a few moments.




In the air

Even with two ‘solid’ gentlemen on board, the Skyleader fairly leapt off the ground, well short of the 100m mark. The owner says with just one person on board, the back wheels will be in the air after just 50m. The book says the official take-off run is 90 - 100m, but that seems conservative.

In the air, the Skyleader feels well balanced and solid. The ailerons are controlled through pushrod bearings, not cables, so the feel for the pilot is stiff and positive. In turns, the aircraft feels stable and not twitchy as you might expect with such a big wing. Because of the dihedral and those wings, once you put the aircraft into a steep turn, it tends to stay in there happily without too much extra input. The whole package turns on a dime too. Very nice on my flight day because we were circling above a large humpback whale, wallowing in the blue water.

Most people will immediately appreciate the fantastic 270° visibility you get from up there. The big canopy lets you see most of the sky, but I predict Aussie owners will opt for some sort of tinting or shades. The fantastic visibility may be great for Europe, but we will bake like a chicken under the Aussie sun.

Stalls were very predictable - 35kt clean and 31kts with flap according to the book, but 42kts clean and 25kts with flap on the day we did it. The Dynon lets you set the stall warning speed in the air (very cool) and the whole event was more of a non-event, which is what I want in a stall. In normal cruise, you can think about 115kts as standard.

Landing

The biggest problem with this aircraft, according to the owner, is that it’s too easy to land. And I have to agree with him.

No instructor wants a training aircraft that doesn’t make his or her students work hard to get a good landing. But the Skyleader feels almost like it’s on autopilot all the way down. I’d never flown this aircraft before and am not a hotshot by any means. But my first approach and landing was perfect - the Skyleader is truly a doddle to land because every single one of my landings was a greaser. Wow. The big Fowler flaps made every approach very controllable. In a STOL landing attempt, we came down like a brick, right onto the piano keys and had the aircraft stopped well within the 50m mark.

This is going to be a nice aircraft to be in, if ever the Rotax up the front stops making the appropriate noises. By the way, the touch-and-goes almost aren’t that at all. After touch down, I retracted half the flap and gave it full power. We leapt off the ground two seconds later. I could have landed in my driveway.

SKYLEADER 500

Overall

This is a fun and clever aircraft, well thought out, well-engineered and well-targeted at the training and recreational markets.

The Skyleader 500, along with its siblings the 600, the 400 and the 100 will definitely find their places in the Australian light sport aircraft fleet.

The rugged suspension undercarriage will allow it to stand up to the rigours of training. Its comfort and visibility will make it an ideal cruiser and its almost too-good-to-be true landing characteristics will make it perfect for anyone who normally finds getting the wheels back down on the ground a chore - and isn't that most of us?

The Price

The 500 sells for 69,000 euro, plus shipping and import costs. The final price depends on the optional equipment fitted and the Aussie dollar rate against the Euro.

The Czechs take aircraft design very seriously. They actually have a Ten Commandments their structural designers are expected to follow.

Maybe that's why they are kicking our bums all over the park. Maybe that's why many of us like to fly their aircraft.

SKYLEADER 500 TECHNICAL SPECS

Never Exceed Speed (Vne)	140kts
Normal Operating Limits VNO	116kts
Manoeuvering Speed	84kts
Fuel capacity	64 L (standard)
Range	850km (standard)
MTOW	580kg
Basic empty weight	311kg
Take-off run	90 to 100m
Landing run	100m
Wing span	9.9m
Overall length	7m
Overall height	2.6m
Wing area	11.85m^2
Aspect ratio	7.78
Cabin width	1.18m

Czech Aircraft design 10 Commandments

1. Live and breathe airplanes 24 hours a day, seven days a week.
2. Maintain contacts with a broad range of designers.
3. Use common sense and pay constant attention to planning human and material resources.
4. Trust your own strengths and abilities.
5. Practice effective leadership of employees, set construction-design goals and strictly adhere to them.
6. In drafting and testing, the following applies: 'Even a bad experience is a good experience.'
7. Be aware that you can never stop learning.
8. Correct planning is the most important phase.
9. Quality work depends on 100% commitment and passion for the project.
10. It is absolutely necessary to share knowledge and experience.

Source: http://www.czechinvest.org