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Flight Test

First Look

Funk soul-brother

Fk14 Polaris, aka Cirrus SRS

The slippery lines of the Polaris run from the spinner back, the liquid-cooled Rotax 912 being tightly cowled, with minimally-sized intakes

Cirrus Design's surprise announcement in July that it is to take on Cessna in the LSA market will, among other things, add new energy to the endless high-wing, low-wing debate. While both manufacturers play down any heated rivalry, not too far beneath the surface lie two highly competitive light aircraft builders. Cessna has aligned itself with legacy designs and traditional, all-metal construction. Cirrus has been more pioneering in its wish to offer millennium pilots modern electronic cockpits, innovative ergonomic solutions, enhanced safety and purity of final airframe finish by adopting composite construction.

Both directions have succeeded and clear lines have been drawn between traditionalists and those appreciating fresh design. The positions adopted in the LSA market have been along similar lines: Cessna with its all-metal 162 Skycatcher powered by an equally traditional Continental O-200 engine, and now Cirrus with its mainly composite SRS and Rotax 912. Perversely, the Cirrus SRS is the older design in the LSA category. The aircraft has been manufactured by German, Peter Funk of B&F Techniks. Since its first flight in 1998 it has been known as the Fk14 Polaris.

Some eighty Fk14s have left the factory since the model was launched. This may seem a modest number – a consequence of Peter Funk's protracted and at times frustrating efforts at getting his Krosno, Poland, factory to increase production rates. South African distributor, Roland Hallam, now has a 24-per cent financial stake in the Krosno factory (along with the Scandinavian agent) – an ultimately wise investment that appears about to pay off, big time.

By choosing the Funk Fk14 to be the Cirrus entry-level model, the company was obviously looking for complementary design values. Among these are safety, quality and ease of operation. While panel decisions are still to be made, it must be assumed that Cirrus Design will adopt a comprehensive digital electronic suite using existing technology. It must also be assumed that, like Cessna, the SRS will offer pilots a natural progression to an SR20/22 model and even a jet.

The two Cirrus SRSs on display at Oshkosh in July were in fact Fk14s branded by Cirrus Design for show purposes. One aircraft was a mock-up and the other a flying example.

The aircraft flown for this flight evaluation is a standard Funk Fk14 configured with an optional tailwheel. The SRS will be sold with a nosewheel. While Cessna is going to keep the aviation media waiting for a first taste of a SkyCatcher, Cirrus Design is in the enviable position of being able to allow both media and future customers a close peek at their new SRS.

Cirrus Design's Alan Klapmeier was looking for an LSA close to his own design philosophy... but a glaring difference between the SRS and SR20 and 22 is the placement of the control stick. In the 20 and 22 it is mounted at either side of the cabin and allows unlimited access to the multi-function Avidyne displays along with everything else that would be hidden behind a pair of control yokes. Owners have adapted to side-stick controllers with little drama and they are an accepted method of control input, just as centre-sticks have become accepted amongst Very Light Aircraft (VLA) pilots. The Polaris uses traditional dual sticks, one for each occupant. In most other respects, design philosophy is very ▸

When EASA opens the gates to Light Sport Aircraft, we'll see it over here... Meanwhile, adopted by Cirrus Design as the SRS, the Funk Fk14 may be the Cessna 162 SkyCatcher's nemesis. Words and pictures by John Leslie-Miller/*SA Flyer*

Funk's ultralights – this is the folding-wing Fk9 – are flying in their hundreds in Europe

'Horns' protruding from the under-wing surface are guides for the area-increasing Fowler flaps, which bestow a 35 knot stall. Although they have carbon fibre spars, the wings are metal skinned

Nicely kitted out in the round-instrument tradition, the Fk14 nevertheless features an AvMap EXP-IV navigation unit (centre panel) and a UL MK engine management system (right-hand sub panel). From bottom, centre console mounts paired throttle and brake levers, electric flap switch, choke, carb & cabin heat

close to Cirrus SR models. The aeroplane's design cleanliness is owed just as much to Peter Funk's obsession with detail as his company's glider heritage. The Polaris has a high-performance aerofoil with tapered leading-edges and a high-performance-glider finish. Small winglets help reduce induced drag – and large Fowler flaps that extend some two-thirds along the trailing-edge leave little room for the narrow chord differential ailerons.

The tailplane is identical to the high-wing Fk9 model. Like many of today's crop of VLAs, the fuselage is pinched behind the cockpit with a strongly tapered rear section and an overall finish that is so good, it is going to cause an interesting problem for Cirrus. The Fk14 is too fast – by 20 knots, to meet US FAA certification regulations, which limit top speed to 120 knots. It's an interesting challenge with a number of solutions, although it's doubtful Cirrus will opt for a smaller powerplant.

Another major difference – this time inevitable given the size of the Polaris, is the aeroplane's swing-open canopy. This is a sturdy item and although a strong breeze from the rear might strain its attachment points and supporting gas struts, the engine can be started and the aircraft taxied with it open.

Getting into the cockpit is relatively easy. Although the wing walkway is fairly narrow, it is possible to sit on the cockpit coaming and slide into either seat with little effort.

The Polaris flown for the test is the factory's latest 'B' model and while there will be changes when the SRS is finally launched, it is pretty representative of the new Cirrus. This Fk14 has been equipped with an AvMap EXP-IV navigation unit and a very nice UL MK engine management panel. In addition it has a Filser transponder and VHF. Analogue fuel and separate oil temperature and pressure gauges complete the right-hand panel. A DUC fixed-pitch, three-blade propeller requires no pilot attention other than an eye on the digital rpm readout, as the engine can overspeed in a dive.

A feature that the Klapmeier brothers were attracted to is the centre pedestal layout, which is configured much like their four-seat models. The Polaris has no toe-brakes, unlike the Cirrus SR20/22, but the positioning of the brake lever immediately adjacent to the throttle means that one hand can be used to manipulate both important tasks, especially during landing, without letting go of control of one.

Behind the throttle and brake slider is the fuel selector, presented in a straightforward 'left' and 'right' choice. Behind this is a glider-style lever for trim change and a small rotating lever to apply the parking brake.

There is plenty of room and in this respect the aircraft is a class leader amongst ultralights. There is even some stowage space along the

Meeting of minds at Friedrichshafen

Peter Funk (above) and Alan Klapmeier (left) are proponents of composite airframes – and both are workaholics

The chemistry between Cirrus Design's Klapmeier brothers and Peter Funk appears to have all the qualities of an electric meeting of eyes across a crowded room. The frisson between two ideal suitors has been an essential element of the Cirrus/Funk relationship since their meeting at this year's Friedrichshafen Aero 2007 exhibition. Notable are Peter Funk and Dale Klapmeier's common purpose:integrating new technology into a strong airframe and installing every safety aid possible including a Ballistic Recovery Parachute.

With Peter's useful but by no means total command of English, early negotiations were substantially helped by South African partner, Roland Hallam. Unusual for an American in a business dictated by corporate protocol, Alan Klapmeier is disarmingly open, even laconic. Peter is highly respected in the European ultralight industry for unselfishly sharing ideas and design insight amongst his colleagues, even competitors. Roland's unpretentious South African enthusiasm provided the glue, which has so far kept Cirrus and Funk firmly on the same page.

Peter, like the Klapmeier brothers, is a workaholic and the trio share a common philosophy, that what is good for them is also good for the industry. That their two aeroplanes are uncannily similar in purpose and execution is no coincidence. Both the Cirrus and Fk14 have massively strong main spars with all the fuel placed behind and towards the end of the wing, so as to provide an absorbing barrier against impact damage.

Both aircraft are great all-rounders, fast but with lowish stall speeds – they also have good luggage capacity. The Klapmeiers liked the Fk14 approach to panel and cockpit design, with the throttle mounted low on the pedestal and a layout suited to capturing a modern avionic installation (yet to be determined).

Both the Klapmeiers and Peter Funk have a fundamental goal of bringing flying to the people – perhaps the most important shared value of them all.

Production has been a continual frustration for both Roland and Peter – a lot of it caused by 'old order' manufacturing traditions in Poland. These have now been largely resolved and Cirrus appears to be happy with what they have seen in Krosno at the FK-ProTech's facility. Production is set to increase dramatically with Cirrus's buy-in of the Polaris design and it is obvious that Poland's considerable aircraft manufacturing skills and lower labour rates are going to give the SRS a huge advantage with costs savings.

Right: *FLYER* expects the Cirrus SRS to emerge with different trim and a revised glass panel, more like Funk's Friedrichshafen show aircraft

Simple & effective: the canopy hinges up and forward with the support of hatchback car-style gas struts

side of the cabin close to seat and floor. The designer has also included a 'secure' storage area, underneath the cockpit floor. Behind the seats there is a deep, netted luggage area able to take sizeable soft bags.

Cirrus will most likely take a close look at the seating upholstery, as given the aeroplane's extensive range, I would image it to be somewhat limited by the lack of comfortable seat padding – an important consideration for any light aircraft.

Natural flying

The Rotax 912 engine starts easily as always. The Polaris is, by taildragger standards, easy to manoeuvre on the ground via its effective tailwheel steering. I was sceptical of the aircraft not having toe-brakes and, despite its ease of handling, this omission may catch out an inexperienced pilot. Roland was entirely happy with the arrangement and indeed, I found it easy to change direction, even in a breeze. A disadvantage of having no toe-brakes is keeping the tail down for as long as practically possible until airflow becomes sufficient over the vertical stabiliser. However, the aircraft displayed no nasty tendencies and despite my own inexperience with taildraggers, Roland was quite happy to hand over the takeoff once he had briefed me on speeds and what to expect.

In fact, the Fk14 gets off the ground quickly and with no fuss. Handling qualities are uncannily similar to a Cirrus SR20/22 with reasonably well-harmonised controls – the elevator being the most sensitive. Control response in roll is excellent with minimal circuit friction. The aircraft is both easy and pleasant to fly. The stick and rudder pedals are ideally placed and reach can be changed by adjusting the reclined seat. Indeed, the flying experience is enhanced by a natural throttle position and roomy cockpit with everything available to hand without having to stretch. We flew on a particularly bumpy day, which required continual control input and I was pleased to notice that the effort to maintain a straight and level attitude was entirely relaxed.

Stalls are benign. Both with flap and without, the nose could be encouraged to break cleanly with a mild roll off to the right – easily countered with opposite rudder and relaxing rearwards stick pressure. I have no reason to doubt Funk's claimed 140 knot top speed; even with fixed undercarriage, the Fk14 is a slippery aeroplane and requires judicious slowing down to reach its low first-flap deployment speed. It is going to be interesting to see how Cirrus slows the aircraft down to LSA speeds.

I understand Cirrus also wants to raise the flap speed somewhat – a notable characteristic of VLA designs, especially the faster ones. Establishing correct approach speeds is also a feature of the Cirrus SR20/22 models and the SRS is going to be an ideal trainer in this respect

The Euro ultralight weight limit dictates a spartan finish – but there's plenty of room for bags...

for pilots eventually moving up the product range

Although academic, the Funk is easy to three-point with plenty of elevator authority at slower speeds I treated the brakes with some respect and Roland was quick to demonstrate just how much stopping power you can apply without coming close to raising the tail on the landing roll I could see that as tailwheel undercarriage aircraft go, the Fk14 has very kindly manners on the ground – an ideal first taildragger

Swiftly on the heels of Cessna's 700-order announcement for their SkyCatcher at Oshkosh, Cirrus made a similar claim – remarkable for an aircraft that had little pre-launch publicity. The SRS will undoubtedly do great things for the Cirrus brand and it will be interesting to see how the two, almost identical aircraft are marketed ■

Above: Funk claims a 131 knot 75% cruise for the 100 hp 912S-engined Fk14 Polaris, falling to (a still impressive) 127 kt for the 80 hp 912 version

The Fk12 Comet ultralight biplane: 'demonstrated ultimate load' +9/-3.5g..

If it looks right... the Fk14's handling is most definitely on a par with its sporty lines

TECH SPEC

Fk14 Polaris/Cirrus SRS
v Cessna 162 SkyCatcher LSA

DIMENSIONS
Wingspan ..... 9.04 m
Length ..... 5.69 m
Height (trigear version) ..... 2.00 m

WEIGHTS & CAPACITIES
Empty weight, inc recovery parachute ..... 284 kg
Max demonstrated t/o weight ..... 520 kg
Baggage bay capacity ..... 40 kg
Fuel capacity ..... 65 lit

PERFORMANCE
75% cruise ..... 131 kt
VNE ..... 157 kt
Stall speed ..... 35 kt
Takeoff to 50 ft ..... 180 m
Max climb at s/l ..... 1,500 fpm

COST
€66,930 (basic price for taildragger/trigear with 100 hp Rotax 912ULS option, complete and ready to fly)

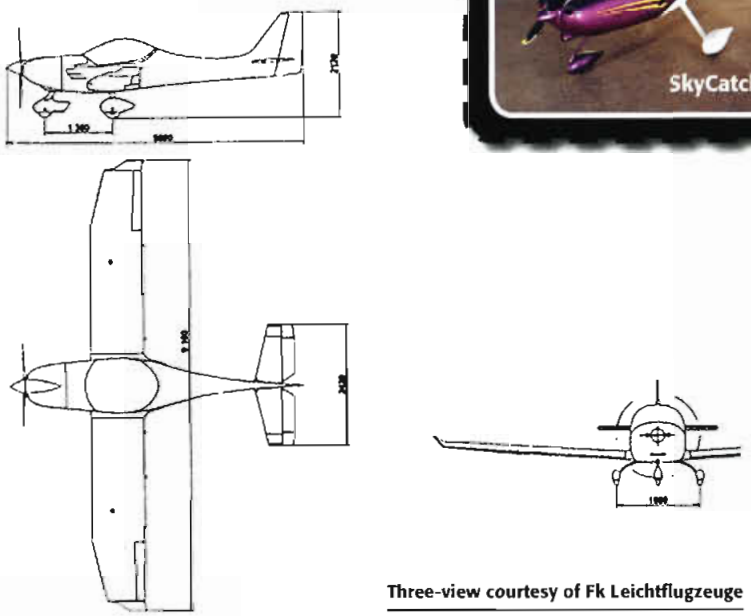
ENGINE
100 hp Rotax 912ULS (performance data quoted) or 80 hp Rotax 912 driving a three-blade DUC aerolastic constant-speed propeller

PRICE COMPARISON

Funk Fk14 Polaris ultralight*	€64,330
Cessna 162 SkyCatcher**	$109,500

*European model **first 1,000 orders only

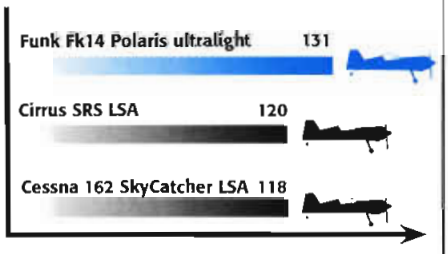
FK14 (TRIGEAR VERSION)



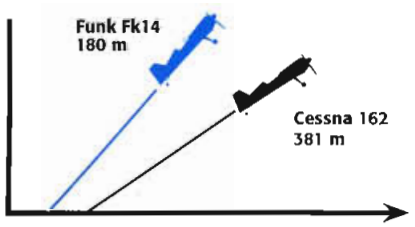
Three-view courtesy of Fk Leichtflugzeuge

Seating, pilot/passengers 2

CRUISE SPEED (KNOTS)



TAKEOFF TO 50FT



WE LIKE
Racy looks ■ Short takeoff ■ Rapid climb ■ good load-carrying potential ■ Superb cockpit view

WE DON'T LIKE
The long, long wait British flyers are having to endure before they will have a chance to operate a Funk of any kind in the UK

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