Could this be love?

This Nynja will sneak up and seduce you

The Nynja is the slickest, flashiest and most expensive SkyRanger yet, and it's worth every penny, reckons David Bremner. Even better, since it's named after a mutant turtle, it runs on Shell

Photos by David Bremner, unless indicated otherwise

Photo: Ben Ashman

THE original SkyRanger was designed by Phillippe Prevot in the 1990s, based on the principle of using no welding, no bending, and no composite parts – just good ol' straight tube, bolts, and sailcloth.

He sub-contracted manufacture within France from 1992 to 1997, and thereafter with Aeros in the Ukraine, and an astonishing 1200 have been manufactured to date.

It's an almost universal truth that the only new aircraft that will sell is the slickest, flashiest and most expensive model – mainly because anything cheaper is competing with the second-hand market, which will always undercut you.

The SkyRanger was a notable exception to this rule. Mid-priced, and only available as a kit, it's been something of a phenomenon in the UK, with more than 200 registered since they were introduced in 2002.

The reasons for this aren't immediately clear, but the importer, Flylight, quickly built up a reputation for excellent service and backup, and the product itself, while not hugely different to its main competitor – the Rans S6 – in configuration, manufacture or performance, was a bit easier to repair thanks to the bolted structure. On the other hand, it may have missed the 912 boat since it wasn't offered with the engine of choice until a good while after its introduction.

Did the fact that it was registered with the BMAA, thus avoiding the need for membership of two organizations, make a difference?

Who knows. Whatever the initial reason, BestOff and Flylight made sure there was a steady stream of minor improvements – cowling design, the excellent XLam covering, and so on, to keep the market interested, and this design has now become the mainstay of the UK's three-axis microlight fleet.

The Classic SkyRanger was fitted with a variety of engines, including the Rotax 912 and 912S, the Jabiru 2.2, the Rotax 582, the HKS and the Simonini. A couple also have BMW R100s.

The SkyRanger Swift is essentially a clipped-wing version, with one bay cut out of the wings. It provided a significant improvement in speed when fitted with the 100hp 912S, and was lighter in roll. Around 50 of the SkyRanger fleet are Swifts.

The next upgrade, the Nynja, will come as a surprise to no one. The prototype has been seen on the Flylight stand at trade fairs for a couple of years, development having been slowed to a crawl by the very weak market for new microlights. But it's finally approved, and on a blustery day in May I popped across to have a go in the demonstrator with Flylight's Paul Dewhurst.

What's in a name?

According to Wikipedia, 'A ninja was a covert agent or mercenary of feudal Japan specializing in unorthodox arts of war. The functions of the ninja included espionage, sabotage, infiltration, and assassination, as well as open combat in certain situations.'

It's also an acronym for No Income, No Job, (No) ▷

Photo: Ben Ashman

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Inside the cockpit **(1)** Standard binnacle and stick, and **(2 and 3)** two views, fore and aft, of Rob Grimwood's customized lightweight Nynja; **(4)** excellent view looking forward and **(5)** good headroom and great view into the turn

▷ Asset (a type of no-income no-asset loan related to the subprime mortgage crisis), Mongolian small-scale gold miners, a militia in the Republic of the Congo, someone from the New York-New Jersey area (NYNJA), and a mutant turtle.

Whichever you choose, the link to a microlight aircraft isn't immediately apparent. I asked Paul about its origin. One eyebrow rose, and he said 'Just be thankful it wasn't called the Tycoon.' Never mind; if the Gallic sense of style can embrace a mini-me for a President, clearly an aircraft with a green carapace is but a small step.

To the untutored eye, at a distance it may be hard to identify the difference between the Nynja and the earlier versions, but as you come closer the first thing that catches your eye is the change in shape of the door, letting more light in. Closer still, and you notice that the fuselage is covered in slick fibreglass panels instead of fabric, and that the fin has acquired high heels.

But by the end of Paul's guided tour I was left surprised at how much you could change without effecting a complete transformation. They may be details, but that's where the devil is, so let's run through some of them.

Refinements

Starting at the front, the cowling has been tidied up, with fewer openings. It's also a tighter fit around the Rotax 912S inside, making it harder to fit alternative engines, and currently only the 80hp 912 and 100hp 912S are approved. Getting access to the engine still requires a plethora of screws to be removed, since Paul believes that if you make it too easy to access the oil and water levels, no one will ever bother to look at the rest of the engine.

My own belief (based on my own indolence) is that by needing an allen key and the removal of so many screws, one's tempted to ignore even the oil and water. But since this is a kit, it should be possible to make your own little inspection hatch or use quick-release fasteners if you so desire.

Once you've got the top off, the oil and water are much easier to get at, since the boot cowl has been trimmed back and the cowl extended aft. The engine mountings are significantly longer, to keep the CG correct.

The oil cooler is now mounted on the back of the radiator – it helps speed the warm-up time a little, and protects the oil cooler from impact damage. Also tucked away underneath is the new, smaller and lighter exhaust, the silencer box for which has been considerably shortened.

One of the most complex parts of an extremely simple build process was always the fitting of the firewall. But even that's got easier now, since it's attached to the new fibreglass fuselage sides.

In fact there's no longer any fuselage fabric; it's now fibreglass all the way. The panels are slightly curved, giving the whole aircraft a more substantial feel. It also makes a smoother transition from the cabin floor to the rear fuselage underside, keeping the flow attached and reducing drag, and the old external main undercarriage draglinks have been tucked away inside under the seats, which reduces weight and again helps reduce drag.

One other change that will please many owners is the external fuel filler on the fuselage side; no more messing about with fancy extended funnels, hoses, pumps and so on.

Moving aft, the old ventral fin has been replaced by an extension on the top of the standard fin. I'm sure it's perfectly effective, but it's the one change that does look a bit of an afterthought. Apparently, BestOff is ahead of me and has an all-fibreglass version in development. Unfortunately it will weigh an extra 0.7kg.

Unlike the fuselage, the flying surfaces are essentially unaltered; the wingtips have fancy winglets which may or may not make a difference; of greater importance but invisible are foam pads inside the outer panels of the wings that help to retain the airfoil section at high speed. One final touch is some natty foam fabric cuffs that fit over the strut/wing joints and stop the dust and dirt finding their way inside the wing.

Of course, the fibreglass fuselage panels weigh a good deal more than the fabric they replaced, so there's been a good deal of out-of-sight re-engineering to keep the weight under control. The result is that the demonstrator as seen has come out at a creditable 264kg. But if you want to put the Nynja on a diet, go talk to Rob Grimwood, CFI at Plaistows in Hertfordshire, who's built one for competition work and reckons to have trimmed the weight back to only 248kg. It was on display at Popham, and looked pretty civilized to me.

Room with a view

So much for the outside; what's it like on the inside?

The first thing you notice is that the front door post has been angled. This gives more room to swing your feet in and a better view downwards, but the lower door opens upwards as well as forwards, making it more likely to slam shut before you're fully seated.

Paul said it was better to park your posterior in first, then swing your feet in afterwards. I knew better, of course, and tried to get one foot in first. It's possible, but Paul was right.

The new bucket-style seats may not please the generously proportioned or pear-shaped, but for everybody else they will retain you more firmly in your place in turbulent conditions or full-on sideslips, and they offer more headroom, since the seat is lower. There are also two attachment points to let you vary the legroom. I'm pleased they've kept the simple and excellent seat belts.

The cabin feels so much lighter. It was never particularly poor in this respect, but the Nynja is definitely much better. There's additional glazing round the doors and the new instrument binnacle gives an airy feel, but above all, that new rear window – made possible by lowering the line of the rear fuselage top ▷

"Getting in: Paul said it is better to park your posterior first, then swing your feet in afterwards. Naturally, I knew better. Paul was right..."

▷ a few centimetres – gives the cabin a wonderful airy feel. It's also much cleaner. There's a nice tunnel to cover up the control circuits, and that's where you'll find the trimmer now.

The other controls are unaltered, including the very French throttle lever. One detail change I liked was the use of eccentric cams for the throttle stops, allowing easy fine adjustment. Oh, and apparently there's an optional 'antler horn' stick which gives you twin controls, even if they are centrally pivoted. It may sound odd, but it's standard fit on all Jodels, and all Jodel drivers will tell you it works just fine.

With the seat in the rear position, both Paul and I (6ft 3in) had enough room for our knees under the binnacle, but if you're a 6ft 7in editor you could opt for the more conventional instrument panel which will give greater shin clearance. We also had plenty of headroom. The view is fantastic in all directions, and when it comes to checking the control movements you can see all of them from the comfort of your seat.

On the demonstrator, there's a baggage compartment behind the seats with a fancy piece of drapery coming down to the floor. This has the slight disadvantage that you can't see the fuel tanks to check the level, but I'm sure no homebuilder would make such an elementary mistake!

Normally, when I do a flight test, I'm sat with a manufacturer or importer who's less likely to pick up on my deficiencies as a pilot. Today, of course, I'm sat with Paul Dewhurst, who's one of our most respected instructors and examiners, as well as our most successful international competitor and multiple world champion, so I'm feeling more than a little nervous. But anyone who's met Paul will know that he is the most easy-going person imaginable, and has infinite patience with lesser mortals.

Taxiing out, the view forwards is spectacularly good, the control is as good as on every other SkyRanger, and the turning circle is also good – you can make it turn about a stationary wingtip.

With all the checks complete, we lined up in a blustery 20kt breeze and I let the 100 horses have their head. We accelerated quickly down the track, and I was so nervous about over-rotating that Paul, fearing for the life of the undercarriage, said gently: "It should fly now…"

Airborne

It did. It's a long time since I flew with a 912S, and the climb performance was magnificent. The propeller boss was a long way above the horizon, and with that breeze we were practically at the scudding cloudbase by the time we'd reached Sywell's perimeter fence.

You might think that with the changes more or less cosmetic, the performance would be pretty much the same, but that's not the case. The rigid fuselage has cleaned up the aerodynamic profile very significantly, and the result is a significant improvement in the numbers. To demonstrate this, we opened up to full throttle and the ASI settled down to 120mph. According to Paul, that's about 10mph faster than the Swift.

After all the excitement we settled into a comfortable cruise at 75mph with the 912S burbling away gently at no more than 3600rpm. The noise levels were as quiet as you would expect, and once trimmed out it was possible – even in the turbulent conditions – to let go the stick and fly it using your feet alone. The pitch stability is sufficient to take control of the speed, and the rudder generates tons of roll which is a wonderfully relaxed way to keep the wings level and make small course corrections.

However, we felt that we should try the stick out, and moved it gently to the left. The wings rolled, the nose rose a little, and reluctantly it started to turn to the left with the nose pointing resolutely outside the circle; adverse yaw, in other words – very common in fixed-wing microlights, which is why you're taught to coordinate stick and rudder in turns.

1 Neat throttle stop adjustments are for UK kits only
2 Engine installation
3 Wing strut end cuffs
4 Rear view

The Nynja behaves more or less symmetrically; it's slightly less marked to the right, owing to the torque effect of the propeller. In fact, if you insist on doing uncoordinated turns, you're probably better using your feet, as there's such good yaw-roll coupling.

One other thing struck me in the relatively gentle turns we were doing – that you could see through the roof into the turns, which is obviously a good thing. It seemed to be better than the standard SkyRanger, but the bucket seats have actually lowered the eyeline a little, so I must be wrong. Anyway, whether it's different or not, it's a feature I really appreciate, and I took a picture to illustrate it.

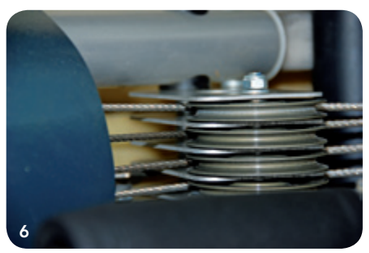
For more aggressive roll manoeuvres, the shorter wing of the Swift / Nynja has made a considerable difference. We didn't solemnly try to measure the roll rate, but suffice it to say that the response (with co-ordinated rudder) was crisp and instantaneous, and once established in a steep turn, it was well-balanced, needing little more than elevator to hold it steady.

After that we tried out the stalls. I checked out the normal power-off stall, and it simply settled into a mush with all the controls effective at around 40mph. With full flaps, we were getting around 38mph indicated. Paul said: "The power-on stall is just the same" – and proceeded to prove it, not only flaps up, but flaps down too. With the aircraft pointing upwards at about 45°, it felt as if we were prop-hanging just like the extreme aerobatic aircraft do in displays, but once again, it was perfectly controllable, and he simply pitched forward to restore the horizon to its rightful place.

No worries about the stall, then.

Next, we explored the faster end of the speed range, and were able to get around 120mph indicated with the engine turning at only 5560rpm. There's no drama and no fuss, and if you wanted to, you could travel that way without trouble. But a cruise speed of 90-100mph would give you a more economical trip, and you won't get there many minutes later.

If you want to loiter, a speed of 50mph is perfectly practical and controllable; obviously the controls ▷



5 Front quarter view
6 Cable pulley cluster has been tidied up
7 Rob Grimwood's lightweight Nynja – only 249 kg empty
8 Undercarriage drag link is inside, under the seat

> "As Paul opened the taps, he counted one thousand, two thousand, three thousand, hauled the stick fully back, and we leapt into the air. I swear we hadn't reached the far end of the numbers"

▷ are a lot softer, but you're not having to tinker with things the whole time; it will fly hands-free for reasonable periods of time. Meanwhile the 912S is pottering along at not much above a tickover.

Talking of hands-free, one of the standard tests is to trim the aircraft out in the cruise, then push the stick forward until you've accelerated by around 10kt, and let go. You're looking to see whether and how quickly it returns itself to straight and level flight. This characteristic is very difficult to achieve by design – you pretty much have to suck it and see – but suck the Nynja, and you see it return to nice level flight within about one and a half cycles. This is about average, and perfectly acceptable.

Having tinkered with the stick in pitch, it was time to tinker with the throttle; obviously it's a nuisance if you have to adjust for massive trim changes every time you alter the throttle. Once again, the Nynja is good – from a comfortable cruise of 70mph, application of full power drops the trim speed by around 5mph, and cutting back to idle increases it by around 10mph.

Of course you will need to adjust the rudder for different power settings, but Paul's got the bungee on the demonstrator set up nicely so that it's feet off in the cruise, a little right foot in the climb, and a little left in the glide.

Talking of gliding, there was no point in trying to measure anything accurately on such a windy day, but the vario settled down at around 400-600ft/min descent at around 50mph, which is certainly the right ballpark.

Were there any controls we hadn't messed around with? The flaps, of course. But these are a bit of a non-event; maximum flap is only 19°, and while they are undoubtedly helpful for takeoffs and landings, they don't induce massive trim changes. The flap lever is where the handbrake lever is on a car, and is easy to reach but not obtrusive.

Oh – and the trim lever. On the Classic and Swift it's on the top cabin structure. On the Nynja it's on the central tunnel, which is neater, but I'm not convinced it's any easier to reach. Nevertheless, like the other SkyRangers, it's very effective, and Paul was happy to demonstrate that it will trim out on full flap and idle power – a combination that defeats many microlights.

There was one more control Paul was keen to demonstrate. Did you know that the SkyRanger is a weight-shift aircraft? On the way back to the field, Paul loosened his shoulder straps and leaned right forward. The Nynja pitched forward quite firmly, and as he leaned back it pitched up again. It takes a bit of getting used to, since there's a significant time delay between input and output, but it should be possible to fly the aircraft home and land it on a reasonably sized airstrip without using the stick at all.

So we reluctantly headed back to Sywell to check out the landings. The 20kt breeze was blowing about 20° from the right, and on the base leg we had maybe 45° of drift, but the Nynja, like all SkyRangers, inspires bags of confidence and I was able to pop it down with minimum fuss.

But I hadn't shown off the Nynja's take-off performance to Paul's satisfaction.

"Shall I show you my competition takeoff performance?" he said.

We taxied back to the numbers, and stopped maybe 10ft behind them. As he opened up the taps, he counted one thousand, two thousand, three thousand, and hauled the stick fully back. I know we had the benefit of a 20kt wind, but we leapt into the air without the slightest hesitation, and I swear we hadn't reached the far end of the numbers.

I was glad to get a second go, because we'd forgotten to check out the sideslip performance, so as we went round the circuit we tried them out. Both rudder and aileron reach their limit at about the same time, and both axes are stable – when you remove the input they return to central.

It's a manoeuvre I always enjoy, because it's such a satisfactory way of correcting an approach that's too high, moreover one which looks as if you meant to do it all along.

The bottom line

By now we'd run out of excuses to carry on flying. As we taxied back I could understand why the SkyRanger has been such a successful product. It's an absolutely honest aircraft: it has no vices, no gotchas, and gives truly excellent performance despite the lack of sophisticated (ie expensive) engineering or aerodynamics. There's no doubt Phillipe at BestOff has benefited from Flylight's input, which has turned a successful design into a much better one.

The price for the kit, as demonstrated but with conventional instruments, is £37,839.80, though the fancy glass cockpit costs a significant amount more. For around £5000 less you can get a basic Nynja with a Rotax 912, conventional instruments, Dacron covering and no spats, or a full-spec Swift, while a Classic SkyRanger with a Rotax 582 and no trimmings will be as low as £21,151. Building any of them is a cinch, and whichever way you decide you'll get a very comfortable cruising machine that's simple to maintain, easy to repair, and should give very many years of service.

Leaving aside the thorny question of all the other types of three-axis two-seat microlights on the market (I reckon there are about 11 at present), if you've decided to go with a SkyRanger, which should you choose?

Starting at the bottom with a 582-engined Classic, you'll be limiting your cruise range, and the Dacron will need protection from the sun to maximize its life. Fuel consumption is becoming an ever-larger part of the running costs, but unless you are going to do hundreds of hours a year, it's unlikely you'll save the £3500 additional cost of a 912.

Moving up to a Swift airframe will mean you have to pick a 912 or 912S, and the airframe will cost you an extra £360 (this seems a bit like a haircut, where you have to pay to have something taken away, but apparently it includes aerofoil struts and one or two additional goodies) but you get those few extra knots if you use the 912S.

The Nynja ups the ante once again, with another 10mph on the top speed, but costs around £5000 more. For that you're getting a more durable fuselage and a host of detail improvements that go to making the aircraft a more pleasant environment.

It might sound a bit expensive for a cleaner, lighter cabin, a smoother fuselage, and a decent fuel filler cap, but I think it's likely to prove a good move. There are some interesting options available too, like folding wings, of which I'm a great fan, as many readers will know. The SkyRanger's version may not be the most convenient on the market, but it has certainly proved popular and is likely to pay its way in no time, with reduced hangarage fees and ease of access.

Paul also mentioned that a ballistic chute option should become available soon. Even if you don't see it as a valuable insurance policy, it will give you around 10kg extra payload.

But perhaps the most important change in the air is that the Nynja has been tested throughout to 500kg MTOW. With just minimal changes – just a slightly beefed-up undercarriage leg – and it should be possible to convert an existing microlight to the higher weight. Of course you'll need to convert your microlight licence, but that's not too expensive to achieve.

As I said earlier, history tells us that it's the newest, flashiest model that always sells, and here's a nice new, flashy model from one of the most respected marques.

Those who can afford a new aircraft are likely to have an extra £5000 available for the right one, and if I were in that position, I would think it money well spent – after all, the improvements are things you and your passengers will all enjoy every time they sit in the aircraft. Moreover, with the new approvals waiting in the wings, it should be an excellent investment. □

SkyRanger Nynja 912S

Manufacturer
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Importer
Flylight Airsports, Sywell Aerodrome, Sywell, Northants NN6 0BT; tel 01604 494459; fax 01604 495007; info@flylight.co.uk; www.flylight.co.uk. Proprietors: Paul Dewhurst, Ben Ashman

Summary
Side-by-side two-seat, high-wing monoplane with conventional three-axis control. Wings have unswept leading edges, swept forward trailing edges and tapering chord. Conventional tail. Pitch control by elevator on tail, yaw control by fin-mounted rudder, roll control by ailerons. Wing braced by struts from below wing, profile n/a, 100% double-surface. Undercarriage has three wheels in tricycle formation. Aluminium sprung main gear, noseleg suspension by rubber in compression. Push-right go-right nosewheel steering connected to aerodynamic controls. Hydraulic disc brakes on mainwheels. Alumininium and steel tube fuselage, covered in glassfibre panels. Aluminium tube wing structure covered in removable laminate fabric envelopes. Engine mounted below wing, driving tractor propeller.

External Dimensions & Areas
Length overall 5.9m. Height overall 3.25m. Wing span 8.9m. Chord at root 1.65m. Chord at tip 1.35m. Dihedral 1.2°. Sweepback 0°. Main wing area 12.8m^2. Fin area 0.42m^2. Rudder area 0.35m^2. Elevator area 0.92m^2. Tailplane area* 1.08m^2. Aspect ratio 8.6/1. Wheel track 1.86m. Wheelbase 1.40m. Main wheels dia overall 31cm. Nosewheel dia overall 31cm.
** excluding elevator*

Powerplant
Rotax 912ULS engine, liquid cooled. Max power 100hp at 5600rpm. Propeller diameter and pitch 1.8m x 35°@33.5cm. Integral gearbox reduction, ratio 2.43/1. Max static thrust n/a. Power per unit area 7.81hp/m^2. Fuel capacity 60 litre.

Weights & Loadings
(figures in parentheses refer to version with ballistic parachute)
Empty weight 264kg. Max take-off weight 450(472.5) kg. Payload 186(196)kg. Max wing loading 35.16(36.91) kg/m^2. Max power loading 4.50(4.73)kg/hp. Load factors +4/-2 recommended, +6/-3 ultimate.

Performance**
Max level speed 118mph. Never exceed speed 134mph. Cruising speed n/a. Stall speed 37mph. Max climb rate at sea level 1200ft/min. Min sink rate 520ft/min at 50mph. Best glide ratio with power off 8.8/1 at 60mph. Take-off distance to clear 15m obstacle 280m on grass. Landing distance to clear 15m obstacle 282m on grass. Service ceiling n/a. Range at average cruising speed 400miles with reserves. Noise level 75dB(A)LEL.

*** Under the following test conditions*
Airfield altitude 0ft. Ground temperature 15°C. Ground pressure 1013.25mB. Ground windspeed 0mph. Test payload 186kg.

Price as Tested
£37,839.80 including VAT and analogue instruments

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