

Kestrel



Ian Seager is impressed by the prototype Kestrel turboprop and thinks it's a worldbeater



I got a call from Farnborough Aircraft a week or two before Oshkosh. "How about coming to Maine on your way to Oshkosh? You can witness the start of the next chapter in the Kestrel story!"

So, despite the best efforts of the weather, I found myself at the announcement of the next big chapter in the life of the Kestrel: a new company led by Cirrus co-founder Alan Klapmeier and a move to Brunswick, Maine, where the aircraft will be certificated and built. But, before the speeches and champagne (in reality, iced tea and lemonade), let's rewind a little...

The Kestrel, or Farnborough F1 as it was then, started life as a twinkle in Richard Noble's eye, in 1998. While Noble's enthusiasm and charisma didn't result in any major investors, it did enable him to raise smaller amounts of money from a large number of individuals. When the (almost) inevitable happened and the project ran out of money, a private investor, Geoffrey Galley, injected some cash. Galley subsequently acquired control of the company at an EGM in 2002, following which Richard Noble left the project. After an approach from Aircraft Investor Resources (AIR), that's the company behind the kit-built Epic LT

turbine, the prototype was largely built in Bend, Oregon. That relationship between Farnborough Aircraft and AIR became somewhat troubled and the matter was eventually resolved in court.

The prototype first flew in July 2006, after which the aeroplane was flown to the UK and then to Dubai. A dalliance or three with Middle Eastern investors failed to come to fruition and the project was taken over by Galley's son, Anthony, in 2008. For a while, the aeroplane could be seen sharing stands with Liberty Aircraft (another UK design that

headed Stateside), but any partnership potential there was to remain unrealised.

Meanwhile, it was no secret that Alan Klapmeier's future at Cirrus was going to be turbulent. His attempt to buy the SF50 jet project from the company fell through, and in the summer of 2009, he found himself without a job. And, probably more importantly for Klapmeier, without an aeroplane project to be passionate about. While there's no shortage of projects out there looking for leaders and money (well, mainly money), a surprisingly large number of them are just plain bonkers and destined never to turn a wheel let alone a profit. Klapmeier and his team spent a year evaluating projects and exploring opportunities, and once again the quality and potential of the Kestrel shone through. As he explained, "We kissed an awful lot of frogs before finding the Kestrel." A couple of deals were struck by the UK Kestrel team. The first was with Alan Klapmeier who became a significant shareholder and CEO and the second was with local government officials keen to commercialise the soon-to-close Naval Air Station in Brunswick, Maine.

Judging by the amount of local interest and the number of local politicians who turned up to make speeches and shake hands, this is a big deal locally. It's a bit of a novelty to see both the local community and elected officials working hand-in-hand with an aviation business to create something special.

Eventually the hand-shaking comes to an end and the food runs out. It's time to say goodbye to Maine and to set off to Oshkosh with a large group of people, a larger pile of luggage (including an accordion) and three aeroplanes – a Kestrel, a TBM850 and a Cirrus. The good news is, I've been offered the Kestrel's right-hand seat for almost the entire 800nm trip. The bad news? There's a very active front lying along our exact route, the same front that was partly responsible for saturating and closing most of the Oshkosh grass.

Anyone and everyone who had a view on the weather gathers around a PC screen in the FBO while we desperately search for some more optimistic data. Every site we look at forecast the en route weather as rubbish, so conversation turns to weather avoidance with an eventual decision to head north via Canada (it's OK to overfly Canada, but only divert in an emergency unless you've completed the customs formalities), with a stop for an hour or so into the journey to do some passenger swapping.

Imagination everywhere

It's when we start dividing people and luggage between the aeroplanes that the size and capacity of the Kestrel becomes apparent. The Cirrus heads off first (in this company it is by far the slowest), one up and with assorted bags. More and more TBM850 luggage is left in a pile by the Kestrel's door. The TBM loads up four adults and a bag or two while we load five people, plus display material for Oshkosh, and plenty of luggage – including that accordion.

The Kestrel is a big six- or seven-seat aeroplane. It sits high on its undercarriage, a stance that almost makes the aeroplane look

Performance

SO WHAT ARE the numbers? Good question. N352F is a prototype and it operates in the Experimental category. That, and the fact that the configuration may well change, makes it both difficult and pointless to talk about specifics, after all, can you recall any aircraft coming out of the certification process faster, lighter and cheaper? No, me neither. That doesn't mean that there aren't projections, calculations and targets, although getting any of the team to talk about them openly is probably harder than certifying a nuclear-powered LSA space vehicle. There are, however, some numbers that we can use as a starting point.

Starting with the service ceiling. The company may have a great starting point, and between the UK and US teams there may well be some extremely talented engineers and a lot more money than any of the Kestrel's previous owners have had for certification, but there's little chance of the Kestrel launching with RVSM, so the service ceiling will probably start off at FL280, perhaps a little higher.

In terms of speed, the aeroplane will need to be competitive, so that means that it will have to cruise at about 320kt. That shouldn't be a problem with 1,200shp up front, but there's a determination to look at all of the engine options, and that may well mean a less-powerful PT6, or perhaps another supplier altogether.

Range? Obviously a function of fuel load, speed and consumption. This will also have to be competitive, so think of 1,500nm as a round figure.

If performance figures for the production aeroplane are hard to tie down then the price is trickier still, but a figure of between \$2.5m and \$3m seems to be in the right area.

proud, an impression reinforced by the huge, four-blade prop, driven by a 1200shp PT6, with the new paint scheme accentuating the aircraft's compound curves. Access is through the rear air-stair. Look right for the large luggage compartment, ahead for the (unused) in-flight potty (can there be a quicker way of bringing a prim passenger down to earth than getting them sitting on a loo separated from their mates by a mere curtain?) and left for the seating. This aircraft is very much a prototype, so while the seats retain their upholstery, the interior lining has been stripped out and replaced, in half of the cabin, by a white foam lining complete with hand drawings of interior developments. Some polished wood here, some leather there and a drop down screen or three so the kids and grown-ups can watch DVDs. Alan Klapmeier may have only just got involved, but already there's evidence of his imagination everywhere you look.

I sit in the back for the first short leg – were the cabin not full of boxes, suitcases, musical

instruments and posters, it would be quite spacious and comfortable, and it's not difficult to imagine it decked out with a high quality interior. It takes about 40 minutes, chock to chock, to get from Augusta, Maine, to Burlington in Vermont, where we land in drizzle and park next to a King Air on the ramp. While pilot Joe Thome sorts out the portable oxygen system (it may be designed to be pressurised, but the prototype isn't for now) and organises the fuelling, the rest of us head into the FBO to help finish off the copious remains of their fortnightly, free BBQ.

Outside it's surprising how old the relatively new King Air looks when parked next to the Kestrel. Truth is, the Kestrel's compound curves make all of the current production turboprops look a bit square and dated. We do a bit of passenger and luggage rearranging and climb on board for the next leg.

Squeezing in

Access to the cockpit is a bit of a squeeze, but once in the right seat there's plenty of room. The prototype has a single Avidyne MFD, a couple of Garmin 430s, a Sandel EHSI and the normal collection of analogue instruments, while the central throttle quadrant has the normal power, prop and fuel-condition lever. Needless to say, the cockpit will completely change with the production version. Steering is by differential braking and, taxiing to the runway, I'm juggling the throttle, brakes and prop lever trying to keep the prop out of the low rpm 'avoid range' and the nose heading in the right direction.

At 8,320ft (2,536m) the runway is four or five times longer than it needs to be, so initially I take my time adding power – asking for all 1,200shp and over-torquing the engine while departing the side of the runway in a one-of-a-kind prototype would take some explaining. We might have got rid of the accordion but the cabin is still full of luggage and we have taken on fuel so we are pretty heavy, but despite that the acceleration was astounding. Rotate is at about 85kt and the best rate of climb with the gear up is 110kt.

We are climbing at 4,000fpm as we enter cloud on our initial climb to 10,000ft. That leaves us still flying in and out of cloud, so we carry on up to 16,000ft (with the Mountain High O2 system doing its stuff) and level off. This is an aeroplane that will spend most of its time being flown on the autopilot, but as the one in the prototype isn't working, I get to hand fly for a couple of hours.

In the nicest possible way, I don't think you could describe the Kestrel's control forces as light. There's a fair amount of stiction in the control runs and the higher airspeed does nothing to lighten the load. Consequently, holding heading and height to a tight tolerance is hard work. There are already plans to reduce the control forces, which, combined with a good autopilot, will significantly improve things.

Thanks to onboard weather (courtesy of a Garmin aera 560) we can see that Oshkosh still has a big red rain return overhead so we make an intermediate landing to stretch our legs and wait out the weather. Engine management in the

descent is straightforward, and if you have no-one in the back and you fancy some fun you can point the nose down while reducing the power until the huge prop 'discs', leaving you hanging in your straps while you experience a speed-stable, rapid-rate descent.

I'm a bit fast on approach and spend a while floating in ground effect, but the trailing-link landing-gear will flatter most pilots and when the prop is brought back into beta the ground roll is minimal. The combination of high power, tall gear and an inertial separator (which basically stops the engine from ingesting too much dirty air) will allow the Kestrel safe access to all sorts of airports and airfields where the VLJs and small jets wouldn't dare to tread. Perhaps Noble's vision of an air-taxi service for Europe had merit?

Once the rain clears (leaving Oshkosh's grass parking closed to visitors for the next four days) Joe and I swap roles, so while he flies the 'Warbird' arrival, I put on my best British Empire r/t voice and trade accents with Oshkosh Tower.

Can the Kestrel make the jump from hugely impressive prototype to mainstream production aeroplane? And once it's done that, will it sell? The mortality rate among new aircraft projects is staggeringly high. So high that it's a wonder anyone ever considers investing money in an aeroplane project (I bet Alan Klapmeier is already

Europe or the USA?

THE KESTREL HAS its roots firmly in the UK. Sure, some of the design and prototyping may well have been done by AIR (the now defunct company behind the Epic kit turboprop) in Bend, Oregon, but the ideas, energy, enthusiasm, persistence and even money come from the UK. Ask the UK team why they didn't stay here and you'd better pull up a chair while they rattle through the explanation.

"We would have loved to build the aeroplane in the UK, creating hundreds of highly-skilled aviation jobs along the way," explained a Kestrel spokesman. "The truth is the CAA/EASA make it absolutely impossible to build and test a prototype aircraft without having the overheads of an approved design organisation, and they, the UK CAA, then charge a substantial fee to oversee the certification of an aircraft – which the FAA doesn't.

"Then there's the fact that the FAA has a lot more experience when it comes to certifying a pressurised carbon fibre aeroplane, making the process significantly more efficient and less costly."

reaching for his keyboard to deliver an email lecture on why almost all bankers are dumb). The Eclipse dream burned through \$2billion (I really do mean 'billion') before it closed its doors.

So how comes the Kestrel is alive and thriving rather than languishing at the back of a dusty hangar? It's not been without its scrapes and a close look at its financial history would almost certainly reveal a few near visits to Carey Street, but it's survived and while that's been a result of tenacious management, the underlying fact is that it's a bloody good aeroplane.

Take a look at the competition. In the first half of 2010, Pilatus shipped 25 PC12s, Daher-Socata 18 TBM850s and Piper eight Meridians. In a year which is the toughest we've seen for a long time, those numbers are impressive.

When you stack the Kestrel up against that competition, it's obvious that this aircraft has the potential to measure up very well indeed. If it delivers anywhere near its potential, it'll sit nicely between the TBM and the Pilatus in terms of size, while outperforming both the Citation Mustang and Eclipse in the cruise. All it needs now is someone with a passion for building great aeroplanes and a successful track record in bringing them to market and going from start-up to market leader. That person sounds very much like Alan Klapmeier. ■

Contact information
www.kestrel.aero
info@kestrel.aero

