Tecnam P2006T

Ian Seager finds Tecnam's light, four-seat twin, efficient, capable of handling short grass strips and frugal on fuel

From time to time, an aircraft comes along that changes the game. I'm talking about aircraft like the Robinson R22 that significantly lowered the cost of rotary training and quickly became the world's most common flight-school helicopter, and the Cirrus SR20/22 which brought glass cockpits and ballistic airframe parachutes to the mainstream of GA before completely dominating the sales of high-performance singles. I'm going to stick my neck out here, but having spent some time with Tecnam's P2006T, I believe that we're witnessing the launch of another significant aeroplane.

In the 90s there were about 370 multi-engine ratings issued to PPL holders every year. The latest figures for its replacement (take a deep breath), the single-pilot-multi-engine-piston-class-rating, are not easily available, but a straw poll and an educated guess suggests that there's been a decline of about 80% in the number of PPL holders getting a twin rating, sorry a single-pilot-multi… Oh, you know what I mean.

Although some blame the decline on the somewhat complex and contorted annual renewal rules, a more basic factor is at work among the ex-twin renters that we spoke to: money. Put bluntly, it costs a lot of money to rent or own a small piston twin, and it costs a ridiculous amount of money to own a larger twin. Even if you are able to find a local school that will rent you a piston twin when you want it, you'll almost certainly be paying the best part of £400 an hour for the pleasure – and that makes even the most expensive lunch in Le Touquet look cheap in comparison.

Enter Tecnam's P2006T. ***FLYER*** visited the factory in Capua, Italy, in early 2008 to fly the

prototype P2006T; it was impressive and showed a lot of promise, but the certification process has a habit of changing things, and these changes usually involve less performance, more weight and more money. So when Tecnam dealer Airways Aero at Wycombe took delivery of a fully IFR certified P2006T, we wanted to see if the early promise had survived the EASA process with its virtues intact!

There are a couple of obvious changes – the split windscreen is now a single-piece unit, the fuel tanks are no longer painted (a means of meeting EASA's lightning conductivity requirements for IFR certification), and where there was once a simple roof, there's now a roof with an emergency escape hatch to be used in the case of ditching. Less obvious is that the wing has sprouted a landing light and grown by 80cm since it was first displayed in public at Aero Friedrichshafen in 2008. The aeroplane has, as you might have imagined, also gained a little weight from the certification diet. ZOOG's empty weight comes in at 838kg, almost 200kg heavier than the data we had a couple of years ago, although the generic POH gives 760kg as a standard empty weight.

Inside, the screens from OP Technologies have been replaced by a more familiar Garmin 950; the 950 is essentially the Garmin 1000 but without engine instrumentation and the GFC700 autopilot. To the right of the screens you'll find the engine instruments and underneath you'll find standby ASI, altimeter and AI, alongside a couple of slightly large fuel pressure gauges. The electric flap lever sits to the right of the centre pedestal along with a flap position indicator, and the gear handle sits to the left along with the usual 'three greens'. To the left of the gear lever is a piece of ballast that ads weight and cost but that contributes little of any value – I believe people used to call them ADFs.

The central pedestal contains the prop and engine controls, which in the Rotax world means throttle, carb heat, propeller pitch and choke levers required for starting – remember your granddad's car? The Rotax has altitude compensating carbs so there's no mixture to play with. In its role as a demo/training aeroplane, ZOOG doesn't have the optional autopilot fitted, but for £22,000 you can specify an S-TEC 55X. Fuel cocks, fuel pumps, ignition switches and starter buttons are in an overhead panel, and contact breakers are on panels on either side

wall. On the floor in front of the pilots seat is a removable panel for emergency gear extension should the electrically-powered hydraulic system fail. For a light twin with Garmin glass, there's a lot going on in the cockpit, and somehow Tecnam has managed to make it look busier than a Citation Mustang.

There are two doors; the front port door gives access to the front seats and the rear starboard door the rear. There's a fairly large baggage area that will take up to 80kg. Getting out of either door while the engine is running would bring a good chance of an instant messy death, or at least a close shave, so there's a safety lock linked to the oil pressure that prevents opening either door when the appropriate engine is running.

Starting is a little different if you're not a regular Rotax flyer as it involves setting the choke before running the fuel pump, turning on the dual ignition and pushing the start button. As each engine starts, the relevant electrics go on and with both running the avionics come on too. The aeroplane is easy to taxi and with a steerable nosewheel there's no need for any differential braking. Inside, the aeroplane is quiet and, on the day of our flight, hot. The ventilation is great, but only when flying and it's got an 80+ kt wind helping it along.

The single-piece screen means great visibility ahead, although the relatively thick B pillars mean that you may need to lean forward to get a good view when turning during taxi. Once at the hold, the brakes (on the top of the rudder pedals) are pushed and the parking brake lever (tucked away out of sight underneath the centre pedestal), locks the pressure in the system. The power checks are straightforward and the flap is set by moving the activator until the indicator is in the right place – there's no detent. Trim is curious in that there's a fairly large trim-wheel between the seats with graduated markings to set it, but no pointer. Instead, there's an electrical indicator that shows you the position of the manual trim, which for some reason points down for nose up trim and up for nose down – I guess it makes sense to someone somewhere.

When full power is applied, the little Tecnam picks up speed fairly quickly and with practice, and at a light weight, it's possible to be up and climbing away within about 100m. The Rotax engines are geared, so the rpm is displaying prop rather then engine rpm. Maximum is 2,388 and max continuous is 2,265, both of which produce a quiet aeroplane. Blue line is 80kt and with gear and flap up, the nose needs to be raised as the Tecnam picks up speed. There's no need to peg 80kt to get a decent climb. 90 to 95kt with full throttle and the props back at 2,200rpm gives you

Engine failure – blue line cut

PROBABLY THE WORST time for an engine failure in a twin is on climb-out. You have a high nose attitude, you're likely to have a fair bit of drag with the gear and take-off flap still deployed, and any loss of thrust will bleed speed quickly, more so if there's any adverse yaw adding to the drag. It's also the part of the flight where you'll be the heaviest, and thanks to sod's law it will undoubtedly be the critical engine that fails.

Looking at the Tecnam on the ground, it's not entirely obvious that it'll cope well if its already meagre 200hp is halved at the worst possible time. I head off with Airways MD Tim Orchard to find out.

We're pretty much at mauw as we climb away from Wycombe, turning north to climb through cloud to get on top at about 4,500ft. At 24°C on the ground, it's 9° warmer than a standard day, but the pressure's higher. Density altitude up here is just under 5,500ft. As a rule-of-thumb, normally-aspirated engines lose about 3.5% of their power for every 1,000ft, so once the left engine is shut down the right engine will only have about 80hp left to offer.

We simulate the failure of the critical engine a couple of times, each time while climbing at blue line (80kt) with the gear and one stage of flap down. There's obviously more yaw than with a failure in cruise, but it's not at all violent, and there's no tendency to roll rapidly over. It's a matter of rudder to correct yaw, nose down to make sure that the airspeed doesn't bleed away, gear and flaps up, identifying the 'failed' engine and pulling the appropriate prop lever all the way into feather, which shuts down the motor. To climb on one engine with the 80hp that we had available called for pegging the blue line pretty accurately – doing it all right gave a 250fpm climb, but if you were too far above or below that blue line you'd find yourself flying level or descending. But as I said, the density altitude was close to 5,500ft.

I'm not saying that things wouldn't be a bit stressful if you were heading for rising ground when it happened, but I am saying that there's no need for superhuman, speed-of-light reactions, and that if you take your time to do everything properly you'll be rewarded with a decent enough climb.

For a very light twin there's a lot going on in the office. A far simpler cockpit should be possible

Think of the P2006T as a four-seat single that just happens to have two engines

a better view and a bit of energy in hand should you lose an engine in the climb.

In flight, the P2006T is a very civilised aeroplane – the ailerons firm up nicely with speed without becoming sloppy at low speed, the rudder is light and sensitive, and although the pitch trim is a little sensitive, it doesn't take very long to get used to it. High speed cruise yields 135+kt for a total fuel burn of just 38lph without any feeling of the engines being strained. If you want to burn even less and are happy to fly a bit slower then 25in and 2,200rpm will give you 127kt for an estimated total fuel burn of 30 to 32lph. Strangely, there's no consumption or range charts in the POH and no fuel flow instrument in the cockpit.

The performance numbers compare extremely favourably with something like a Piper Arrow or a C182. The Tecnam really does manage to deliver more for less (cue letter/email from the 165kt PA-28R or C182 owner), and what's more it will do it burning mogas rather than avgas, if you can find any at an airfield or if you're happy to fill the tanks from jerrycans – not the easiest thing to do with a high wing aeroplane... ask me how I know!

Of course, the thing that everyone wants to know about twins, and about light twins in particular, is how they cope on one engine. With both engines turning the same way (clockwise when looking from behind with the Rotax) the critical engine is on the left (P1) side. We start by failing the right-hand engine in the cruise, and while it may bit of a cliché to describe it as a non-event or benign, anything else would be a gross exaggeration. Apart from requiring a bit of ▸

Twin terms

THERE ARE A few terms that are twin-specific and worth mentioning.
Red line: minimum control speed on one engine. Let the speed decay below this and with one engine shut down you won't be able to maintain control.
Blue line: best (and possibly only) climb speed with only one engine running.
Cross-feed: feeding the right engine with fuel from the left tank and vice versa. Some bigger twins have multiple tanks and multiple valves and multiple pumps to move fuel around.

left rudder to keep in balance, nothing much really happens other than the loss of about 20kt of airspeed. For continued single-engine cruise you can make use of the electric rudder trim (the actuator is down by elevator trim and the position display is in front of the pilot), but in all honesty there's no real need – the rudder force required is much less than a lot of single engine aeroplanes in the climb.

As we weren't at mauw, we postponed the worst case engine failure for later (see box 'blue line cut) but took a look at the stall instead. Clean, the stall warning starts beeping at 74kt and at 64kt there was a definite break with a bit of a wing drop. The same thing in approach configuration leads to the break coming at just above 50kt.

Slowing down for the circuit isn't an issue thanks to the liquid-cooled Rotax engines, so it's pretty easy to share the circuit with most other GA traffic. The first stage of flap can go down at 119kt and the gear at 93kt. The electrically-powered hydraulic gear is very quiet and very slow. It takes 15 seconds to go from gear up to gear down and locked, and if you're anything like me you'll check for three greens at least half a dozen times before landing. 70kt is a good approach speed, slowing further only once you're committed to landing. The trailing link gear does a great job of flattering the pilot and it's easy to see how the Tecnam could easily cope with short strips.

To sum up, if you had any doubt about the importance of weight on an aircraft's performance, then Tecnam's little twin provides you with an excellent real-world example. Its mauw is at least 500kg lighter than any of the competing twins (DA42, Seminole and Duchess) and at 1,180kg it's very firmly in the single engine aeroplane category. It's lighter than a Cirrus SR20, lighter than a Piper Arrow, about the same as a DA40Tdi and only a little heavier than a new C172. It performs better than most singles and burns less fuel than many while doing it. Of course, there's the advantage of an extra engine making for a more relaxed time when crossing water or inhospitable terrain.

As we've seen, much to the surprise of some, it will climb on one engine, not that strange when you think on one engine the Tecnam is producing about the same power as a 180hp single running at 55%. The climb rate may not have you pushed back in your seat, but you will be going in the right direction.

Obviously there's no such thing as a free lunch and on such a lightweight twin there's a fair amount of give and take to be had with the cabin loading and fuel. Fill the tanks to their maximum 200lt (just over five-hour) capacity and you'll have 198kg left to play with. That may not seem like much, but do the same sums with other common singles and the real world results results for most aircraft are in the same ballpark. Many manufacturers must only weigh their most anorexic airframes for the brochures.

Thanks to its light weight and efficient wing, the aeroplane uses remarkably little in the way of runway, and thanks to its tough, trailing-link undercarriage it's more than at home on grass. I only hesitate to call the P2006T a good farm strip machine because is just seems so wrong, but the truth is that performance-wise a current pilot would have no problem operating in and out of 450m of grass.

So we have a lightweight aircraft that just happens to be powered by a couple of very reliable, very frugal Rotax four-stroke engines. It's benign engine-out handling, low fuel consumption and decent enough cruise speed come together in a package that offers the security of an extra engine with better performance than most singles, all achieved while burning less fuel.

As I've mentioned, it does have a few individual foibles in terms of the cockpit's ergonomics, but none are really an issue. In terms of price, the Tecnam is certainly cheaper than other four-seat twins, and a little more expensive than a new single, depending on equipment – a good move that should see the lure of two engines appealing to buyers of new singles, while schools, individuals and groups previously considering a light twin will be tempted by the capital savings. I think we'll be seeing quite a few of these aircraft in the UK. ■

Tough landing gear and impressive short field performance makes this twin a strip-capable machine

Getting the rating

IF YOU WANT to fly the Tecnam twin you'll need a multi rating, except there's no such thing as a multi rating any more, so what you'll need instead is a 'Single pilot Multi-engine Piston (Land) Class rating'. In order to get one of those you'll need to follow a course of flight and ground training. The theoretical training will last a minimum of seven hours and the flight training a minimum of six hours. There's a flight test and a written exam with some general questions and others that are specific to the multi-engine aeroplane that you are training on. Before taking the skills test, you'll need a minimum of 70 hours PIC.

TECH SPEC
Tecnam P2006T

■ DIMENSIONS
Wingspan 37ft 4in/11.4m
Length 28ft 6in/8.7m
Height 9ft 4in/2.85m

■ WEIGHTS & LOADINGS
Empty weight (G-ZOOG) 1,843lb/838kg
Mtow 2,601lb/1,180kg
Fuel capacity 53usg/200lt

■ PERFORMANCE
Cruise (75% @ 7,000ft) 145kt
Stall (full flap) 51kt
Range (65% 30' reserve) 620nm

■ COST
As tested €355,000

■ ENGINE
2 x Rotax 912S

■ SEATING
4

■ CONTACT DETAILS
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