

An Aircraft with Attitude



In its end of term report, the Dakota PA-28 would probably only score an average for speed and style. However, if you were to mark it for comfort, solid handling and low running costs the Dakota would be hitting 10/10.

Geoffrey Boot tells of his introduction to this 'Piper with attitude'

You could be forgiven for thinking that, with the designation PA-28, the Dakota is just another 'yawn' derivative of the Cherokee/Archer/Warrior range. In some ways you would be right. But there are two vital differences. Firstly the Dakota is propelled by no less than 235hp; secondly, if you omit the word 'Piper' from your call sign you will soon have a crowd awaiting your arrival – Ok, they'll be there under false pretences, but what a way to arrive! The Piper Dakota is most definitely not just another PA-28: it would perhaps best be described as a PA-28 with attitude.

Four or five years ago while working for *FLYER* I hired a Dakota (the Piper version) in Florida. I was impressed by its ability to haul four adults, fuel and baggage, something its smaller cousins are not usually noted for. This capacity for large payloads is combined with the same docile flying characteristics as all the PA-28 range, and endeared it to our test aircraft owners Peter and Polly Vacher. Not many people travel to Australia, end up choosing an aeroplane which they then buy in California, in order to fly around Europe – but that's what the Vachers did.

While Peter and Polly are both fairly low time PPLs they have certainly been around and seen the sights. Their first acquaintance with type came when they were in Australia and read about a brave individual who had flown across the Pacific from America to Australia in an almost brand new Piper Dakota. They were planning a trip around Australia, so working on the assumption that if the aircraft survived the Pacific then that was the aeroplane for them they made some contacts. Negotiations followed, then a fairly stringent check flight paying special attention to short field bush-type landings. Ten and a half thousand miles later they had fallen in love with the type.

This was around the time at which Piper were going through their 'black period', but after filing Chapter Eleven bankruptcy protection in the States, production recommenced with a small batch of Dakotas – one of which soon had Peter and Polly's name on it.

With slightly less bravado the aircraft was crated and shipped to the UK and put together by Piper's distributors Anglo American at Bournemouth Airport. It now resides in the UK with registration G-FRGN.

Business commitments have of late curtailed their adventures but further extensive trips are planned in the near future. Prior to this we were able to get our hands on the aircraft for a flight test.

The test aircraft

From all appearances the Dakota looks very similar to any of its more modern PA-28 counterparts. It is an all metal aircraft with partially tapered laminar flow wings, conventional fin and all flying stabilator. This all sits on a sturdy, fixed, oleo-strutted undercarriage, with large aerodynamic spats. The only real giveaway is at the front end, where the cowling hides a six cylinder Lycoming 1-540 235hp engine – the clue is in the larger exhaust stack protruding from the base. The engine drives a two blade constant speed Hartzell propeller and both the undercarriage and prop clearance look, and are, capable of operating from unpaved surfaces.

Access to the cabin is over a hard strip on the starboard wing, through the usual single door on the 'wrong' side (the pilot has to scramble over the crew pilot's seat). The cabin is not vastly spacious, but is adequate with reasonable access to the passenger seats, as long as the co-pilot's seat is folded forward.

Behind the passenger seat is a commodious area for baggage storage with its own separate rear access door.



This will house up to 200lb. This is perhaps where the aircraft departs from a standard PA-28, as with a gross weight of 1,361kg and a basic weight of 842kg you are left with 519 kilos as useful load – which equates to four passengers at 77 kilos, full fuel, (193 kilos) plus 18 kilos of baggage, all staying well within the C of G.

Fuel is housed in two conventional wing tanks holding 77 US gallons of which 72 are usable.

On the climb

Starting the large Lycoming engine requires priming, then cranking with the mixture control in the idle cut off position until the engine fires. The seating position allows reasonable vision both forward and to the side, although it is a little restricted above as the fuselage tends to wrap around. The panel layout is fairly normal with dual control columns and dual rudder pedals with toe brakes. G-FRGN has a fairly comprehensive IFR

avionics fit and, in fact, the aircraft has recently been CAFU approved for IR training and examination purposes – Polly is converting her American Instrument Rating (IR) to a British IR.

During taxiing the large engine makes the nosewheel fairly heavy, but with use of differential brake and steering the aircraft will turn almost in its own length.

The larger engine's noise and vibration levels appear somewhat smoother than the four cylinder versions and would have you believe that you are sitting in a larger aircraft. The same applies when power is applied for take-off – there is the very definite need for a good dab of right rudder to maintain direction against the slipstream. Acceleration is sprightly and at Lydd, with around 10 knots of headwind, three adults on board and over half fuel we were off the ground in approximately 300 metres, rotating at just over 70 knots.

The best climb speed is 90 knots, which results in a high nose attitude but a fairly stratospheric 1,500fpm+

DAKOTA PA-28 SPECIFICATIONS AND PERFORMANCE

Airframe:
Wing Span 35.4ft
Engine Lycoming O-540 6 cylinder 235hp
Propeller 2 blade constant speed

Fuel System:
Total Usable 272lt (72 US gal) (193kg)
136lt per side

Speeds:
V_{NE} (never exceed) 173KIAS
V_{NO} (normal operating) 137KIAS
V_{FE} (max 10 degree flap) 102KIAS
(max 40 degree flap) 72KIAS
V_{AT} (speed at threshold) Normal 65KIAS
flapless & glide 70KIAS
Turbulence Penetration 96-124KIAS

V_A (max manoeuvring speed with full application of flight controls) 96-124KIAS
V_S (stall speed/0 flap) 65KIAS
(stall speed/full flap) 56KIAS

Glide, power off/0 flap 85KIAS
Max crosswind 10KIAS

Performance:
75% Power 52lt/hr (13.6gph)
Endurance 300min (240 + 60res)
TAS @ 4000' 136kt

Gross Weight 1,361kg (3,000lb)
Basic Weight 842kg (1,857lb)
Useful Load 519kg (1,143lb)

Take off over 50' obstacle, sea level, ISA
Gross Weight approx. 396m (1,300')

Landing over 50' obstacle, sea level, ISA,
Gross Weight approx. 548m (1,800')

Further details

Although the Dakota is no longer on Piper's production list, a spare hand example similar to the Vachers' might be found in the region of £90,000, but obviously any such potential purchase price would depend on a number of variables.

For more information contact the Piper distributors in this region: Anglo American Airmotive at Bournemouth Airport (BAZ) 570023.

airborne again. However, with proper speed control the aircraft will land and stop within 300 metres and, better still (as mentioned earlier), will take off in not much more than that, fully loaded.

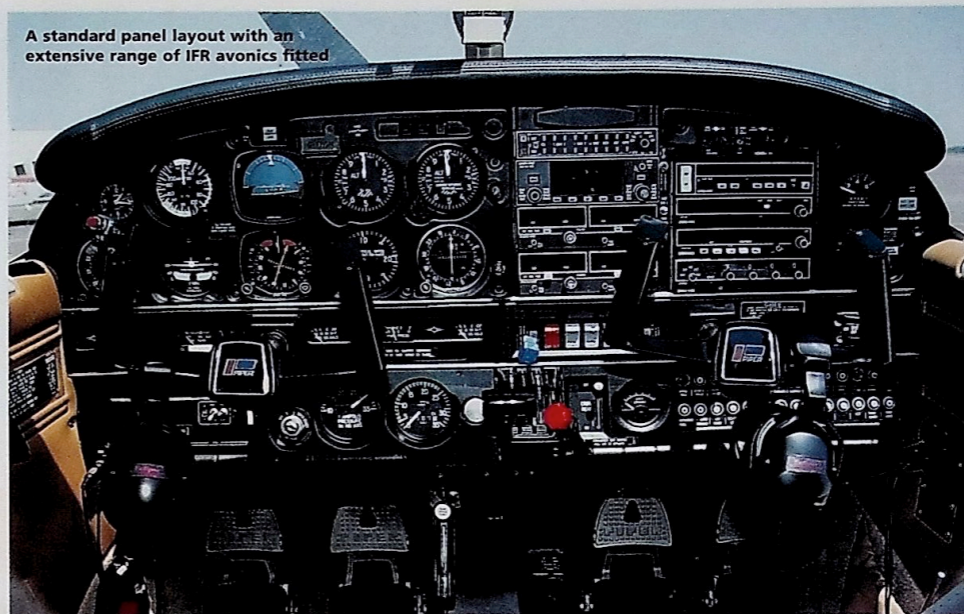
For flapless approaches the speed needs to be a little higher and the nose attitude restricts forward visibility but once again, providing speed is bled off over the runway, the aircraft lands with no problems.

The Piper with attitude

The Dakota won't break any speed records, it certainly won't stand out as the flashiest aircraft on the apron and it will only carry four people, so it's not going to startle you into a complete re-evaluation of your flying life. On the other hand, don't think that we're going to warn you off the aircraft – nothing could be further from the truth. It may only carry four people but it will carry them with luggage, lots of fuel and haul them off the ground using remarkably little runway. Once airborne it might only fly at around 135 knots (a little faster if you squeeze out a little more altitude) but this is in comfort, in a solid feeling aeroplane which won't frighten the wife, children or business associates. It rides turbulent conditions well and provides a stable platform for IFR operations – a point particularly worth noting for low hour IFR converts.

As to looks – agreed, the Dakota won't be the prettiest aircraft on the apron, but at least you have the satisfaction of knowing that running with a fairly basic airframe which has been proven over many years of service is not going to cost you an arm and a leg. And don't forget that little extra panache of having your own in-built welcoming crowd if you 'forget' to use the words Piper or PA-28 in your call sign!

The Dakota is a real PA-28. With attitude. ♦



climb rate. Lowering the nose and reducing the power to 25 inches manifold pressure and 100 knots brought this back to a more normal 700/800 feet per minute.

With no cowl flaps, turbocharging or retractable undercarriage to worry about flying the aircraft is simplicity itself. Levelling out, with the power brought back to a more moderate 23 inches of manifold pressure and 2,300rpm at 3/5,000 feet (depending on the outside air temperature) speed trues out to 130/135 knots burning approximately 52 litres of fuel per hour. This equates to approximately 75 per cent power and gives five hours endurance to dry tanks or, more practically, four hours plus 60 minutes reserve giving a practical range of around 550 nautical miles.

65 per cent power reduces the fuel burn to 45 litres per hour and increases endurance by approximately 40 minutes. Put in navigational terms this means that the aircraft is quite capable of reaching the South of France in one large hop from Southern England, or of getting to most of the Northern European destinations from anywhere in the UK.

Safe and solid flying

General handling is safe and solid: the aircraft rides turbulence well and feels stable in all three axes. Hands off trimming is easy, with a moderate roll rate of around 30 degrees per second. Everything happens at a predictable and controllable rate.

Even when provoked to the stall handling remains impeccable with plenty of buffet and an aural warning prior to a nodding break with no tendency for wing drop with power off, at 60 knots indicated. Lowering flap brings down the speed at which the break occurs but in all cases the stall is as docile as you are likely to get. Upward pitch authority of the all flying stabilator is restricted, no doubt for safety reasons, making it difficult to hold the aircraft in the stall, particularly when in it's in a clean configuration. The nodding which develops at quite a high rate of descent in an almost level attitude is easily arrested by application of power and a slight pitch forward.

Lowering and raising flap causes no great pitch changes. As flap comes down the nose pitches up and requires trimming for level flight; raising flap has the opposite effect. A full 40 degrees of flap is available, which means that a fairly steep short field approach is possible. One reassuring trait, no doubt arising as a

result of having those 235 horses available, is that even with full flap down in a baulked approach you can apply power (remembering of course to squeeze in a hefty dose of right rudder) and the aircraft will still climb at 400 or 500 feet per minute.

On returning to the airfield the flap limiting speed is 102 knots, but with no turbocharging and a fairly bullet proof Lycoming engine bringing the power back to a low power setting is feasible. The aircraft can be kept at a relatively high speed prior to a fairly rapid deceleration on the downwind leg, flap being deployed turning base with full flap on finals and reducing to approximately 65 knots over the threshold. If the speed is a little too high (as it was on my first approach) the aircraft, particularly with full flap set, will maintain a fairly level attitude over the runway and, if the speed isn't bled off properly, will tend to become

DAKOTA HERITAGE

Piper first launched the Dakota range, based on the all-embracing and venerable PA-28, in 1979. There were two models at launch, one propelled by a Continental 200hp turbocharged engine – the aircraft unsurprisingly known as the 'turbo Dakota' – and the other fitted with a 235hp Lycoming. The turbo version seems to have ceased shortly thereafter but the 235hp version is still on the books, albeit with a limited following.

Some might argue that there comes a point at which it is no longer worth putting a larger engine in a PA-28, as it only has four seats and a fixed undercarriage. After all, detractors would say, the larger Saratoga has six seats and would seem to be a more practical aircraft – if you are spending more money for a bigger engine you are also going to need more fuel. However the fact remains, and the sales figures back this up, that there are a number of people who feel most comfortable with the sort of aircraft they trained on coupled with a little more performance. This is just where the Piper Dakota sits. Looked at in terms of the car market, it's a bit like the number of people who buy the GT or GLT version of a standard family saloon.

