Owning & Operating

AS KEN DELVE DISCOVERED, MICHAEL DRAKE IS DEVOTED TO HIS CHEROKEE: "I CANNOT THINK OF ANYTHING I WOULD SWAP MY CHEROKEE SIX FOR AS THERE IS NOTHING IN ITS CLASS THAT COMES CLOSE."

Piper's PA28 series, of which the Cherokee family is a part (and the Cherokee Six is an even smaller part), had its origins in the early 1950s search for a Tri-Pacer development. The concept was for a four-seat, metal low-wing single-engined aircraft, and after negotiations with Mooney for one of its designs fell through, Piper looked at other various options, finally settling on developing a design of its own.

The experimental aircraft flew in January 1960 and was followed in February 1961 by the first production PA28-1 (N5000W). Initial production included 150hp and 160hp options at $10,900 and $11,500 respectively. The Cherokee family continued to develop during the 1960s and early 1970s to encompass an almost bewildering array of variants with the PA-28 and/or Cherokee name. To make it even more confusing, the PA-28 also carried other names such as Challenger, Archer, Fliteliner, Cruiser, Warrior, Cadet, Dakota ... need we go on, I think you get the picture!

So how does this relate to the Cherokee Six? Piper threw in even more confusion here as the aircraft was the PA-32 series but retained the Cherokee name. The basic Cherokee design was modified into a six-seater (hence Cherokee Six) by adding six inches to the cabin width and increasing the fuselage length 30 inches. Furthermore, there was a new tapered rear section and an entry door installed in the left-hand side of the cabin. To balance this longer rear end a baggage compartment (a very useful 18 inches) was added between the engine firewall and the cabin. Wing and tail surfaces were those from the Cherokee 235 design. The prototype of the new variant flew in September 1964 with a 250hp Lycoming. Other engine options followed and the Cherokee Six remained in production to 1979, at which time its place on the production line was taken by the Piper Saratoga. The Cherokee Six was one of Piper's most successful designs and the Vero Beach factory turned out almost 4,000 in over 20 major variants.

Michael Drake flies around 200 hours a year in Dublin-based (Weston Airport) Cherokee Six G-KFRA and has amassed over 1,000 hours on the aircraft. "Myself and my business partner Bill Rankin had owned a number of aircraft and for a variety of reasons, mainly to do with cabin space, decided to say goodbye to our Rallye 235 and get something a little larger but still with a good power ratio - our sights being set on a Piper Saratoga. I had also had a part share in a Tobago but wanted something with more power. One option appeared to be the Piper Saratoga, but having started looking for a suitable aircraft we discovered that the costs of acquiring and running a Saratoga were appreciably higher than for its immediate predecessor the Cherokee Six but, without, as far as we could see, any great difference in performance. The cruise speeds seemed similar and the Cherokee has a better short-field performance as well as being cheaper to maintain. When I first acquired the aircraft it seemed very big and heavy and it was not until I'd flown 25 or so hours that I felt really comfortable with it."

Michael's research into the Saratoga Vs Cherokee 'debate' included comparisons of key performance data - as shown in this panel:

Above: Left: Visibil from the cockpit good all round, in from the cabin se with the pilot's le window also have small opening par The de-mist is ver effective so there be no need to use as a DV (Direct Vi panel, although a crabbed approach this window is pos

Above: The forward is excellent in all s of flight even thou nose is quite long.

erokee Six

SARATOGA Vs CHEROKEE

	SARATOGA	CHEROKEE 6	
AX WEIGHT	3,600lb	3,400lb	
SEFUL LOAD	1,204lb	1,563lb	30% better
UEL CONSUMPTION AT 65%	16.5gph	14gph	18% less
RUISE SPEED AT 75%	163kts	155kts	5% less
RUISE SPEED AT 65%	159kts	147kts	11% less
EILING	15,500ft	17,100ft	10% better
TALL SPEED	60kts	47kts	28% less
AKE-OFF GROUND ROLL	376m	274m	29% less
ANDING GROUND RUN	227m	192m	18% less
	Saratoga – maintenance = Seneca less one engine		
	Cherokee – maintenance = Archer plus two cylinders		

le then noticed a Cherokee Six for
at what seemed like a good price
o went to Liverpool to take a look.
ircraft, G-BGII, had only had two
rs from new, its build date of late
making it one of the last PA32-
built, and it only had 900 hours
time. After a round of negotia-
with the owner we closed a deal
ly 1994 and although the aircraft
brand new C of A, and it was IF-
ped, we decided to fit additional
cs. This comprised a Garmin 150
kyforce moving map - the first
nstallation on a G-reg aircraft."
el has a habit of trail-blazing
ts on the aircraft and this was to
first of first of various 'firsts' for

tional cost in order to get the STC!

The panel-mounted system was/is antiquated, the moving map being simple mono graphics but it is still very efficient and testament to the fact that 'old' systems (and bear in mind here that it is only eight years old - an indication of just how rapid advances have been in GA avionics) if they receive database upgrades are effective.

Cherokee Six G-KFRA is a PA32-300 powered by a single Lycoming IO-540-IG5D engine rated at 300hp at 2,700rpm. The easiest way to tell the difference between the -260 and -300 is that the former has a single exhaust, whilst the latter has a triple.

The aircraft has received a number of modifications, including changing the standard two-blade propeller for a three-bladed Hartzell example. The original prop had some damage that meant it needed to be changed and after a visit to Hartzell, Mike elected to fit the three-bladed option. Standard claims for the advantages of a three-blade over a two-blade include less noise and greater performance.

"I have to say that I have not noticed any real difference in noise levels," Mike told us, "but then the aircraft has never been particularly noisy. As far as performance is concerned, there is certainly an increase in climb performance and it also gives a few more knots on the cruise speed." According to Mann Aviation at Fairoaks, who do all the servicing on my aircraft, this is the fastest Cherokee Six they have seen. I would certainly recommend the change of prop. An added bonus is the extra ground clearance with the shorter blades of the new prop and this can be a distinct advantage at some of the grass airfields."

Performance is very much one of Mike's major points in respect of the 300hp Cherokee Six: "The aircraft is not marginal in any way; it's a great all-round performer and is particularly good for short-field work as there is

Above The rudder is large enough to become effective early in the take-off run. Indeed, all the control surfaces are well harmonised.

Below "When we considered a change of aircraft one option appeared to be the Piper Saratoga but having started looking for a suitable aircraft, we discovered that the costs of acquiring and running a Saratoga were appreciably higher than for its immediate predecessor the Cherokee Six but, without, as far as we could see, any great difference in performance."

CHEROKEE SIX (PIPER 32-300)

WING SPAN	32.8ft (10m)
LENGTH	27.7ft (8.45m)
CABIN LENGTH	8.2ft (2.5m)
CABIN WIDTH	49ins (124.5cm)
GROSS WEIGHT	3,400lb (1542kg)
EMPTY WEIGHT	1837lb (833kg)
MAX SPEED	156mph, 2700rpm at sea level
CRUISE SPEED	152mph, 75% - best power
	148mph, 75% - best economy
	132mph, 55% - best power
	125mph, 55% - best economy
STALL, FLAPS DOWN	55 (40° full flap)
STALL, FLAPS UP	62
CRUISE RANGE	679 miles, 75% at 8,000ft
FUEL CAPACITY	98 US gall (371 lit)
USABLE FUEL	94 US gall (356 lit)
OIL CAPACITY	12 quarts (11.35 lit)
FUEL CONSUMPTION	18 US gph, 75% - best power
	16 US gph, 75% - best economy
	11.9 US gph, 55% - best economy
SERVICE CEILING	17,100ft (5,212m)
TAKE-OFF DISTANCE	Ground run 900ft (274m)
	Clearance of 50ft obstacle 1,350ft (411m)
LANDING DISTANCE	Ground roll 630ft (192m)

Above and Below Mike decided that he needed additional lights for operating into some of th airfields he visits. "I had Skylight lights fitte each wing and these are great, floodlighting th area ahead of the aircraft rather than the sma pool of light from the original light. The other problem with the original light is that when th aircraft is fully loaded on the ground the light tends to point too high."

sure you can feel the pressure on the stick and you can trim it out if you wish but as a safe aircraft to operate in almost any condition it must be one of the best."

In terms of field length the book says that the take-off ground run is 900ft, increasing to 1,350ft for the standard 50ft obstacle clearance. According to Mike it's "best to stick to around 1,600ft or so at least until you are experienced with the aircraft; 1,150ft is about the smallest you would ever want to consider."

Having operated from most Irish airports, Mike has developed a short-field technique for the Cherokee Six: "I use two notches of flap, full power and then brakes off. I let the aircraft wander a bit if it wants to rather than use rudder as this helps reduce the ground roll. As the airspeed comes alive I start pulling back on the stick gradually and unstick starts at around 45kts - although I don't really look at the indicator as I know if it feels right. Climb away at 60kts or so but again I don't use precise numbers but rather the feel and sound of the aircraft."

Starting the engine when it's hot can be tricky - something of a standard Piper problem. "I find the best technique is to select full throttle, full mixture and give it five seconds of fuel pump to get rid of evaporated fuel in the lines as this latter seems to be one of the main causes of hot start problems. I then lean the mixture and start the engine; it will crank for approximately ten seconds and as it fires, throttle back and put the mixture forward. If you don't get it to start first time, you might as well go to the café for a cup of coffee and wait for the engine to cool."

Visibility from the cockpit is good all round, including from the cabin seats, with the pilot's left window also having a small opening panel. The demist is very effective but there is also a DV (Direct Vision) panel which means that a crabbed approach using this window is possible. The cockpit and cabin have a number of fresh air inlets to help maintain an equable climate and in European conditions these are adequate, although in hotter climes the aircraft would heat up quickly and become uncomfortable on the ground. The heater is very effective front and back.

One of the main appeals of the Cherokee Six is its carrying capacity, a useful load of 1,563lb (709kg) with a standard 2+4 people plus two baggage compartments. The forward baggage compartment is located between the engine compartment and the cockpit whilst the aft compartment is behind the rear seats, but with its own access door. The rear seats can be reclined if passengers want to lie down! Mike's one-liner on the carrying capacity is: "Weight and balance is not a problem with the Cherokee Six."

Michael's aircraft is also fitted with a Strikefinder display, the circular unit being fitted into the lower centre of the instrument panel, the location in part being dictated by the length of the instrument. As Michael flies to Spain a fair bit he decided that a severe weather-warning device would be a good idea

Above Left The main entry door for the pilots is over the right wing, note also the step attached to the fuselage behind the flap. The door is a good size and climbing aboard is no problem.

LEFT Starting the engine when it's hot can be tricky - something of a standard Piper problem. "I find the best technique is to select full throttle, full mixture and give it five seconds of fuel pump to get rid of evaporated fuel in the lines, as this latter seems to be one of the main causes of hot start problems."

RIGHT Each wheel spat is fitted with an inspection port.

heel has various bits of it - Skyforce nfinder and ta Monitoring he Cherokee t is roomy and de with all od switches ach.

and elected for a Strikefinder, as his main concern was avoiding lightning and the associated severe conditions.

"The set has a range of up to 200 miles but you can change the scale right down to just a few miles. It paid dividends soon after I had it," Mike told us, "not in Spain but in Manchester. I was en route to Barton when the screen lit up with numerous orange dots - showing a severe amount of bad weather. The greater the number of dots the more intense the storm. This was followed moments later by Manchester telling me that they were having the worst storm they had seen in years. A rapid diversion to Liverpool followed. It has been an excellent piece of kit to have on board and really helps the peace of mind when operating in areas where severe weather might be a factor."

The other additional instrument that Mike would not be without and highly case an EDM 700. As engine monitoring systems were covered in the October issue of *Today's Pilot* we will not go into more detail here - except to say that with its highly accurate Outside Air Temperature indication, it is a useful tool for avoiding icing conditions. One of the few limitations of the Cherokee Six is the lack of an anti-ice system, although this also applies to most aircraft in this class. According to Mike the fuel filler caps give a good early indication of the onset of ice as the vane on the outboard caps shows ice before it

I FIND THE BEST TECHNIQUE IS TO SELECT FULL THROTTLE, FULL MIXTURE AND GIVE IT FIVE SECONDS OF FUEL PUMP TO GET RID OF EVAPORATED FUEL IN THE LINES AS THIS LATTER SEEMS TO BE ONE OF THE MAIN CAUSES OF HOT START PROBLEMS.

The aircraft's landing light is fitted above the nose leg and whilst it is "OK for normal operations" Mike decided that he needed additional lights for operating into some of the airfields he visits. "I had Skylight lights fitted in each wing and these are great, flood-lighting the area ahead of the aircraft rather than the small pool of light from the original light. The other problem with the original light is that when the aircraft is fully loaded on the ground, the light tends to point too high. Although wing-light systems were already installed on Cherokee Sixes in the USA I still had to get an STC down for my aircraft."

The Cherokee Six has four fuel tanks, two in each wing - tips and main - giving a grand total of 83.6 US gallons, of which 78 US gallons is usable fuel (this is for the 1978-build aircraft, the 1979-build has 98 gallons total, of which 94 gallons is usable). Each tank is independent

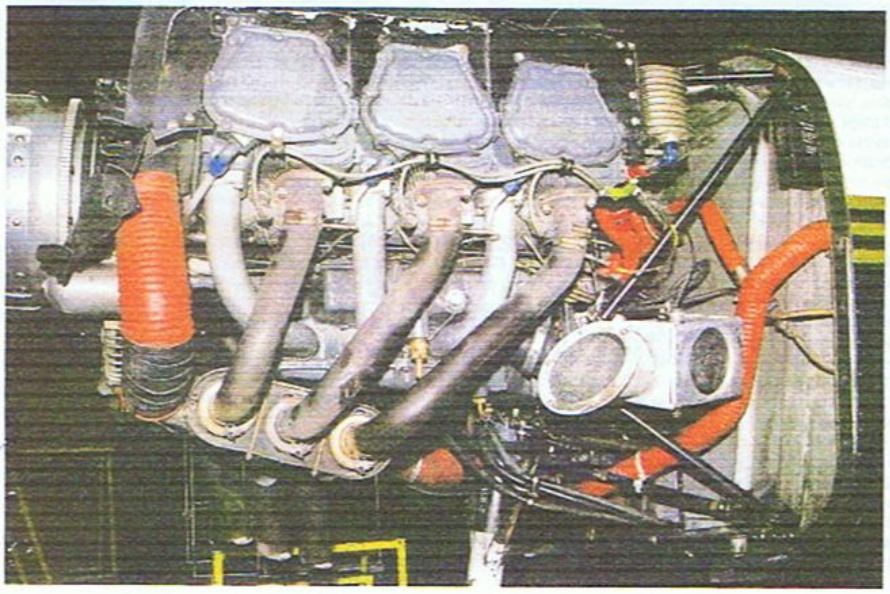
being located on the lower portion of the instrument panel. When filling the tanks it is best to fill the tips first, and when using the fuel, it is best to use the main tanks first. According to Mike, fuel management is somewhat open to individual choice but it is best to run down one main tank to 10 gallons or so and then select the other main tank. It is always worth switching on the auxiliary fuel pump when changing tanks - a belt and braces precaution against problems that might be caused by air in the fuel lines. The aircraft can get out of balance laterally if too much fuel is used from one side. Fuel consumption is not bad for an aircraft of this size and engine type with cruise fuel burn around 17-18 US gallons per hour (13.31mp gallons) at 75% according to the book.

THE MAJOR SELLING POINT OF THE AIRCRAFT FOR ME WAS THE INTERIOR SPACE AND ITS LAYOUT. THIS AIRCRAFT HAS MASSES OF ROOM AND IS WELL APPOINTED WITH COMFY CHAIRS, TABLE, READING LIGHTS AND EVEN A FRIDGE!

The walk-round checks are simple and straightforward, being pretty much identical to those for the PA 28 Warrior. However, a good one to watch out for is the forward baggage hold - make sure that this is closed and latched. "I usually start here and put the ignition keys in the hold - that way I have to go back to get them and as it is the last thing I do, there is less chance of any distractions causing me to the leave the hatch unlocked." Amongst the main points to check are that the air vents in the wing are clean, the fuel drain plug is not dripping (this is something of a known problem), the cowling attachments are in place, the air scoop is clear and the condition of the propeller. The creep marks on the tyres can only be checked if they are visible beneath the wheel spats, although there is a spring door on

Above Left **With the main cabin door (left-hand side) open and the baggage door hinged up, the entry space is massive. There are two baggage compartments - the one at the rear of the cabin is the largest.**

Above **With the flight instruments confined to the left-hand side of the panel there is plenty of room for an impressive avionics stack... "the mono Skyforce map might look a bit dated but the system works really well - although one day I will probably change it for a colour map."**




Filling up from the self-fuelling station at Dublin Airport. The aircraft has four fuel tanks, two in each wing.

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300hp erful is also effective

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each spat to help with tyre inspection, including the inflation valve.

The aircraft is not great on ground manoeuvring, as the nose wheel movement is restricted, although with a relatively short wing span, clearance is not usually a problem. It doesn't take too much power to get the aircraft moving and the brakes are very good, although you do need to use power and brake as the aircraft is quite heavy. Depending on the load, the nose can sit a little high but this is not a significant factor for taxying. For tight turns differential brake works well. More care has to be taken when taxying on grass, and after take-off it is worth tapping the brakes, although the reason Mike does this stems from an incident where a Tobago pilot suffered a fire caused by grass caught in the wheels.

"The Lycoming engine is reliable and efficient and although I have an EDM fitted, engine handling is very straightforward as the rpm gauge is essentially in the green all the way round. I tend to reduce the manifold pressure only one inch at a time and I also make gradual descents, taking care to avoid shock cooling. Lycoming recommends that the engine is run at varying rpms as this prevents spot wear in the pistons. The performance tables printed on the back of the pilot's sun visor are excellent and I use them all the time."

According to Mike, crosswind landings are not a problem "as long as you don't try to fight the aircraft. The demonstrated crosswind is around 18-20kts but the aircraft is quite happy above this speed providing you handle it carefully and let it crab into the wind - especially if it's gusty and the tail starts wagging. It is always a good idea to keep a bit of power on and the Cherokee Six lends itself to this technique."

So in conclusion, Mike summarised his view of the Cherokee Six: "This is the perfect aircraft for the ex-Warrior pilot and I have nothing but praise for it. Indeed, I cannot think of anything I would swap it for as there is nothing in its class that comes close."

THANKS TO MICHAEL DRAKE FOR G-KFRA AND GERRY MORTON FOR THE CAMERA SHIP.