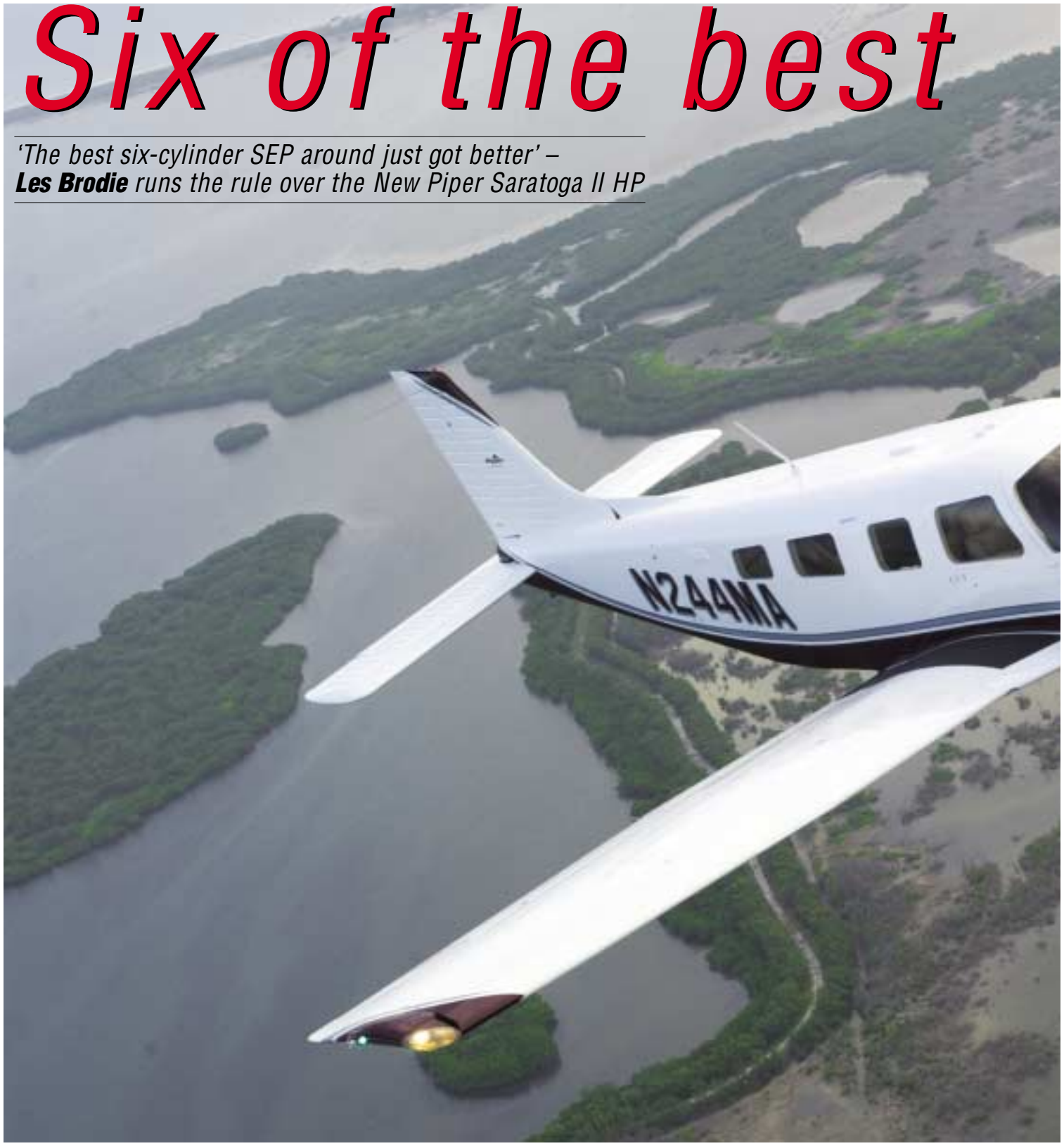
Six of the best

'The best six-cylinder SEP around just got better' –
***Les Brodie** runs the rule over the New Piper Saratoga II HP*

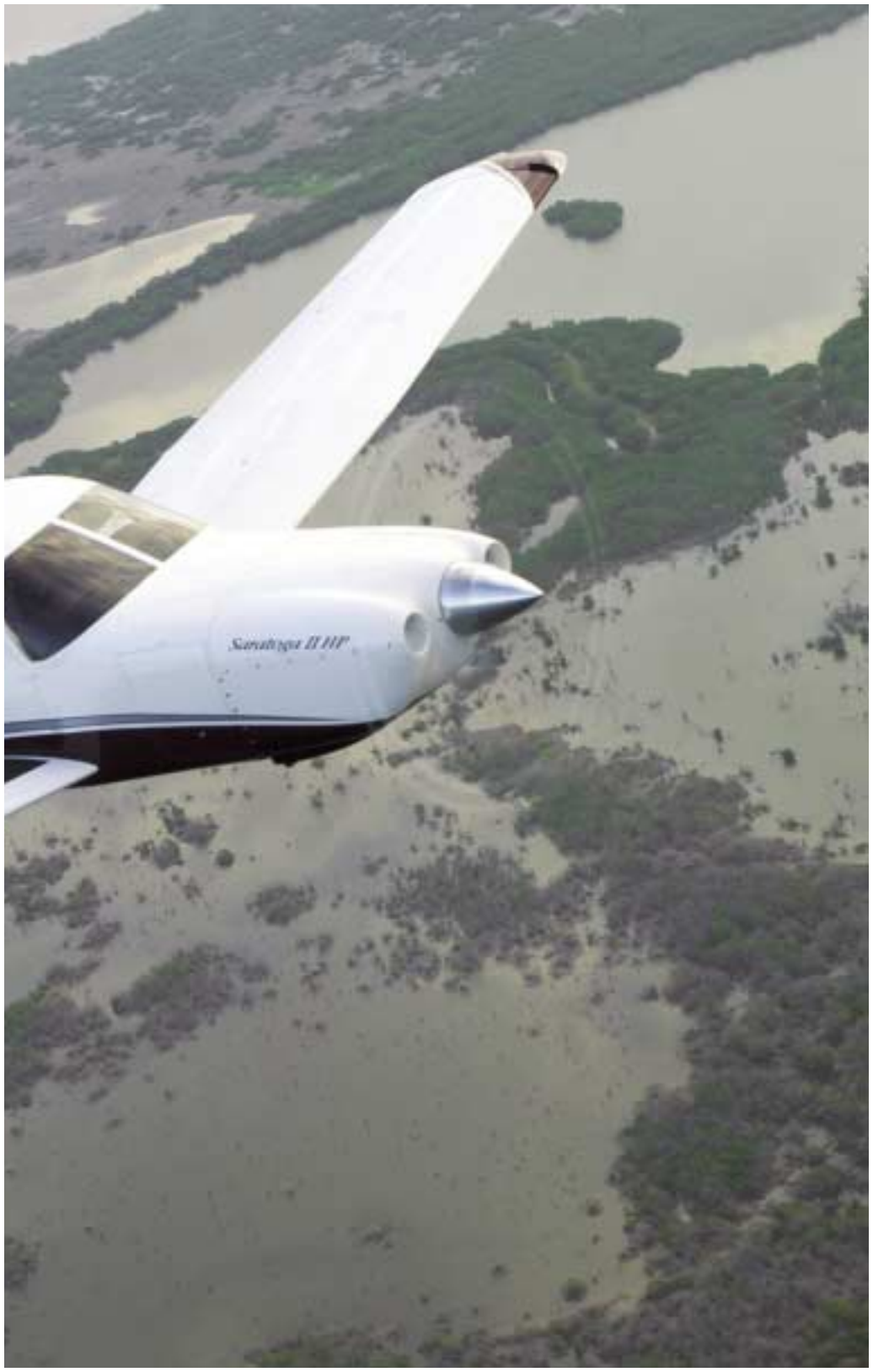


Make your way to Elstree, meet David Tang and evaluate his latest purchase a brand new Piper Saratoga II HP was the request from *General Aviation* magazine editor Pat Malone. I have been continuing my aviation adventure by flying all sorts of aircraft since retiring from flying Concorde so this was yet another request that I could not resist.

Making my way to Elstree was fun in itself as I called upon the services of my daughter Sarah to fly me from our local airfield White Waltham in a Cessna 150G. It is a great pleasure for a father to be flown by one of his offspring, and in this case there was the added bonus that Sarah could use one of her other skills as photographer.

Neither of us had flown into Elstree before so we extracted the relevant information from the UK AIP. It is most certainly a PPR/must have a radio airfield. A friendly voice at the other end of the telephone line gave a thorough arrival briefing. Arriving from the west via BNN VOR, it is a matter of using the right hand traffic rule to follow the M25 to the north of the Elstree zone, which conveniently takes you to a large golf course VRP at 4nm finals RW 26. It was nice to use the M25 as a convenience for a change. There is a stand alone tall building at 2nm final which acts as another reporting point. On the Saturday when we arrived, the local circuit (which is exclusive to Elstree training flights) was left hand in the morning and right hand in the afternoon for noise abatement. The local training traffic has to give way to visiting or returning traffic – just another example of how you are made to feel welcome when visiting EGTR.

David was there to meet us on arrival, along with three of his children. Sonia, the eldest, is a commercial pilot and will soon get checked out on the Saratoga, so David will also enjoy being flown by one of his offspring. David was obviously excited about his acquisition and he explained that he had been part of the delivery crew (his transatlantic flight was covered in the December issue of *General Aviation*) so was already experienced on type. Pilots planning to fly a Saratoga for the first time will need some



The Saratoga has its origins in the 1960s when Piper introduced the Cherokee Six

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training, for although the aircraft falls into the Single Crew SEP Class, it is considered a complex single with its retractable gear and constant speed propeller. Under JAR that requires flying with an instructor in order to learn about these differences.

David's aircraft is equipped with the Avidyne Entegra Flat Panel Display System that David had fitted as an option but is now standard equipment on the Saratoga. With a name like this it comes as no surprise that it is essential to have familiarisation training before being let loose in the open skies, if lookout is not to be compromised. Even when you are familiar with the equipment it requires discipline to move your head up and look out. It is all too easy to become engrossed with the Primary Flight Display, a 10.4 inch screen that shows attitude, airspeed, altitude, rate of climb and primary engine gauges (MAP, RPM, oil pressure and fuel flow). On the lower part of the same screen is the EHSI (electronic horizontal situation indicator) that includes a moving map with outside air temperature and wind vector, very useful for your instrument rating renewal when your eyes should be inside the cockpit.

If the PFD isn't enough to attract your attention inside then the MFD (multi functional display) will certainly do the job. At the press of a button you can choose to display a moving map with advanced terrain mapping, or engine instrumentation that includes manifold pressure, RPM, exhaust gas temperature, fuel flow, fuel quantity, oil temperature and pressure, cylinder head temperature, percentage power, electrical system performance and exceedence monitoring and recording. On the same screen you can bring up the information to lean the mixture accurately to obtain maximum economy without damaging the engine.

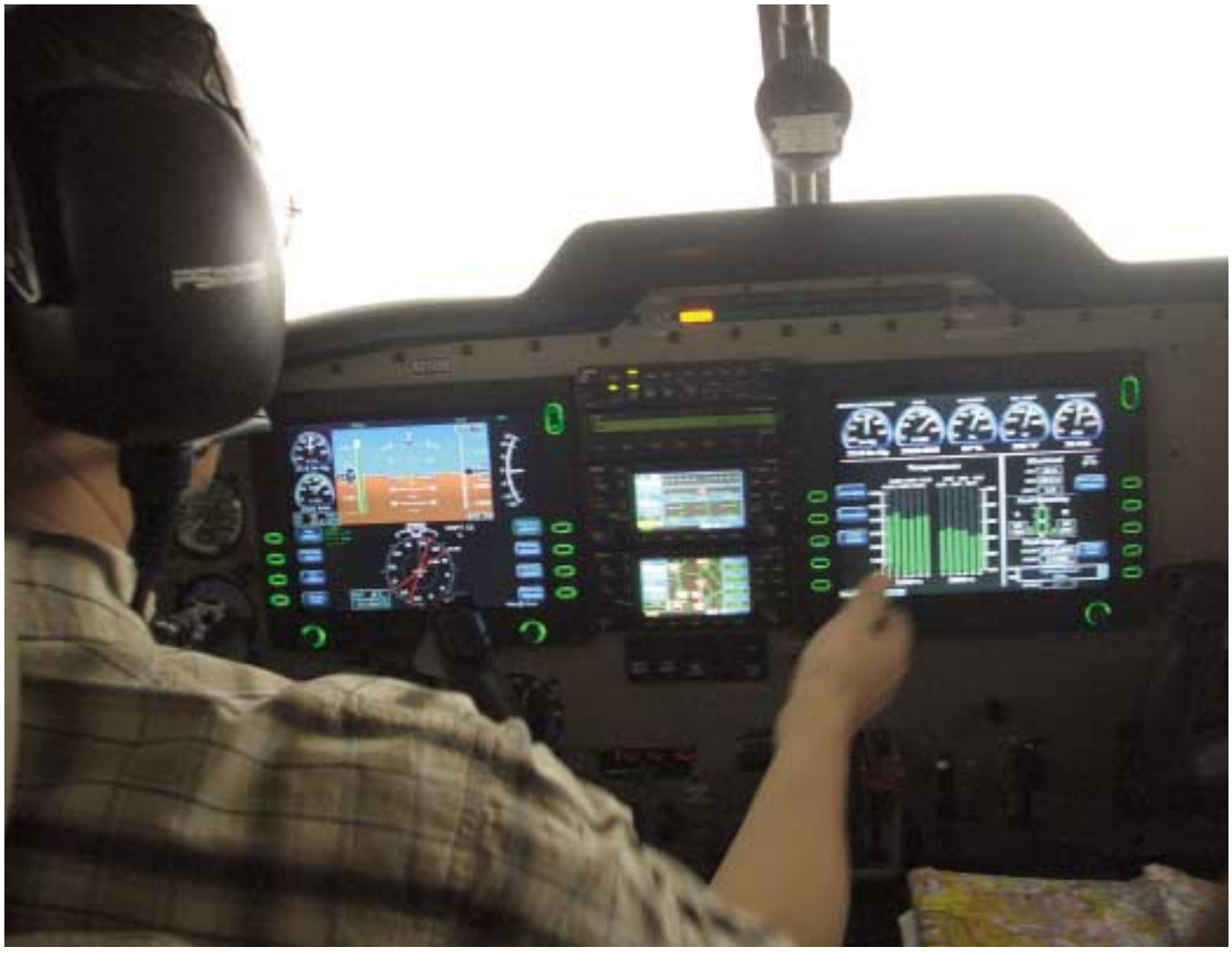
There is an annunciator panel at the top of the instrument panel that draws your attention to such problems as low bus voltage, alternator inoperative and low oil pressure. If one of these lights illuminate you would check the MFD to see what is going on. The annunciator panel also has lights to show starter engaged, nose baggage door ajar, gear warning, flaps in transit and pitot heat inoperative/off. All very useful, and right in your face while looking out.

Moving the aircraft off the grass onto the tarmac was a family affair involving the four Tangs and both Brodies for the push. If the aircraft was at its Maximum Ramp Weight of 3615lbs (1640kgs) the task would have been more difficult but as the Saratoga was at its empty weight of 2448lbs (1113kgs) plus about 300lbs of fuel it was fairly straightforward (was that a pun?).

While talking about weights, maximum useable fuel is 102 US gallons (386ltrs) which weighs around 600lbs (272kgs) so at full tanks you still have 567lbs (258kgs) available for payload. With crew of my stature – I weigh in at 190lbs – you could only depart three up, bearing in mind that Piper quotes that at full tanks the aircraft is able to travel 859nm at long range cruise power and still have 45mins in reserve. Happily most of David's passengers are somewhat lighter than me, so he does not have to trade off too much fuel to use six of the best seats available in modern light aviation.

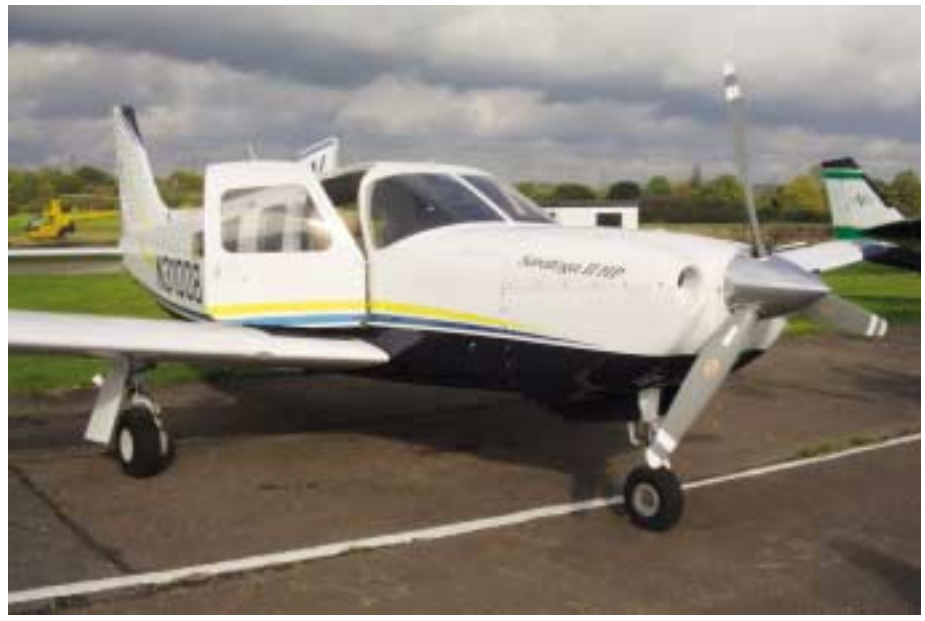
With six in mind it is interesting to note that the Saratoga's origin goes back to the 1960's when Piper introduced the Cherokee Six – six cylinders moving six seats through the air, giving someone with a large family a chance to take the whole brood to faraway destinations together without having to go to the expense of buying and operating a twin. The Cherokee Six was originally fixed gear but by the time it evolved into the Saratoga it was fitted with the Seneca's retractable gear system and a version of the Warrior's semi-tapered wing, allowing more than 150 knots from the 300hp IO-540 Lycoming engine. The latest Saratoga comes in two versions – either the Saratoga II HP (high performance) or the Saratoga II TC (turbo charged). David chose the HP with its service ceiling of 15,588 feet over the TC which can reach 20,000 feet, since his flying is conducted mainly in the lower airspace and he does not see a need to fly from a hot and high airfield where the TC would come into its own.

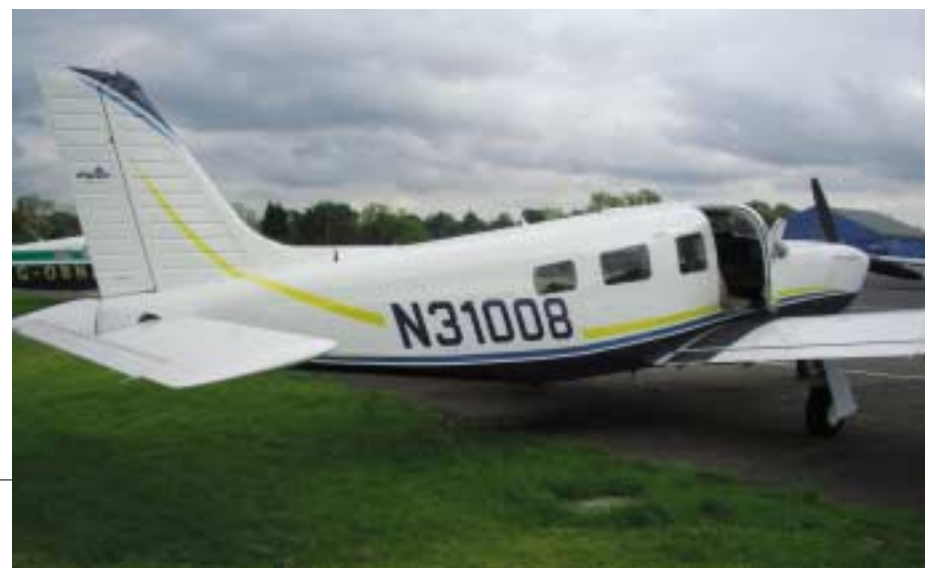
Once we had positioned the aircraft on the tarmac we boarded and closed the doors. New to me was a Piper door with a single handle operation. No more having to remember to lock the top latch. The single handle operation



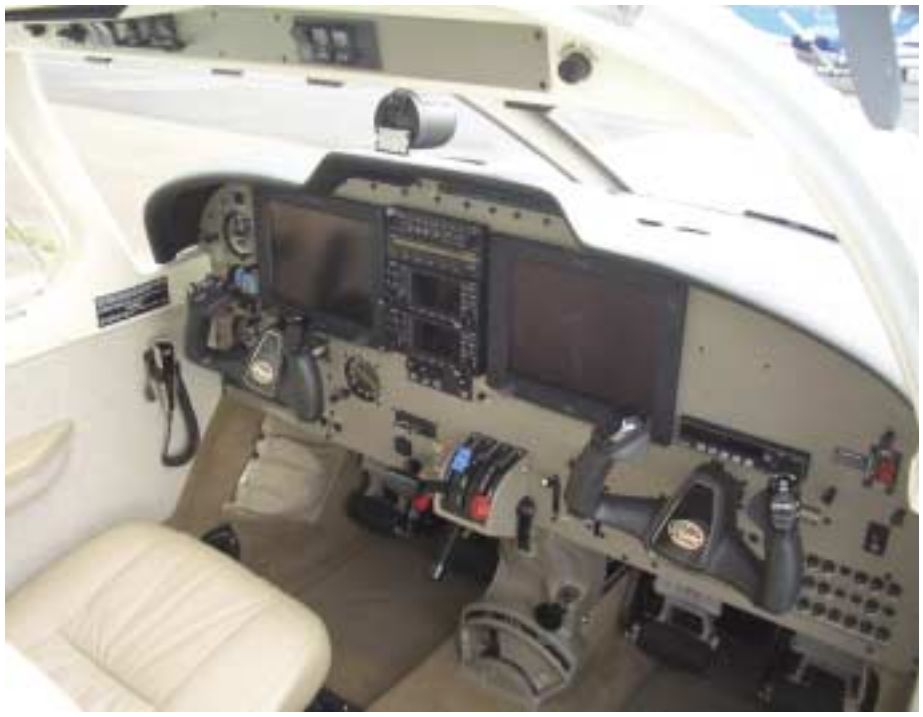
is easy to use and it is reassuring to be able see the top pin engage. The rear passenger cabin is accessed through the main door which works in unison with the rear luggage compartment door. Both doors open to make a very large access into the fuselage. It reminded me of loading my classic Minivan with its two relatively large rear doors; it is amazing just how much you can get into a small compartment from such an opening. I have managed to load a whole fir tree into that vehicle – which surprised those around me when I extracted it at the refuse tip. Not that I am suggesting ruining your immaculate Saratoga interior by airlifting fir trees, but easily loading people and their luggage, golf clubs and fishing tackle comes to mind.

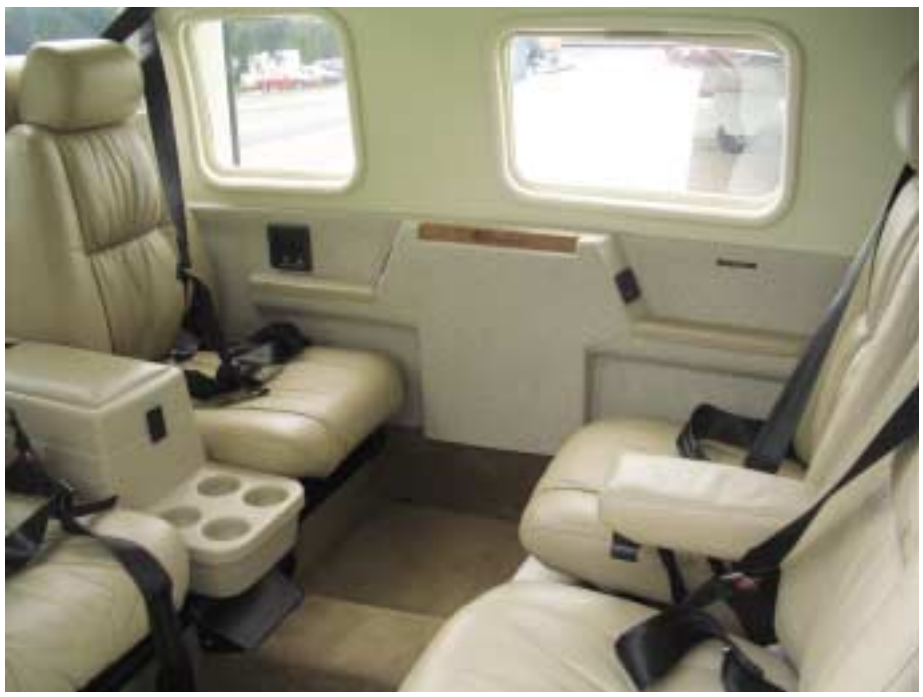
Sitting at the controls I soon felt comfortable with my surroundings and was impressed with the layout of the controls and equipment, along with the quality of this new Piper. We used the checklist to prepare the aircraft for start and the Lycoming IO-540 came to life easily and ran smoothly. David demonstrated a short field take off, and using two stages of flap we were soon airborne about halfway down Elstree's 650 metre runway. After David cleaned the aircraft up I took control and step climbed under the London TMA towards the north west until I was over the Vale of Aylesbury, where I spend a lot of time instructing for the British Airways Flying Club out of Wycombe Air Park. The Saratoga handled much as I expected, easy to manoeuvre and very stable, very similar to a





Top: Avidyne displays are so clear the author could manage without his reading glasses Right: Saratoga falls into the single-pilot SEP class but is considered a complex single with its retractable gear and constant-speed prop





New Piper Saratoga II HP	
Dimensions:	
Wingspan	36.2 ft (11m)
Length	27.9 ft (8.5m)
Height	8.5 ft (2.6m)
Cabin width	48.75 ins (123.8 cm)
Weights & loadings:	
MTOW	3,600 lbs (1,633 kg)
Empty weight	2,396 lbs (1,087 kg)
Useful load	1,204 lbs (546 kg)
Fuel capacity (useable)	102 gals (386 litres)
Performance:	
Max speed	175 kt
Cruise	166 kt
Range (long range power settings, 45 mins reserve)	859 nm
Stall speed (40 degree flap)	63kt
Service ceiling	15,588 ft (4,752m)
Take-off distance (50 ft)	1,520 ft (463 m)
Ground roll	1,200 ft (366 m)
Landing distance (50 ft)	1,520 ft (195 m)
Ground roll	640 ft (195 m)
Powerplant:	
Lycoming I0-540-K1G5	
HP	300
Price:	$ 440,800 (£250,000)
All figures provided by the manufacturer	

Top: Layout of controls and equipment is comfortable and impressive, as is quality
Above: four seats in club arrangement are accessed through wide double doors
Right: Satagoga has a version of the Warrior's semi-tapered wing

'heavy' Warrior.

The Avidyne displays, as I found with the Lancair Columbia earlier this year, are excellent. They are so clear that I could manage without my reading glasses and there is so much information (including other traffic) that your 'situation awareness' is kept up to speed at all times. With two Garmin 430 Comm/Nav/GS/GPS sets, navigation is a piece of cake. David demonstrated the 'lean assist' function of the E-Max Engine indicating system on the MFD that enables the pilot to safely set the mixture for maximum economy. We also tested the autopilot, with its associated flight director bars and integrated altitude pre-selector on the PFD; it is like operating a mini B777. I used the autopilot to guide the Saratoga back to Elstree and flew the approach manually. The aircraft is very stable on approach and has no vices in the landing phase, very useful if you're operating in poor conditions. With such a good autopilot and navigation set up, along with the Saratoga's stability, IFR operations are no problem, a much needed attribute in our fickle climate.

I asked David what options he had ordered for his aircraft apart from the Avidyne system that was an option at that time. David explained that he had to take up the King ADF and DME options to comply with JAR. He also ordered a WX-500 Stormscope – a wise choice, I feel, having recently used similar on a night flight from Edinburgh to Guernsey with Cb activity along the route. One option he would have liked to have had (not available at the time) was PIIP (Piper Inadvertent Icing Protection). This system, designed in Britain by Tecalimet, Kilfrost and Sheepridge Stokes and often referred to as 'Weeping Wing', uses a highly dense glycol-based fluid that seeps out of tiny (laser drilled) holes in the wing leading edge. The fluid flows across the wings, tail plane and propeller controlled by two settings – either normal flow (anti-ice) or max flow (de-ice). As the name suggests, the system is not approved for flights into known icing conditions even though it is meant to be far more effective than de-icing boots. The penalty of carrying an extra 35kgs of equipment and fluid, giving either two hours at normal flow or one hour at max flow, could be a problem when going for range with a full load.

With PIIP or not, the Saratoga II is most certainly a fine aircraft that has evolved from a basic design that has been a proven success over many years. Now with its modern interior and equipment upgrade, the best six cylinder SEP around just got better. David has definitely ended up with six of the best seats and cylinders around today. I am sure he will have many years of safe and reliable flying from his purchase. ■