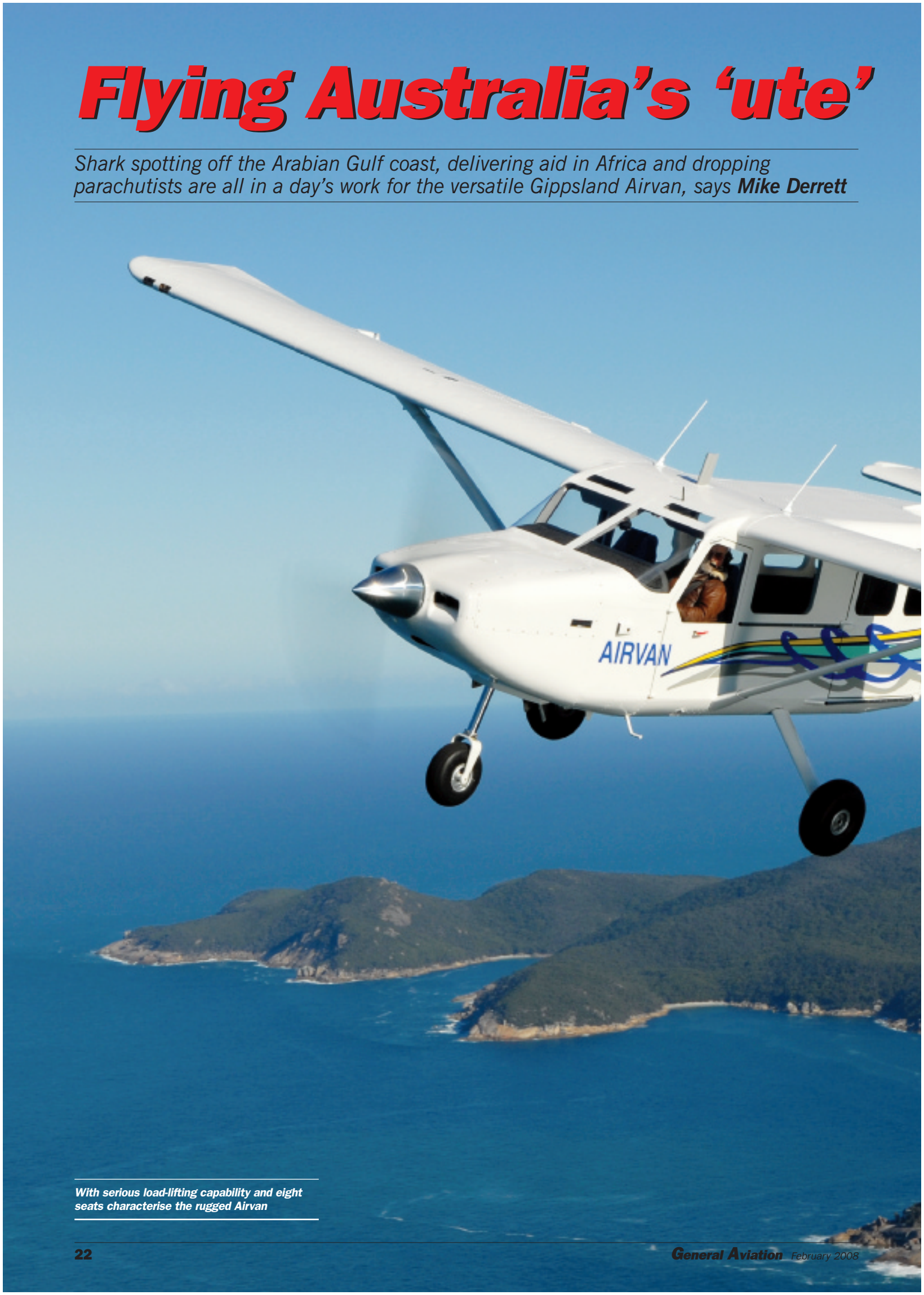
Flying Australia's 'ute'

Shark spotting off the Arabian Gulf coast, delivering aid in Africa and dropping parachutists are all in a day's work for the versatile Gippsland Airvan, says ***Mike Derrett***



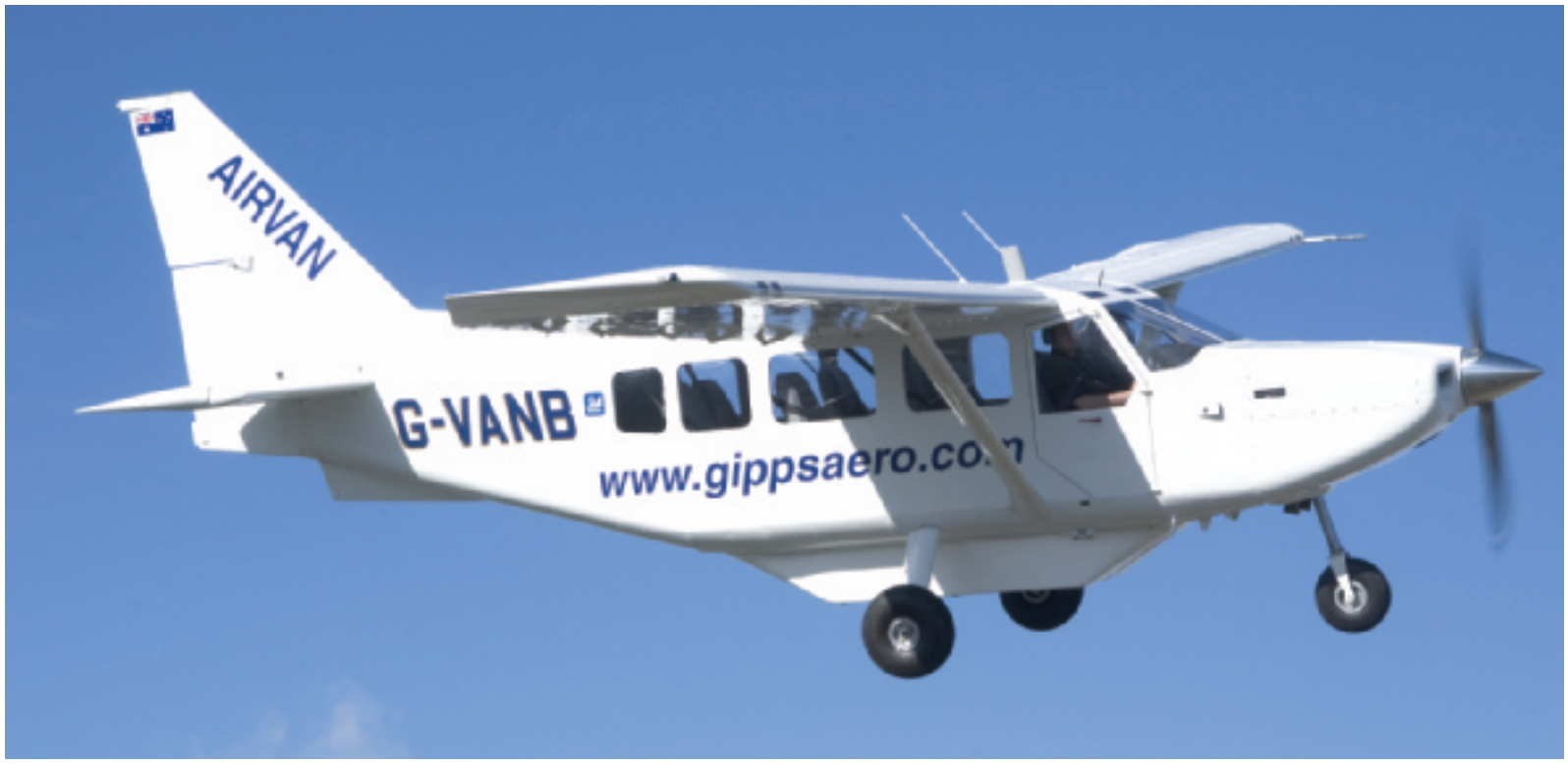
With serious load-lifting capability and eight seats characterise the rugged Airvan

At first glance the Airvan – correct title the Gippsland Aeronautics GA8 – seems tailor made as a bush aeroplane, more like a mud spattered basic Australian 'ute' than a sleek touring machine. It nevertheless has a lot of features that are attractive to the private owner, group or club looking for a reliable low-cost aircraft, especially if they are looking for load-carrying capacity and eight seats. The aeroplane may look conventional and dated, but the Airvan really scores on handling qualities, reliability and low operating costs. Its no-nonsense rugged styling also has a certain 'macho' appeal and it's a serious Aussie workhorse with the capacity to haul, on just 300 horsepower, a full load of eight people with 80 kilos of baggage for 230 nm at 120 knots with reserve fuel. Max range is 590 nm with six people and reserves.

My first opportunity to fly the Airvan was in the United Arab Emirates where Airvan A6 -VAN is in use with the Umm Al-Quwain Aero Club for a multitude of roles including parachute dropping and sightseeing flights. The aircraft is also available for hire at competitive rates. Umm Al-Quwain is one of the seven Emirates of the UAE and is situated on the Arabian Gulf coast some 40 nm north east of Dubai. The airfield presents a pleasant contrast to the busy international airports of the rapidly growing Gulf States. For visitors from the UK it's more like a typical UK club airfield, except that its 1,800 metre tarmac runway is surrounded by desert, not grass. Set up by His Highness Sheikh Mohammed Bin Rashid Al Mulla, son of the Umm Al-Quwain ruler and a passionate aviator, the airfield is one of the main centres of general aviation in the Emirates, with a resident skydive centre and flying school which operates a Cessna 172 and 182 and a Piper PA34 Seneca as well as the Airvan. Chief Flying Instructor at the time of my visit was long time friend Captain Khalid Butt, a 10,000-hour veteran Gulf instructor. Capt Butt hails from Pakistan and has been teaching flying in the in the UAE for 15 years, and was going to check me out on the Airvan.

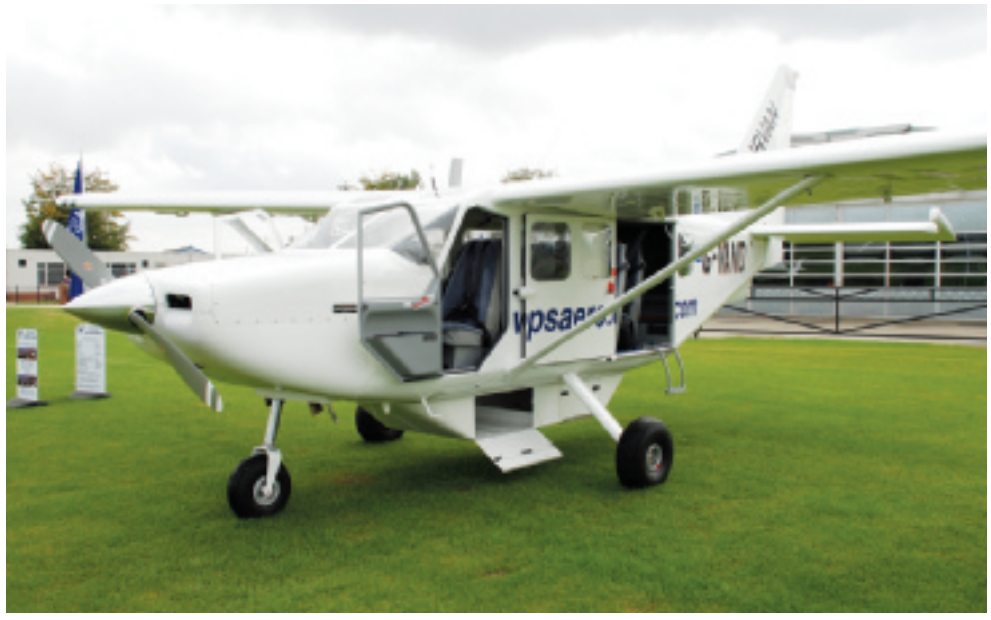
So how would the average PPL with a few hundred hours in his log book cope with the Airvan? First impressions are somewhat intimidating for someone like myself, more used to instructing in Tiger Moths and Cessna 172s and 182s. In comparison this is a big aircraft. You climb up to the pilots seats, accessed via very convenient doors, hand-holds and steps on each side of the aircraft, and once installed in the office you feel more like you're on a flight deck than in a small aircraft cockpit. The Airvan is set up for single pilot operation and it's immediately obvious that a lot of thought has gone into the layout. The KISS methodology – keep it simple, stupid – is obvious right through the aircraft. A good example is the single fuel shut-off valve mounted on the instrument panel. It's the pilot's sole fuel control. The twin wing-mounted tanks supply by gravity a central sump tank with a valve system to provide automatic balancing of the fuel flow, with final delivery to the engine via an electric boost pump and an engine-driven mechanical pump. As well as the usual fuel tank gauges there are optical fuel sensors in the fuel lines from the wing tanks and in the sump tank, with lights to warn of very low fuel levels. A digital fuel flow computer is also fitted, showing rate of flow, fuel used and fuel remaining. Once you're seated, the big aircraft feel is enhanced by the overhead systems panel which houses most of the electrical switches and circuit breakers, with two separated electrical bus systems for reliability and redundancy.

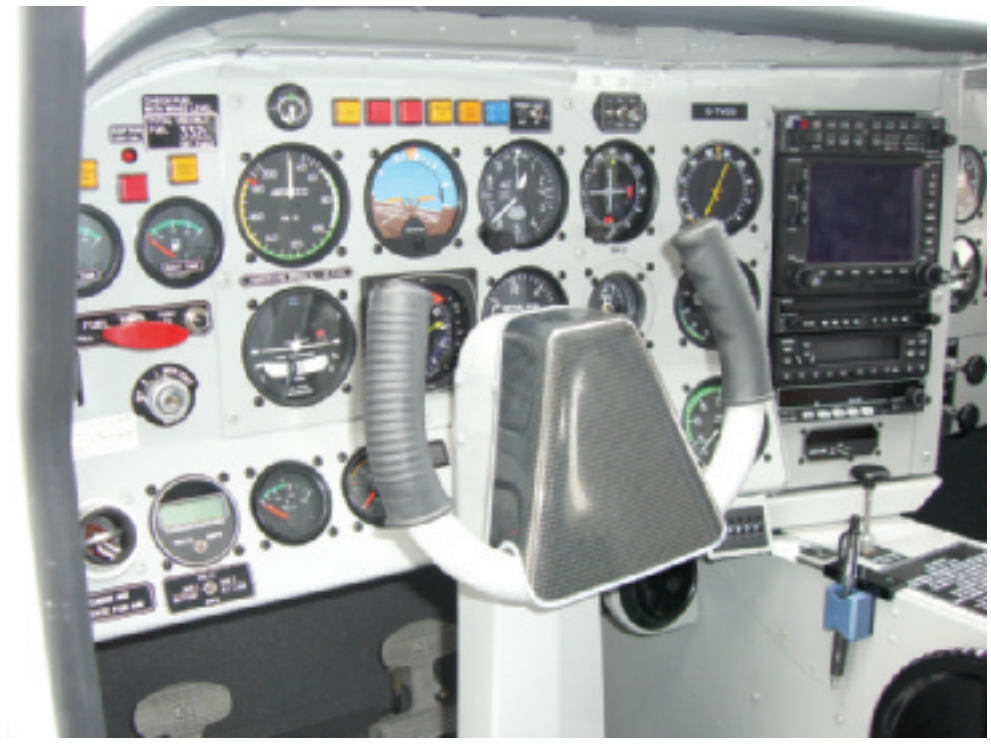
Starting the fuel-injected six cylinder Lycoming IO-540-K1A5 six-cylinder 300 hp engine is conventional and the throttle, mixture and propeller controls come naturally to hand on the centre console. The floor-mounted hinged control column also works well, allowing for a clearer instrument panel – it has maintenance and reliability benefits, too. Initially during taxi the steering, via a fixed linkage from the rudder pedals to the nose wheel, felt heavy, but once on the move it proved to be quite manageable. During the backtrack of Umm Al-Quwain's long, narrow strip, with a sporting 12/15 knot gusting



crosswind steering proved very positive and it was easy to control any swing. Despite the crosswind Captain Khalid insisted I did the take off. The combination of a heavier aircraft with a large fin and rudder, powerful ailerons and positive nosewheel steering ensured the aircraft tracked the centre line and my first take-off in challenging conditions seemed a non-event. With only two persons on board and half fuel, take-off took no more than 300 metres even though I held the aircraft on the runway in deference to the gusty conditions. Rate of climb was over 1,000' per minute at 80 kts – book performance is 788' per min at maximum all up weight of 1,814 kg.

Levelling off at 1,000 feet under the 1,300-foot cloud base and with hazy forward visibility in a developing sandstorm – not unusual in the Gulf in January – we departed the circuit for some general handling. I soon found that this aircraft is really easy to fly despite the turbulent conditions, and for a high-wing aircraft visibility is really excellent, with the pilot's position ahead of the wing's leading edge. The weather conditions ruled out stalling and upper air work, so Capt Khalid gave me a heading for a short transit to the mouth of Umm Al-Quwain Creek, where we did a little shark-spotting. Peering out of the pilot's side window of the Airvan showed up another interesting feature of the aircraft. The side windows for the pilots and passengers are all curved outboard by some 50 cm, considerably aiding the view of the ground – a useful feature for an aircraft targeting the tourism market. We flew back into the circuit for two landings which showed once again how well-behaved the Airvan is, the powerful ailerons and rudder giving good control in the crosswind. I made wing-down approaches, and the touchdown was cushioned by the large balloon 8.50 x 6 tyres. Target approach speed at our weight was 70kts. The landings reminded me of flying the Cessna 182 and anyone current in the high wing Cessna range





Top: the high wings afford excellent visibility for pilot and sight-seeing passengers
Above right: wide doors and steps make for ease of access, front and rear
Right: the Airvan 'feels more like a flight deck than a small aircraft cockpit'

should have no problems landing the Airvan.

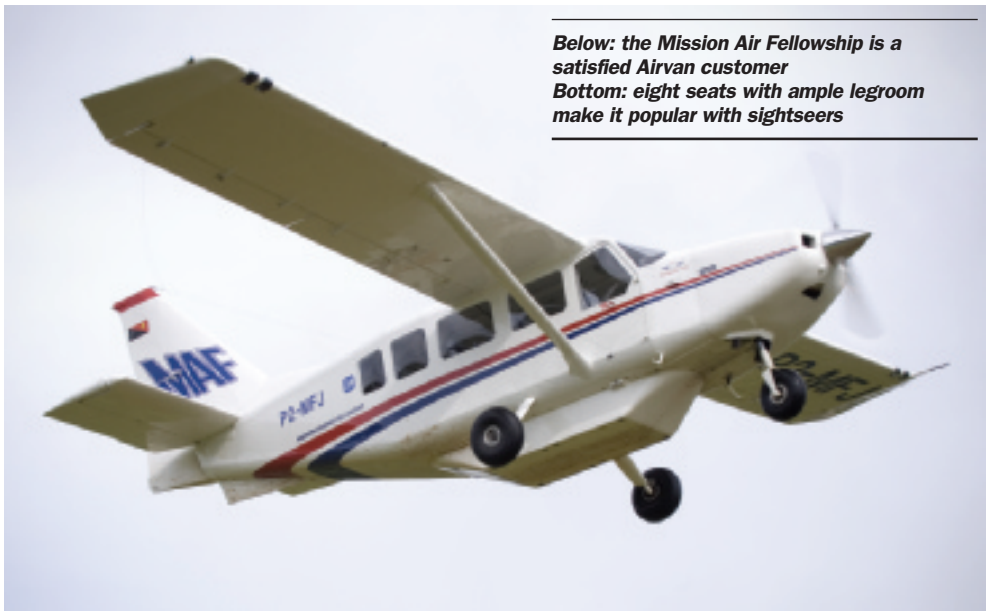
I was able to explore the slow speed and stalling characteristics of the Airvan when Neil Plumb, the Gippsland European representative, made available demonstrator aircraft G-VAND during the Missionary Aviation Fellowship (MAF) supporters' day at Northampton in September. MAF is one of the largest operators of the Airvan world-wide with eleven aircraft operating in Northern Australia, Papua New Guinea, East Timor and Indonesia.

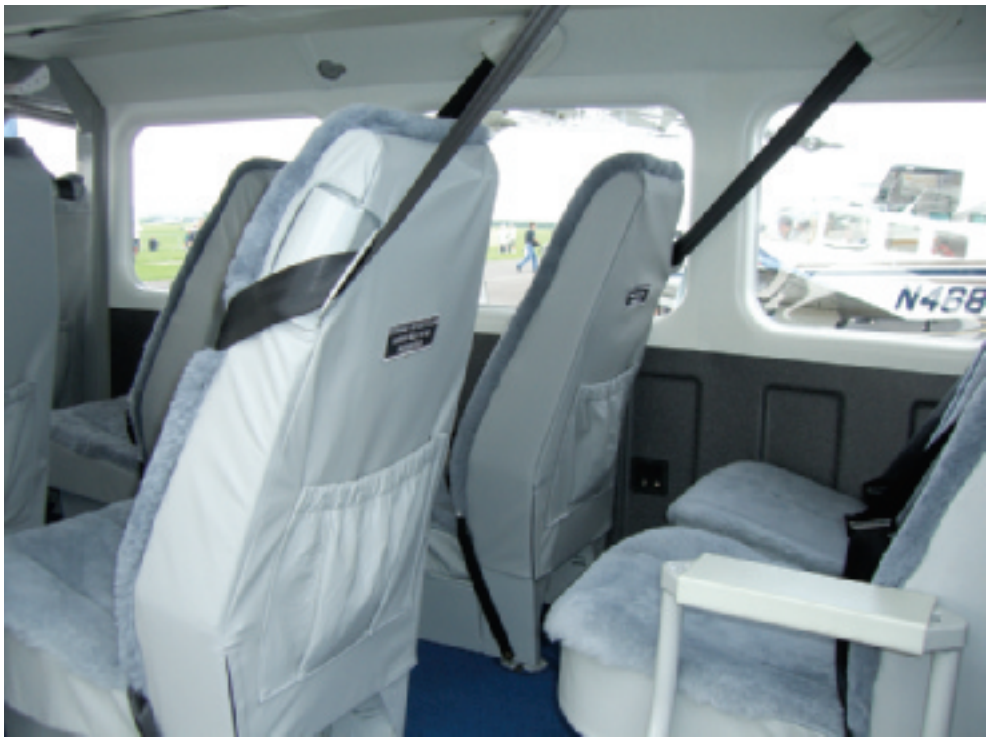
G-VAND was straight out of the box, having arrived in a shipping container from the Australian factory a few days before. Neil, a licensed engineer and commercial pilot assembled and rigged the aircraft, which had already been test flown in Australia. Its first UK flight was the short positioning flight from Cranfield to Northampton. With two of us on board and fuel nearly full at 290 litres, Neil demonstrated a short field take off from grass runway 23. The Airvan took less than 300 metres to get airborne and climbed at over 1,200 ft per minute at a best angle of climb speed of just over 60 kts. Once away from the ATZ we climbed to check out the slow flight and stalling characteristics, and the Airvan proved to have no unpleasant surprises in this department. Even when provoked in a full power stall with full aileron the aircraft would not drop a wing or show the slightest sign of bad behaviour. Landing back at Northampton, Neil emphasised the need for accurate speed control on the approach as the aircraft, with its highly efficient wing, will float considerably. In our case a target speed of 70 kts used just 400 metres of the available grass.

First operator of the Airvan in the UK in a commercial passenger role is Duxford-based Classic Wings, who placed an Airvan on their AOC in 2006. According to senior pilot Barry Hughes: "We operated the aircraft for twenty hours flying passenger trips and found the Airvan to be a reliable aircraft. The cockpit layout and the well-thought-out systems are a boon for the single pilot operating lots of short duration flights. From the passengers' point of view the spacious cabin with a central isle and the curved windows offer a pleasant experience, and with the ability to take seven passengers the economics of operating the aircraft are excellent. The Airvan is safe and vice-free to handle, and in my opinion most private pilots used to high wing Cessna's would be able to operate the aircraft providing they appreciate the handling differences between the aircraft lightly and fully loaded."

Keeping maintenance simple was a key objective in the design of the Airvan. There are lots of practical features to keep purchase and operating costs down. Obvious examples are manual flaps, a sturdy fixed main wheel undercarriage and a simple coil spring oil damped nose gear that does not need a shimmy damper, with no oleo leg to go flat on a remote airstrip. To cope with hot climates, twin engine oil coolers are fitted. But under the skin of this aircraft there are other less obvious features, for example, flat battery - no real problem as the 12 volt electrical system, rather than the usual 24 volt, can be jump started by any car battery and the ground power socket is right below the pilot's door so it can be withdrawn without exiting the aircraft. The complete engine cowling assembly comes off quickly to give access from the firewall forward. In the cockpit the six main flying instruments are mounted in a centre panel which, together with the electronics stack, can be removed completely for easy access and bench testing. Another benefit of the floor-mounted hinged control column is that the flying control mechanism and wires are separated from the electrical wires and pressure instrument pipes behind the panel, often a cause of snagging and long term abrasion problems in light aircraft. To access the rear fuselage for checks there is a man-sized hatch in the floor of the fuselage. All these points and more help drive down the maintenance and operating costs for the operator.

As befits an aircraft designed to be operated





Below: the Mission Air Fellowship is a satisfied Airvan customer
Bottom: eight seats with ample legroom make it popular with sightseers

Gippsland Aeronautics GA-8 Airvan	
Speeds at mauw of 1,814 kg:	
Normal cruise:	120 kts
Stalling speed clean:	60 kts
Stalling speed full flap:	52 kts
Aproach speed:	71 kts
VNE:	185 kts
Range mauw with 8 people, 80 kg baggage and reserve fuel:	230nm
Weights and fuel:	
Max take off weight:	1,814 kg
Empty weight:	998 kg
Payload with max fuel:	571 kg
Max useable fuel:	332 litres
Dimensions:	
Wing span:	12.28 metres.
Length:	8.95 metres
Height:	3.89 metres
Cabin:	
Seats:	8 inc pilot
Cabin length:	4 metres
Cabin width:	1.27 metres
Cabin height:	1.19 metres
Rear baggage compartment:	0.93 cu metres
Under-floor cargo pod:	0.51 cu metres
Engine and propeller:	
300 hp Lycoming IO-540-KIA5 six cylinderpiston engine with two blade Harzell constant-speed propeller.	
All figures provided by the manufacturer	

CFI Captain Khalid Butt lends scale to Umm Al-Quwain Aero Club's Airvan

in some of the most inhospitable areas of the world, safety has been well taken care of. Designed to the latest Federal Aviation Regulations (FAR) 23 the structure meets very high standards of crash survivability. In particular the passenger seats have to survive loads of 21G horizontally and 18G vertically, and pilot's seats more. Pilot's seats have a full four point harness, while each passenger seat has a lap and diagonal harness. The battery box is positioned under the pilot's seat, with the main circuit breakers located under a lift-up panel next to it. This allows the whole electrical system to be isolated by the pilot close to the battery, considerably reducing the risk of an electrical fire in case of a malfunction or a crash landing.

Looking at the performance figures of the Airvan against its competitors, the Cessna 206 and the Cherokee Six, all three have the same 300 hp engine power but the Airvan out-performs them in terms of useful load and cabin size. The Airvan cabin is so big it gives everyone an individual window seat accessed from a central aisle. It has good luggage space on the fuselage floor at the aft end of the cabin, with a maximum load of 118 kg, and aft of this there is a luggage bin in the rear fuselage that can take long items. Maximum load here is 22kg. A useful option to the standard Airvan specification is the luggage pod which is fixed under the fuselage with side and rear opening doors – ideal for those golfing weekends around France.

So how does the Airvan rate as a private aircraft? Sleek and stylish the Airvan is not, but practical it certainly is. Although Aussies would liken it to a 'ute', the ubiquitous pickup truck that's so popular Down Under, in the UK we would think it the Land Rover of the private aircraft world. It fits neatly into a slot between the Cessna 206/Cherokee Six and the much bigger and costlier Cessna Caravan, and no other aircraft of 300hp can rival its cabin size and seating options. The outstanding impression of the Airvan is that it won't get you into trouble; in the air it won't give a low-time pilot many surprises and on the ground it must be one of the most cost effective new aircraft to maintain and operate. With a price tag in the UK of £265,000 plus VAT the Airvan should be well up the wish list for a private owner, group or club looking for a safe and reliable eight seat touring aircraft. ■