

A bigger bird



photo – Jabiru Aircraft

The Jabiru J430

In aviation circles, Bundaberg was best known as the home of the great solo aviator, Bert Hinkler. But for 20 years the Jabiru aircraft company has been putting Bundaberg again firmly on the map and today is carving another niche in aviation history with the popular J230/430 range.

The first Jabiru took flight in 1991 as part of founder Rodney Stiff's vision to develop and promote affordable flying. From the humble lone J160 prototype, the company has gone on to become one of the stalwarts of what has become the Light Sports Aircraft (LSA) category. Today over 1600 flying airframes and 6500 engines spread over 30 countries bear the Jabiru name.

Supplying the factory built and kit market with RA-Aus or VH registered aircraft, Jabiru has continued to refine and grow its product line. The big brothers of the fleet are the factory built two-seat J230 and its four-seat kit variant, the J430. These two larger Jabirus are built to the same specifications, with the exception of seating and certified MTOW. As the LSA category has

a limitation of two seats, the four-seat J430 is offered in kit form for operation in the experimental category. In support of this, Jabiru offers a program that allows owners to build their J430 kits onsite under the watchful eyes of experienced Jabiru staff. The result is a quality aircraft, built in quick time and complying with the regulatory requirement that the builder must be able to demonstrate at least 51 per cent fabrication and installation of the components of the aircraft.

Today, the J230/430 are the fastest selling members of the Jabiru bloodline as customers seek a little more space and performance from this ever popular type. Given the professional approach of the Bundaberg based company, this trend looks set to continue.

ON THE NUMBERS

While the origins of the Jabiru 430 can be tracked directly back to the first Jabiru LSA 55/2K, the family has evolved substantially through its smaller members, the J120, -160 and -170. Though sharing similar lines to the smaller models, the J430 immediately catches the eye by its longer fuselage, additional mid window and rear

entry door on the port side. Substantial winglets are prominent and offer additional aileron authority approaching the stall.

The aircraft is manufactured using fibre reinforced plastic (FRP), which is much of the reason for the empty weight of 360kg – quite impressive considering the empty weight of a Piper Warrior is nearly 300kg heavier. This permits quite an effective uplift within the MTOW limits of up to 600kg for the factory built J230 or 700kg for the J430 kit.

Putting the power in the performance is a Jabiru six cylinder 3300A engine, named for its capacity of 3300cc. It produces an output of 120hp (90kW) while burning 20-25 litres per hour of avgas to cruise at up to 120kt. Jabiru is one of the few manufacturers left which produces both airframes and engines and you can find its powerplants under the cowlings of a wide variety of aeroplanes around the world. The Jabiru 3300 engine is not merely a 'best fit'; the aircraft was actually designed around it.

The advertised maximum fuel capacity of 135 litres is shared between two wing tanks. However, there is also a five litre 'header tank' under the rear bulkhead in the J230 and under the rear seat for the J430. With full tanks, the J430 offers a range in

the vicinity of 700nm at best range speed, although with four people on board the fuel load will need to be reduced.

POWERS OF DECEPTION

Like its stablemates, you really have to try the J430 on to see how it fits, as looks are deceiving. As you approach it, the sleek lines conceal the space within the cabin to some degree and not until you are seated and strapped in can you appreciate the cabin height and width. The comfort factor is far greater than many traditional trainer/tourers, and when compounded with the large windscreen and low-cut side windows, offers a definitely airy feel.

Behind its two seats the J230 offers a large floor space, which is occupied by the additional two seats in the J430. The rear cabin is accessed by a door on the port side which is secured in the same manner as the front doors with a latch and additional pin on the upper window frame for added security. Behind the rear seat lies a small luggage compartment and another little secret. Instead of a rigid bulkhead, the aft fuselage is concealed by a detachable soft panel, allowing storage of long, light items such as fishing rods or skis. This long narrow section of the fuselage is not filled with control cables and bell cranks that would normally be fouled by such a load.

Access to the front seats is simple by backing up to the door sill, sitting down and then bringing the legs up into the cockpit. The seats are fixed – in fact they are integral to the aeroplane's structure – and the seating position is modified by adjustable rudder pedals and tailored seat cushions if a little further elevation is needed.

Once in position, the pilot could be faced with one of a variety of potential instrument panel layouts, in this case an impressive EFIS display. Such technology is becoming par for the course in the rapidly evolving world of general aviation avionics. The compact communications radios are made by Microair, another Bundaberg aviation enterprise. The lower panel features a variety of toggle switches with a clever little guard between the two magneto switches to reduce the likelihood of an inadvertent selection to 'OFF'.

Between the seats is a central contoured armrest which is essential as the 'U-shaped' control column lies just ahead. This control column is reminiscent of the Victa Air-tourer's central 'stirrup' and permits easy operation of the aircraft from either front seat, increasing its appeal in the training environment. Also centrally situated ahead of the control column are the brake lever and dual trim levers which control the spring balanced system. On the pilot's side of the pedestal is a guarded fuel selector,



EXTENSION Behind the front seats, the two-seat J230 offers a large floor space, which is occupied by an additional two seats in the J430 (pictured). (Jabiru Aircraft)

while the quantity gauge is located just above the door frame.

Owners of early model Jabirus will note some divergence from the earlier designs. Aside from the control column and dual trim levers, the J430 and J230 have shed some of other 'Jabirisms' in favour of a more conventional modern cockpit layout. The throttle is no longer situated between the pilot's legs and is mounted outboard on either side of the flight panel, although there is no variable friction control. Ceiling-mounted flap levers have been replaced by electric flaps, which are actuated by a central ergonomically designed switch. Overall, the changes not only make the aircraft more attractive as a trainer, but offer more familiarity for a new owner converting from another type.

TAKING FLIGHT

Our airtest is of a VH-registered J430, with Jabiru's highly experienced test pilot Jamie Cook in the other seat. Jamie has

flown the Jabiru range his entire adult life, and he owns an immaculate J430 tucked in the hangar, so it's fair to say he knows his way around the aircraft.

Starting the Jabiru 3300 engine is straightforward. Magnetos and master switch on, choke out if it's a cold start, and then push the starter button for the engine to burst into life. It is worth noting that there is no accelerator pump associated with the throttle, so attempting to pump the throttle or leaving it cracked for start will have no effect.

The lightness of the airframe is evident as the aircraft commences taxiing with minimal coaxing. In the absence of toe brakes, the hand brake lever sits on the central pedestal ahead of the U-shaped control column, which permits easy use by cradling the forearm in the padded 'U' section. The nose gear provides adequate clearance for the Australian-made wooden propeller.

After the pre-takeoff sequences and with half flap selected, the aircraft is lined up for departure. Advancing the throttle the aircraft accelerates rapidly, lifting the nose-

REAR CABIN The rear cabin is accessed by a door on the port side which is secured in the same manner as the front doors with a latch and additional pin on the upper window frame for added security. (Owen Zupp)





WEIGHTY ISSUES The Jabiru is manufactured using fibre reinforced plastic – much of the reason for its empty weight of 360kg. (Jabiru Aircraft)

wheel off at around 40kt and becoming airborne at 55kt in less than 200m. Placing both feet on the floor on climb out the balance ball deflects its own width out of its central position. The rudder required on climb is notable, but by no means excessive. The longer fuselage and resulting moment arm for the rudder gives the J430 a much greater degree of directional stability compared to the very early model kit Jabiru I had previously flown.

With two onboard we establish a comfortable climb speed of 80kt and nudge a 1000ft/min rate of climb. We are quickly levelled out at 3000ft and throttle back to 2850 rpm which gives an indicated air-speed of 120kt. For Lycoming and Continental pilots, the higher rpm regimes, standard for the Jabiru engine, don't take too long to get used to.

We set off along the coast and establish ourselves over Mon Repos Beach, the

historic site of Bert Hinkler's first glider flights. The immediate impression of the J430 is its level of stability for a light aircraft. Forty-five degree steep turns are easily managed and can even be comfortably entered with balanced use of rudder and trim alone. Once established, the aircraft will maintain the turn, even with your feet on the floor!

Despite an impressive cruise speed of up to 120kt, the J430 is even more at home in the slow speed envelope. Its stall characteristics are seemingly viceless in both clean (45kt) and approach (40kt) configurations. A very subtle buffet commences about 8kt before the stall and there was no noticeable wing drop tendency. The aircraft just sat there in the stalled condition and was easily recovered by relaxing the back pressure and introducing power.

With the power off, the aircraft glides at 70kt with an indicated rate of descent of

350-400ft/min, which is reassuring should the engine quit after takeoff. Increasing the speed to 75kt, the aircraft was then side-slipped and the resulting rate of descent peaked at 1200ft/min. In all phases of flight, control authority was sound and more than ample to get the aircraft back on track.

Returning to the circuit, the J430 joined downwind at 120kt, so planning for folks converting from Cessnas and Pipers to the Jabiru is essential. Like so many 'lighter' recreational aircraft, they need to be managed around the base leg. Simply retarding the throttle will not slow the aircraft down if the attitude is not maintained. If the nose is allowed to drop, the flap extension speed of 80kt will be a long time coming. However, management of attitude, power and drag on base in a correct fashion will see the J430 nicely positioned at 75kt with half flap. On final with full flap and 70kt, the aircraft will fly a very stable approach.

The flare is straightforward, though the clean 9.5m 'wingleted' span will want to keep the aircraft flying if any excess speed is carried or the flare is initiated too early. The wide track tricycle undercarriage allows a comfortable touchdown and raising the flap to half stage permits a touch and go after a very brief ground roll of around 180m. For pilots familiar with aircraft possessing a central throttle, some forethought to the management of the touch and go is worthwhile as the flap lever is not proximal to the Jabiru's outboard throttle.

The large windscreen and low set side windows afford good visibility in the circuit and generous peripheral outlook in the flare. With good climb performance and a downwind speed of up to 120kt, there is potential to get real value for your dollar when circuit training. Overall, value is a prime feature of the Jabiru fleet.

COCKPIT The 430's EFIS cockpit. (Owen Zupp)





SPEEDSTER Despite an impressive cruise speed of up to 120kt, the J430 is even more at home in the slow speed envelope. (Jabiru Aircraft)

QUALITY CONTROL

The Jabiru company was a pioneer of the LSA scene in Australia. As such, it has endured the rigorous processes of certification time and again. Before the option existed for RA-Aus, full VH certification standards were required and the quality control processes were put in place accordingly. It is a procedure that Jabiru still follows today, regardless of the category the aircraft is designed for. RA-Aus or VH, the Jabiru production line maintains full VH certification and audit processes on all of its aircraft.

This quality control permeates the Bundaberg operation where highly skilled staff busily ready a steady stream of aircraft in the quoted 430 hours of building time. Additionally there is a research and de-

velopment area where Jabiru is constantly assessing how to improve its aircraft.

The J230/430 range is currently the most popular of the Jabiru line, increasingly bought by 'Grey Nomad' retirees setting out to see Australia the long way round. Gauging by the number of interested parties seeking demonstration flights on the day of my visit, it would seem that the J430's popularity is set to continue to grow.

Rodney Stiff's vision was to make flying affordable and the Jabiru range has undoubtedly done that on a global basis. The J430 provides the next step on this journey with the ability to fly farther, faster, and offers the pleasures of affordable flying to more passengers through the company's first four-seat cabin aircraft. The Jabiru is certainly continuing to spread its wings. ■

PLENTY OF ROOM There is space aplenty in the rear of the two-seat J230. (Jabiru Aircraft)



JABIRU J230/430

Technical specifications

Powerplant

One Jabiru 3300 six cylinder four stroke developing 120hp (90kW)

Performance

(Manufacturer's quoted)

Stall speed full flap 40kt

Stall speed clean 45kt

Max cruising speed 120kt

Vne 140kt

Rate of climb at SL 700ft/min

Max range 740nm (no reserves)

Endurance > 7 hours

Fuel capacity 135 litres

Weights

Empty 360kg

MTOW 600kg factory built;

700kg kit built

Dimensions

Wing span 9.58m

Length of fuselage 6.55m

Wing area 9.49m²

Manufacturer

www.jabiru.net.au

Price

J230 \$94,450 (RA-Aus) fly-away

J230 \$96,450 (VH) fly-away

J430 kit \$69,790