4 years of Jabiru ownership – by Julian Harris

Well it all started when I wanted to buy a three axis microlight which got me places. Places which were hitherto innaccessible to my previous Xair, particularly when there was a head wind. A strong headwind could easily cut down the cruise speed of the Xair to 20kts over the ground! I looked at one or two others, before finding that not only was the Jabiru kit cheaper, but it offered a higher cruising speed than its peers at the time. I originally looked at the Ikarus C42, but to me a bit on the slow side and underneath not that far removed from the Xair. A couple of calls to ST Aviation and my aircraft was on the next container leaving Aussie in the next few days. Six weeks later I was unloading the kit in my garage, marvelling at all the individual components blister packed onto cards for ease of identification. Six weeks after that, I was loading the nearly completed aircraft onto a trailer for finishing and painting. My profession is project management, and looking at the kit I realised that by far the biggest job was doing the fuselage join. This, together with fitting the horizontal and vertical stabilisers, had to be completed in a single day, due to the fact that the fibreglass resin is only useable for 8 hours or so. I then broke the job down into bite sized chunks of a day each. Most of the rest of the work was smaller and easier and I therefore developed a programme to identify what work was required to be completed in a given day. My plan was to build an aircraft which was safe and flew well, but possibly was not aesthetically perfect, with perhaps not quite pin sharp join lines on the cowl. Now, over 600 hours later, I don't fully regret that strategy, although sometimes I wish I had spent another day on fitting the cowls slightly neater!

The build was fairly straightforward, however some parts could have fitted better and the build manual was a photocopy which made it impossible to build in some areas where the only guidance was a colour photograph! On the whole, it was a good complete kit, and generally things went together well.

The main build took me six weeks, and that was despite the fact that I was working a full time job. In that time, I did take a week off work, worked most evenings and weekends, and carried out a lot of logistics and procurement whilst doing my day job! The latter is quite time consuming, particularly if, like me, you change all the instruments from the standard fitment, and want to customise your Jabiru slightly.

I was somewhat intimidated by the fibreglass work, but after a couple of mixes, realised that the fibreglassing was not more difficult or involved than wallpapering! You had to get the proportions of resin and hardener right, but a cheap digital weighing scales made that part easy and accurate. There's not an extensive amount of fibreglass work to do, and most is carried out on the join day. I understand now that the fuselage on new kits comes ready joined.

Colin Lamb, an automotive painter from Sussex, agreed to do all the filling, rubbing down, pinholing and painting which was fine by me because these are items of work which I do not particularly enjoy or am good at. He has the necessary skills, ovens, equipment and know how and I was happy for him to get on with it. A few weeks later the completed aircraft arrived at Rochester airport, for wing installation and final completion.

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With paperwork completed and permit in hand, the test flight was uneventful, with the exception of a prop which was too fine and a slight bias to the right. Jim Stevens, who tested the aircraft, said that because the wings are formed in the factory, you don't get variations in lift which you might do with other kit aircraft. On certain other kits you actually build the wings, and therefore can achieve slight differences in shape giving asymmetric lift.

Once adjustments made, the wheels didn't touch the ground!

I ended up doing countless circuits, because being a light aircraft with long wings, landings can be a runway consuming affair at first, until I eventually discovered that I was coming in about 5kts too fast. The normal approach speed is 55kts, but on calm days, this can be reduced to 50kt, or even a wee bit less. At these speeds, the aircraft loses its desire to float on and settles nicely on the runway. The elevator provides powerful control right up to the stall giving plenty of flare control. The other useful feature is because the delivery of power is so linear and so instant, you can give the engine a few revs more to counter a spot of rotor, or to fly along and land on the far end of the runway (well flying is more fun than taxiing!).

Because of the long wings, to a non Jabiru-ite, there is always this curious juggling of the joystick just at the point of touchdown in order to counter slight variances in the breeze or ground. Such juggling normally results in a greaser landing, with the tyres skimming through the grass.

After the X'air, it had seemed that the tables were finally turned; After being caught up by circuit traffic at Rochester, I was now catching up with the GA traffic! It was quite something to be able to overhaul a C172 when it was flying cross country in an airacaft which cost me less than £25k and which I had built in my garage! It also seemed (and still seems) amazing that I can cross the Channel in 12 minutes in comfort in such as craft. When I first flew the Jab, I felt that when I was slowing down in the circuit it felt was going to fall out of the sky. This is a function of the wide speed variance being afforded by the aircraft, and the slippery shape. I was quite on edge until I went out over the Isle of Grain and did a lot of slow flying practice to convince myself that it was certainly not going to fall out of the sky! In fact the stall doesn't really happen. You pull back on the stick, it nods its head and then unstalls itself! Even in the stall you're only going down at 400fpm.

Once the landings were mastered, the trips multiplied. I started to really enjoy the low fuel consumption, low noise levels and comfort afforded by the Jabiru. No more raging hurricanes through the cockpit! The original propeller was a Kremen, and at some point Jabiru had re-worked their original engine to improve the cooling and also provide a full compliment of horses. The original engines did not seem to quite have the legs of a full 80 horses and so Jabiru fitted a larger carburettor and new heads.
The latest engines now have hydraulic tappets which removes the periodic valve adjustment required on earlier models.

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This change meant that propellers which originally worked on the engines were too fine. It took Kremen a full 4 months to make and spend me a coarser prop and the difference was amazing, with a full 10 knots on the cruise. In fact I found that I could reach the vne of 116kts in straight and level flight relatively easily. Because of this, and in part because of bad grace by another manufacturer, I gathered together the necessary equipment and assistance and went out and broke the world speed record for three axis microlights, which stands today.

What also surprised me is what a great touring aeroplane the Jabiru made. It was quiet, safe, swift, reliable, comfortable and easy to fly. At normal speeds, you hardly have to touch the controls at all in the cruise, as it flies as straight as an arrow with no pilot inputs required. Even light turbulence doesn't normally need any control input as the dihedral in the wings self-stabilises the aircraft. The glide ratio means that when I cross the Channel, I can climb to 5000 feet and if the donkey stops, I don't get my feet wet! Other types I've flown, it seems that as soon as you back off the throttle, you're going down fast!

In smooth air, and when trimmed out and hands off, you can make the aircraft climb slightly just by moving your feet back. The slight change in the centre of gravity is all that is needed to make it climb. On a longer journey, you become grateful to have the carb heat knob to pull out from time to time!

Folks are amazed by the tardis-like comfort offered by the Jab; It was originally designed around 2 large Aussies sitting side by side on chairs with a decent gap between them. Sitting recently in an RV-7 I'd say width wise the Jabiru is the same. Composite materials are such that the rest of the aircraft could be moulded around this cocoon whilst taking up minimal space. Most of my passengers find the shape and positioning of the seats, the armrests built into the doors and the width of the seats incredibly comfortable.

Fuel consumption stays relatively stable at 14lph at 95-100kt cruise speed, although this can be reduced to 10lph if you fly slower. This is possible, although it takes more concentration to fly slower in the nose up consiguration. Typically in the cold days of winter, I can get an easy 100kt cruise speed at 2800RPM and this reduces to about 95kt during the summer.

Reliability has been very good. In the nearly 600 hours the engine has run, the only major failure has been the starter motor. Other than that, it has been like an aerial car. Just push the yellow button and it goes, even in the coldest winter or hottest summer. When the starter motor failed I was stunned that it didn't go! I dropped it into an auto electrician's workshop and £85 later it was fully refurbished and ready to go. The core of the starter was a Bosch, out of a Ford Mondeo I believe. I have seen friends around me with major engine and airframe problems, but in the Jabiru I just seem to have to wipe it with a damp rag and away it goes! The only main issue I had with the airframe was with the main undercarriage legs which I did not originally bed in with 'flock', a mix of gound cotton and fibreglass resin. The legs came slightly loose a couple of times before I rebedded in the legs and they've been fine since.

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Maintenance is a little involved. From new you have to adjust the tappets during the running in period, and because they are small the brakes and tyres seem to require attention every 25hrs. Initially, my first set of brake pads wore out in 50 hours, but this turned out to be that I had wrongly installed them. A new set of pads was obtained for £20 and since then they seem to last about 200hrs. The spats also get a pounding, unless you profile them to provide better ground clearance. If they are too close to the tyres, or if the tyre is soft, the tyres can bulge on landing and contact the spat, causing the front spat to pop open. By and large, so long as the tyre pressures are regularly checked, no problems should occur. I had to replace the tyres after 400 hours because they had worn out!

One wing suffered some delamination of the foam core from the wing skin, and had to be injected with a resin slurry, but this was repaired within a couple of hours and the issue has not since resurrected itself.

Some models of Jabirus had issues with the undercarriage. The bolts on the main gear were a bit on the small side and if during assembly they were not fully tight or became coil-bound, they could flex and fail under fatigue. These have now been beefed up, as has the nose gear mount. Jabiru had deliberately made the nosegear mounting a weak point so that in the event of an accident the nose gear housing would pop off and preserve the fuselage from damage. The PFA (rightly in my opinion) mandated that the primary function of the aircraft is to protect the occupants, rather than the aircraft, and now if a hard landing or ditch etc catches the nose wheel, the modifications implemented mean that it is much less likely to collapse.

Costs have been minimal. With an oil and filter change costing less than £15 and some maintenance spares available from car spares shops, maintenance is very cheap. Parts are similar prices to car parts, and you can fit them yourselves, with an inspector sign-off. I'm horrified at the costs which friends are forced to pay for repairs and maintenance of C of A aircraft, particularly for engine parts which don't always necessarily seem better or more reliable than the Jabiru, possibly in part due to the age of the fleet. The main costs of self-ownership are insurance and hangarage. The former costing £1100 to £1300 per anum for hull, passenger liability and third party cover and dependent upon the value, your experience and where the aircraft is based. Hangarage can cost a similar amount, but is dependent upon where you live and the facilities provided. Depending upon the approach, a typical minimum runway length would be about 400m. You can get into less, but I wouldn't like to do this on a regular basis at MAUW. Typically, a later model Jabiru could land in 175m and take off in 150m but that's with a clear approach, and being a bit tasty on the brakes!

Safety was a key consideration to me, and the aircraft has been tested to over 8g, including a super-critical factor for composite aircraft. I also like the superb glide ability, meaning if you ever had an engine outage, and a reasonable amount of height, you can spend a lot of time picking your field! I have now crossed the Channel over 60 times in my Jabiru, and normally fly at

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FL55 meaning that even if I had an engine outage, I could glide to the nearest coast and not get my feet wet! Even so, with foam filled wings, it should float like a cork, providing a refuge if you had to ditch in water.

Being that the aircraft is made from composite materials, airframe maintenance and deterioration is minimal. There are vastly fewer components and fittings than a 'rag and tube' or metal aircraft, and issues with metallic aircraft such as fatigue and/ or corrosion are minimalised. The fabled water take on with fibreglass is minimal, and probably applies only to boats.

And perhaps one of the most compelling factors for me is the smoothness and quietness of the engine. Whenever I fly with friends in other microlights and light aircraft, I'm amazed at the noise levels, even with ANR headsets. I did at one stage think about buying another kit aircraft, but decided that I loved to fly the engine. I have even flown without headsets, and was able to talk to my passenger without having to shout!

All in all, one of the quietest, safest, swiftest and in my case most reliable aircraft you can buy.

Julian has been flying for 6 years and has now over 800 hours in a variety of microlights, including the (French registered) Esqual. He works as a Project Manager at Airbus in Filton.