The Cub that never ages

Australian flying

My first impression, as I drove into Lethbridge Air Park on a crisp autumn Victorian Western District afternoon, was that it was a pretty yellow aeroplane.

I had seen this particular example, 24-7031, at the Avalon air show but there was always a crowd of people around it so this would be my first opportunity to take a close look.

Bruce Vickers, the Victorian dealer for Savage Cub, had placed the aeroplane on the grass outside the flying school – the afternoon light and the green grass set the scene for our assessment. This was the base model, called the Classic Cub.

I have never flown a Piper Cub, so no comparisons between the Savage Cub and the original would be possible. However it seemed that the classic yellow colour scheme was designed for a flying school like this where the aircraft would show up clearly against the green paddocks and the blue sky.

I first became familiar with the flight manual. It is a simple aeroplane but the manual was quite comprehensive and well written with only the occasional example of poor translation into English but nevertheless easily understood.

The Basic Empty Weight of this example was 300kg and with a Maximum Take-off Weight of 560kg we would be close to the maximum take-off weight with Bruce and I on board plus nearly full fuel. Even with full baggage we would have been well within the allowable centre of gravity range. If I was to fly it solo I would need a few kilograms in the luggage compartment to stay behind the forward centre of gravity limit.

The useful load allows for two people with reasonable baggage (maximum allowed is 20kg) plus full fuel of 68 litres. Quite a useful aeroplane for a trip somewhere although you won't get there quickly with a maximum cruise speed of 90 knots. I noted that its useful load was better than that of my 1979 Decathlon.

Bruce commented that the Savage Cub's cabin was wider than the Piper Cub, so plenty of room for me. He generously commented that I'd be the biggest person that he's had in the aeroplane.

The interior was neat and spartan with the tube trusswork visible. I noted that the fuselage truss is made from aeronautical grade steel (4130) whereas the original Piper Cub was made from mild steel. The next one will have internal metal sidewalls and full floorboards.

Of course, every additional option adds to the empty weight and reduces the useful load.

The next one will be red and white instead of Cub Yellow and again with the 100HP engine.

The standard 80HP engine may suit a private owner as I'd expect the lower power to be no real disadvantage to the aeroplane in that role - i.e. it is not fast anyway.

Overall, the fabric and paint finish seemed to be of a very high quality. I know that aircraft owners like to hangar their aircraft but I'd have no qualms about leaving this one outside.

Consider the trade-off between hangarage costs near a capital city and repainting and/or recovering costs. Consider also that a fabric aeroplane can withstand even hailstorms very well. The longevity of Stits fabric is well known and there is an option for internal corrosion protection of the steel tubes which suggests that these aeroplanes will be around for a very long time.

These days it seems an anachronism for a new aeroplane to be made of rag and tube - however there are several niche markets where this type of construction has an advantage over more modern materials. Maintenance on a rag and tube airframe is very easy with substantial repairs or rebuilds well within the capability of many local shops. One plus is the absence of any issues regarding temperature of the structure and the flight manual permits operation up to 50°C and down to -25°C.

Vortex generators are a factory option and this aeroplane was fitted with them – according to Bruce it resulted in a slightly more positive, and slower, stall. The flight manual notes that the stall speed is about 3 kts slower with the VGs.

Although the basic design of the airframe must be about 70 years old

I noticed some neat features:

• the aileron seal to improve control effectiveness;

• the tail brace wire tabs have multiple holes as a means of adjustment rather than turnbuckles – simple and effective;

• the skylight over the cabin was a simple single piece eliminating numerous metal fairings that I've noticed on other types; and

• the battery is located in the rear fuselage and accessible through a removable panel.

Bruce had removed the top engine cowl to point out the internal air filter which is an option. As air is taken from the top rear of the engine compartment it is warm, so there is no need for a carburettor heat control. On the downside there is a power loss of about five HP at max power from the 100HP engine.

The cowl looked quite thin and I thought that if it was made solely from fibreglass that it may not be very durable. However Bruce had determined that it had some carbon fibre in it and was actually very tough. The next one has a metal cowl in the original Piper Cub style and looked a lot nicer.

Getting into the rear seat is easy through the large door on the right hand side. Anyone new to aeroplanes like this need to be very careful about where to put their feet with the risk of putting a hole through the fabric. Hence Bruce's decision to have the full interior on the next one.

However, I was going in the front which was going to be more difficult with needing to get my legs around the doorway and thread my body past the wing struts. Solo flying is from the front seat.

Instruments are not fitted to the rear cockpit but this one has some basic flight instruments installed on a special panel on the floor, forward of the control stick.

Unfortunately this prevents the adjustable front seat from moving all the way back – not making it any easier for me to get in and out.

Bruce demonstrated, in one flowing movement, how to slide in and out. Front seats of high wing tandem aeroplanes like this have no elegant way of getting in and out in my experience; granted, I was bigger than Bruce.

I gingerly tried to emulate his technique, adjusting the method to suit my frame – I have the body of an 80 year old, as one of my personal trainers had once unkindly mentioned.
Taking care not to scratch the new airframe, a bit more practice and I'd be fine.

Once inside there was plenty of room, even with that seat not being able to go all the way back - and I am 187cm tall. Initial impressions of the front seat was that it was firm and not comfortable. However once I got going I thought no more of it – didn't think about it at the end of the flight and I took the view that it would be fine for a long cross-country flight. Harness – lap and shoulder belt on each side - is integrated so just two points to connect, very neat.

View over the nose is excellent - the usual angle on the ground for a taildragger but the cowl is low. First flight of the day, cool afternoon, choke applied and the engine started straight away and ran very smoothly – ran smoothly throughout the flight. All checklists were provided on the instrument panel in front of me. Very convenient especially for me, being new to the type.

With the large wheels it taxied easily over the grass to runway 29. Optional tundra tyres are available for those who want to go into some very rough strips.

The take-off was easy. I held stick back and applied full power then soon let the tail up as the elevator quickly became effective. Lifted off by itself from a near level attitude and set attitude for a climb at 55kts. The first observation was the excellent visibility in the climb.

Climbing through 3,000ft, it was showing a rate of climb of 600fpm at 5,100rpm and 65kts. This would be where the performance benefits of the 100HP engine would be obvious – expect a somewhat lower rate of climb with the 80HP engine.

At 4,000ft, the cruise speed at 4,900rpm was 83kts indicated which equates to about 88kts TAS. Fuel flow at this power setting would be about 17 litres per hour. With 64 litres of usable fuel that gives an endurance of three hrs and a range of 265nm (with 45 minutes reserve).

Now for some turns to get familiar with the aeroplane. There was some adverse yaw but it was easily managed by the effective and light rudder. All the controls seemed nicely balanced with enough control force feel to be comfortable. The aeroplane was rigged nicely and required little attention to fly straight and level.

We had plenty of height for stalls, so after the pre-stall checks, I set it up in a descent with idle power then maintained altitude to give a slow reduction of airspeed. The flaps up stall speed is 30kts indicated. At the stall there was a slight nose down pitch and roll to the right about 15 degrees.

The next stall was to be with full flap and some power, 3,700rpm. With the airspeed well below the top of the white arc I found it extremely difficult to move the flap lever back to lower the flaps. The behaviour was much the same as with flaps up and power off but with a lower indicated stall speed of about 25kts. I took my time about recovery to give the aeroplane a chance to misbehave – rudder opposite the yaw and stick forward to unstall it resulted in a straightforward recovery.

Bruce had previously explained that there was no stall warning horn as there was natural stall warning via buffet. However, to students, he emphasises the importance of stick position as a cue to an approaching stall. I must admit that I didn't notice the buffet at all.

On a cruise descent back to Lethbridge Air Park for some circuits, Bruce pointed out the local "fly neighbourly" procedures and we joined downwind for 29 again. There was a light wind pretty much straight down the runway.

I followed Bruce's advice to fully close the throttle and reduce speed to 45kts then smoothly and quickly move the flap lever back to apply full flap. With the lower airspeed and no slipstream this resulted in a much lower force on the lever.

We seemed to be a long way out from the threshold and I was surprised when it became obvious that we would be overshooting. Some left stick and right rudder to provide a significant sideslip increased the rate of descent enough to recover the correct aiming point. I noticed that it runs out of rudder first in the sideslip.

Approaching the fence, I straightened up for a straight glide. As I commenced the flare I tried to recall the nose attitude during taxi but I was still slowly raising the nose to get there when the main wheels touched. I'd misjudged the height by a few inches.

Other types that I'd flown would've tossed me back into the air again but the Savage Cub just hesitated for a second then decided that I wanted to land three-point. Next thing I was taxiing slowly along the runway after an extremely short ground roll.

There was probably enough room to comfortably take-off and land and take-off again on the remaining runway but I naturally turned around and taxied back to the threshold.

The next take-off was to be one using a short field technique. I held stick back and kept it on the brakes while giving it full throttle until maximum rpm was achieved. The tail came up quickly. Bruce just said to let the aeroplane go – it decided when to fly.

I climbed out again and around for another landing. I reduced power earlier this time and my new technique for lowering the flaps was much easier. A flatter approach this time with a trickle of power. I admitted to not favouring wheeler landings in the aeroplanes I normally fly these days, so asked Bruce for advice. As usual, I made a decision in advance to convert to a three pointer if it bounced or go-around if a significant bounce.

I got it close to the ground with the tail just slightly below the level attitude and put the main wheels on the ground. I didn't get the timing right on moving the stick forward but again the aeroplane decided to be helpful with just a slight skip and I managed to get the mains to stick. Holding the tail up until I was ready to lower the tail to the ground was easy.

Bruce suggested another circuit for another attempt, just to get a perfect three-pointer – not necessary, it had impeccable manners and I was confident that if I flew it again that a greaser would be the outcome. Those who know me are aware that I need some work to transition to new types but the Savage Cub just felt very comfortable and familiar right from the start.

Back in the flying school office we discussed pricing. The Savage Classic with a 80HP engine would be around $90,000 including GST. The next model up is the Savage Cruiser.

Top of the line is the Savage Cub at around $120,000 with typical options. There is a generous list of options so I'd add my personal caution to keep tabs on weight that would be added with each one. Empty weight just keeps on going up while maximum weight stays the same – make sure that you end up with a useful aeroplane.

The Savage Cub entered production in Italy in 1997 and in 1999 production moved to Zlin Aviation in the Czech Republic. It is certified as a Light Sort Aircraft so may be registered with either CASA or the Recreational Aircraft Association. Kits are also available for amateur-built construction.

It is clearly not an aeroplane to suit everyone. It is not fast but still quite usable to go somewhere for two people with some baggage and enough fuel to suffice. For those who have only flown nose-wheel aeroplanes the transition will be painless – get a good instructor and simply use standard tail-wheel handling techniques.

This would have to be top of my list if anyone asked for my advice on what aeroplane to learn in. Tail-wheel aeroplanes are no harder to learn than those with nose-wheels but they

are certainly less tolerant of a sloppy technique. My opinion overall was that it has classic handling characteristics. It seemed to me that it just behaved like “the book” says.
I liked it.