

## BALSA FLIES BETTER ?



Reviewed in 2008 this great combination has stood the test of time

In old black and white flying movies the autopilot was often referred to as George. Whether this is true I don't know. What I do know is I've long been a fan of gyros as a teaching aid.

I suggest to Club Presidents and Instructors still espousing the piston power and balsa flies better mantra is out of date. Foam trainer combos are what people are purchasing today in city clubs and this Sub 2kg model is the best of them. The three axis gyro in a Super EZ is a brilliant combination.

I spent considerable time during summer teaching a Futaba Pro Shop customer to fly. He bought a 70th anniversary 18 SZ but not from me. Model Flight were discounting Futaba prices, but not its own Spektrum brand. A practice known as bastardising the price. Anyway

I wouldn't sell mine for cost price and implored him to grab that one to get it off the market. Not fussed, it's only one sale. Deal was I would teach him to fly if he bought that radio. I could always sell him receivers and servos etc. We hadn't got around to getting him started before I closed that retail operation.

We went to P&DARCS where he learnt to fly. To some degree it reconnected me with that club and I made a new friend. A sales guy. Also gained material for an article I've long wanted to write. This article. The other thing I got out of it was deciding whether I wanted to get back into earning a living flying RC Planes. I had been approved to offer Commercial Flying Instruction at NFG. VMAA forwarded that approval to MAAA in February. Which I am still waiting for. Perhaps when



This one has a better mousetrap in every way. I have four myself

the MAAA Secretary has finished selling jets I might get an answer. I wouldn't bother applying to teach commercially at this club again. Instead I found a suitable private property just down the road.

Deal was a minimum of twice a week for a morning session. His model was the E Flite Apprentice S. Great first model but the narrow track undercarriage always makes it a bit of a pill teaching take off and landing. A touch of crosswind and you just forget that for the day and move onto some other part of the curriculum. Thing keeps tipping over all the time. Flipping it upside down for battery access becomes tiresome.

We flew his Apprentice a couple of times then put that aside to fly one of my Super EZs with buddy box.



Ready to change the battery pack? Narrow track undercarriage strikes again

Futaba 16SZ master and a basic 6L transmitter on Mode 1 as slave. Fourteen flying sessions later he passed the MAAA Bronze Wings flight test to a high standard. We went out for one more session to consolidate. Out of fifteen sessions he experienced one calm day. The rest was in wind. Hardly ever straight down one of the three available runways. Broke one prop. Since then he has flown every week, at least twice, in up to 25 kph wind.

I teach all beginners to fly to what I call F3a Standard. Stand straight. Shoulders parallel to the runway and don't follow the model as it passes by. Takes a little longer initially. Pays dividends down the track.

Circuits are flown at at half throttle which makes initial circuit and bump training much easier. Concentration

lasts longer. Battery too. This is where Mode 2 shows one advantage. On Mode 1 the model climbs after right aileron has been applied. Descends after left aileron too because the throttle setting usually changes until they learn to recognise that and not do it. Increasing the stick tension helps reduce this.

Teaching climbing and descending using power revealed the model setup was not ideal. Just like every other modern high powered trainer offering I've flown the past few decades. Not a problem if trimmed straight and level at full power but trimmed my way the model was holding him back. Climbing at full power after a go around power reduced back to half pitched the nose up.

Increase the down thrust or reduce wing incidence is the correct way to change the



Battery pack access through the top hatch is a must have for me but it is the undercarriage and all round handling qualities that sets this model ahead of the pack

rigging. The other option was elevator mix with throttle. No computer radio on the slave I did it the easy way. Reduced the incidence by running both ailerons up a few degrees. Better in the air but not still what I was after.

Reducing the thrust fixed it. Easy peezy with electric. Changed the standard 10 x 5 to an 8x4. No need to re-tune the engine, less thrust equals longer battery life and produced the gentle climb at full throttle and comfortable descent at 1/4 I wanted. More than enough power for basic aerobatics too.

Flying buddy box I find the handing over all controls preferable to over ride mode. Each to his own but that requires less concentration on my part. In circuit work my throttle remains at half throttle. For take off I hold a touch of up elevator and full throttle. Up elevator and idle



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Look. Up in the sky. Is it a bird? Is it a plane? No its a Power Hawk. Not faster than a speeding the Power Hawk shoos cockatoos off quietly and effectively. Powerliner tows 500 metres of 90 kg shark fishing line. Power Chook easily copes with a 900 g payload of ashes. Modified Super EZs in case I had to go back to flying RC commercially. Three different applications for Sub 2kg airwork and flight training

on final. This gives me time to make a quick correction and hand straight back rather than waste the manoeuvre. If the student notices I pass it off as a gust or fess up. Taking over sometimes I forget to announce that until the plane is sorted. That is the limit of my deception.

When the student has gained proficiency I reverse those throttle positions. That way should I lose concentration the sound of the motor alerts me I have let the lever go. Same with helicopters although I do match the throttle and concentrate more.

Teaching take off my reverse method works a treat. Student's throttle is set to full and I hand over in the climb. A few of those then hand

over just after the wheels leave the ground. Next they hold a smidge of up elevator and I hand over just before lift off. Next is stationary with full power and a bit of up. Finally they advance the throttle from idle. Job done. Well almost.

High power to weight ratio, even in de-tuned mode, the thing is off the ground in a few metres. Even less in a head wind. Which gives hardly any time to use rudder. Or getting off elevator to establish a shallow climb angle. The answer was to take off at reduced power. Stability Mode made demonstrating an acceptable climb easy. Hold full up. Hit full power and do nothing else. Model climbs out at a shallow angle. Basic taildragger

technique holding up elevator to prevent tipping over due to bumps and long grass makes taxi lessons with a 1kg foamy in wind tricky. One answer was to commence that part of the curriculum taxiing back down wind after a full stop.

Here's another idea. Alex now busy logging flight time in order to move up to his new Flex Innovations RV8 for his Silver Wings, one of my four Super EZs has flown quite comfortably with a 1kg payload.

Stability Mode. The instructor can have the student get used to the left and right thing by flying around using aileron. George looks after creating a balanced turn with negligible height loss. Once they get it I switch George

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Stand straight shoulders parallel to the runway, don't follow the model as it passes by flying off Runway M, A or F the same. Thumb and forefinger is best

out of stability mode. E Flite calls its version SAFE. Next I set the master to give them elevator only. Flying sixty degree bank orbits out in front where they can see it they quickly learn to hold the correct amount. More importantly they see elevator's role as a vital component in turning model aeroplanes. Teaching thirty degree banks doesn't work very well. Models fly too far away.

Once they've got that I take elevator back and hand over aileron. Next they get both and off we go flying ovals, orbits and figure eights.

My general rule of thumb landing circuit instruction is a thirty degree bank turning crosswind. Which is usually a climbing turn under power. Half throttle and sixty degree bank turning downwind and base. Thirty degree bank turning final. Which is hard to see. Start rolling out when the nose is pointing at you.

The hardest thing to teach is the turn to final and maintain track to the runway. One hundred feet agl give or take, on calm days we set 1/4 throttle after turning base. In wind that happens after turning final. Most com-



"P&DARCS TOWER Power Hawk 1 ready Runway A First Solo"

mon occurrence is too steep a turn. Nose drops. Up elevator applied. Model turns rapidly and misses rolling out on the correct heading.

Most of our flying was done on the Western Runway (*now known as Runway A*) with a gentleman's agreement when the F3a and Scale Aerobatic guys using the main runway we wouldn't encroach their airspace. That worked well. So Alex had to learn how to turn very soon after take off. Occasionally he got to continue the climb into a conventional circuit when the other airspace was empty.



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Gentle flat climb after take off is what we are looking for

More often than not wind was Sth Westerly and at least 10-15 kph on most occasions. Which meant base leg often flown at quarter throttle. Sometimes at idle before

turning base to shave height. High ground speed made missing the turning point easy. Which made intercepting and maintaining the glide slope quite difficult. Model



About to round out and land right in front

crabbing sideways on final too.



Bermuda Triangle strikes again? No. Was never going to make it back Just fell short of Runway F. (Faraday)

Coping really well with that lot but one day rough conditions started denting his confidence. When that happens to anyone I often switch to basic aeros or deadsticks. My way of teaching dead stick landing is so much easier with electric power. I made him dump it in the long grass off each end and adjacent the runway a dozen times. easier with electric power. Demonstrates if you put it down into wind, slowly, the model can survive. Anyway I mix it up a bit to have some fun. Loops, rolls or Imme-



The time to turn back into wind to set it down is when it reaches fifty foot altitude



Engine failure after take off



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F3a competitor and retired instructor Glenn Burgdorf congratulates Alex on the successful completion, to a high standard, of his Bronze Wings Flight Test man turn are easy to teach but we had already done those.

This time I tried something new. A theory I had long wanted to test. Last flight of the day, after much protesting by the student, due to tiresome rubbish that gyros don't make you a real pilot, we agreed to give it a go. This is where Stability Mode was brilliant. The only control Alex had was throttle. George looked after pitch and roll. Heading was maintained by me using rudder.

Reduced workload he began to see how reducing or increasing power affects the glide slope. Having the aeroplane overflying the runway then going around drummed in what the approach should look like. Repeating this next time out in calmer conditions and he had it. George was switched back to assist mode. Stability mode never to be used again. After that Alex never really knew whether



One week later, site induction completed, Peter Harris presents a club badge, P&DARCS cap and extends a warm welcome to the New Member

George, in assist mode, was on of off. I trialled that heaps and he didn't pick up the difference. And so, fourteen flying sessions from go to whoa. Bumps in the runway, wind and long grass, as mentioned, we broke one prop. A couple of cartwheels too. I did those showing off.

Balsa flies better? Not really but it certainly doesn't bounce better. On board electric start made the teaching experience much easier.

Seeing he passed the Bronze Wings test with flying colours, F3a Style, on the main strip it was time to do what any instructor worth his or her salt should do. Give the student a taste of things to come. In this case an old style red hot flying F3a aerobatic model flying with the big boys on the main runway. (*now known as Runway M*) At half throttle. I noticed that throttle setting didn't last long.

Congratulations Alex.



Flying off Runway M this thing goes and stays where it is pointed