

## Chris Foss Acrowot foam-e

This is a superb model. Put it together and set it up exactly to the manual and it will fly like a dream. The tailplane and rudder are held on by screws, which helps when repairing. Under full power it will do any manoeuvre. Throttled right back into wind it will almost hover. Stalling is clean without dropping of a wing. The only thing it doesn't like is strong winds and medium to strong crosswinds. It then becomes difficult to make a good landing.

It is fairly flimsy, especially the fuselage and rudder. The wheels are small so the most common damage is to rip out the undercarriage when landing in longish grass and bending or breaking the top of the rudder and the balance ends of the elevator due to a nose over. Taking off on longish grass means gentle acceleration with full up elevator then full power when unstuck. The wings are robust and I have had three fuselages for one pair of wings.

I have made a few modifications.

### **Wiring and battery hatch**

#### **New motor**

#### **Neuron ESC and later a more rearward placement**

#### **Re-inforced rudder**

#### **Ply ring behind the spinner**

### **New battery wiring and hatch cover**

The supplied ESC has a Deans connector. All my small batteries are XT60. I changed the ESC connector to XT60 but it is bigger than Deans. Initially I also used lipo voltage telemetry so needed a balance lead extension. Both leads had to be fitted into the space between the battery and the motor. One common problem is for the rotating motor to cut through the insulation on the wires from the battery or ESC. This has happened to me twice and of course caused the model to crash, so I made two modifications.

First I made a thinner battery hatch cover out of ply to give more room for the wires. The supplied foam one projected down to hold the battery in place and took up precious space. However it was still difficult to push the two leads in so they didn't touch the motor. I fitted a thin ply plate above the motor placed so it doesn't obstruct the cooling airflow. The front is glued on to the foam moulding. The back sits on a spruce cross-piece, which is glued into slots cut in the foam moulding. In both cases I used epoxy.



Hatch cover

3 x 6 mm spruce cross-piece epoxied into the foam moulding



Here is the ply plate in place

The above was how I did it on the supplied kit where the fuselage is already assembled. A replacement fuselage comes in two parts with the motor mount loose. I built up a plate using three pieces of 3 mm liteply glued onto the mount before assembly, which makes a much better job. I also made the ply plate a little narrower to improve airflow.

## New motor

After many flying hours the original motor finally gave out very noisily. I removed it with some difficulty as one of the screws had the centre chewed out. I used a burr and a pointed grinder in my Dremel to remove the old head. I already had a suitable Propdrive motor to replace it which was 2 mm longer but the same diameter. The mount needed the two long holes lengthening slightly and those were the only two that I could use. I could have drilled another two holes but it is perfectly safe with Loctite used on the M3 screws. Two advantages were that the Propdrive was more powerful and about half the price of the original motor - £24 against £45.

## Motor data

Acrowot original	3540	117 g
New one: Propdrive	3542	155 g 47 A 14 pole

## FrSky Neuron 40 A ESC

I like FrSky Neurons. I fitted a 40S which has a capacity for bursts of 60 A. It also provides me with telemetry data about rpm, current and mAh used. After fitting the new motor and a 10 x 6 prop instead of the standard 11 x 8, I found that the maximum current was well over 60 A and the rpm was a bit low. In an electric motor this is clear evidence of over-propping. The kV is 1000 so the motor needs to run fast. I fitted a 9 x 6 and then maximum current was just over 40 A. There was no reduction in performance. The ESC fitted in exactly the same place as the supplied one. It is slightly thicker but the battery still slides in perfectly.

## Re-inforced rudder

The top of the rudder is prone to bending or snapping off on a noseover. I rebated a 1 x 3 mm carbon fibre strip in and glued with epoxy.



## Spinner ring

The new motor had a slightly longer shaft. This left an unsightly gap between the spinner and the fuselage front. I made an annular ring out of 6 mm ply and glued it to the front. This had the added advantage of strengthening the nose, which is fragile.

As you see from the picture the profile isn't quite right but it's better than a gap.

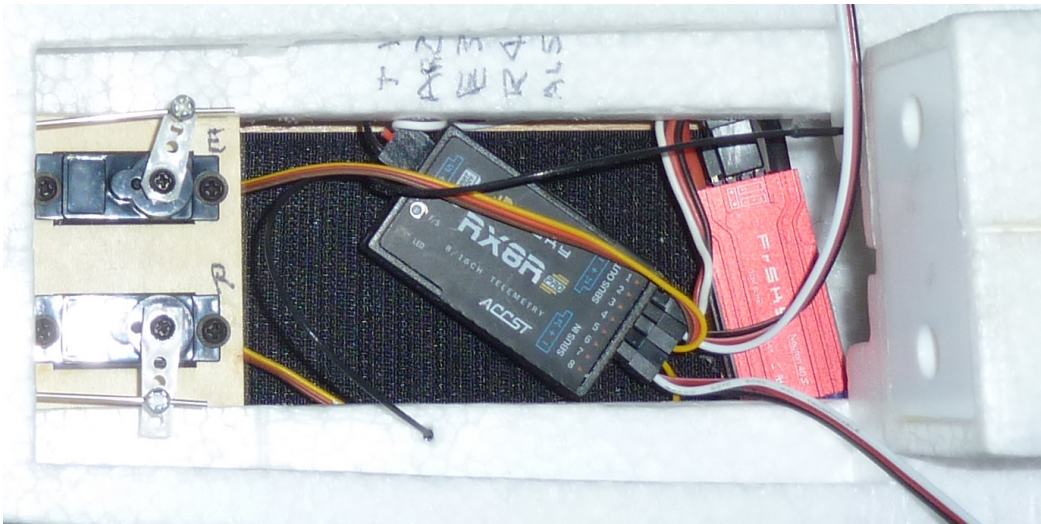


## Balance

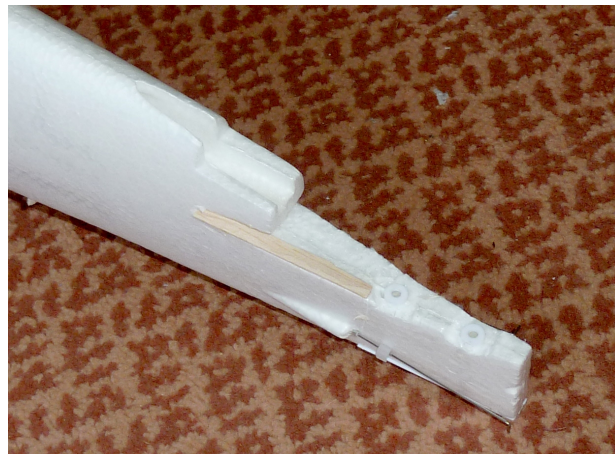
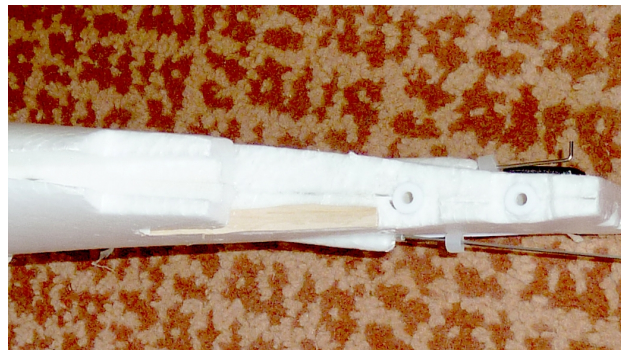
In the current version using the Propdrive, Neuron and Turnigy 2.2 Ah 3S batteries I needed 20 g of weight on the tail, which I stuck on the fuselage sides under the tailplane. The C of G should be 75 mm back from the leading edge at the root.

## New model

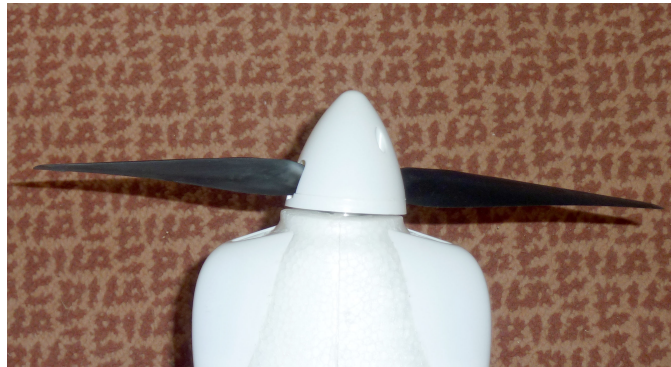
The poor thing finally gave up In March 2022. It went in vertically in true noble fashion and made a decent hole in the ground. No half measures. Possibly receiver failure but most likely pilot error avoiding another flyer. So I bought a new one at nearly double the last price (£214 against £129). I decided to change the wiring. I fitted the Neuron ESC more rearward above the wing and next to the receiver. This meant that I had to extend the ESC and battery wires with 14 awg wire and 3.5 mm bullet connectors. It did make for a much more tidy layout around the battery so I was able to use the foam battery plug supplied that keeps the wires off the motor and so avoided gluing in ply barriers. The throttle and telemetry wires from the ESC to the receiver are now very short. The only change to the balance was that I only needed 10 g of weight on the tail instead of 20.



The quality of the kit was poorer than past ones. I had to trim some flashings off the edges of some of the flying surfaces. Are the moulds getting old and worn? The lower plastic attachment under the rear of the fuselage had not been fully fitted home so the screws for the fin were not long enough. I had to replace them with some 30 mm M3 socket head screws to reach the screwed bushes in the fin. They were longer than needed but they were what I had. At least the bushes were metric and not some strange US thread as with some Wot wing bolts, which would have meant a delivery delay. This also meant that the tail wheel and the shaped wire were a bit low for the rudder horn so it was a battle to get all the bits securely fitted. A further problem was that the tailplane did not seat correctly. It was tilted to one side by about 5°. I trimmed away some of the foam around the tailplane seat holes and one side of the fuselage but it was still off. I had to glue in some 1.5 mm packing at one side and trim the foam some more to get it straight.



Too much glue had been splattered about on the aileron hinges and had to be trimmed off. It was underneath so was out of sight, but still not good. One positive was that the propellor was perfectly balanced and I mean perfectly. However the spinner was out of line with the fuselage so they have altered the thrust lines without changing the moulding. Or is this another misalignment? I won't know till I fly it.



Buck your ideas up Ripmax and get back to proper quality assurance in China.



All finished and looking as handsome as ever without the garish decals. Just waiting for the wind to drop for the maiden flight.

### **First flight**

Brilliant! The 10 g in the tail was a little too little so needed up elevator trim, but the model flew like a dream. I added another 5 g to the tail and it was then exactly right. Really sensitive and lively but quick to stabilise. Did every manoeuvre with no fuss. I think the motor is a bit more powerful. Straight and level at full throttle it goes like the wind.