

Electrifying a Wot 4 Mk 3



During the summer of 2009 I was consolidating my return to aeromodelling by flying an OS 46ax powered Wot4. It went really well, plenty of power and as is true of all Wot 4s great performance in a traditional non 3D way of flying.

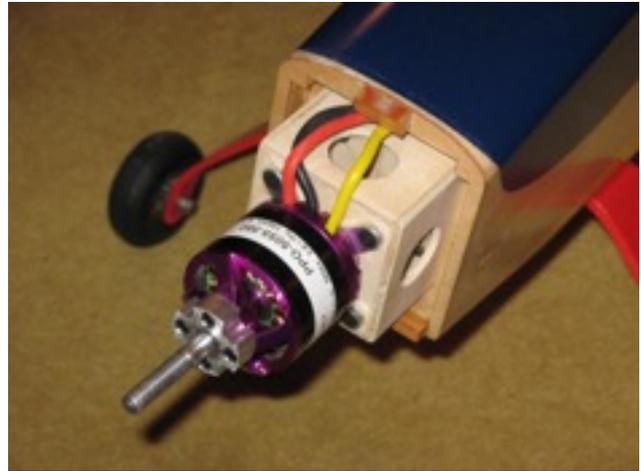
Then I discovered electric power and the Wot 4 sat on the shelf, I toyed with selling it and didn't really really consider converting it to electric as Ripmax had their version of the Mk 2 commercially available.

But the more it sat on the shelf the more I regretted not flying it. So the decision was made to electrocute it!

I haven't actually seen the Ripmax electric Wot 4 so have no idea of the set up and performance. Consequently after some research working on the basis of 100 watts per pound a 500+watt power set up would be needed. I like to have power in reserve when flying but rarely fly on full power choosing to attempt to fly flowing turn around aerobatics using the throttle conservatively. All of my electric planes so far have been lightweight fun fly or semi F3A style models so converting an airframe from 2 stroke to electric power was a challenge particularly one that would weigh getting on for 6 pounds.

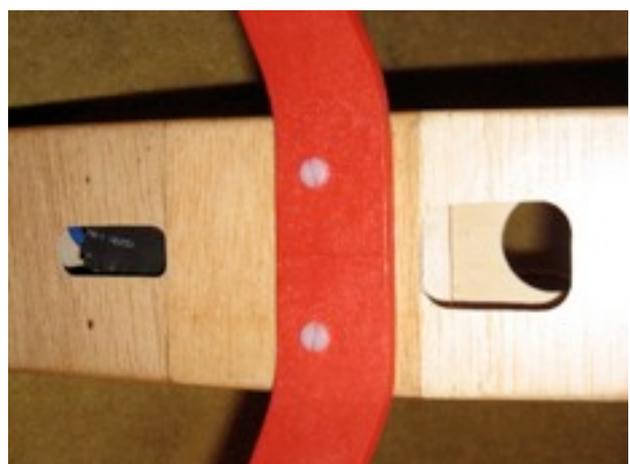
Fortunately Purple Power/4 Max <http://www.4-max.co.uk/index.htm> have recommended set ups so I selected their

PPO 5055-580 Outrunner suitable for 4s to 8s lipos and models weighing between 2 and 4 kgs. I am using a 4s 4900mah 25c lipo and a 70amp esc with a UBEC to power the receiver. The propeller is a 14x7 APC.



After deciding on the set up out came the OS (anyone want an as new just run in finger flicking starting engine?), the receiver battery and the throttle servo. It felt good to be removing weight particularly before adding a great lump of rotating electric wizardry and an even larger lump of lipo.

To mount the motor I had to build a motor box and bolt it to the firewall using the old blind nuts from the previous oil splattering installation. By using the old engine mount as a template I could measure to ensure the thrust line and prop driver driver distance from the firewall remained the same. A new cowling from Chris Foss with some air cooling holes cut was fitted to locate in the old mounting holes. An inlet cooling hole underneath the speed controller in the fuselage and an outlet



behind the undercarriage were cut to prevent against over heating.

So far so good but my real concern was making sure the battery was securely mounted. The thought of it coming lose in flight is too scary to contemplate. Through previous models I have developed a simple yet robust self locating mounting plate held in place with one screw. The



battery is velcroed to this both fore and aft and by a lateral strap.

An unexpected problem was soldering the 5.5mm connectors onto the Lipos. I have never had a problem soldering before but found the fluxless leadless environmentally friendly solder I had bought by mistake from a well known chain that used to be called Tandy completely useless.

I haven't used a UBEC before but wiring it up was straightforward. Whilst I wouldn't begin to fully understand the electricravery, Purple Power publish a very useful



information sheet at <http://www.4-max.co.uk/pdf/WhyDoINeedaUBEC.pdf>

Interesting the final weight is about the same as the original 2 stroke version and the centre of gravity after a small adjustment to the battery position came out spot on.

Pre flight power tests on the wattmeter showed about 530watts and a current draw of 35 amps. Both within the target range. All that was left was to fly.

How does it fly? Like a Wot 4 only quiet. Plenty of power and duration. Half power aerobatics including good size loops and vertical climbs on full power. If anything it is smoother than the original and on a cold winters day there is no worry about engine



cuts. Overall a surprising success.

Paul Hoey
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