

## TJIRC Magnus Review - 60" moulded slope soarer Andrew Blee



Having flown foam models for too long, I wanted a “proper” plane with the higher performance of a moulded construction. 60” is a useful size because it can fit inside my car without disassembly. There are lots of beautiful planes out there, but bearing in mind this plane could have had a very short life, I wanted something that was also low cost.

Here is the BoM (Dec 2020 prices)

Magnus 60inch Moulded Glider	airframe	£261.60	<a href="https://www.t9hobbysport.com/magnus-60inch-moulded-glider-m">https://www.t9hobbysport.com/magnus-60inch-moulded-glider-m</a>
Hitec HS-65MG	elevator servo	£22.44	<a href="https://www.t9hobbysport.com/hitec-hs65mg">https://www.t9hobbysport.com/hitec-hs65mg</a>
4 ES3352 12.4g Mini Metal Gear Digital Servo	wing servos	£35.06	<a href="https://www.banggood.com/4PCS-EMAX-ES3352-12_4g-Mini-Me">https://www.banggood.com/4PCS-EMAX-ES3352-12_4g-Mini-Me</a>
FrSky RX6R Receiver ACCESS	Receiver	£26.83	<a href="https://www.t9hobbysport.com/frsky-rx6r-receiver">https://www.t9hobbysport.com/frsky-rx6r-receiver</a>
Plane battery	???		
	Total	£345.93	

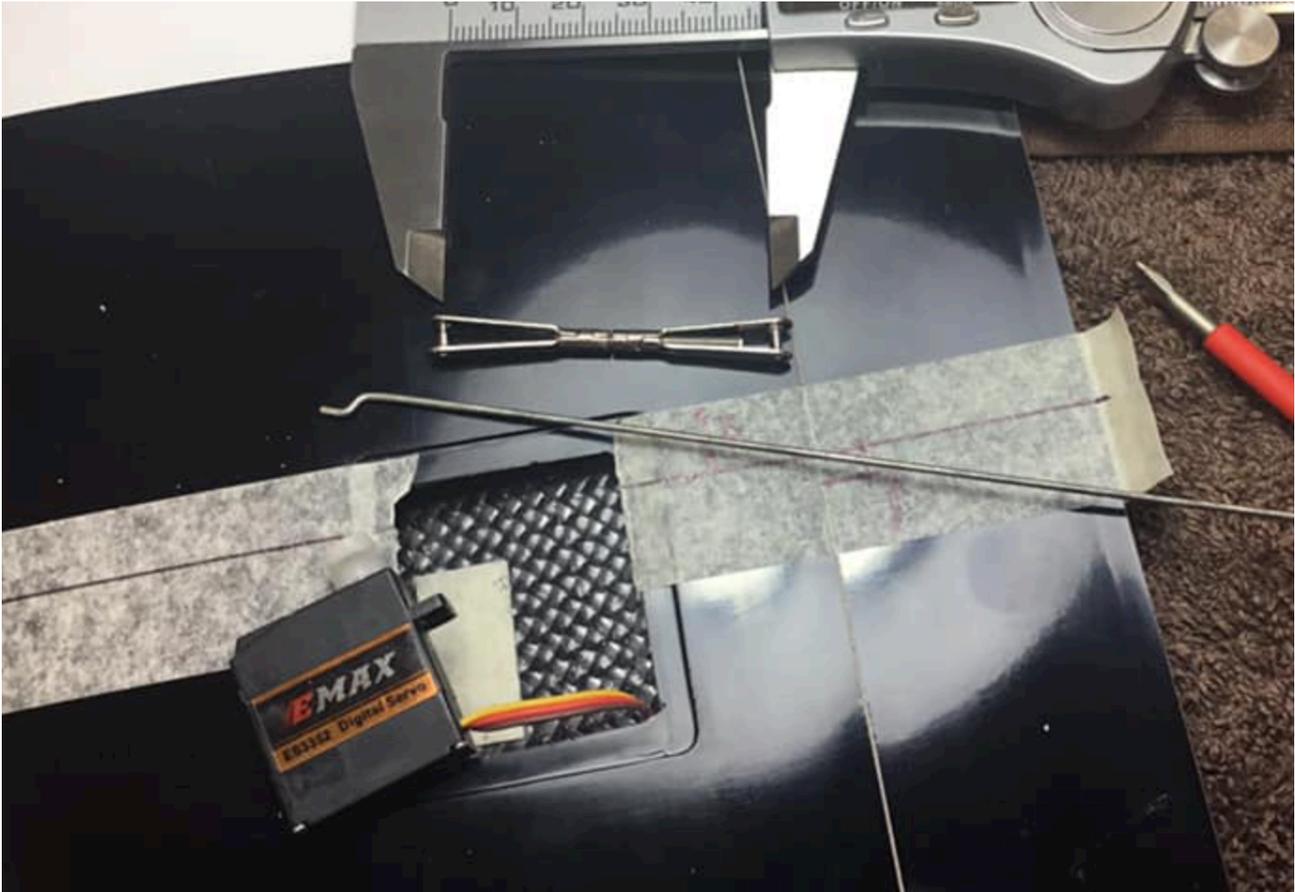
With a £16 Eneloop 2000mAh battery I am all done (excluding Tx) for £362.

The Magnus is designed by Jonathan Wells who I understand is a real expert. His prototype flight videos are incredible: <https://youtu.be/cpHlp5P0G3c>

The plane is beautifully made - maybe not exquisitely made (no lacquer over the paint) but all the tolerances and finishes are way better than anything I can make. The control surfaces have wipers to better seal the gap to the wing - nice.

Fitting the radio is easy if you know how. There is no assembly manual but there are build logs online, plus various forums to ask questions and compare notes. It took me ages because so many tasks are a one time operation. For instance the wings are so slim that the 4 servos are recommended to be glued in place with epoxy. They aren't ever coming out. It better be right first time. The wing control rods go from one side of the wing through to the other. Using a Dremel to cut a passage (four times) was like dentistry and you really don't want to remove too much material.

The throws for the flaps are asymmetric - much more down than up, and you want as much downward throw as possible to get maximum air braking. With the servo glued in place you can't even adjust the control arm. Nothing is too difficult it just takes time and lots of fiddling before I could commit the glue.



The elevator (no rudder on this 5 servo plane) is much more straightforward with a linear pushrod through the fuselage.

I crafted a moulded nose weight in sand. This worked very well. I also had some rectangular ballast sleeves made on a rapid prototyping machine. Filled with lead and epoxy they are really neat and fit in the wing without rattling.

I programmed everything in OpexTX which was a long learning process but I had all the time in the world with a winter in Covid lockdown. There is a sheet of throws available which helps a great deal. The plane has crow braking, 3 modes for the aileron / flap position: camber, normal, reflex, snap flaps, different rates. It's a lot for a newbie to work out but hey, I had nothing better to do.

What about the flying? The plane is super slim and faired so it accelerates through the air with extreme ease. The dynamic soaring record for the Magnus is 250mph - this is a fast plane.

Hunting thermals is much easier due to the planes ability to cross the sky so quickly. In camber mode, it slows right down to stay in lift. Normal mode is much quicker. Reflex mode is much quicker than that. It makes a very pleasing whistle at speed. Walkers point and stare at this thing ripping through the air. You appreciate you have a real duty of care with something flying so fast with such a pointed nose. Don't get anywhere near people when at speed.

It is "easy" to fly in that it is very predictable with no vices. Being fast it ends up a long way away quite quickly. The side profile is small so it can be difficult to see at a distance.

The crow braking really works so with a decent breeze you can land with zero ground speed. Just know what you are doing because the air frame is not going to bounce well.

I want this to be my go-to plane which I have the confidence to fly on all slopes in most weathers. If the weather would improve just a bit, perhaps it will be.

Andrew Blee