

George McCarthy's 1/5th scale PWS -101 Vintage Glider

George from Toowoomba in Queensland has retired from flying full size aircraft and built a 1/5th scale model of the vintage Polish glider PWS-101. Following is a report on his build.

I was looking for a stylish and functional glider that had a light wing loading. Having searched many glider sites and forums

<http://www.rcgroups.com/forums/showthread.php?t=635758>

I decided that the PWS-101 looked as if it would fit the bill.

I found some free plans on

http://www.scalesoaring.co.uk/VINTAGE/Documentation/PWS101/PWS101_models.html

To set the scale at 1/5 I loaded the PDF files and changed the scale to 75% of the downloaded size. This gave me exactly 1/5th scale or 4.0m wingspan. I have fitted an electric motor and Li-po battery as it is more convenient for launching and I am not a 100% purist,.

<http://www.espritmodel.com/xpower-xc35225-1ssailplane-brushless-motor.aspx>

I used a folding propeller 14x10 W/ Alloy hub 50mm / 6.0mm shaft, Plush 60A Brushless Speed Controller, Turnigy 3000mAh 3S1P 20C Li-po.

I used the cut tool in Acrobat and cut all of the plans up into A4 size and taped them together. This was handy for all of the profiles as it was just a matter of pasting the paper templates onto the ply and balsa ready for cutting.

It was important to make sure that the bench was perfectly flat and that there was enough room to work without disturbing the construction site.

Because the temperature in Toowoomba is about 4°C (this morning 0°C) the PVA glue takes quite a while to set even when a heater is turned on. While waiting for the glue to set there was time to start making the horizontal stabilizer and rudder.

When the fuselage had completely dried I gave it a sand. I used Spakfiller and bogged all over ready for sealing and undercoating. Making the wings was very slow and tedious, just had to hang in and remain patient. The hoop pine gives the leading and trailing edges extra strength.



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The wings were covered in JAP silk.

Making the canopy was the hardest part of the build. The PWS has an oddly shaped canopy and it is hard to get the correct angles and curves.

Fitting the electrics before silking and painting is a must. These included metal geared servos for the rudder and ailerons. To keep the motor cool a computer fan was mounted in the cockpit. There is 750g of lead ballast under the battery that can be removed if a larger battery needs to be fitted.



The build was not straight forward. The PWS101 cost about \$350.00 to build. A kit from Germany costs about \$2500.00. I am building a 1/4 scale Minimoa now and the huge learning curve from the PWS build has taught me many of the pitfalls in scratch building a model. The link to the first flight is

<http://www.youtube.com/watch?v=UbjajpdlviY&feature=youtu.be>

The photo below shows it ready to fly. Steff Gray has been volunteered to do the honours.

