

Building a Control Line pulse jet model.

I have wanted to fly control line speed models since the early 1980's when I used to get engine tuning help with my pylon race models from Bill Bessant. For those of you who did not know Bill, he was a member of the SMAC for most of the 1960's and 70's and during this period Bill had won the UK Nationals in C/L speed with a very unusual Cox Tee Dee 09 powered model.

I was offered the model that forms this review through Ken Morrissey, who is a multiple time member of the UK C/L speed team and current European champion in 2.5cc FAI speed.



Speed model kit

The kit was quite expensive on first sight, however it did include a really nicely made metal fuel tank and all of the correct control hardware to take the 150mph flights and 45 Kg safety pull test. All of the wooden components with the exception of the tailplane were profiled by a CNC machine and are produced in 'Bass wood', Bass is something like Obeche as used to veneer foam wings but with a tighter grain structure.

I started construction by shaping the 3/32" plywood tailplane and cutting the tailplane dihedral joint on the centre line. The fuselage is really a mini log type affair, however the corners are all radiused prior to the installation of the wings and tailplane.

Installation of the tailplane was easy, using the new CST® cyanoacrylate adhesive that I was trialling at the time. The most involved piece of crafting work in the airframe was shaping the 1/4" Bass wood wing to a decent airfoil section, this work was carried out with a selection of planes and sanding blocks.



Pulse jet on work bench

The wing is mounted to the top of the fuselage with a slow setting epoxy adhesive, the

joint is assisted by the installation of two 6mm aluminium dowels that tie the wing to the fuselage top.

All of the hardware to mount the pulse jet is included in the kit, after a trial fitting of the hardware and engine, I was ready to paint the model. As you can see from the photo of the engine, it is a work of art. I thought that this in turn meant that the engine deserved a decently finished model, so I decided to go for wet look full gloss paint job.

I started off by filleting all of the wing and tailplane to fuselage joints with Plastic Padding, this material has been my choice for this kind of fillet for many years as it has some fillers within it that make it strong and less brittle than conventional fillers. After giving the model a final once over with 240 grade wet and dry (used dry) I sprayed the model with a polyester spray primer thinned with acetone. Once this primer had cured I completely dry sanded the airframe using a hard block with 240 through to 400 wet and dry paper, the aim is to cut the primer back to a translucent condition i.e. where you can see the wood grain but the grain is not fully exposed, this keeps weight build up to minimum.

I sprayed the white tail end of the model first, for the colours I used 2 component car paints which using a spraying mask was carried out by my shed door. Once the white was cured, I masked that off to apply the red wings and nose. I used a stencil to apply my BMFA number to the right wing.



I then applied a very light coat of Awlgrip 'G' line clear lacquer over the whole model for the real wet look, once cured this was given a quick buff for the final finish.

All of the hardware was then reassembled onto the airframe and the model awaits its test flight. I think I will have to nip down to Brian Target's house and ask if it is OK for me to test fly the model at Beaulieu !!!!!!!!!!!!!!!