

DH82A TIGER MOTH REBORN

18th May 2013 was not such a good day for flying, well for me anyway. We were attending the COMSOA scale rally at Maitland, a fine day but a rather stiff but steady westerly wind blowing.

Models were assembled and first up a flight with my then, trusty Avro Avian Monoplane which handled the wind ok so why not fly the Tiger. After starting, and a retune, we were ready to go. Can't have been too good as the engine quit as soon as the throttle was opened and it was back to the pits for another restart and another tune.

I should tell you at this point, the engine is a Magnum 180 (30cc) Four Stroke which has been fitted with an OS200 Carb for better reliability.

HaHa I hear you say! It also has an on-board glow that is on permanently while the engine is running. This is also to improve the reliability. Yep, I hear more HaHa's.

Well all was set, the motor restarted, engine tuned, raised the nose, the tune adjusted again, all set for take-off.

Clearance given, a smooth take-off and 25ft up a cough, back on the throttle and tried to nurse the model downwind and back to the field when late downwind that ever reliable!!! Magnum, yeh HaHa again!!

QUIT, yes QUIT (##@&#\$@*%&%%)**

My first thought were to try to nurse it back to the field but the strong tailwind had me turning away for a landing in a clear area across the access road. We got too slow, tipped stalled and you can see from the photos that the result wasn't going to be pretty.

I'm smart enough to know this wasn't going to be my day and I would have some work in front of me.

The Tiger cartwheeled on touching down and the wings because they are a braced unit came out of it fairly well. Upper left wing had damage to the root rib and some of the bracing wires and structure was damaged. Quite minor really. The fuse was another matter, broken in half at the front cockpit, this was going to take some serious work.

Incidentally, the fuse is the weakest part of the build with the front and rear sections being built in two pieces and grafted together. It had broken here previously after not much more than a hard landing. This was the time to do a proper repair.



All the decorative bits were removed, along with covering, undercart, tank, rudder controls, batteries and motor. Do I stick with the motor? Or is it time for a change?

Well we have a OS200 carby so why not a full OS200 setup, WHY NOT indeed, so I purchased a used OS200 and with a few minor mods it would fit ok.

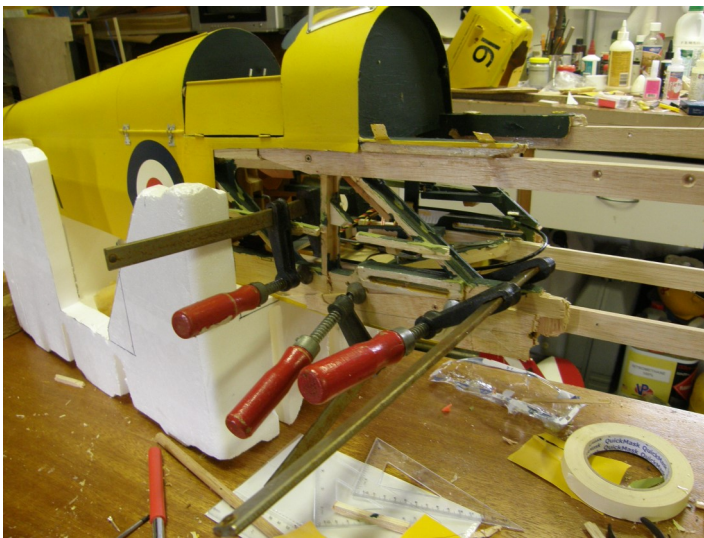
After a bit of trial fitting it became apparent that a bit of glue wouldn't do the job so off to the local Bunnings for some Tassie Oak hardwood for bracing. I chose 18 x 8mm and 4 pieces would be installed from forward of the front cockpit to aft of the rear. Each piece would be approximately 400mm long.



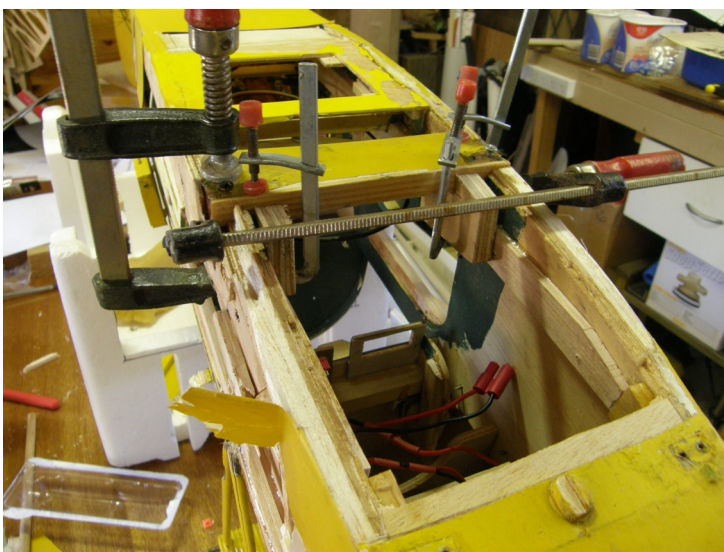
I started by grafting the new upper longerons into the rear portion of the fuse using epoxy, clamps and screws.



More clamps, just as well I am a frustrated cabinet maker!
Once all 4 new longeron sections are in then the two halves will be brought together



Clamps everywhere, fore and aft holding the front and rear together and clamps on both sides holding the original frame to the new longeron sections, When the two halves were brought together and alignment was established, screws were inserted through the existing frame and into the 4 longerons. This allowed me to check everything before the glue was applied. Liberal amounts of 24hr Epoxy was then applied to the frame and longerons and with clamps and screws it was held together to allow the glue to dry for a minimum of 48hrs. Now the fun started, adding in the gear mounting blocks and re-building the undercarriage, changing the engine mounts to accept a new OS200 four stroke, re-plumbing the fuel system, repairing the fibreglass cowl, sorting the throttle linkage and on-board glow system. And to finish off, ordering some moulded parts from Flair UK.



It was also time to think about whether I would retain the original colour scheme. This scheme was taken from VH-UVZ , the first Tiger Moth registered in Australia on 12th August 1936. It too crashed into Sydney Harbour, was rebuilt and spent the war years as a trainer in the RAAF at the Temora base. Fittingly it is now part of the Temora Air Museum and flies regularly on their flying days. This would all be dependant on matching the colour allowing there is a clear, which in itself has yellowed, over the original yellow.

To be continued.

DH82A Tiger Moth Re-birth continues.

The rebuild continues with the problem of matching the paint colour. The problem is that the original yellow acrylic has aged and there is a clear Estapol (satin enamel, not polyurethane) over the acrylic as a fuel proofing which has also aged and yellowed. So after talking to a couple of paint experts the consensus was to look at a different scheme as matching the colour while not impossible, would be difficult. OK, so do I go for a full repaint or can I utilise some of the yellow already on the model. The worst part was at finding a colour scheme that might at least utilise a part of the original colour.



So into some books on DeHavilland aircraft and when nothing turned up there it was onto the internet and Dr Google to do some further research. Airplanes.net, a search for Tiger Moths and while they brought up many colour schemes it was a search of the aircraft at Luskintyre airfield in the Hunter Valley of NSW that gave me the colour scheme I needed.

VH-DWP was an aircraft restored at Luskintyre and painted in a camouflage with a yellow underside and yellow bands on the fuse and upper wings. So what are the colours it is painted? A check on the CASA website turned up the owner of the aircraft, over to White Pages and we have a contact number.

With a quick phone call, a brief explanation as to why I wanted the paint details I had the Federation Paint colour numbers. Federation is an international colour pallet similar to the Pantone system. Back to the internet for colours.

So off to the paint shop armed with some colour samples and after a bit of fiddling we ended up with pots of brown and green for the camouflage and satin polyurethane for the fuel proofing.

While a lot of the fuselage had been recovered



all the old paint needed a full wash down with grease and wax remover to remove all residue oil so the primer will stick. The wings were also washed down and everything was sanded with 600 wet & dry paper.

Now the masking commenced, we needed bands of the old yellow on the upper wings and the fuselage and to get a sharp edge I prefer to use 3M Fineline tape (or generic brand) that gives a very sharp edge and this is backed up with low tack masking tape and paper.



DH82A Tiger Moth Re-birth continues.

Now when all the masking has been completed it was time to mix the paint. The chosen paint was acrylic water based as it is east to use and washes up with water. I was using an airbrush for the camouflage colours and generally the edges are not sharp so masking wasn't required. Thinning is usually required with

low air pressure. I used a bit of cardboard to stop over spray. I also spray onto the area to be painted to help avoid the overspray.

Now to make sure that there is no bleed under any masking remember to rub down the edges again immediately before applying the paint. I started with the lighter colour first, the brown, and followed by the dark green as it gave a better edge.

A total of 3 coats were used for each colour as each was quite thin and they were applied on a warm day to assist with drying between coats. After the last coat was dry the masking was removed and the paint left to harden for



another 24 hours before any further work was started.

Next the decals were added before an Estapol satin clear coat was added to protect the acrylic and provide a better fuel proofing. This was applied with a normal spray gun with the paint thinned down so 2

thin coats were applied.

Painting is something that I have found you can't rush. If you put the effort into prepping the surface and take your time and allow plenty of drying time between coats you will end up with a better job in the end.

Now to the rigging, repairs had to be made to some of the flying wires as these are functional. The wing incidence while set by the root mounts has to be adjusted for wash in, wash out by adjusting the flying wires and interplane struts. This is where a good incidence meter comes in handy.



Now with the new OS200FS fitted the engine was run still using the onboard glow system and all seemed fine. Now it was ready for a test flight but before we headed to the field I needed to check the balance as I had added weight behind the CG during the rebuild. Those bits of Tassy Oak make a difference. A little nose weight was required but not as much as I thought. Better to add nose weight than be tail heavy. A little nose heavy is fine but tail heavy deadly and it's usually back to the workshop.

At the field the Heavy Model inspector was doing his thing as the model needed to be re-certified due to the major rebuild. Thankfully it passed inspection and the Tiger was assembled, rigging checked, Rx



battery voltage checked, range check completed, engine run and tuned so I had now run out of excuses.

With a slight easterly breeze we taxied out, lined up, took a deep breath and we were away. Take-off was fine and engine seemed to be performing OK, only a minor trim adjustment was required so we could slow down and do a low pass. All good but on climbing out and turning downwind the engine quit again. Just what we needed, a deadstick landing. Thankfully it was without any drama.

The cause of the deadstick was found to be overheating so back to the workshop.

Decision time, stick with nitro or go petrol. A DLE35RA would fit, would handle the heat better so that was the way I went. A bit of fiddling with the engine mounting and removal of the tank for the new plumbing for petrol. That extra weight I added could be removed as the DLE35, the spark unit and battery were on par with the OS and weight.



Again back to the field for take two. All checks complete, engine tuned we were now ready again. Wow, what a difference, the DLE had more power and performed faultlessly. A real confidence builder. Minor trims only and a landing under power for the first time in a long while.

It flies like a real Tiger with rudder needed to balance the aircraft in the turns due to the adverse yaw.

Since the rebuild we have been to Shepparton Fly in twice and took out the top award at the 2014 WRCS scale day. **DON'T** be afraid to rebuild, it's worth it.

