nsmac newsletter – 4th march 2012

John Olsen has provided this picture of his Fokker DVII in flight today and writes:-

Above is a picture of a little success we had this weekend. It is my Fokker DVII having a successful flight after a repair job. It only had one flight on its first outing, on the second takeoff attempt it had a mishap and it has spent about three months in the workshop waiting for parts and having repairs done. So, today (4th March) it got back in the air again for the first time.

I would still like to tidy up some cosmetic features, I haven't been able to quite match the red paint on the cowling but she looks pretty good in the air. The photo catches her just leaving the ground on the second flight today. Apparently she is quite easy to handle in the air. I didn't try myself, but my son, who is better on the sticks than I am, had a turn. As biplanes go, she is not too bad to rig. Of course, the Fokker DVII has no rigging wires, so that is one thing that does not have to be done, but there are 6 little screws to put in, two on the lower wings and four on the cabane struts. Then the N struts have to be put into place and four little colletts screwed on to retain them. It pays to have a picnic rug to do this on so that any parts that are dropped can be found.

Thanks heaps for firing this in, John – tremendous picture and wonderful plane!

Today's flying:

Today was a fantastic flying day with lots of folk out there having fun with some very interesting planes. And the helis went berserk with some fiendishly complex and astounding aerobatic displays. It has been a bit of a long haul with indifferent weather for a bit, but today was worth the wait!

There's been a huge gap between newsletters cos I've been selling up, moving and starting a new job that's been taking almost my full time and concentration – sorry about the lull.

Ralph McCleery wrote the following article some time ago – here it is, however belatedly. Thanks Ralph – brilliant!

I'm not sure if this project is worthy or not but it's about a Beagle and before you jump to any conclusions, no it's not the dog next door - it's the recent addition to Top RC's ARF's, the Beagle B121 pictured right.

These days ARF's go together pretty quick and the quality of finish has come a long way, especially for these budget conscious Chinese kits. This particular ARF is ply and balsa for the lower half of the fuselage and moulded ABS plastic for the cabin half. Pretty clever, if you ask me.

Ho-hum, I hear you say and rightly so. ARF's are pretty straight forward and not that difficult to follow those chinlish ARF assembly manuals. My problem was that the same week I bought my new toy, a mate I fly with most weekends, Wayne, bought the exact same model. I figured that sooner or later one of us would have a senior moment and pick up the wrong model and let's not even think about the consequences that are possible from that sort of mistake.

As you can see, the full size plane and standard constructed ARF model employ a “Tricycle” landing gear style, so I decided that a “Tail dragger” setup would give me enough differentiation.

The tail wheel on any aircraft is usually easy to adapt and I even bent my own, although I will confess to using a commercial wire assembly to create my bend pattern. On the left you can see a mock-up (blue masking tape and all)

The main gear is a little trickier, being a low wing plane. After gluing in a block behind the firewall (10mm x 30mm x about fuse width) I cut into the wing and glued in the same size block with M4 blind nuts. To fix the landing gear on the firewall side I used the Dubro screw and glue threads. These threads started life as 4-40 but I tapped them out to suit M4. Oh, and by the way, don’t forget to drill out the wing locating dowel holes (6mm) in the firewall block. Otherwise, the wing won’t fit. Guess how I found that out – doh! ☺

Alignment for your main gear is crucial to help with well balanced take-offs and landings. An expert once told me that the axle should be as close to perpendicular below the wing's leading edge as possible. Using the Dubro 40 size unbreakable plastic landing gear that has a 4 hole pattern, it worked out spot on. I've powered my Beagle with an OS FS70-U and with all gear fitted minus flight pack, the CG ended up right on the money, so I glued in (opposite the switch) a battery mounting plate right on the CG line (copied that off Wayne too!).

My first flight was Labor weekend down at the Whitianga field. On take-off, I was caught by surprise as the plane became airborne very quickly, so be warned this plane is very slippery. I had far too much aileron travel for a first flight and no dual rate dialed in so I guess I should have paid more attention to the set-up instructions, double doh! The plane flew very well with no noticeable bad habits and after a few minutes of zipping round the sky and calming my nerves, it was time for that first landing. Long story short, after 3 or 4 failed landings I had a flame out (motor too rich on low speed mixture) and lost the landing gear. Not the planes fault by the way - I got lazy flying my now ex Super Stunt which was a floater on landing and hadn't had the experience of the symmetrical style wing and how "HOT" you have to land them. The damage was more to pride than the plane. The way the mounts had been made, it broke clean and only took a few minutes to re-glue (don't you love it when a plan comes off!)

This incident then made me think about the second mod that my colleague had already done to his Beagle, working flaps. As you can see in the pictures the full size plane has a 50/50 aileron/flap wing so this mod does make a lot of sense. I was watching Wayne land his Beagle and he would come in at a 45 degree angle to the strip which looks so cool! He tells me he still has a bit of throttle on until touchdown.

Having not done a modification like this before, I felt it best to get Wayne to assist. Actually he did it all and I was the extra pair of hands when needed. All the Beagle's

working surfaces are screwed rather than glued, which means all you have to do is locate the screws under the film, make a hole with the phillips screwdriver and the aileron comes right off, easy! The original servo location becomes the flap servo and you have to mount in two extra pieces of ply for the aileron servos.

In the picture to the left you can see the wing is prepared, new servo mount glued using 5 minute epoxy and the balsa rails to hold the

plywood plate are glued using CA. Hopefully you can also make out the 45 degree chamfer for the flap. Wayne did the chamfer in one single movement. All I did was hold the wing steady, very impressive. The theory to the chamfer is to allow a 90 degree flap action if you so desire. Unfortunately my initial setup couldn't, as I didn't have any ball-link control rod ends with me.

Next we re-covered all the naked wood with film including the flap and aileron cut ends. When you cut the original aileron in half, get the flap piece and take off about another 2mm where you just cut it. This is so the flaps and ailerons don't bind against each other. The original aileron has 3 CA style hinges (screwed remember) and 2 of the original hinges on the new aileron are in the perfect position. You have to add one extra hinge on the flap half. We removed all the CA hinges on the flap halves and used small metal pin type hinges which allow greater travel of the surface without the resistance typical of a CA hinge. One small point to note, because of the loss of timber from the chamfer for the flap you have to screw it in from the top of the wing when re-fitting.

The pictures below show the finished product (flaps up and flaps down). Fingers crossed my second flight will have a much happier ending now. Top RC lists the Beagle as a beginner's model, but I would tend to think the skill level required is more like intermediate. I'll report back once I've had a few more flights and let you know how it goes. Blue Sky's and happy landings everyone, and remember if the plane comes home in one piece it's been a good day!

Great article, eh. **But wait – there's more……** those words *'…..and remember if the plane comes home in one piece it's been a good day!'* took on real meaning, as Ralph had a most unfortunate "Beagle incident". The following is an excerpt from a subsequent email conversation: -

Yep Stan, that was mine and it was version 2 to boot.

The first one flew great for several flights till a Spektrum AR500 RX failure. Seems I ended up with 2 of the faulty AR500 RX's from end 09 beginning 10. Known fault, they had faulty processors in them. They are dust now!

The V2 on the weekend was its maiden and it turns out the RX battery, while voltage check was fine, failed under load after about 2 minutes of flight. The plane became sluggish in response and as I was turning to come back and check what was going wrong it dropped a wing and didn't have enough voltage to lift again and did the death spiral into the ground.

A caution for all fliers using Nickel Metal Hydride RX packs, always do a cycle load test on the battery if it's been sitting around for a while. It's important to make sure they will deliver 3A+ for the capacity of the pack depending on the planes set-up. The pack I had was a 2200 4 cell NiMH and at 1 amp it will deliver the 2200mAh but at 3 amp it would fail (fall below 3.6V) after delivering about 150mAh. That's about 1.5 circuits and that's exactly when it happened.

I've never liked NiMH with their charging limitations (1C max) and have a few NiCAD packs that just don't quit but from now on it will be 3 cell LiPo with UBEC's in the planes.

There were actually quite a lot of mishaps on Monday. Simon lost throttle on his plane and had to run it out of gas and do a dead stick in. Mind you it was one of the best landings of the day. Another chap burried his electric stick. Adrian ran out of battery earlier than expected in his Sundowner - landed but lost his undercarriage, and as I was leaving, I think Grant was giving a newbie a lesson on a real nice

4stroke trainer (not too sure if it's the clubs or not?) and with my head in the back of the car, I heard this thud and thought "that's a plane into the tree!" and sure enough there it was hanging from the branches of that big tree at the eastern end of the runway.

Things happen I guess and, as they say, every plane has an expiry date on it. We just normally like it to be after we are finished with them.

I did get my Dynam Meteor EDF up about 5 times though and that always puts a smile on my face. Only its third outing, so it's still quite a challenge, especially the landing.

Cheers

Ralph

PS: One of the planes I've got in the build hanger that now moved up the list so to speak is a nice P47 (90-120 size) that I'm putting a 30cc DLA gas engine in. If I remember I'll try and do a build log with pictures.

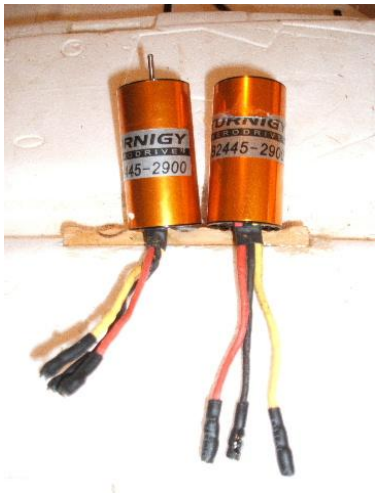
PPS: I am putting together now a GWS A4 Skyhawk and found a neat trick to putting in a thrust tube, I should write that up too I suppose.

Ralph also sent me this "press release" for a giggle ☺:-

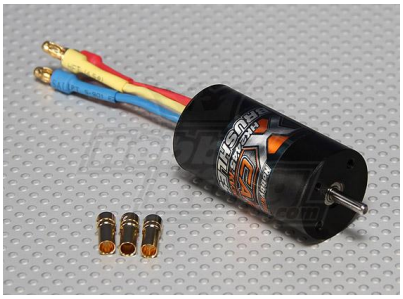
PRESS RELEASE

Saturday November 19th 2011

North Shore, Auckland NZ: A local surgeon at 10:00 hrs. successfully performed open-body surgery on a GWS F15 EPO EDF Jet.

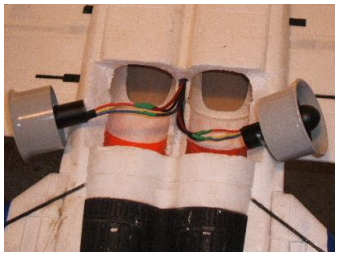


This beloved model suffered a catastrophic motor failure (broken shaft) to its starboard fan unit during the 2011 winter park-fly season. The owner was devastated by this incident and signed up immediately to the Hobby King donor's watch list as this plane is a favourite and doesn't deserve to be shelved.



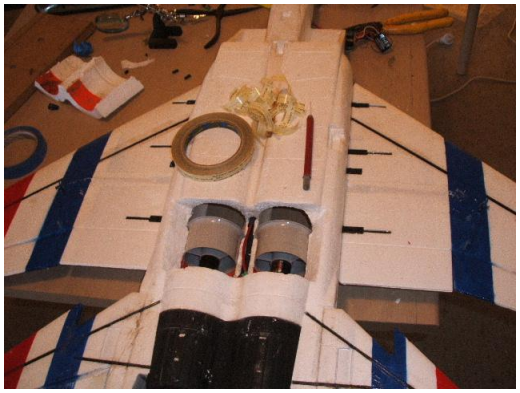
A few weeks ago donor motors became available and were sent urgently so this transplant could go ahead. It's not surprising that these original motors (Turnigy HXT 2445-2900) suffered this failure as they have a 2mm shaft. Most modellers are of the opinion that a minimum 3mm shaft is needed like the donor motors (S2445-3200).

The surgeon allowed us to view the operation and here is how it went:



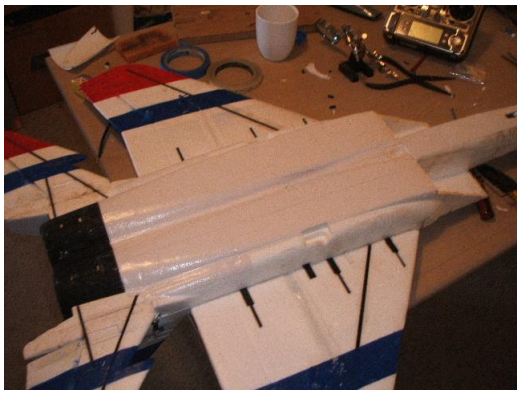
Measuring to make sure the surgical cuts were either side of the EDF units a very sharp hobby knife was used to cut out the bottom as shown. Note the cross cuts are square and the side cuts are on an angle. This is to assist in stitching up the patient after surgery.

The new motors connections were soldered directly (as were the originals) to the ESC outputs and tested for direction. Heat shrink is used to insulate the wire joints.



Next the surgeon test fits the EDF units and then uses double sided tape to stick them back in place.

Now it's time to stitch up the wound. Using double sided tape again on the outer angled cuts the opening is closed.



As the model is a hand launch and belly landed a layer of white gaff tape is used to give an easy clean smooth surface to the bottom of the model. It also acts to cover up the scar this operation caused.

The surgeon is quoted as saying “The operation looks to be a complete success and the patient should make an full and complete recovery!”

So, that’s all, folks! Have lots of fun..... remember the Hibiscus Coast Radio Fliers Open Day next Sunday.

Cheers, Stan

Big thanks to Ralph for his articles and to John for his Fokker photo and report. You can contact Ralph at ralph@amber.co.nz and John at mjolnir@paradise.net.nz