The News Letter of the Hobart Model Aero Club Inc. June 2017

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Some more from Peter's camera

Bill's Scale Column

Fournier RF-4D Covering and Finishing

Hi Guys,

Well - finally, after some 8 months work, the model was completed a couple of weeks ago and has subsequently been successfully test flown by Peter Ralph, ably assisted by Nils whilst I stood next to them and held my breath! Given the dire warnings that I have received from various people as to the dubious flight characteristics of Fournier models, there has always been an element of doubt in my mind as to the wisdom of choosing to build such a model. However, in the end, the sheer beauty of the full size aircraft won me over. So next, a description of the covering and finishing stages of the project.

Covering

In regard to the flying surfaces, there really was no choice. Profilm is currently my favoured covering film, as it is most certainly easier to stretch and shrink around compound curves and it results in a finish very similar to that obtained from the use of such products on full size sport aircraft. I decided

to cover the flying surfaces first, simply because at that point in the project I remained somewhat unsure as to whether the complex compound curves of the fuselage could be accommodated by Profilm whilst still providing the quality of finish that I was aiming for.

The only challenging part of the wing covering process however, was the question of how to ensure that both of those long tapering wings ended up with exactly the same amount of washout. In the end I decided that there was really no choice but to construct a wing jig that would hold the twisted wings in the required position during the critical shrinking phase. Both bottom and top of the first wing were initially covered but not shrunk, before inserting the wing into the jig. Next the top surface was shrunk with a heat gun to hold the washout in place, before the wing was slid out of the jig and the lower surface also shrunk to its finished state. Finally, the completed wing was slid back into the jig to confirm that the required washout was now permanently in place. After reversing the jig, the same procedure was used to cover and twist the second wing into its required shape. The attached photos may assist others in understanding the process used which, I am pleased to report, did exactly as intended and might easily be adopted for other such applications.

By this time I had made up my mind that white Profilm also provided the best option for covering the fuselage, primarily because the use of any alternative finish would almost certainly have resulted in an unacceptable increase in the all up weight of the model. With some trepidation I started with the wing fillets, simply because their concave surfaces presented an obvious potential problem. I won't attempt to describe the process, but simply say that in the end it worked! The rest of the fuselage presented few real problems other than the selection of the best locations for overlaps in the film in order that the multiple joins would be rendered less visible on the completed model.

Decoration

With the model covered, it was now time to decorate it in a scheme as close as possible to the full size aircraft. All RF-4D's were originally painted with red trim and, in restoring XOS, Bob Jenneson decided re-create the original factory job which involves a lot of very fine lines not all of which are parallel sided! It presented a not inconsiderable challenge, but I opted for the traditional mask and paint technique. It was, to say the least, very difficult to obtain the result I wanted, but I got there in the end, even if it did take me more than two days to get the masking in place! As on my previous models I used Kill Rust epoxy paint; sprayed on in the case of the wings and cowling, but brushed on to the fuselage because of the real difficulty in effectively fully masking such a complex shape. As on previous models the decoration was completed with the application of vinyl registration letters produced by Signfast. Finally the dummy exhausts, heat guards, radio aerial, wing walkway and cockpit frame were glued into posiition using Kwik Grip clear contact adhesive - not used before but proved very effective.

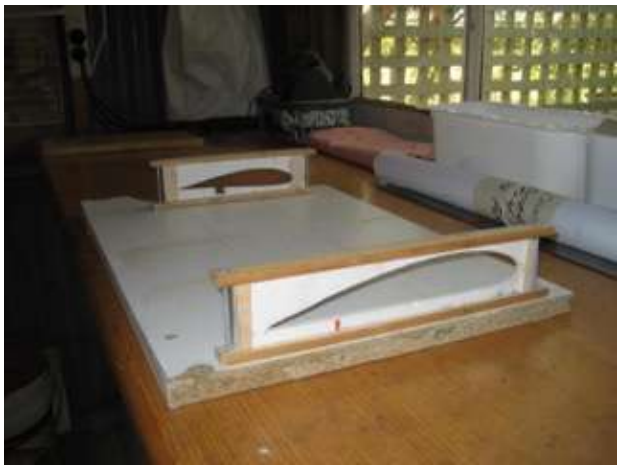
Installing the electrics

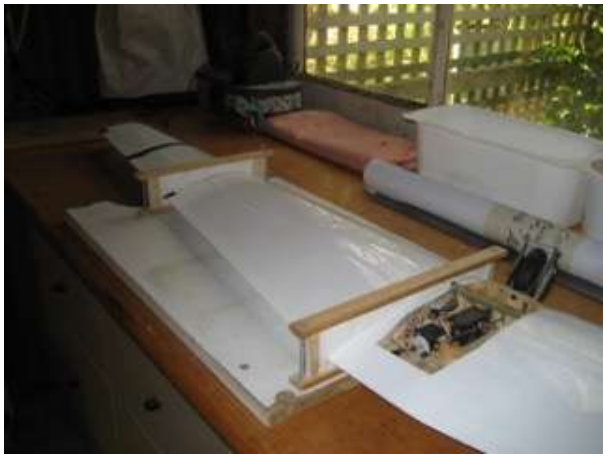
With the model structure now complete, the next task was of course to install the motor, ESC, battery and R/C equipment to confirm firstly, that they all fitted into the planned locations and secondly, that the model balances at the desired location.

Every scratch builder understands the importance of avoiding a completed model that requires the addition of lead in the nose for the model to fly properly! With this particular project I was even more in the dark, because I have never previously scratch built an electric powered model! So, quite simply I planned for the location of all of the heavy electric equipment as far forward in the model as it was possible to get. I chose an OS 3820 motor which is relatively heavy, and decided that the recommended 50 amp ESC could also be located within the cowling parallel and adjacent to the motor. Research on the internet confirmed that such an arrangement would pose no electrical problems, and it does offer a number of significant advantages. Quite apart from putting two heavy bits right at the pointy end, the broad cowling with air outlets on both sides provides both, effective cooling for the motor and ESC and the use of very short electrical connections.

As previously reported, the model was constructed in a manner that allows the battery/s to be inserted through the retract bay into a vertical position against the back of the firewall. With the main wheel down, this arrangement allows for battery changes to be accomplished without removal of the cowling or wings, and eliminates the need for a non-scale removable hatch in the top of the fuselage. Given the inevitable uncertainty as to balance, the battery storage area was constructed in manner that would allow either, the use of a single 2200 mha LiPo or perhaps two batteries connected in parallel if additional weight was found to be necessary to balance the model.

The attached photos show just how it was done, but is it really finished?





The Final Episode: Balancing, trimming and flying to come.

Chris Rowe

Over the years I have been perplexed as why some US and British aircraft in the ETO have only the bottom part of the aircraft painted in "Invasion Stripes" and others have the whole Monte. After doing some research on aircraft of the USAAF. 8th & Ninth Air forces I was enlightened!

Invasion Stripes is not the correct term used by us in the know. The proper phrase is "Distinctive Markings" and was promulgated in operational Memorandum No. 23. On 18th of April 1944. Black and white stripes to be applied around the wings and fuselage of certain dimensions that are too long to be printed here (if anybody is interested contact me and I will give you the beans) However after about a month Squadrons were starting to remove the markings from the upper portion of the aircraft and on the 6th of July HQAEAF recommended that no further aircraft should be given the Distinctive Markings and from the 6th of July to the 19th of August 1944 the Distinctive Markings could seen to be applied to the underside of fuselage and wings only. I hope this has helped other scale modellers out there with not a lot to do who also had this quandary.

On a closing note at the TMAA conference last Sunday the Club (me) put our hand up to hold a Scale fun fly in March next year and an Electric fun fly at a date to be announced. These events can be a real good thing but it requires more of our members to participate. If anybody has a date for the Electric day that they think would be appropriate please let me know.

Think and fly safe.
Bill Jennings

President's report

For my last Presidents report I would like to summarise the past year. I find "It is always nice to know how far we have come than how far we have to go…"

As we are all aware, the start of the HMAC club year in 2016 marked the clubs 50th year since formation in 1966, the exact date unknown.

As part of celebrating our 50th year, a small museum, or history cabinet, has been added to the club house consisting of RC items from the early days of RC. At our AGM on the 18th June, a BBQ and car boot sale will be held to wrap up our 50th year. A Life members park bench and framed pictures of our Life members will also be unveiled. Other club members are welcome to attend.

Club membership numbers are reasonably static with the usual turnover of a few members leaving and new ones joining. Some members are no longer active or re-joining due to health woes, which is saddening. On the other hand a few members have had health concerns but recovered which is fantastic, and what a better place to recover than in the comradery of a friendly club environment!

Our Northern border, although still a volatile area, thankfully remains quiet. I put this down to having a strong working relationship with council, integrating horse agistment to Kelly Field and persistent vigilance and education among members to avoid overflying our Northern neighbour. Well done to all and keep up the good work everyone!

Although many of our events had to be cancelled due to uncooperative (or rather downright cantankerous) weather, many other club projects and general flying persisted. Things still on the go, and nearing completion, include a project to upgrade our main sign to two 3x1.5m panels, a street direction sign in Franklin St Richmond, and re-erecting the old tail fin sign at the main gate to mark our entrance.

Recently the TMAA AGM was held on Sunday the 28th at Campbell town. Bill Jennings, Barry Gerrard and myself made the annual pilgrimage to represent HMAC (and get a free feed). The minutes of the meeting will be made available in due course, including the contest calendar, which is to be renamed a more friendly and welcoming 'events calendar'. HMAC volunteered to host two

inter-club events. An Electric Fly in (date TBA) and a Scale Fly in (March long weekend 2018). SEAT will be in contact with HMAC members for possible DLG events. Clive Butler reported that the NSW Free flight body will host a multi discipline 'National Jamboree' type event over Easter of 2018. This should be a truly spectacular event, well worth the effort to get there. Other TMAA business included discussion of dwindling club membership, of which there was no definitive answers other than numbers appear to be constant among retiree's. Maybe clubs should focus on retiree's as new members? Setting the TMAA budget and fee schedule for the upcoming year was discussed. Fees remain the same, mainly due to cost reductions made by the MAAA to international competitor support and future cost savings such as more teleconferencing. TMAA funds remain very healthy at approximately $46,000. Problems with some clubs losing their fields was brought up. Being proactive in this area looking for alternative flying sites (before end of lease) and club amalgamations were two solutions offered. This last issue brought home how lucky we are to have Kelly Field and a reminder of how quickly a club can lose their flying field, not to mention limitations imposed by land owners of flying sites! The latest club under threat is Hobart RC Flyers at Lauderdale, with their site being offered for sale by the land owner in the last few weeks. Phew! I think that's about all the interesting and relevant things for HMAC.

I would like to thank everyone for allowing me to represent them over the last couple of years, the committee for their service to HMAC the past year, and not least our esteemed editor. Lastly, I wish the incoming Executive all the best for 2018. See you at the AGM Regards Jason Bedelph

Radio Interference

A spate of glitches and control loss of models has been experienced in the last month or so attributed to radio interference on the 2.5 GHz band. Whilst not discounting this it is felt that a better understanding of the 2.5 GHz band would be in order which may assist overcoming some of these problems.

The 2.4GHz band is not for the exclusive use of model radio control as some members think, but an open unlicensed band for industry, telecommunications, industrial control, WI FI, agriculture etc. We are but a small part of this spectrum and operate within a veritable "fog" of radio and data information. What makes our systems work is clever frequency hopping and software to sort out the desired signal from all of this garbage, providing the receiver in <u>your model</u> is getting a good signal from <u>your transmitter</u>? Note, some manufacturers do this better than others, or put bluntly "you get what you pay for".

Most members know not to point the transmitter antenna at the model, the reason being that antennas do not radiate of the end. What most are not aware is that the reciprocal applies to the receiving antenna; it does not receive of the end. These laws apply to all wire antennas irrespective of frequency, however with very high frequencies this becomes more pronounced as the antennas are very small. A majority of receivers now are provided with two antennas to be positioned at right angles to each other making it virtually impossible to have the receiver antenna pointing end on to the transmitter as the model flies around. Note, this is not the only reason for two antennas; but the above should suffice to make my point.

Now to our model, a big source of radio fog onboard the model (if electric) is the speed controller. This unit 'chops' the DC from the battery and converts it to a sort of rough 3 phase AC for the motor, and in doing so produces lots of spurious electrical noise. Some noise suppression is provided in the speed controller, but as said before, some manufactures do it better than others. Servos also produce some noise to a lesser extent.

Let's take a worst case scenario, the transmitter has inadvertently had its antenna left pointing out towards the model, the model is equipped with a single antenna receiver and is electric powered with a somewhat dubious speed controller. As the model is flying its attitude is changing and at some point and probably at a reasonable distance where signal strength is low, the receiving antenna presents itself in an end on alignment with the transmitter. The required signal will be so low that the onboard electrical noise (and background "fog") will swamp the receiver; this will present itself as a glitch or worse still total loss of control.

So what's to be done? Given the above a re-think of the equipment and installation practice as used on our models might be in order. Whilst not the intention to criticize or to tell members what to use and how to do it I do feel that the use of well-known brands of equipment, with systems that use diverse (two) receiving antennas installed well away from other airborne equipment will go a long way to alleviating some of our problems. So far it has worked for me.

The 2.4 GHZ band is becoming more congested as manufacturers continue to produce greater quantities of equipment, so I am not discounting radio interference completely because it is definitely there, but we do need to be aware and do all that is possible from our end.

I hope this information has been of some value to those members that are experiencing problems. Anyone wishing further information feel free to talk to me at the field.

Regards, Mike Hawkins.