



# The Soaring scene

September 2016



Cover picture

Sam Laidlaw launching his ASW 28 at Quaildale at a previous aerotow

## The Soaring Scene

Once again we have enjoyed a relatively benign winter, nonetheless I think most are looking forward to gradually increasing temperatures now that Spring is here. It's a great time of year although frequently windy around the country which can make for difficult flying days. Glider pilots know that as long as it's not raining there is a fling style to suit whatever weather we have. If it's relatively calm DLG is perfect, a bit of activity in the air signals soaring conditions and wind calls us to the slopes. To paraphrase a common saying, "there is no unsuitable weather, just unsuitable models" and if it's raining there is always the building board.

### Aerotowing

July the 16th was to be our final Soaring Saturday until January as the owner of Quaildale would be running stock on the area we fly from for the remainder of the year. As this is the only nearby site that we can aerotow larger gliders from we have been lucky to be able to have monthly access to what is a great flying site. Not only is there lots of unobstructed space but we can get a Notam issued to allow flights up to 2000 feet (600 metres) and we have found the area to be relatively calm when it is uncomfortably windy at Bankhouse.

This was the case when the usual suspects turned up hoping for a good day of flying. Half a dozen local glider guys, were joined by Sam Laidlaw and Phil Jordan from Nelson and also by a few from the BMAC power fraternity - Alf with his Zero, Chris with a large Cub, Noel with a Hurricane and Daryl with a variety of smaller models, hence the number of vehicles in the photo below. In addition we had a few spectators turn up during the course of the day, which was good to see as Quaildale is a bit off the beaten track.



The weather was calm and fairly cool, so after the initial flights were over we decided to fly the ALES 123 NDC event which was scheduled, the reasoning being that the wind would probably get up as the day wore on and it didn't seem likely that the temperature would climb a great deal. The results of that contest are tabled later. Having got NDC out of the way we started towing with Peter Deacon's Extra and Carl McMillan's Big Stick available as tugs. Gliders were my 4.5 metre Discus, Sam's 4 metre Duo Discus, Peter Graham's 3 metre KA-8, Ken's 3 metre Sting and several smaller models. As usual not a huge number but enough to keep us happy.

And why wouldn't we be happy, in the middle of a period of rough weather we were unexpectedly enjoying a beautiful Winter day. We all had several successful flights but for some reason the day ended with a series of incidents that damaged a number of models. Earlier in the day Sam burnt out his retract servo by using the well known technique of sitting the model on it's belly then turning the radio on. Of course, un-noticed, the gear was selected down, couldn't overcome the model's weight so stalled and cooked itself - damn! Next up was Ken - we had just finished the ALES event when he decided to have another flight. The motor tearing itself and the bulkhead it was attached to out of the fuselage made an amazing sound. Not a good sound but amazing!

Phil Jordan had several flights with his FPV glider and, not to be left out of the drama group, managed to get lost just as his battery started to run down (at least that's what we assume happened) and was unable to climb back to an altitude where visual contact could be re-established. The cry of "I've crashed, somewhere!" initially caused some mirth until we all realised that he actually had no idea where the model was. Later extensive searching could not locate it so Phil had to go home empty handed. Fortunately the farmer found it that same day so Phil had to come over from Nelson the next day to retrieve all his gear, luckily relatively undamaged.

To finish off the afternoon Peter and I totally fouled up a tow launch which resulted in two broken wings on the Discus and a badly damaged fuselage on the Extra. Other than to say that neither of us operated our releases nearly quickly enough I think the less said about this the better. Have you ever noticed that when your jaw drops open in astonishment your brain no longer functions? The vision of my big glider bounding from wingtip to wingtip closely followed by the tug smacking into the ground will haunt me for some time. That sort of spoilt what was an otherwise great day of flying.

### **Competition Results**

There were a couple of late results from the June NDC schedule, Phil being in Australia when the rest of us flew ALES 200 but able to fly the event later in the month. Just Pete and I flying Radian, which was a pity because the conditions were quite good as the scores show. All these flights were at Bankhouse on the 25th of June.

#### **Event #182 ALES 200**

**Phil Elvy** MFNZ #11020

Flight 1 - 4 min 47 Points - 287 Landing - 50 Total - 337

Flight 2 - 7 min 13 Points - 433 Landing - 00 Total - 433

Flight 3 - 6 min 18 Points - 378 Landing - 35 Total - 413

**Final Score - 1183**

#### **Event #184 ALES Radian**

**Rex Ashwell** MFNZ #10746

Flight 1 - 7 min 00 Points - 420 Landing - 50 Total - 470

Flight 2 - 7 min 06 Points - 414 Landing - 50 Total - 464

Flight 3 - 7 min 05 Points - 415 Landing - 50 Total - 465

**Final Score - 1399**

**Peter Graham** MFNZ #10777

Flight 1 - 6 min 16 Points - 377 Landing - 00 Total - 377

Flight 2 - 5 min 25 Points - 325 Landing - 25 Total - 350

Flight 3 - 5 min 18 Points - 318 Landing - 25 Total - 343

**Final Score - 1070**

At Quaildale we flew ALES 123 early in the day. It was cool then with a light NE breeze and while there was some lift around it was very patchy. With just 123 metre climbs this can be a difficult competition as, although the target time is only 6 minutes, if you don't find some air fairly quickly you can be back on the ground in no time. The bigger models seem to be less suited to the short climb so Peter Graham and I stuck with our Radians.

### **Event #188 ALES 123**

**Rex Ashwell** MFNZ #10746

Flight 1 - 6 min 03 Points - 357 Landing - 50 Total - 407

Flight 2 - 6 min 04 Points - 356 Landing - 25 Total - 381

Flight 3 - 4 min 55 Points - 295 Landing - 50 Total - 345

**Final Score - 1133**

**Peter Deacon** MFNZ #10441

Flight 1 - 4 min 28 Points - 268 Landing - 50 Total - 318

Flight 2 - 4 min 15 Points - 255 Landing - 50 Total - 305

Flight 3 - 3 min 43 Points - 223 Landing - 50 Total - 273

**Final Score - 896**

**Phil Elvy** MFNZ #11020

Flight 1 - 3 min 30 Points - 210 Landing - 25 Total - 235

Flight 2 - 5 min 32 Points - 332 Landing - 25 Total - 357

Flight 3 - 2 min 59 Points - 179 Landing - 25 Total - 204

**Final Score - 796**

**Peter Graham** MFNZ #10777

Flight 1 - 4 min 15 Points - 255 Landing - 00 Total - 255

Flight 2 - 4 min 01 Points - 241 Landing - 25 Total - 266

Flight 3 - 3 min 47 Points - 227 Landing - 00 Total - 227

**Final Score - 748**

**Ken McMillan** MFNZ #10988

Flight 1 - 3 min 08 Points - 188 Landing - 00 Total - 188

Flight 2 - 4 min 23 Points - 263 Landing - 25 Total - 288

Flight 3 - 3 min 40 Points - 220 Landing - 50 Total - 270

**Final Score - 746**

## A New Model

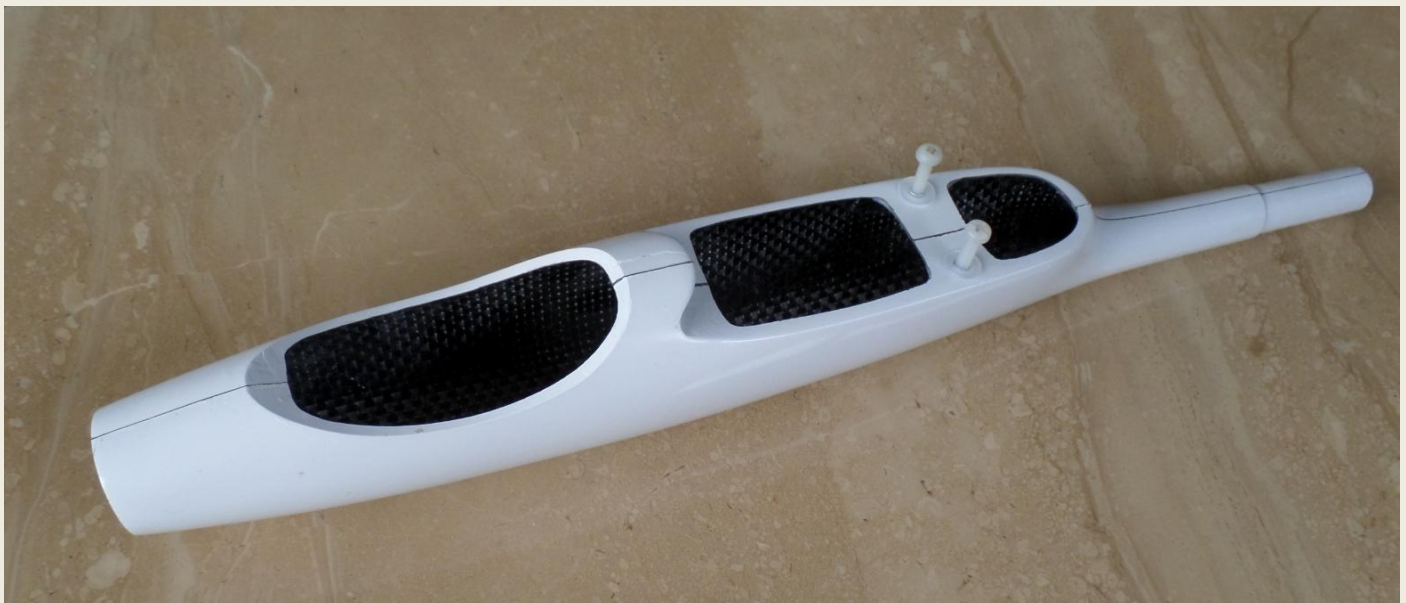
Here's Phil Elvy's report on what was required to build his new 2 metre electric glider. He was stepping into new territory with this model but carried it off well. As you will see from his text, building a competition model is nothing like screwing together your average foamie - you have to think about every step. It was worth it though as initial flights with the Magic show a lot of promise....as long as you keep a close eye on it, because the cross section is very small and the model can really get along.

### Reichard Magic 2E Build

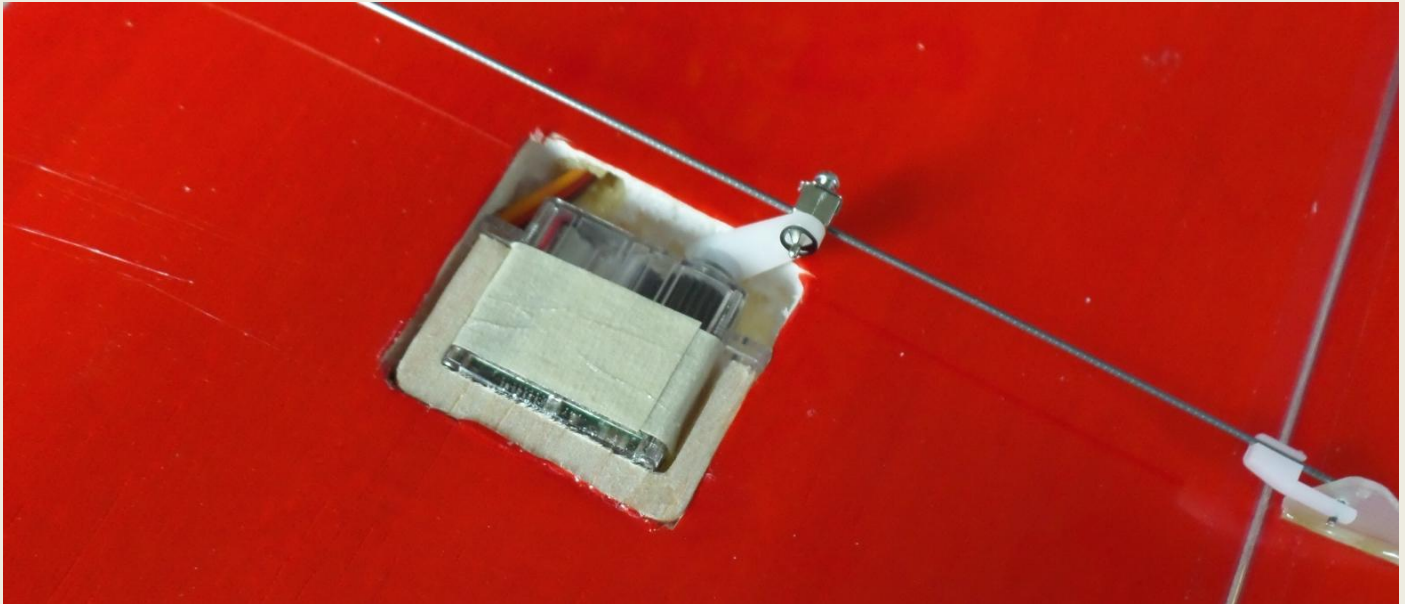
My foamy Phoenix 2 metre just wasn't up to good thermal soaring so I have been looking for a 2 metre composite glider that I could fly on club days. I have a 2.8 metre Prelude which is just a bit too big for normal Sunday flying. After a lot of research I finally settled on a Reichard Magic 2E from Esprit Model in the USA: [Magic 2E F5J/ALES \(ARF\)](#) Esprit have a good website that describes the models very well and also recommends and supplies the associated components. I went with what they recommended - an AXi 480 2217/16 motor, Hitec servos for the ailerons and flaps, Futaba servos for the rudder and elevator (obtained elsewhere), a 10 x 6 folding prop and I'm using a 3s 950 mAh Lipo and a 30 amp ESC.

The model components consisted of a carbon fibre fuselage pod (described as fibreglass on the website), two piece foam core balsa sheeted wings covered in Ultracote, carbon boom and covered balsa tail feathers. The control surfaces were all pre-hinged with tape. There was a set of instructions that comprised of one A4 page of text, very nondescript and hard to follow, plus some photos so I was pretty much on my own. This caused me to ponder a lot before I glued.

I started with the wings. Two leading edge locating pins needed to be fitted to the wings, then marked and matching holes drilled in the fuselage. The holes to run the servo extensions to the ailerons and flaps were too small to allow the servo plugs through so I had to cut the plugs off, run the wire, then solder them back on. Instructions said to glue the servos in, which I didn't want to do in case they ever needed to be removed, so I glued tape to the wing and wrapped it around the servos. Supplied packers fitted around the servos which made them nice and tight. No servo covers were supplied but the linkages definitely required protection on landings. I tried a couple of sizes from Hyperflight but they were not suitable so I ended up making some fibreglass covers.



**Carbon Fuse**



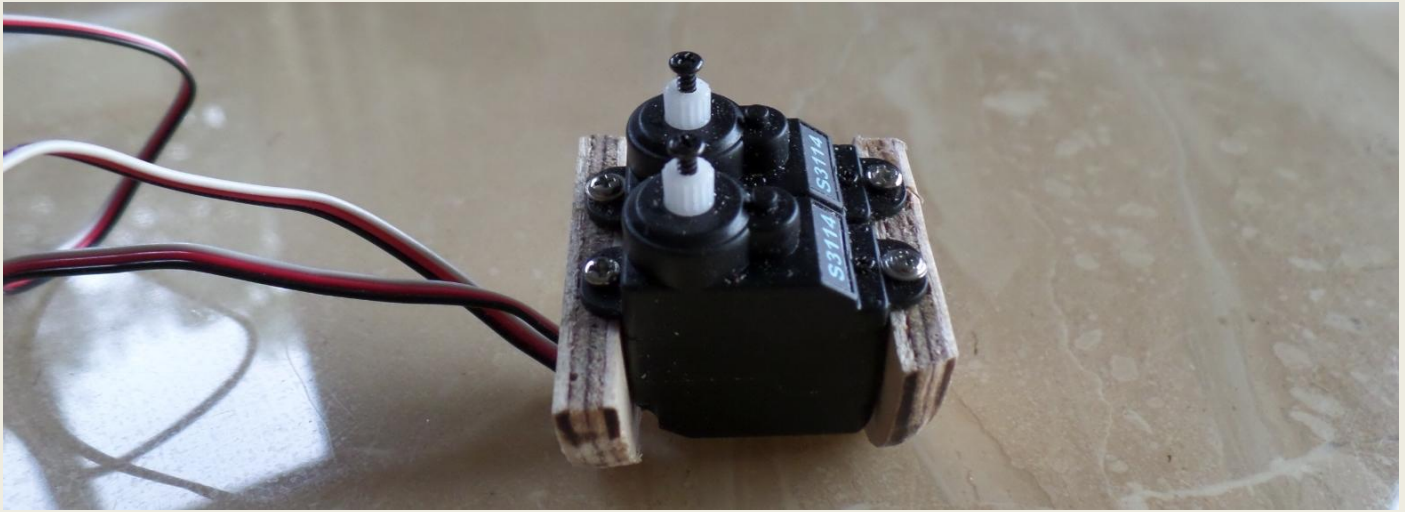
### **Wing Servo Fitted**

Next the horizontal stabiliser and fin. The hori stab simply screwed onto a base plate which was glued onto the boom. The base plate held two blind nuts to accept the screws, so holes had to be drilled in the boom to accommodate these. I fitted the wings temporarily to ensure that the tail feathers were square. The fin was attached using a pin - a carbon pin was supplied but I used a piece of pushrod to make it stronger. This was drilled vertically through the boom so that the fin and tail skid slid onto the pin and were glued. I used two pins to make this assembly stronger and prevent twisting. Drilling the locating holes in the fin without punching out the side was quite tricky.

The rudder and elevator use a pull string/torsion spring control system which I hadn't come across before. The springs were easy to fit but I was concerned that the kevlar string supplied might rub on the boom and fray, as it was not a straight run from control horn to the servo arm, so I elected to replace it with craft wire. The elevator wire runs straight through the boom while the rudder wire comes out the side of the boom. The servos are attached to bulkheads which are then glued to the fuselage. I had to make these as the ones supplied were too small. I made the cutout for the servo wires large enough to let the plugs pass through in case I ever need to remove a servo.



**Rudder already fitted and showing elevator mount**



### **Rudder/Elevator servos mounted in bulkhead ready to be glued to fuselage**

I pondered over the motor mount for some time as the instructions called for 2 degrees of right thrust. How on earth do you measure this with any accuracy? In the end I allowed a smidgeon (technical term) of right thrust. The only way I could figure to fit the mount was with the motor and spinner installed to ensure it was square with the front of the fuselage. I have glued similar mounts in before but this one seemed more difficult to get sitting correctly. I used slow setting epoxy which took a couple of hours to harden which didn't help (or maybe I fluked my previous one).

The fuselage canopy was to be held in place with a micro magnet at the rear and a screw in the front which meant undoing the screw to unplug the battery. I fitted a piece of pushrod to the front of the canopy which just hooks under the fuselage and used a button magnet at the back. As the fuselage is carbon I had to use a Rx with a long enough antenna to go outside the skin. Fortunately I had a Lemon Rx (I'm Spectrum) which has two nice long antennas which go out each side of the fuselage.

Ready to fly the all up weight with the battery fitted is just 705 grams. C of G was a little nose heavy so some weight was added to the tail. The maiden flight was uneventful and the initial impression was that I am going to have some fun with this model and it could yet be my preferred glider for ALES events. The AXi motor gives it plenty of grunt and it will easily get to 200 metres in 30 seconds. I only had one flight on the day but was able to trim it out before the wind got up. So far I am pretty impressed.



### **Finished Reichard Magic 2E**

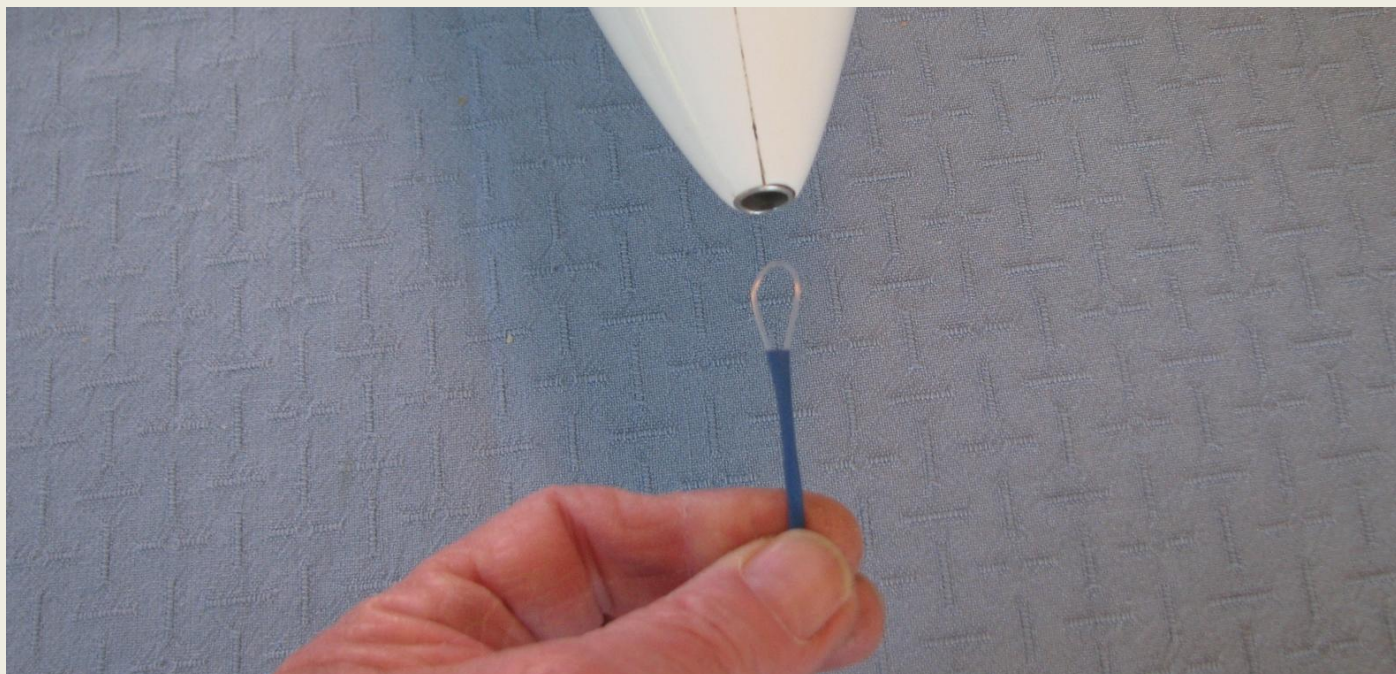
I did have some issues to take up with Esprit. One of the Hitec servos was faulty and was quickly replaced by them. Things didn't go so smoothly with their recommended 36 mm spinner, which was bigger in diameter than the front of the fuselage. I took this up with them and was told that all the components were specifically matched and all I had to do was trim the fuselage back. To get the diameters the same would mean trimming 8 mm off the front of the fuselage which would mean the supplied motor mount would then be way too small. When I asked them to check their stock, thinking they might agree that they were supplying the wrong size, I got no response. I have now fitted a 34 mm spinner which matches perfectly. It was disappointing that no servo covers were supplied and I wouldn't fly this model without them as the aileron linkages are too exposed during landings.

*Phil Eloy*

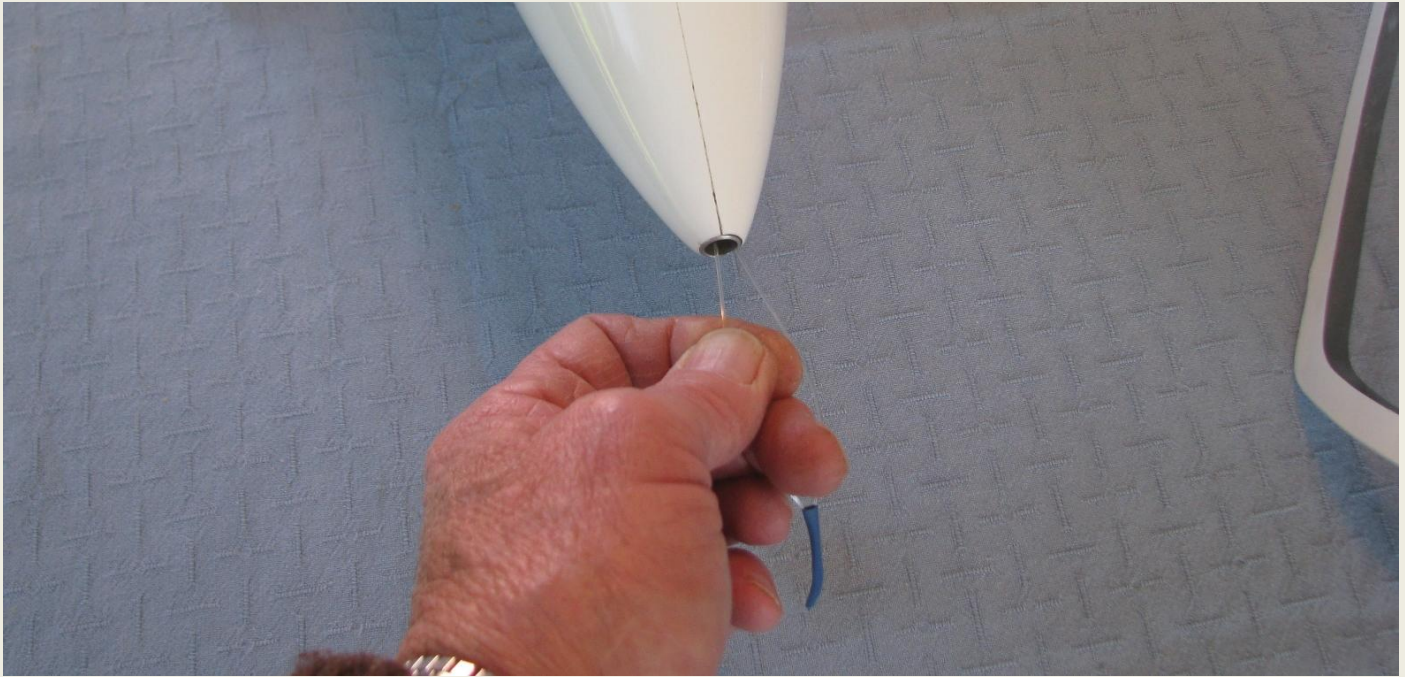
### Tow Loop Improvement

When I first started aerotowing a couple of years ago all the local participants were using a simple loop of monofilament as the connection between the glider and the towline and this seems to be what most still use. It's a low cost and simple answer to the problem but one that I've always struggled to connect to my gliders, especially if I'm in a hurry. The problem is compressing the loop down to slide into the tow release tube - it does it's best to escape all the time or the resultant loop twists sideways and doesn't want to hook up. I use the Hobby King tow release units and if the loop doesn't slide into place properly the hook can close on the monofilament, pinching it in place without hooking up and sometimes nicking the nylon.

I've come up with a low tech solution that has worked faultlessly for me and thought to share it with anyone else having similar problems. As you can see in the photos, all I've done is to slip a couple of lengths of heat shrink tube over the monofilament loop. Make sure the tow plane end has the heat shrink covering the knot, then once it's shrunk it won't move. At the glider end you can slide the heat shrink towards the end and tighten up the loop to make it easy to slip into the release unit. Once it's secured slide the heat shrink back and do the normal check to make sure the loop is properly secured and not pinched by the hook.



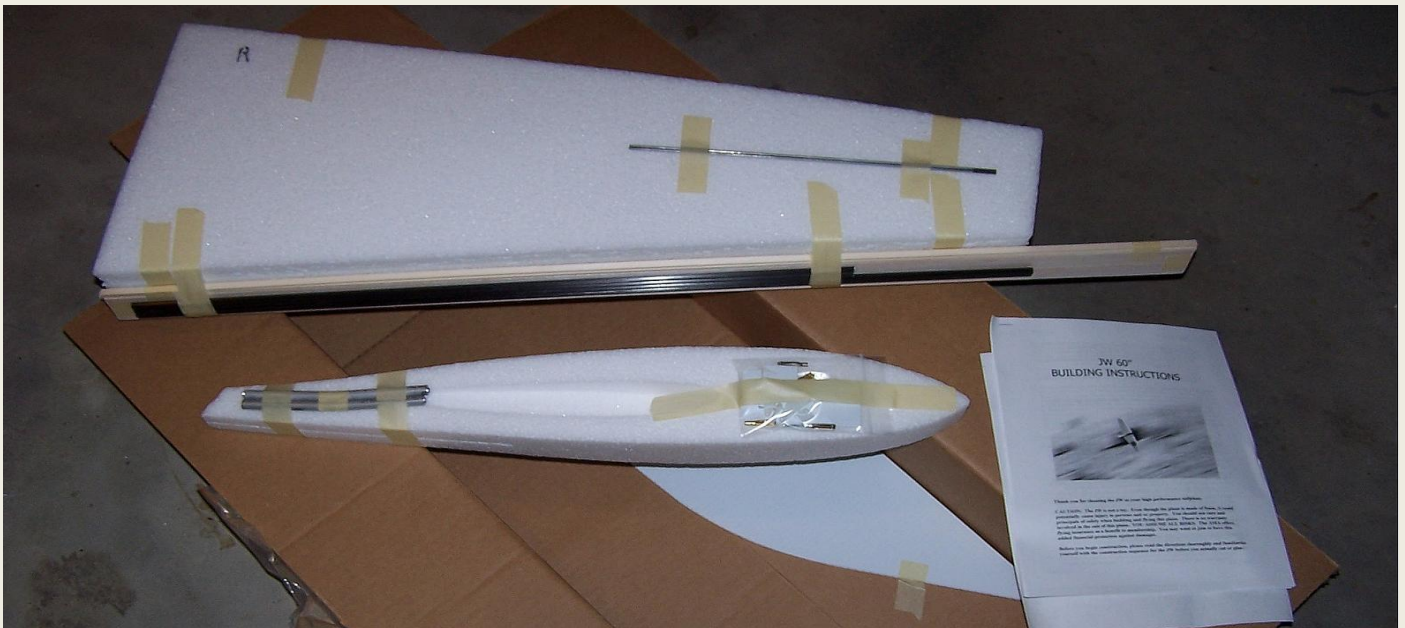




### **Slope Soaring**

I'm pleased to see that the days are starting to lengthen as we move into Spring and I'm looking forward to the "slope soaring season". Not that there is anything to stop us slope soaring at any time of the year but in recent times several members of both BMAC and MAMS have got together after work on Wednesday evenings during the daylight saving period and flown at Meadowbank. Normally we get up to half a dozen pilots and it would be good to see that number increase.

Meadowbank is a beautiful site and being able to drive to the top of the ridge is a great bonus. Depending on the wind strength a wide variety of models can be flown with the Radian and Phoenix being popular. Carl McMillan has a JW60 kit underway and it will be interesting to see how this model performs. It's a 60 inch span foam wing designed by Joe Wurts, hence the name, to be suitable for dynamic soaring as well as general flying. Alex Hewson clocked 244 mph with one of these a couple of years ago but I can't imagine that Carl has anything like that in mind.



**JW60 Kit Unboxing - It looks rudimentary but there's more to this than meets the eye.**



**Carl with the JW 60 - Ready for the slope**

### **Club Competition**

There are a lot of our club members who fly electric gliders but only a handful that indulge in any form of competition, primarily NDC. This always seems a pity to me as there is a great sense of achievement in reaching the target set in a simple competition. Recently the regulars flew an NDC round under the X5J rules. This is a really simple format that requires no extra equipment, just an electric glider and a timekeeper, and I think it would make an ideal fun event for us to fly one club day.

The rules are simple - you have a 10 minute window to fly in, you can run the motor for as long as you want and restart it as often as you like, but only the gliding time counts toward your score. At the end of the flight there are points awarded for a spot landing but if you have restarted the motor or are still flying when the 10 minutes has elapsed you cannot score landing points. That's it!

These are the results from the recent round that we flew and as you can see the format makes for close scoring. It wasn't an easy day to make a 10 minute flight and most required at least one motor restart, which explains the scarcity of landing points. You can see from the flight times that most climbed for around 30 seconds before gliding and if a restart was required it would be for 10 seconds or so. I think I had 3 short restarts on my last flight - not good!

This is not that different from the way most fly on a casual basis, it's just spiced up a bit by having a target to aim for. There is no need to have 4 flights, a couple would be enough. I reckon we should be able to have at least 10 people flying this so give it some thought and be ready to have a go when we come up with a date. It's not difficult, it's not cut-throat, it's just fun. These are the results from the last NDC round that we flew in this format - you can see how close the scores are.

**Event # 190 X5J Unlimited Class 0**

**Peter Deacon MFNZ #10441**

Flight 1 - 9 min 14 554 points 00 landing 554

Flight 2 - 9 min 31 571 points 15 landing 586

Flight 3 - 9 min 30 570 points 40 landing 610

Flight 4 - 9 min 26 566 points 20 landing 586

**Total - 2336**

**Rex Ashwell MFNZ #10746**

Flight 1 - 9 min 20 560 points 00 landing 560

Flight 2 - 9 min 16 556 points 00 landing 556

Flight 3 - 9 min 21 561 points 30 landing 591

Flight 4 - 9 min 15 555 points 00 landing 555

**Total - 2262**

**Peter Graham MFNZ #10777**

Flight 1 - 9 min 16 556 points 00 landing 556

Flight 2 - 9 min 17 557 points 00 landing 557

Flight 3 - 9 min 21 561 points 35 landing 596

Flight 4 - 9 min 11 551 points 00 landing 551

**Total - 2260**

**Phil Elvy MFNZ #11020**

Flight 1 - 9 min 15 555 points 00 landing 555

Flight 2 - 9 min 35 575 points 00 landing 575

Flight 3 - 9 min 25 565 points 20 landing 585

Flight 4 - 9 min 00 540 points 00 landing 540

**Total - 2255**

**Ken McMillan MFNZ #10988**

Flight 1 - 9 min 12 552 points 00 landing 552

Flight 2 - 9 min 19 559 points 00 landing 559

Flight 3 - 9 min 26 566 points 40 landing 606

Flight 4 - 6 min 02 362 points 00 landing 362

**Total - 2079**

## **Big Stuff**

Old friend and ex basketball and volleyball team mate Dennis Hipperson sent me some photos of his current pride and joy. I understand that his Cirrus was a \$9000 purchase which required very little work to bring it up to standard. Those of you who have models worth more than this may want to pause and contemplate a little at this stage. Dennis, who is also an aeromodeller from way back as well as having a long history as a glider pilot, is now retired and living just North of Melbourne, Australia.



## **YouTube Stuff**

I am generally saddened to see a nice model crash. It's a lot easier to take when it's someone else's model of course and when it's on YouTube the reaction can vary from astonishment to hilarity. Here are a few recent examples of collisions with the planet:

[Large Scale RC Turbine GLIDER::::CRASH ةاوللل نى عللا يدان - YouTube](#) I imagine this model would have rivalled Mr Hipperson's Cirrus in monetary value, but not any more.... even the pilot died. When you need a trailer to carry the wreckage away it counts as a major crash.

[Duo Discus glider crash. - YouTube](#) Somehow these guys managed to contrive a disaster from a relatively minor launch problem. Some lessons here are that if you are going to have a team launch your model they all need to launch at the same time and never forget that gravity doesn't magically stop working even after contact with the ground.

[RC Glider Crash Landing Competition - YouTube](#) This crew have made a game out of crashing. Using a hole in the ground as a target is a fairly original idea I suppose but diving your model into the hole seems like asking for trouble to me. There are some very tough foams out there.