



BULLETIN OF THE AUCKLAND MODEL AERO CLUB INC. EST. 1928

March 2018



Keith Trillo's Hangar Rat getting away nicely at the last Drury indoor evening.

Photo: Ricky Bould



& Tomboy Texaco

Tomboy and 1/2A Texaco will be flown as a monthly competition at either the AMAC field at Karaka or the Tuakau Club field.

Contact Keith Trillo for confirmation of site and possible postponement,
Mobile: 027 460 7180.

AMAC placings count to event Club points

Charles Warren's RC Tomboy. Photo: Keith Trillo.



Open Rubber

Put in flight times for this year's Open Rubber competition at either Karaka or Hoteo

Mike Fairgray's Flying Aces Moth. Photo: Mike Fairgray.

Photo credits

Unless otherwise noted, all photographs are by the authors of each article.

Editorial – Blue Skies

It is a pleasure to reflect on club flying for the month. This month's Karaka report records plenty of flying activity in good conditions. This is in contrast to the many weekends of hot, humid or wet breezy weather that have preceded it. Next month will carry a report on the last Sunday in February's ideal calm and sunny conditions at Karaka. Other Club fliers enjoyed similar conditions at the Vintage SIG's competition at JR Airsail's RC Airfield at Pukekawa on the same day.

This month's report on Indoor flying at Drury reflects the enjoyment of Hangar Rat fliers to get back to some focussed competition in this class, with uniformly good times being recorded. The next Drury night in March will be for competition in Kit Scale and Push E. Let's hope for a similar level of interest and support.

It was also a pleasure to receive the two building reports on quite different projects and the second instalment on making a DIY controller this month. Both are of interest to a wide readership of Slipstream. Please keep these reports coming in!

Amongst the notices this month is the announcement of the Morrinsville indoor free flight flying day, now an annual fixture and a great day to support. A notice for the Whangarei MAC combined control-line and indoor days later in the month is also included. Just like Morrinsville, this is an opportunity to fly with modellers both locally and in other regions.

Stan Mauger

Notice of AMAC Annual General Meeting

The Club's 90th AGM will take place on Monday 2 April 2018 during the regular club night held in the ASME rooms.

AGENDA

1. Apologies
2. Minutes of 2017 AGM
3. President's Report
4. Secretary's Treasurer's Report
6. Confirmation of Subscription
7. Other Reports
8. Election of Officers.
9. General Business

Mike Fairgray
Hon. Secretary

AMAC subscriptions for 2018 are due after being set at this meeting

PROMPT PAYMENT PLEASE,

BY cash or cheque or direct banking to Auckland MAC

Monthly Club Night - Mike Fairgray

5-2-18

Present were Ricky Bould, Guy Clapshaw, Paul Evans, Mike Fairgray, George Fay, Tony Hill, Angus Macdonald, Stan Mauger, Bill McGarvey, Harold McGrath, Brendon Neilson, Geoff Northmore, Mike Stoodley, Keith Trillo, Stephen Wade, Charles Warren, and new member Brian Howell. It was good to see Keith Williamson returning after being absent due to illness.

Apologies: Don Spray, Bryan Spencer.

Notices

Indoor starts with Eilerslie on the 13 February and Drury on the 19th February. Ricky Bould reminded members that National Decentralised Competition events are now listed in the bulletin and urged members to enter their models in the various competitions.

Theme

The theme for the night was: Survivors from the Nats, with a talk by Bill McGarvey on setting up rubber motors.

Models on the table

Ricky Bould had along his Curtiss Robin CO2 powered indoor rubber powered scale model which has been repaired after books accidentally dropped on it. He also brought his well flown and "competition experienced" CO2 powered Comper Swift. This has been flown at the Nationals and at International events over several years with good results. There was an interesting diesel engine sitting on its box. It was a Redfin small horizontally opposed twin cylinder diesel engine of 1.0cc reed valve induction, triple ball race crankshaft and is supplied complete with radial engine mounting. The interesting thing about this engine is that each cylinder fires simultaneously!

George Fay had his number three version of the twin rubber powered Petlyakov Pe-2 Russian light bomber. The power will be from 30 inches 120 grams of rubber in each pod and contra rotating propellers. George said that the hardest part was winding the contra rotating propellers. The wings are "knock off" to avoid damage on rough landings. The finish will be a three stage camouflage used on the original aircraft with Russian markings.

Keith Trillo had his Nationals entry, the Stardust Special. This model was flown in E Texaco and Duration. He scored first in E Texaco and second in Duration. The weather was not kind to the days on which Vintage was scheduled to fly. Only one day cleared enough for the competition and by starting at 7am going through to 5pm all events were flown. Several competitions required a fly off to determine placings, however, not all remained to do so.

Top: Keith Trillo's Stardust Special with fuselage still in its carry box, after Nationals success.

Centre: Ricky Bould's two contributions - his Curtiss Robin now repaired and flight ready and beside it, his much flown CO2 Comper Swift.

Right: George Fay's new Pe-2 feels light and should fly well.



Charles Warren had an ex-Terry O'Meara RC trainer that he got from Steve's Model Shop. He had trouble starting the engine but finally found that the carburettor had dirt stuck in it. After a good clean out he had the engine and model performing well. Charles is now reverse engineering the model (no plan available) for electric power. The fuselage, tail and fin are well on the way to completion with the wings to follow. Charles has made a great job of the fuselage build. An electric motor has been fitted along with servos and control runs.

Angus Macdonald has gone back in time to build a 1948 Modelair Kea. The original build was powered by an ED Bee but when an Elfin 149 was installed it proved too powerful for the model. A redesign, lengthening of the fuselage, adding an extra bay to the wing and leaving the tail and fin as designed made for a better model. His new build is scaled up 1.61 times the original plan with a 500 motor and a 2s battery and will have a separate battery for the RC equipment. Original Modelair Airstream wheels have been fitted and the covering is Solatex iron on film.

There were a couple of books on the table. The first, on the untold stories of NZ Great War Airmen was brought along by Tony Hill. The story is based on the Diaries of the pilots and gives an insight into flying during the First World War. The second book was doing the rounds of members. Titled *1916 to 1918 Bomber Pilot* and written by CPO Bartlett, this book also gives an interesting insight into the experiences of Pilots and the operation of the bombing arm of the Airforce of the day.

Mike Fairgray had his first electric build on the table, The Bambino. This was from an RCM&E free plan for a small electric model. Covered in Lightex shrink film, it looks smart in the blue and white colour scheme. The film which is a lot lighter than the traditional films was purchased from TopRC Model. The first motor fitted turned out to be faulty having erratic startup and running very hot. The ESC also became hot and a subsequent check of the battery found one cell to be dead most likely due to the load the faulty motor was taking from the other components. With a new motor and battery fitted, performance was faultless. It was interesting programming the ESC for without a programming card everything was programmed based on bleeps from the ESC. After a few attempts the ESC was finally configured the way he wanted it. He was using his FM receiver and transmitter which was purchased new a couple of years ago and this was its first time being used in a model.

Setting up rubber motors - Talk by Bill McGarvey.

Bill's talk was informative and covered topics which are highlighted below.

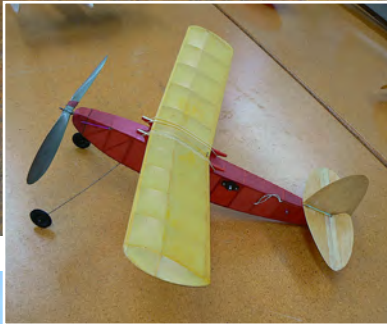
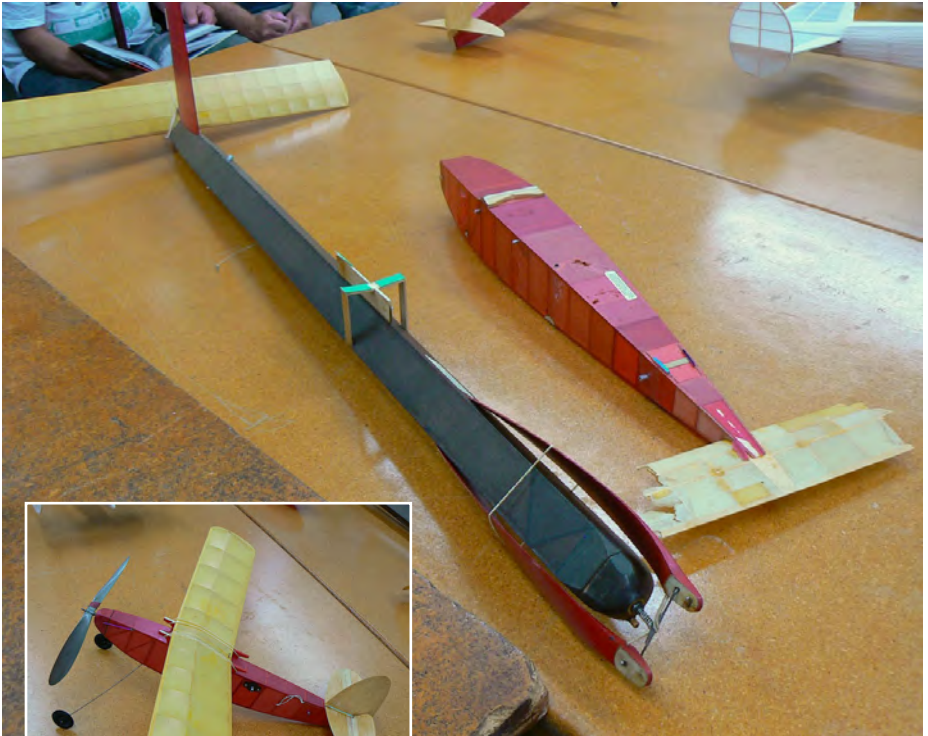
Bill had brought along a couple of models to be used to demonstrate the different uses of rubber in competition models, for larger open rubber and a small open rubber models.

The most common rubber available nowadays was Super Sport Tan.

When making a rubber motor the usual length was 1.5 times the length of the fuselage.

Rubber is wrapped around a bobbin at the peg end of the rubber to avoid damaging the motor in the peg.

Rubber for all but the smaller open rubber models such as the Modelair Sportster and



Upper: Bill McGarvey brought two fuselages to demonstrate making up rubber motors.

Inset: Bill's Modelair Sportster complete with dethermaliser, a testimony to its performance.

Above: Angus Macdonald has completed his enlarged Modelair Kea, for electric vintage. It's now ready for some test glides.

Cloud Tramp needs to be braided to obtain greater duration from the rubber motor. It also allows for more rubber to be used in the same space. When the motor has run down, the optimum is to have the rubber end up with a slight sag and not touch any part of the fuselage, but still holding the nose block in place.

Rubber needs to be well lubricated with either a purpose made rubber lubricant or by an alternative product such as the automotive Armoral silicone spray.

Bill does not use any fancy knots when tying the ends together, however, on small sized rubber, his trick to ensuring that the knot does not come undone during the expansion and contraction of the rubber is to tie a second knot and pass a length of 2 ply wool through the centre of it knotting the wool firmly. This takes the strain off the first knot, thus preventing it from coming undone during the operation of the rubber motor.

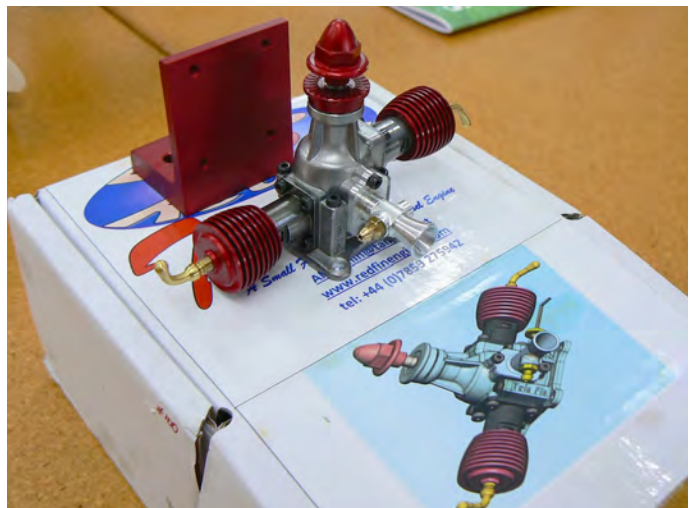
On 3/16" and 1/8" rubber he uses a small amount of cyano glue dispensed from the tip of a sharp stick on the top half of the second knot which allows the second knot to remain still while the first knot can move. Care must be taken to avoid the glue wicking into the knot as this will lead to the knot being cut by the excess cyano.

In preparing his motors he pre-stretches to around 80% of its length for open rubber and other rubber 60%, and leaves the rubber under tension for 15 minutes. Doing this will increase the longevity of the rubber.

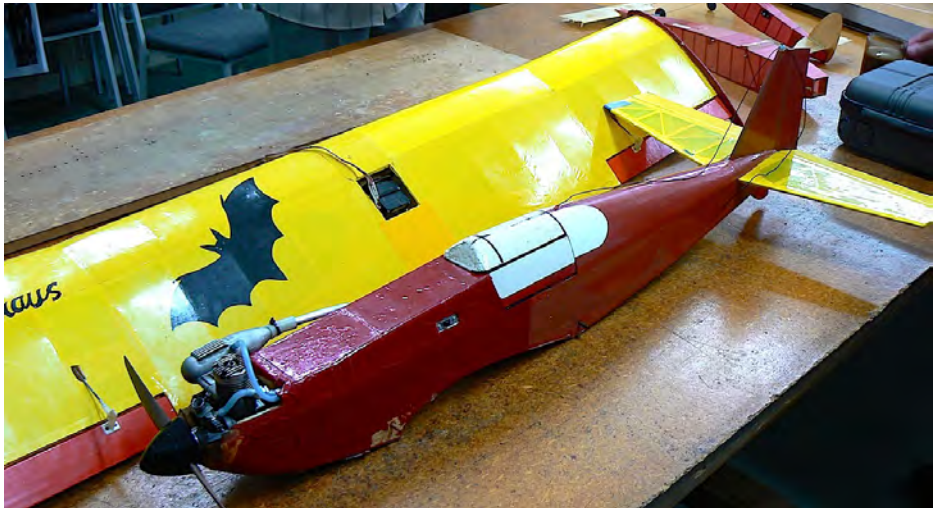
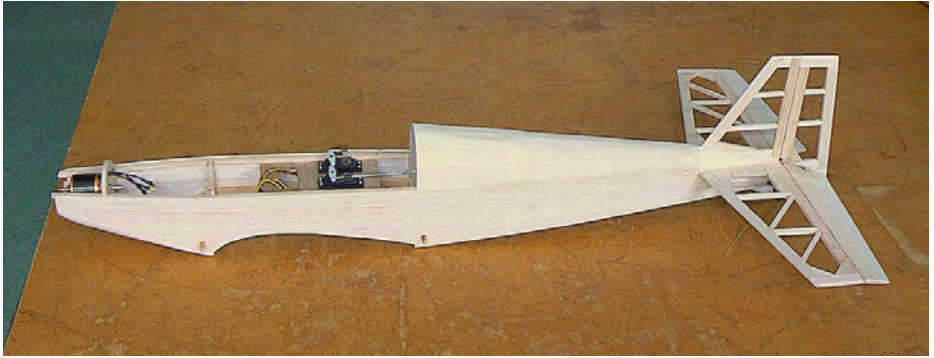
Always check the rubber for any nicks or deterioration before and after use.

Bill went on to demonstrate a couple of devices easily made for inserting the rubber in the fuselage and inserting the back peg. The talk ended with a demonstration on how to braid rubber which is a little complicated to explain here. The link below takes you to a video demonstrating the braiding sequence.

<https://www.youtube.com/watch?v=fxKpJLnB2xQ>



Right: The latest addition to Ricky Bould's Red Fin engine collection, a 1cc twin reed valve induction engine.



Upper: A new fuselage built for Charles Warren's RC Trainer.

Centre: Charles Warren's Die Fledermaus, an ex-Terry O'Meara RC trainer.

Left: Mike Fairgray's Bambino. More details appear in the building article on page 14.

Karaka Diary - Keith Trillo

Since November our regular Club paddocks had not been grazed and I assumed they were locked up for hay. The tall growth was not cut for hay and it is only now after the cattle have been in that the paddocks are now flyable. It has been convenient to fly from the Karaka Sports Ground during this period as you can have your vehicle close by. However, we need to use our Club paddock again to prevent its loss. The roadside verge has been mowed to make easy access to the stiles.

Karaka Sports Ground

19-2-18

As the weather was very flyable, we had the best turn-out for some time. Paul and Martin Evans arrived with a large collection of models, Paul flying a Krumpler Corsair and Silent Bugler and Martin a Meadow Lark, Bandito, Gas Champ, Fly Baby and Radian.

Charles Warren had some good flights with his Radian Glider as there were good thermals in the area. Keith Trillo was delighted to do two flights with his fickle friend – a Cox Powered 1/2A Texaco Skipper, getting an engine run time of 5 to 6 minutes on both flights and exceeding the 8 minute Max that is required. Stephen Wade, Brian Howell and Brendon Neilson came to spectate.



Above: Paul and Martin Evans with a Krumpler Corsair.



Upper: Brian Howell, Paul Evans, Stephen Wade, Martin Evans and Brendon Neilson.

Above: An assortment of Models flown on the day.

Right: Charles Warren about to launch his Radian Glider.

Drury Indoor - Stan Mauger

19-2-18

The last Drury indoor night was full of competitive Hangar Rat flying. It is some time since I have seen such competitive focus on a monthly indoor club night. Those competing flew only Hangar Rats and were all trying to squeeze the best performance out of their models. Some good times were recorded and in some cases, motors were changed to suit the humid conditions of the hall. By the end of the evening Angus Macdonald had sorted out C of G settings and motor selection on his model.

Keith Trillo, Ricky Bould and Bill McGarvey all had their models flying in the two minute plus range. Ricky's model was on good form narrowly topping Keith's best flights. Bill had clearly been working away at getting his model set up for good flight, the model using the space of the hall and flying well during the time of each flight.

This was a great start for Hangar Rat competition for the year.

In between this intent competition RC fliers were, as on most evenings, able to thread Vapors and ARF foam scale models between free-flight flights. RC fliers included Geoff Burgess, Brian Howell and Rex Benns.

Results

B. McGarvey	2:32	2:51	2:33	
R. Bould	2:03	2:07	1:50	1:58
K. Trillo	1:54	2:01	2:01	
A. Macdonald	1:48	0:39	0:51	

Indoor Free Flight at Morrinsville

Sunday October 7, 2018

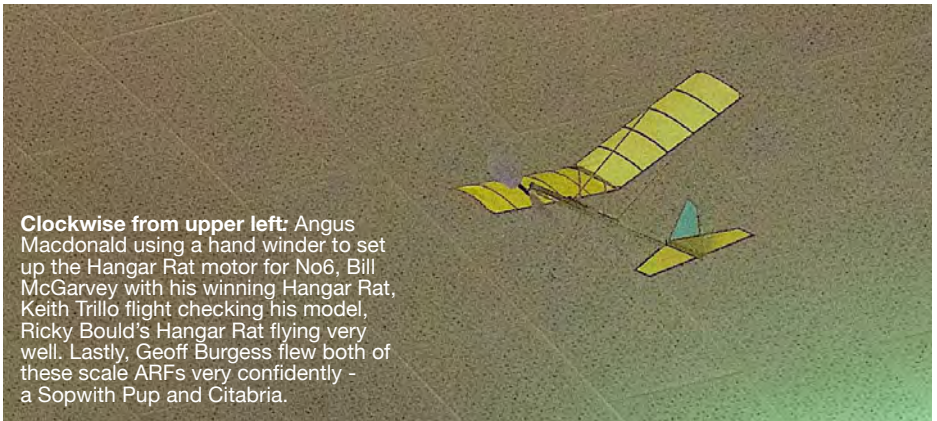
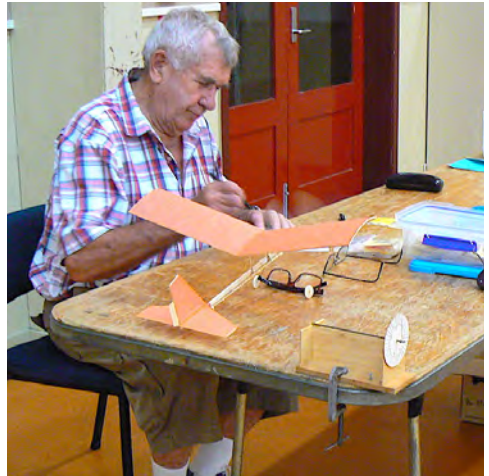
Free flight and scale classes

Westpac Stadium Hall, 21 Ron Ladd Place, Morrinsville

Contact Stan Mauger 09 575 7971, stanm09c4@gmail.com for more information



Organised by the Auckland Model Aero Club Inc
in conjunction with the Scale Free Flight & Control Line SIG



Clockwise from upper left: Angus Macdonald using a hand winder to set up the Hangar Rat motor for No6, Bill McGarvey with his winning Hangar Rat, Keith Trillo flight checking his model, Ricky Bould's Hangar Rat flying very well. Lastly, Geoff Burgess flew both of these scale ARFs very confidently - a Sopwith Pup and Citabria.

Building the Electric Bambino - Mike Fairgray



This looked like a good project to cut my teeth on, on the journey to electric power. The plan was published in the October 2015 edition of RCM&E. There was a problem when printing the plan which saw the tail section and ribs being incorrect. This was corrected with RCM&E publishing the amended page on it's website. I had already started construction and having noticed the mistake had already made the necessary corrections.

The fuselage was straightforward being a box structure made from 1.5mm balsa sheet and sheeted top and bottom. There are two main cabin formers, one of which has the undercarriage fitted to it. Once these are in place the nose and tail are brought together. A former is installed just ahead of the tail and the gap from the former to the end of the fuselage infilled with 1.5mm balsa.



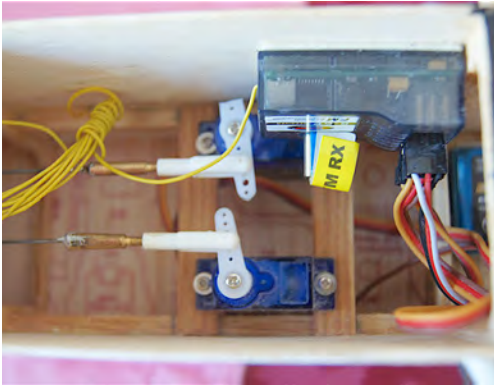
The nose former is installed after the mounting holes for the electric motor mount have been drilled, as well as a hole to allow for the motor wires to exit towards the rear of the fuselage. Top and bottom of the fuselage are planked with 1.5mm balsa except for the area behind the front mount to the cabin where a hatch was installed to allow for access to the electrical connections, battery and ESC. The servo mounts were installed next. Cement two side rails to the fuselage sides and then cement the cross rails sized to accommodate the two micro servos. All were made from spruce strip.



The wing is straightforward being made in two parts and joined at the centre with a ply dihedral brace.



Fin and tail are made from 3mm balsa with the hinge lines for rudder and elevator cut. These were joined to the fin and tail by nylon hinges. The hinge slots were made using the Dubro hinge slotting tool. Before joining, I wrapped a narrow piece of covering material along the hinge line which makes fore easier covering. The hinges were now fitted and pinned with toothpicks sanded flush with the surface of the parts and a drop of glue using cyano to the exposed end of the toothpick.



The remainder of the parts were now covered with Lightex shrink film which is light and sticks well.

After checking just where the control rods were going to exit the fuselage, the rudder and elevator horns were fitted and the tail and fin attached to the fuselage.

Time to now fit the servos and control rods. The servos were screwed to the spruce cross pieces. I used a servo tester to centralise the servos. Much easier than connecting up the receiver and transmitter. The servo tester is a simple device powered by any lipo battery and can test throw, continuous movement and also centralise the servo.

After connecting the control rods to the horns and servo arms, using the servo tester, I made sure that there was no contact between the rudder and elevator. Just as well, as the elevator required more clearance on the inner ends. The tester can be procured from a number of on-line model suppliers for around \$7.50 to \$15.00. It pays to shop around.

Fitting the electrics was fairly trouble free. After soldering the necessary connections to the motor and ESC I used mounting screws screwed into trapped nuts and attached the ESC and receiver to the fuselage side with Velcro, the system was livened up and tested.

Now this is where it became interesting! The motor took some time in starting (no it was not on soft start) and when it did get going any movement of the throttle stick caused the motor to stall. Both the motor and ESC got very hot. So time to stop and scratch my



Power System

- Motor Turnigy 1811 290kv
- ESC 10amp
- Battery 450 2s
- Prop 7x5

head. I tested the battery which showed one cell nearly depleted while the other cell's voltage remained OK. Now I had recharged the battery prior to fitting and all went well with all cells reaching full voltage. I connected the battery to the charger and the charger would not charge the battery showing low voltage.

My conclusion was that the motor was faulty taking a high current draw to get it going which caused the problem with the battery. So a new motor and another battery were fitted and all went well. This a great little model easy to build and cost effective. All the building materials were from my existing stock and was able to use a lot of scrap wood. Next step is to get it airborne to see how this attractive little model performs.

FREE FLIGHT **SCALE DAY**



Sunday **April 15**, Hoteo
from 8.30am

Trophy events for free flight scale classes

- F4A power scale • Rubber scale • CO2 / Electric • Kit scale
- Plan Scale entries

Intending fliers and visitors please check for cancellation because of weather conditions, by calling Stan Mauger on 575 7971 before departing.

Organised by the Scale Free Flight and Control Line SIG in conjunction with AMAC

Photo of Ricky Bould's Comper Swift, seen at Hoteo Photo: Ricky Bould

Mike Mulholland's Elias Aircoupe

The Elias Aircoupe was produced in 1928 in Buffalo New York by the Elias brothers in conjunction with a Mr Cato, the designer. The concept was to produce an affordable every-man sort of aeroplane with a low landing speed and safe handling, much as the Piper Cub was later to become.

The aircraft was designed to be flown in two configurations; it had a coupe top or hood that could be attached for comfort, which borrowed heavily from contemporary automotive design. If you preferred the wind in your hair the aircraft was flown with the hood removed and a rear deck fairing fitted. In this latter configuration it was actually known as the Airsport. Although some sources refer to two prototypes having been built it appears on balance that there was only one aircraft and that the word 'Airsport' has simply been retouched onto the photos of it in that guise.

As a Peanut scale model the Aircoupe offers much, primarily the massive broad chord wing and bags of character, but it is not without challenges, one of which is the fully exposed 6-cylinder Anzani engine which needs to be executed convincingly or spoil the effect. The other challenge is the rather poor 3-view which is the only one in existence.

Fortunately for model builders the Elias concern had hoped to make its fortune and had engaged a professional photographer to take a set of promotional photos which have survived through Mr Cato's daughter. Also, quite amazingly the aircraft was literally discovered in the standard regulation barn in the 1950s and is in storage at the Mid Atlantic Air Museum in Reading Pennsylvania!

I started this model with a request for help on the Hip Pocket Aeronautics forum http://www.hippocketaeronautics.com/hpa_forum/index.php?topic=22532.25 thinking that one of our American friends might be able to help with information. In fact the help came from Greece in the form of master modeller George Kandylikis who has also researched this aircraft and who I am sure will produce something a lot more impressive than mine in due course.

George is absolutely amazing and was even able to send me a good photo of a patch of the original fabric that he somehow managed to get out of the Mid Atlantic Air Museum. He also produced links to 2 absolutely stunning photos of the aircraft when it was re-discovered in the barn in the 50s.

I was able to repay George to a small extent for this kindness because when I looked at the first picture I realised that the un-regarded object to the left of the picture in the foreground was actually the rear fairing for the Airsport configuration! George had not noticed this previously, but what a boon, as this is the only known close up image of that feature.

<https://www.facebook.com/photo.php?fbid=10154994086127731&set=p.10154994086127731&type=3&theater&ifg=1>

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Construction

There are a few aspects of the construction that may be of interest. The model is based on the Walt Mooney design but in the end I could not reconcile a lot of the original plan with what was there before my eyes in the photos. Also, I had intended that this would be a detailed scale model which meant that lightness would have to be achieved wherever possible. Following a lead from another superb modeller, Mr Enrique Maltz with whom I have been corresponding, in Israel, I decided to swap out all of the 1/20" square structure and replace it with 1/32" square – once you make the paradigm shift to working in those sizes you get used to it surprisingly quickly and then wonder how anyone could ever put lumber as big as 1/16" square in a Peanut!

Wing structure is of split rib construction with two full-depth spars cut out of 1/64 sheet. All outlines are laminated. All up the basic structure with wheels, assembled, covered and painted came in at 4.6g. Of course I still have the engine and prop to go on so it looks like being in the vicinity of 6.5g complete.

The wheels are worth a mention because they came out very well and are extremely light. The basic discs and tyres are turned from blue foam on a Dremel tool. I have made a little arbor out of a length of 10swg wire with a hardwood disc. The blue foam attaches with double sided tape – very simple. The forces involved in turning blue foam are so minimal that only a very small piece of tape is required. My turning tools are just fine sandpaper glued to conveniently shaped balsa boards. The hubs are 1mm styrene rod centre drilled to be a perfect fit on the 0.25mm guitar string axles, glued into the wheels with a tiny spot of epoxy. The hub caps are vac-formed in 5 thou styrene sheet.

The engine, and this is where I am up to at the present time. Here are the cylinders (see the detail shot of the construction). I used my bendy straw dodge again. Admittedly it doesn't quite have the correct profile but in this scale it's not noticeable and the more correct head section and valve gear leads the eye away from the less accurate part. Each section of straw is filled with soft balsa which keeps it all straight and gives a good surface for gluing them onto the eventual crankcase. To make the balsa core I simply sharpened a brass tube the correct I.D. and rotated it end-grain into some really soft light balsa and then cut out the resulting dowel. The head fins and valve gear, tie rods and inlet manifolds are all fabricated from styrene sheet and rod. Sprayed matt black and over-brushed with pencil dust they look OK I think.

The prop started life as a Hi-Flier prop but has been shaved and re-profiled to within an inch of its life and is now 0.6g, down from the original nearly 3g. I plan to try it at the original 6" diameter to see what happens!



DIY small motor controller Part 2 - Mike Stoodley

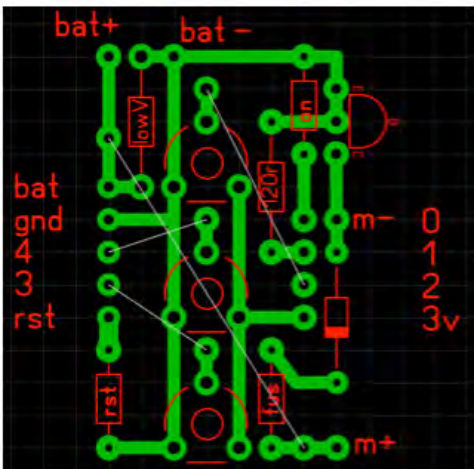
In part 1 I made a “proof of concept” flight profiler using a small programmable device called an Adafruit Trinket, as a possible alternative to commercial units.

This month we get to a fully working on-board device that you can make with parts from Jaycar. Basically we rearrange all the components and wires from the initial experiments onto a small piece of “bread board”, and attach that directly to the Adafruit Trinket. After 3 attempts, I ended up with an all up weight of 7.9 grams, including the JST battery leads and wires for the motor. The transistor I used can handle up to 40 volts at 0.5 amps - I measured a mere 25 milliamps with a KP01 so there appears to be plenty of current available for small models. Like this, I think it would suit Earl Stahl upwards type models and in fact will use his Rearwin Speedster as a test bed. At 7.9 grams + battery, I think smaller models would need a short nose to make use of that weight. Other transistors (not available at Jaycar) can deliver up to 3 or 5 amps, easily powering bigger rubber-style FF models.

As an aside, we are still dealing with old-fashioned DC motors - but from what I've read, it looks like a very simple conversion to use an esc and a brushless motor. I'll get to that another day.

I have to warn that breadboarding this is not easy. Even on my 3rd version I was making errors....I didn't hook up the 3v rail, and by that time the Trinket was soldered underneath - leading to the kludge you can see in the photo of a bit of fuse wire running down the top of the trimpots. Ugly :-)

In fact, unless you enjoy soldering tiny things under a magnifying glass, and can troubleshoot mistakes (like forgotten connections and solder bridges), I recommend you go buy an Atomic or KP profiler and save yourself a lot of fiddling around. Or - wait for my pcb, which will take 95% of the pain away. But until then, to make this something you can build entirely from Jaycar we need to breadboard it.



The Breadboard layout, viewed from above

Left is the basic layout, as viewed from above. You arrange the components on the breadboard, then connect them along all the green lines. Then you attach the Trinket from below using small pins.

Sounds easy, but here is an example of what makes it really awkward: the Trinket is attached from below and connecting the 120r resistor to pin 1 of the Trinket has to be done above the breadboard because there's just no way to solder that leg of the resistor once the Trinket is there. You find these things out when you build it.....to re-

ally iron these things out and provide a step-by-step guide would mean going through another couple of builds....and I've had enough! If you can follow all this, I can tell you that it works, pretty well in fact.

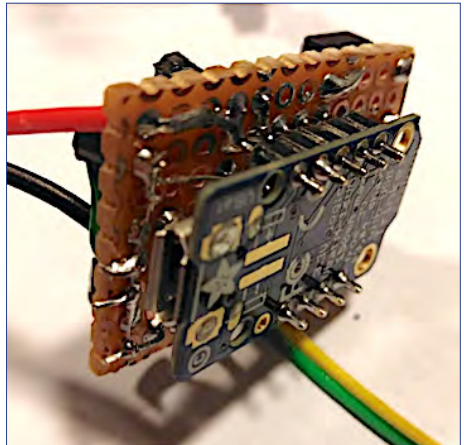
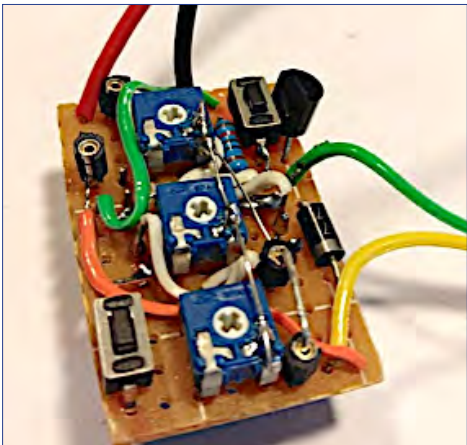
The "lowV" is a placeholder for a lipo low voltage indicator and you can just ignore it (don't solder a wire across there else you'll short the battery!). The "fuse" is also a placeholder - I put a couple of small sockets there for future fusing, and just bridged it for now (you can see it in the photos) .

The four white lines are connectors and you need to solder a piece of wire in for each of them. "on" and "rst" are microswitches. "on", not surprisingly, starts the motor run. "rst" reboots the Trinket, which takes all of 3 seconds. So if you are trying different settings, instead of waiting for the complete cycle to finish, you can just reset it and start again. Both of these switches could be mounted off the board (e.g. on the side of a fuselage) and connected to the board with wires. I think the reset could be done more elegantly in code, but haven't got there yet.

"bat+" and "bat-" are the battery leads, positive and negative respectively. Similarly "m+" and "m-" are the positive and negative wires that go to the motor.

The 3 circular things down the middle are the trimpots for ramp, speed and cruise time. Any value will do, I used 5k. You could also mount one or more of the trimpots offboard too, for example if the board is going to end up somewhere that is difficult to get to, but you want to change the settings often.

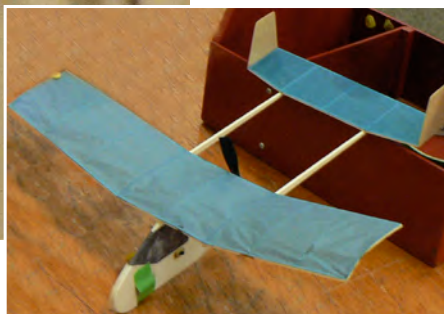
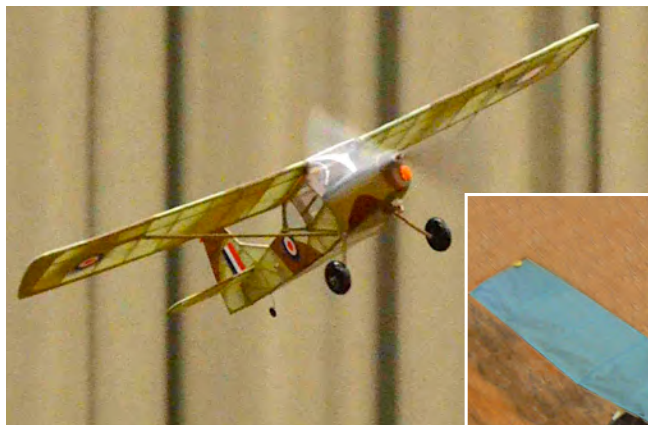
The "120r" is a 120 ohm resistor, and the other rectangular thing is a 1n4001 diode. The diode must be mounted in the orientation shown. These values are not critical - I've seen values up to 270 ohm for the resistor and a 1n4004 for the diode. The transistor is a PN2222, and must go in the orientation shown with the flat side facing in (viewed from above).



Above: Flight unit - 7.9 grams all up.

Right: From underneath, showing the Trinket that has all the "smarts".

Drury Hall & Kit Scale & Push E



Join us in Kit Scale and Push E competition this month
at Drury School Hall on March 19 at 7.30pm.

AMAC placings count to event Club points

Don Spray's AOP9 and Mike Stoodley's Push E. Photos: John Swales

Slipstream contributions

Contributions of photos and information about latest projects are very welcome for the Building Board section of the bulletin. Field reports and articles are too! Please just send them in.

Deadline for articles for the April Slipstream is March 23

Whangarei MAC presents the 2018 Control Line Grass and Indoor Meet

Portland Recreation Centre
McGill Road, Portland, Whangarei

Saturday 10 March Control Line - Grass Circle

Round 4 of the North Island Stunt Series

Practice from 9.00am

Pilot Briefing 9.45am

Round One Start 10.00am

F2B Aerobatics

Sportsman Aerobatics

Classic Aerobatics

Slow Goodyear (pm)

Phantom Racing (pm)



Sunday 11 March Indoor

NDC Aggregate 8.30am (not indoors, weather permitting)

Hall open and Pilot Briefing 9.30am

Hangar Rat

HL Glider

Push E

Modelair Hornet

F4D Rubber Scale

F4F Peanut Scale

Kit Scale



Control Line (unofficial)

\$20.00 landing fee covers both days, all events

Michelle's famous BBQ Saturday

Contact Daniel Walker 021 450 338
danwalker@hotmail.com

Calendar **March**

For information about the location of club fields and cancellations or postponement of flying, contact the field stewards.

KARAKA

Sundays

Tomboy Extravaganza (*for Club points*)

Flying can take place between 10am and 2pm
(9am to 3pm for gliders and other silent models)

NDC RC Vintage events

IC Duration, E Duration and Classic E Duration

(also see Hoteo FF list).

Aggregate model trimming, Cloud Tramp trimming

Karaka Steward

Keith Trillo 09 298 4161 027 4607180 careith@hotmail.com

HOTEO

Call the field steward if you would like to go up and do some free flight and vintage flying there.

NDC FF & Vintage

F1B Rubber, Kiwi Power, Kennedy Precision, Aggregate, Tip Launch Glider, Classic Glider Duration, Vintage Rubber Duration, **(also see Karaka RC list).**

Hoteo Steward

Paul Evans 479-6378 ziply@xtra.co.nz

AKA AKA

Saturdays & Sundays

Intending fliers should phone Lloyd Hull to confirm that there will be flying.

Instructor

Brett Naysmith

Aka Aka Steward

Lloyd Hull 09 235 2890

CONTROL LINE

As advised

Control line flying
Intending fliers should phone Stan Mauger to confirm where and whether there will be flying.

C/L Steward

Stan Mauger 575 7971 stanm09c4@gmail.com

INDOOR EVENTS

Ellerslie

Tuesday March 13

Michael Park School Hall

Indoor radio flying (7.00-10pm)

Drury

March 19

Drury School Hall

Kit Scale and Push E - for Club points (7.30 - 10pm).

Indoor Steward

Bryan Spencer 570-5506 bspencer@xtra.co.nz

Morrinsville

Sunday October 7

Westpac Stadium

Free flight scale & indoor free flight classes (10.00-4pm)

OFFICERS OF AUCKLAND MODEL AERO CLUB INC.

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	Charles Warren	09 238 9430	cpwarren@ps.gen.nz

Club subscriptions

NZMAA Affiliation is mandatory for Club flying

Senior \$50 (+\$75 NZMAA) **Family** \$55 (+\$75 NZMAA)

Junior \$10 (+\$20 NZMAA) **Social** \$40

Intending members with current NZMAA affiliation pay only the AMAC sub

Please make payments to

The Treasurer Auckland Model Aero Club

Mike Fairgray,

3 Kanohi Tce Mangere Bridge 2022, Auckland

NEXT CLUB MEETING AND NATTER NIGHT

Monthly club meeting

7:30 PM

Monday March 5, 2018

ASME Clubrooms, Peterson Reserve, Panmure.

Theme: Indoor models and Cloud Tramps

Items for the table:

Models, plans, engines, photographs etc

Trading table:

Buy, swap and sell

**Visitors or intending members
welcome**