Impington
Model Aeroplane Club
Founded in 1946 by Ray Malmström

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www.impmac.co.uk

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Hugh receives his Cup

Hugh Stevenson (left) was presented with the Indoor Free Flight cup and a bottle of wine by Michael Marshall at the first indoor meeting of 2018

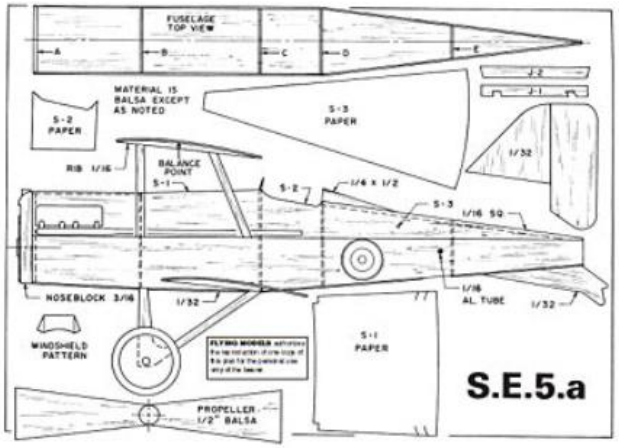
The cup is awarded to the overall winner of the combined indoor events held during the year

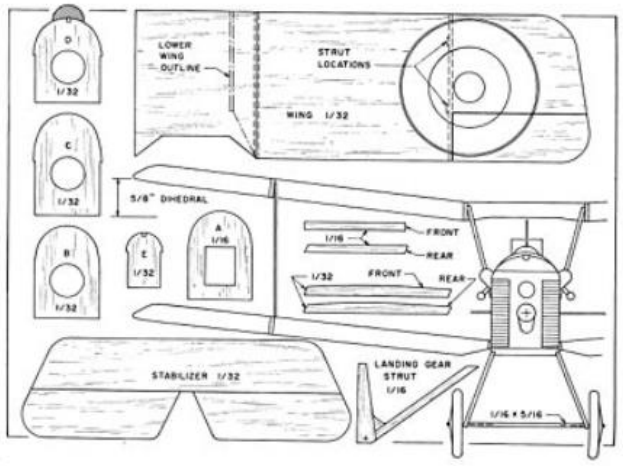
Roger Rookes Peanut SE5a

You may have seen Rogers SE5a being trimmed out recently. It's awaiting final finishing

Roger writes – I was looking for something which I could build quickly and which would produce a good looking scale model (and hopefully fly as well as it looked). It took less than 48 hours to build something which could be put in the air and trimmed out.

You can see from the plan that it offers a commendable level of scale detail for a small model.





Indoor Competitions

Hugh Stevenson is taking over from Bruce as the FF indoor competition organiser and has his first one lined up for February.

This will be a rubber FF Precision competition – likely to be a "nearest to 30 seconds" event with the exact details to be decided on the night. This will be held on **Thursday 8th Feb**

The next RC competition will be on **Thursday 15th Feb** during the 2nd session of the evening. This will be a Carrier Deck landing competition. The format is simple – a 6 ft trestle table will be set up and you have to take off and then land back on the table. As many attempts as you like and the winner is the pilot who lands back on the table in the shortest time. What could possibly go wrong?

Indoor flyers

The start of the new years indoor season brought out some nice models – old and new!!

Chris Strachans Messerschmitt M17. This was one of the very first aircraft built by Willy Messerschmitt in 1925. The aircraft was a two-seater almost completely made of wood and weighed only 437 lb. The engine was a 29 hp Bristol Cherub II and the pilot had no forward visibility!!

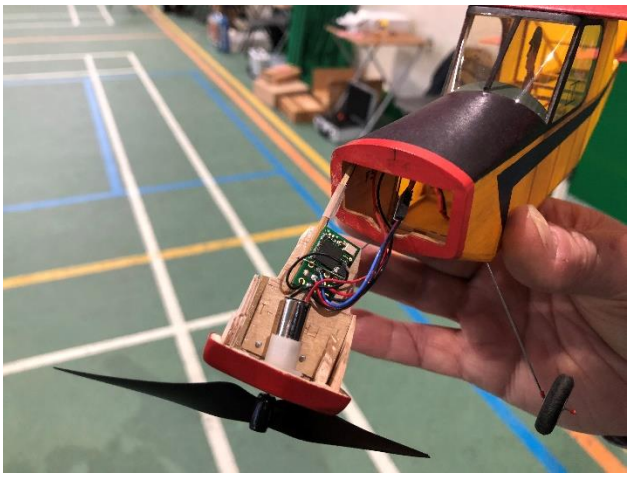
Chris built this model some 20 years ago and sold it at a club auction to Mick Staples. Margaret has now given it back to Chris who was flying it with great success in the big hall.

Terry Brown with his own design canard model built last year. Terry said he had another identical one that flew much better – well, they all say that don't they!!

Actually, they both flew pretty well……

Gotthelf Weidermann poses with his Bostonian Pup of 16" span from the Peck Polymer kit converted to RC. It flies very nicely with just rudder and throttle control, albeit a bit fast. To keep the CG in the right place the battery and rudder servo are behind the wing.

The model flew very well under rubber power but was a bit heavy for competitions. Gotthelf decided to convert it using the airborne equipment that came out of his SE5a that didn't survive the test flying phase of its life!!



The motor and receiver / ESC in Gotthelfs pup

Mark Saunders Grasshopper. Peanut scale built from plan and still to be trimmed out as it lacks a bit of power.

Mark with his Bristol Scout. This is from the Aerographics kit and has printed tissue covering. Mark has tamed the beast and got this one flying very nicely over the last few weeks

Canadian Tiddler

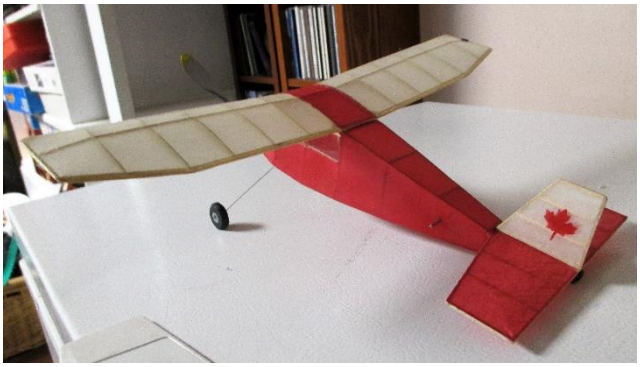
You may remember that last August we received a request from Adrian Culf in Ottowa for a copy of Mick Flacks Tiddler plan. Adrian had been reading our newsletter and liked the look of the model. Well, Adrian built a Tiddler after Mick sent him the plan…..

The Canadian Tiddler

Adrian sent us some pictures and a brief report –

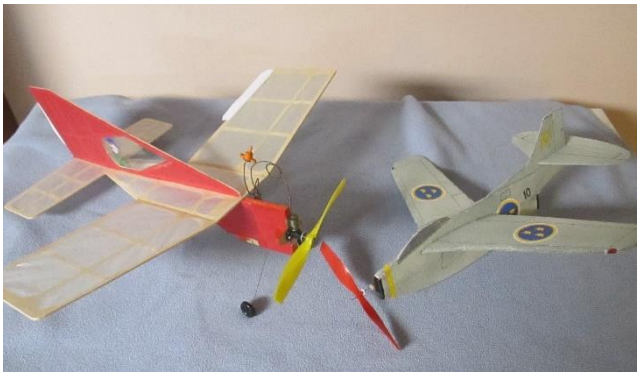
Just to let you know of a Tiddler flying very well in Ottawa, Canada. I used Esaki Jap tissue, 4 ¾ inch Peck prop, foam wheels and a 1 ½ times length loop of 3/32" Tan supersport rubber for some very good indoor flying.

Just to show it's in Canada, there's a red Maple leaf on the tail.



Another picture of the Canadian Tiddler built by Adrian Culf in Ottowa.

Adrian is also a big Ray Malmstrom fan and sent us this photo of his latest creations along with a short report on their flying prowess –



Adrian reports - Thought I should share another photo of recent builds from Ray Malmstrom's plans.

These are the Arrowair for Telco CO2 which I flew for the first time this past Monday evening indoors. It flies beautifully! Total weight was 38g which includes some tail ballast. I had the Model Maker issue 3 magazine and article since June 1980 and only recently acquired a Telco to enable the build!

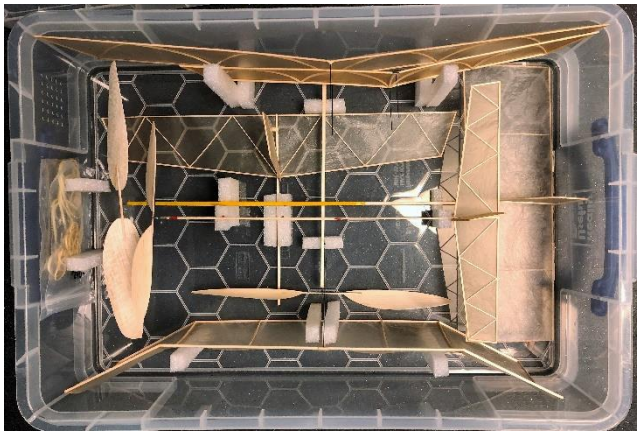
The other is a scaled-up Saab J29 Tunnan to 12" wingspan and constructed along the lines of Steve Midson's foam wallpaper NoCal methods - have to look back to the 1990's Aeromodeller for a series of articles from Steve. Of course, he runs MidAir models.

Anyway, it's a great flyer with a 5.5" North Pacific prop and a loop of 3/32" rubber. Swedish insignia are ink-jet printed normal paper glued on with 3M Super77 spray glue.

Ray's original plan was for a balsa sheet profile Jetex model. This one did not need any ballast and is presently my best flyer. Nice one, Ray!

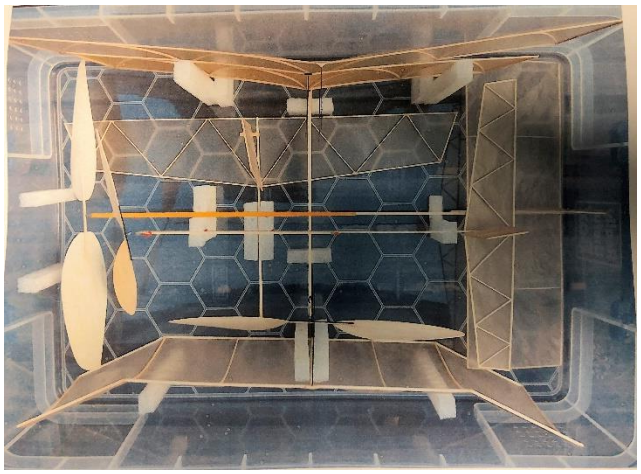
Intricate boxwork

Alan Hunter manages to get 3 ultralight models in one plastic box. It definitely makes us cardboard box chaps look a bit inferior!!



An overhead view of Alans box

However, it's quite a puzzle to get the models back in the box, so Alan has a plan view to help – see the picture below



The photo that Alan has on the lid of his box and uses to get the models back in their right places. Very neat…..

Dates for your Diary

Sat 3rd Feb 2pm – Indoor flying in Sports Hall. £3 entry fee

Thur 8th Feb – Rubber precision competition

Thur 15th Feb – RC Carrier Deck landing competition (in second session!!)

Sat 17th Feb 2pm – Indoor flying in Sports Hall. £3 entry fee

Thur 8th March – Annual club auction at 8pm. Flying takes place till we need to get the room ready at about 7.45

Sunshine at Cottenham

This aerial picture was taken from one of Trevors FPV fleet and shows a great day at Cottenham in late December with light winds, plenty of sunshine and a nice crowd enjoying it all. It's just a matter of picking the right days when they crop up in the winter!!

Who's winding?

Are those a ladys hands winding the model. Answer at the end of the newsletter.

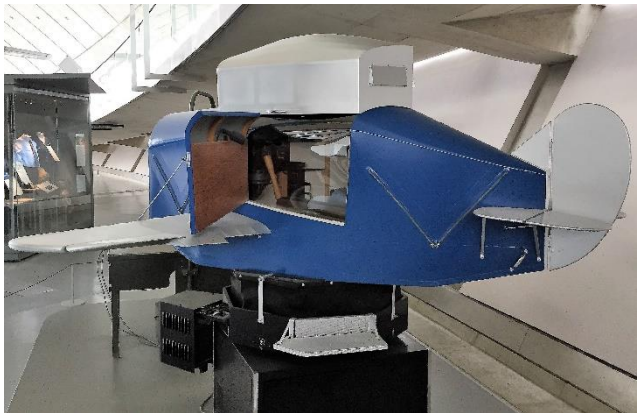
Members Privacy

As you have probably noticed, there are pictures of club members in the Newsletter, website and in various videos on YouTube.

If anyone would like to opt out of having their pictures shown, please let me know.

Also, if I don't get round to you, but you do have a model that you'd like to feature in the newsletter or a video, just grab me on a Thursday evening or send me some photos!!

What's this then?



And, did you ever have a go in one? Answer at the end of the newsletter

Caption Competition

Paul Craske spotted this one. I wondered if Chris Strachan was starting to take the indoor car races at the Public Open Days a bit too seriously!

Sales and Wants

No one has yet given the editor anything for this column, but don't forget if you do have something to sell, give away or want, this is the place for it!!

DIY Hot Wire Foam Cutter

Thanks to Mark Saunders who wrote this article to show us how it's done. The article is also on our website.

With a view to being able to scratch make or modify 'foamies', I looked into buying a foam cutter, only to find that the affordable, hand-held ones were battery powered and therefore could only be used with the cutter supplied with them, which were inevitably fine wires held in a bow. If you want to make shaped cutters for cutting channels or servo holes, then you would want to use a thicker stiff wire, which accordingly would have a much lower resistance and need a higher current than a battery powered device could provide.

Now for the physics:

The Resistance of a conductor is proportional to Length/Cross Sectional Area. (e.g. Short fat wires have a lower resistance than long thin ones). Resistance determines how much current flows for a given voltage according to Ohm'sLaw, R=V/I. Power dissipated in a conductor is V x I (or I^2R, by substituting V). Seeing as R is proportional to Length, the power dissipated per unit length for a given cross section is determined by I^2 alone.

So for a piece of 20 Gauge piano wire, 5A would dissipate the same power per inch independent of the length. This means you need to be able to adjust the voltage of the Power Supply to get the right current for the length and type of wire you are using for your cutter. However, you want to measure the current, so as to set the required power per unit length for the gauge of wire you are using.

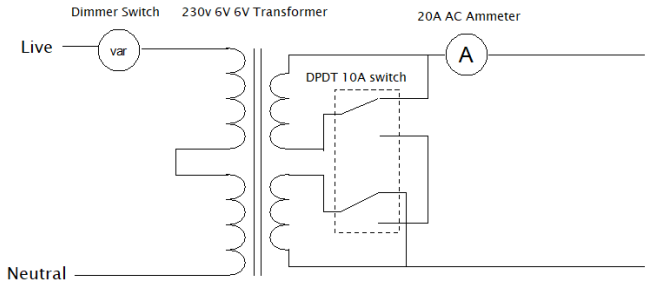
Component Selection

The types of wire suitable for foam cutting are generally very low resistivity, meaning that the power supply needs to produce plenty of current. It turns out that this could be as high as 10A for a 16 Gauge piece of piano wire. Voltages will be low (although proportional to the length of wire), so for long, thin cutting wires, such as those needed to cut a 1.5m wing core, you may need up to 12V. Overall, 100W of power at up to 10A and 12V (although not at the same time) should cover it.

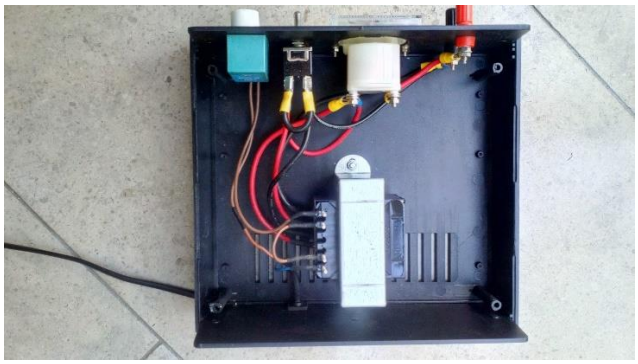
In the olden days it would have been very difficult to make a variable power supply to do this, and you would have probably ended up having to use a Variac, a type of mechanically variable transformer. However, the humble dimmer light switch provides finely adjustable power at mains voltages, which it achieves by crudely chopping the AC signal using a semiconductor thyristor switch. Dimmer switches come in lots of guises, but you need to choose one which is suitable for inductive loads (such as your transformer). The one I chose was £7 from ToolStation, and has the benefit that the electronics module just unscrews from the light switch faceplate for easy re-mounting.

Next in the circuit is a transformer to reduce the high voltage/low current mains input to a low voltage/high current output. At 100VA

(100W) power rating the most suitable is the lowest voltage option commonly available, which has Dual 6V output coils. These two output coils can be connected in series to give a 12V/9A output or in parallel to give 6V/18A output. A Dual-Pole Dual-Throw (DPDT) switch connected to the centre tap outputs of the low voltage side of the transformer is used to make this selection. A 20 AC Ammeter to measure the output current completes the circuit. There is no need to rectify the output convert to DC, although you could do this (with the addition of a diode bridge) if you were planning to use the output for something else as well as foam cutting.

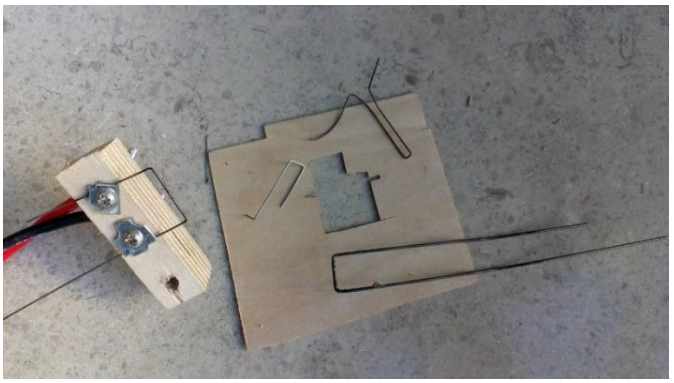


So with all the components selected, all that remained was to find a suitable enclosure (ebay) and get drilling and soldering. The result is very satisfactory. The dimmer switch provides suitable adjustable precision to set the current for long-thin and short-thick cutters. There is no appreciable heating of the transformer so far (although, to be honest, foam cutting is a fairly quick process). You do notice that once you have set a current and the blade warms up, the current drops off. This is because the resistance of wire is dependent on temperature. Let the temperature settle, and adjust the current again. The 6V range is suitable for everything I have attempted so far, but I haven't made a really long fine cutter yet.


Layout of the internal components

Front panel layout. Note the maximum current markers on the meter


A selection of different cutters


Various profile cutters and a servo cut-out template


Templates in 1mm ply for a DIY Foamie

And the resulting 24" 4-channel model. Can you tell what it is yet?

Just a word of caution. The input side of the circuit does use potentially lethal mains voltages, so if you are not qualified or competent to do so, do not attempt to make this yourself, or at least get someone who is to inspect and test your work! Don't mess with The Mains unless you know what you are doing.

Specifically, my implementation used a plastic box, with everything mains inside insulated again (so-called 'double insulated'), so no earth connection is required. However, if you are using a metal box, it must be earthed from the mains lead. Likewise, an appropriate (3A) fuse is fitted in the plug. Because of the relatively high currents used on the low voltage side of the design, a heavy gauge of cable should be used to prevent it getting too hot. (I used 30A wire).

You should also be aware that foam gives off noxious fumes while being cut, so do your cutting in a well-ventilated area (and hold your breath!). By far, the biggest risk is burning yourself or setting fire to something, so be careful!

Club Auction

In case you hadn't spotted it in the dates for your diary section, the Club Auction will be held on Thursday 8th March at 8pm. See John Copsey for more details.

Answer to What's this then?

It's a Link Trainer. It was powered by a compressor that pumped air around to move the whole thing and power the instruments.

The winder was Terri Craske.

Christmas shopping?

A couple were in a busy shopping centre just before Christmas. The wife suddenly noticed that her husband was missing and as they had a lot to do, she called him on the mobile.

The wife said "Where are you? You know we have lots to do."

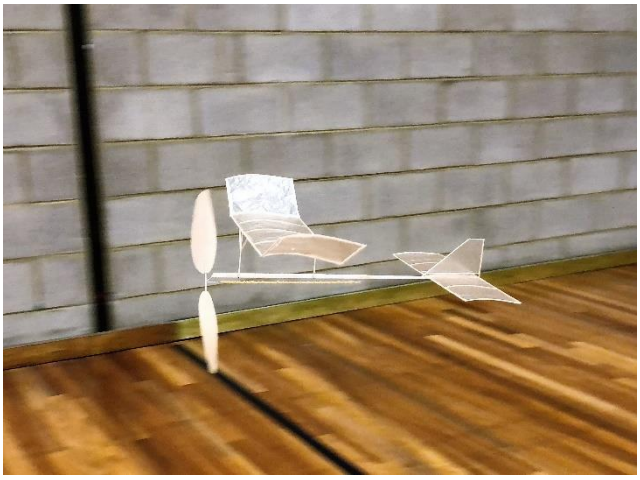
He said "You remember the jewellers we went into about 10 years ago, and you fell in love with that diamond necklace? I couldn't afford it at the time and I said that one day I would get it for you?"

Little tears started to flow down her cheek and she got all choked up… "Yes, I do remember that shop" she replied.

"Well I am in the model shop next door to that."

Thanks to Paul Craske for that!!

Pats proliferate



There are now 4 of these Pennyplanes cruising around the Club. Why not have a go – the kits are only £12 with everything included

On Saturday 20th Jan we managed to get all 4 PATs flying at the same time. The intrepid quartet are pictured above and even after a mid air collision all 4 flew for about 2 minutes. There is a nice video on YouTube – search for IVCMAC PAT.

The Club featured in the January 2018 Aeromodeller

IMPINGTON VILLAGE COLLEGE FLY-IN

THE LAST SUNDAY IN OCTOBER SAW INDOOR FLYING ENTHUSIASTS GATHER JUST OUTSIDE CAMBRIDGE. ANDREW BODDINGTON REPORTS.

Paul Craske with a Bostonian he has scaled down to Peanut size. Balsa with blue foam spats.

Ann Staines with Ray Malmström Viking which has a photo of her grand-daughter Georgina as the pilot.

Ann's husband Richard Staines had a lovely collection of small FROG rubber powered models including the Senior Linnet, and Junior Pup and Scamp.

Our display models were much admired. See the News section on our website for the full article. www.impmac.co.uk