

Sticks and Tissue No 176

If you can contribute any articles, wish to make your point of view known etc please send to or phone 01202 625825 JamesIParry@talktalk.net The content does not follow any logical order or set out, it's "as I put it in and receive". Thanks to Mark Venter back issues are available for download from <http://sticksandtissue.yolasite.com/> Writings and opinions expressed are the opinion of the writer but not necessarily the compiler/publisher of Sticks and Tissue.

Painting by
Mike Cummins
of Raynes Park
MAC



From Peter Scott

Wishing you all the best at Christmas, and thermals and the hum of engines in 2023.



Autumn meeting of the rubber motor friends at the "Gheid" airfield

Peter Ziegler

Saturday, 22 October 2022, the morning still partly cloudy with first blue gaps towards the west. The intermediate high pressured and the southwest wind freshened. Not exactly ideal conditions for the fourteen participants and their models.

After the welcome and the briefing, there were also newcomers among the participants, and the first brave ones dared to let their models fly. As the weather got nicer and nicer, the courage increased and the revolutions of the rubber or the charge level of the CO2 tanks was increased. Yes, in addition to the rubber engine, the CO2 engine or models powered by it have also been part of the event for years.

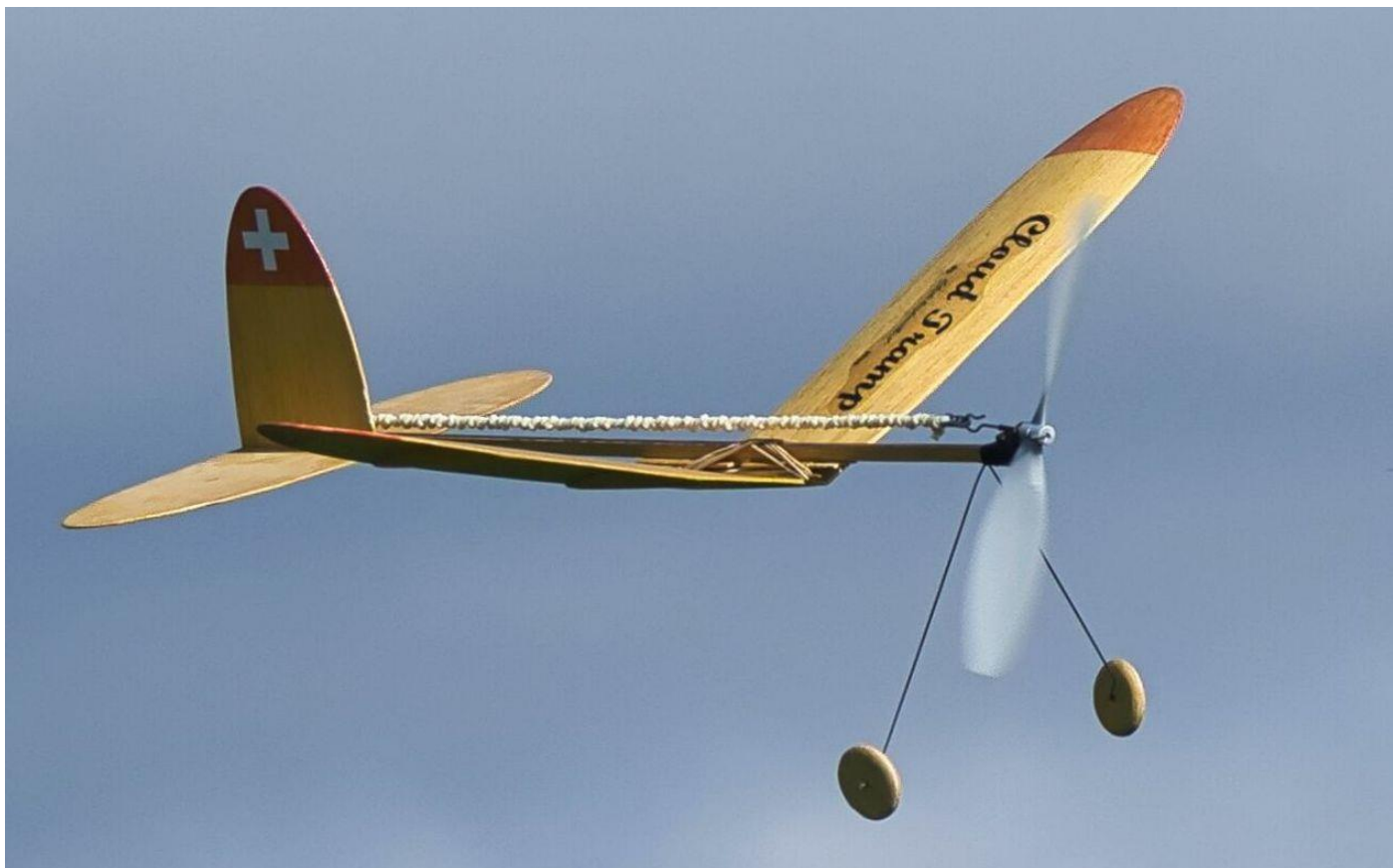
Not without consequences: Two models were blown away by the westerly wind towards the east, towards Olten Southwest with its old gravel pit, new quarters with the corresponding vegetation and trees (it is autumn, everything is nicely coloured). One model was found, the other not despite hours of searching. Take a break. A second search party then succeeded in locating and recovering the model with the help of binoculars.

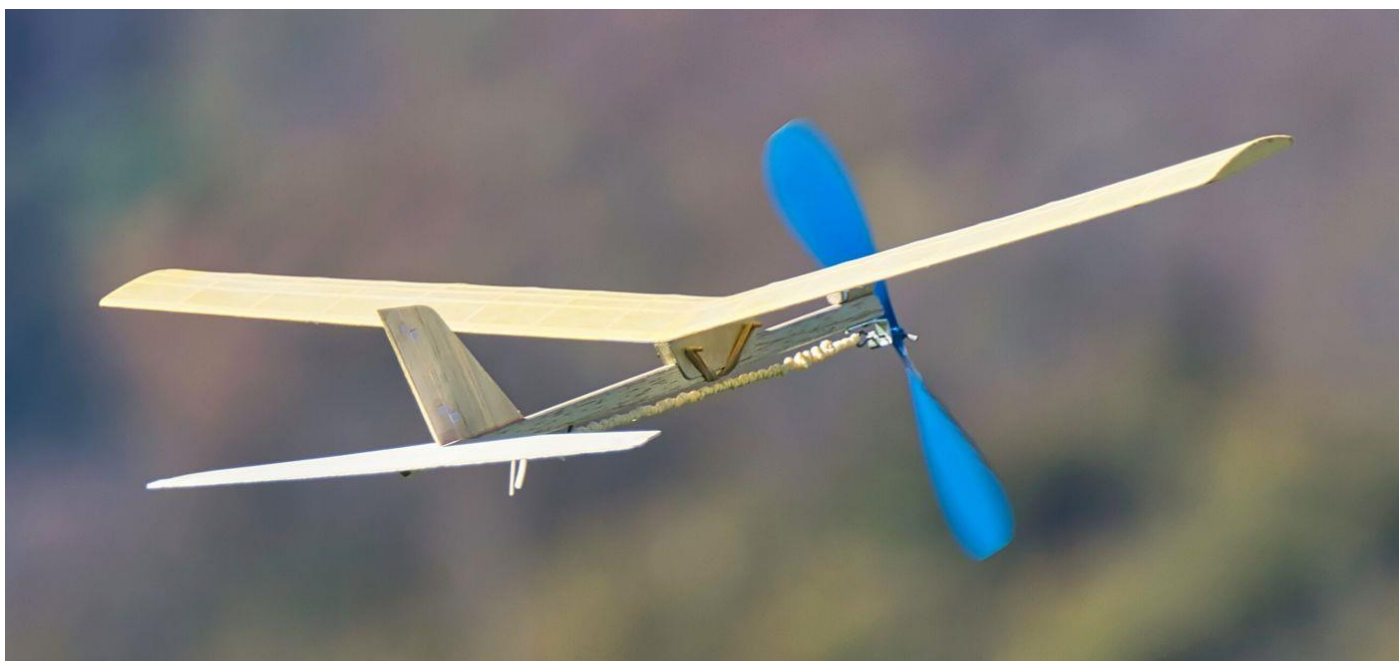
During the course of the afternoon, the wind suddenly died down to calm and we flew, discussed and really enjoyed the time until well into the early evening. There were enough objects (models, magazines, etc.). Satisfied with the day and what we had experienced, we set off for home. See you again in 2023, when the invitation to the meeting of rubber/CO2 engine powered models will be extended.







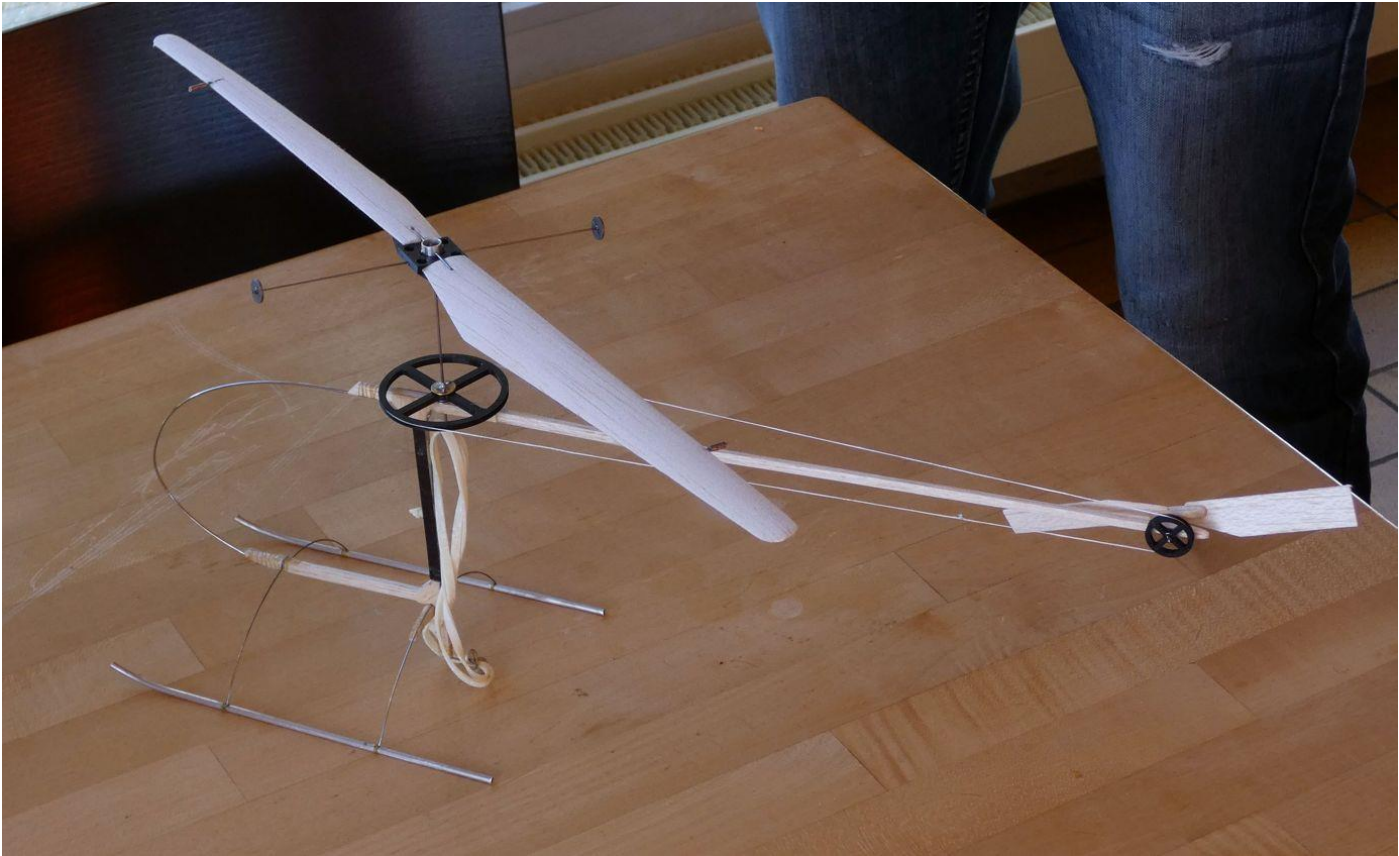






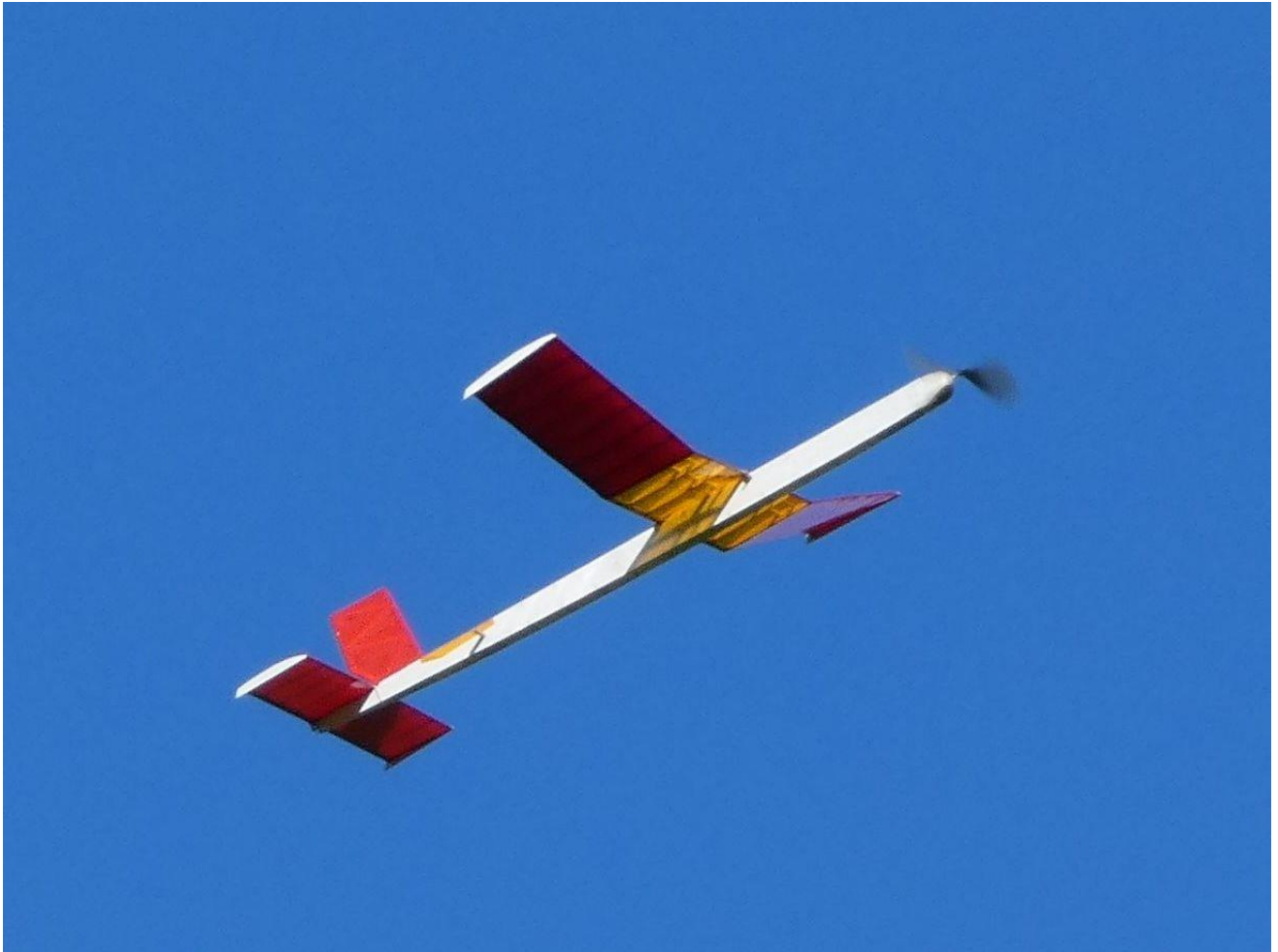




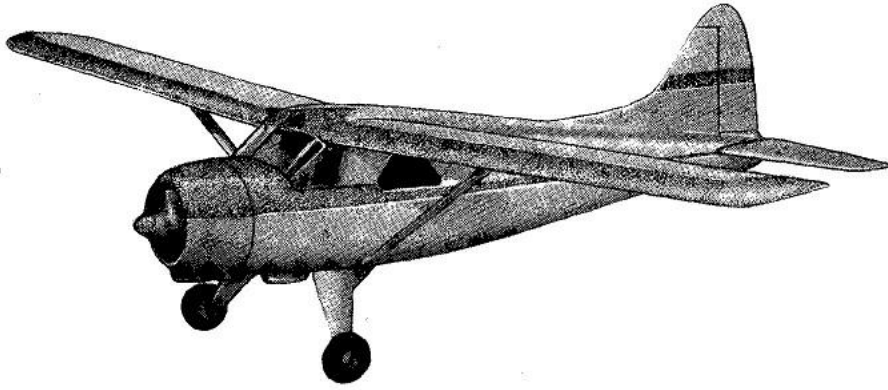








DHC2 Beaver by J H Sheppard from Model Aircraft February 1951



When designing a flying scale model one has to bear in mind that even if it has a fast flying speed, as the majority of flying scale models have, it must be able to withstand heavy landings and the flying surfaces must be easily displaced in the event of a crash or hard knock. Also, it must have a practical motor installation—

motor trouble is bad enough in a freelance design, but an inaccessible engine in a scale model can lead to gory propellers, cut fingers, and bad language!

The D.H.C.2 Beaver fulfilled my requirements admirably providing a model with a radial cowling which allowed plenty of room for an upright motor, a reasonably long undercarriage sprouting from an ample fuselage, and filletless wings permitting an easily detachable fixing. Above all the Beaver is a good looking aeroplane having rugged yet clean lines.

The original model was powered by an E.D. Bee though an Amco 0.87 or any other good engine of a similar capacity could manage as efficiently. Any thing smaller would have difficulty in dealing with the fairly high wing loading.

The pendulum rudder was fitted to cure instability which resulted from the small dihedral angle.

The sprung undercarriage was fitted after the prototype had been flown because it was found that downwind landings on tufty ground or ploughed fields tended to tear Former No. 5 away from the fuselage sides. The installation of sorbo pads and gussets cured this and the present undercarriage will deal satisfactorily with all landings on reasonable terrain in normal weather conditions.

The weight of the original was 16 3/4oz., but in spite of this, with the CG. at about 50 per cent, of the chord, quite a slow glide was obtainable.

The model has stood up well to "cartwheel" landings, which occurred before the fitting of the pendulum rudder. On one occasion half of the tailplane became loose and began to fall off. Once clear of the locating peg it turned through 90 deg. so that it was vertical in relation to the airstream. The only damage resulting from the ensuing 50 ft. plunge to earth was a cracked rudder !

Wings

These are perfectly straightforward, but it should be carefully noted which ribs are made from - 1/16th in. and which from 1/32nd in. sheet. The multi-spar construction is used to minimise tissue sag and so preserve scale appearance care should be taken to bind and cement the brass tubes securely to the web between the spars.

The strut anchorage consists of a wire hook to take tensioning rubber bands and a small housing made of plastic wood into which the bevelled edge of the struts fit.

Fuselage

Start by building the basic side frames on the plan from 3/32nd in. sq. and 3/32nd in. sheet. When these are set, join them together with the small former stop and bottom using F5 as a means of keeping the whole job square. The undercarriage should be attached to F5 before it is installed. The sorbo pad could be made of a sorbo tyre off an old wheel. Add the engine bearers not forgetting to incorporate the downthrust.

Plank the "bonnet" and under the fuselage ; also sheet the " corners" of the fuselage. These parts can be planked with single pieces of sheet as they are not compound curves ; the wood should be soaked in hot water and then bound with rubber round a broom-stick and left to dry thoroughly. It will then be roughly the right shape for the corner curves.

The fin outline is constructed from laminations of 1/32nd in. sheet. When the fin is completed it is

cemented to the fuselage. The rudder is attached and the pendulum installed. Take care to cement the pendulum supports securely into position.

The tail-wheel strut is sewn to F18 and cemented to the rear strut is dummy and merely protrudes through a piece of 3/32nd in. sheet into the fuselage.

The wire wing fixing is soldered to two 6 B.A. nuts and bolted to F5. The correct dihedral angle is incorporated by bending the wire as shown on the plan. This fixing, provided it is made from good 12 s.w.g. spring wire, makes a very efficient wing mount, being sufficiently flexible to spring backwards, forwards, upwards or downwards to take shocks and yet being sufficiently rigid for normal flying. The undercarriage fairings are made and installed as shown on the plan.

The cowling is made from 1/16 in. sheet—the front ring being from 1/2 in. sheet. The bottom half of the cowling is cemented to F1 and braced to the engine bearers while the top half is made detachable in order to provide access to the motor. Carve the exhaust pipe and carburettor air intake from 1/2 in. sheet and stick on after doping.

On the original model since the ED. Bee is not fitted with a cut-out a celluloid fuel tank was constructed as shown and graduated. This proved to be quite satisfactory since accurate timing of engine run is not of great importance with scale models. The tank shown held sufficient for about a 30 sec. engine run. For choking, a length of wide neoprene tubing was pushed over the carburettor intake of the engine and led out of the side of the cowling.

In order that the compression lever can be adjusted without removing the cowling, a small extension may be made. It was found on the original that the engine started and ran efficiently without any adjustment to either compression or needle valve. Extensions to either are, however, easily made.

To avoid the possibility of the engine mounting nuts vibrating loose 18 s.wg. wire clips were made to snap over the bolts just above the nuts. The wing struts are made of cartridge paper wrapped round a balsa former and cemented. They are then clear and silver doped.

Tailplane

The tailplane is of quite simple construction. The elevator hinges are made from strips of cement tube. The tips of the elevators should rub against the tailplane tips so that the elevator cannot be easily displaced.

Finishing

The wing, tail, and fin are covered with ordinary rag tissue, the fuselage is covered with double-thickness rag tissue, and given three coats of clear dope. The rest is given two coats of clear dope and the whole aircraft finished with two coats of silver dope (sprayed on, if possible). Registration letters and the top of the engine cowling are maroon in colour and a maroon stripe is painted down the fuselage sides with the aid of "Sellotape" for masking purposes. .

Ailerons, doors, hatches, etc., are marked with Indian ink, which is then given a coat of clear dope for protection.

Flying

First make sure that all flying surfaces are free from warps and check the C.G. position. All being correct, choose a calm day and glide test over very long grass. Trim (by moving elevators slightly up or down) until you have obtained as slow and as flat a glide as possible.

On the original model a Truflex 8 in x 4 in. pitch propeller was used. For the first power flight the engine should be throttled back until it is running slowly, or if you cannot get your motor to run slowly, use a wooden propeller and stick a piece of 1/16 in. sq. on the leading edge of the blades. This will reduce thrust and revs. If a light airscrew is used, gyroscopic forces will be minimised and the model, will therefore, be easier to trim.

Normally the pendulum rudder will tend to keep the model on a straight course, but circling flight may be obtained by adjusting the inset tab on the rudder.

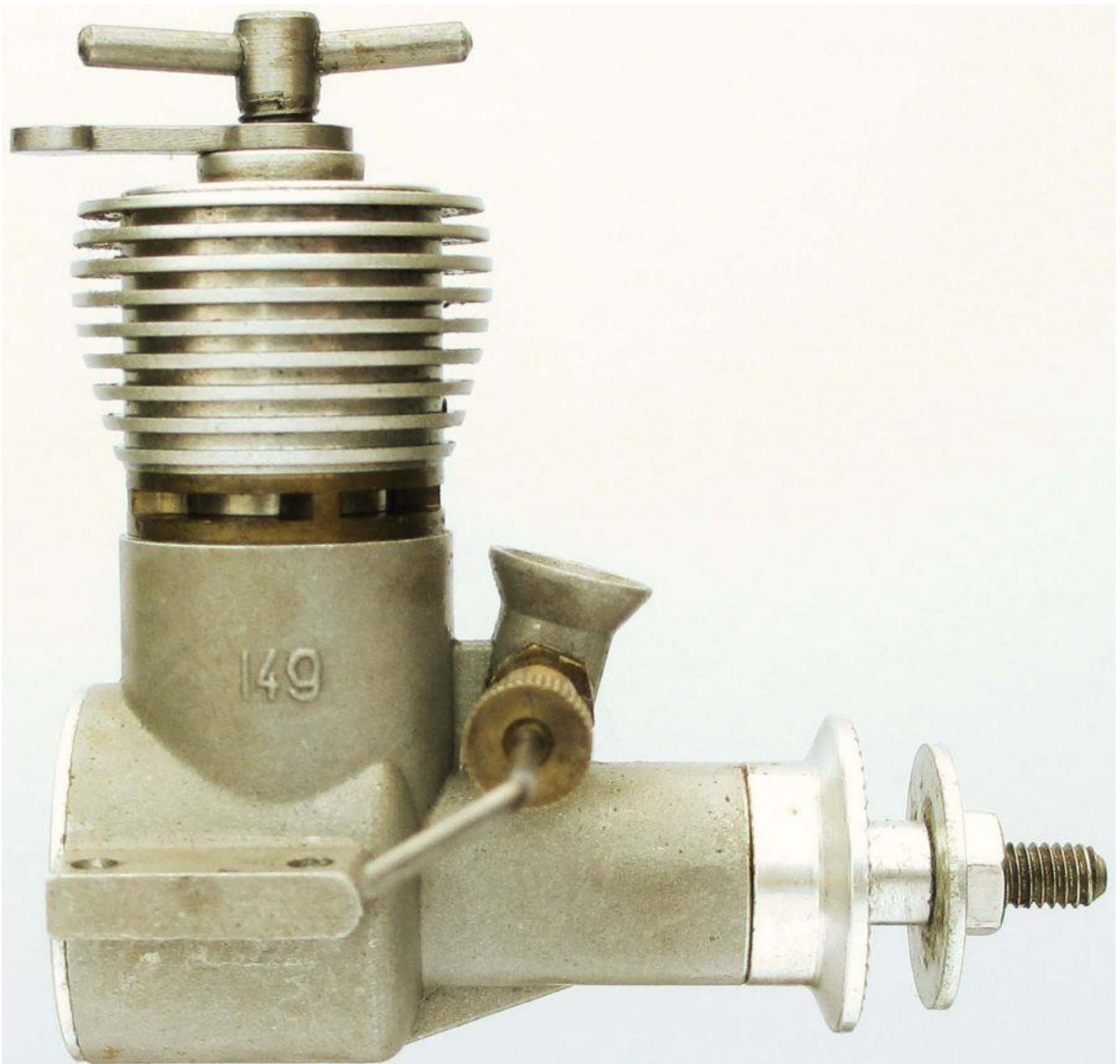
If the model tends to oscillate from side to side it is probable that there is either too much movement on the pendulum rudder or that the model has not been launched straight and a weaving motion has been started by the action of the rudder.

From Bill Wells

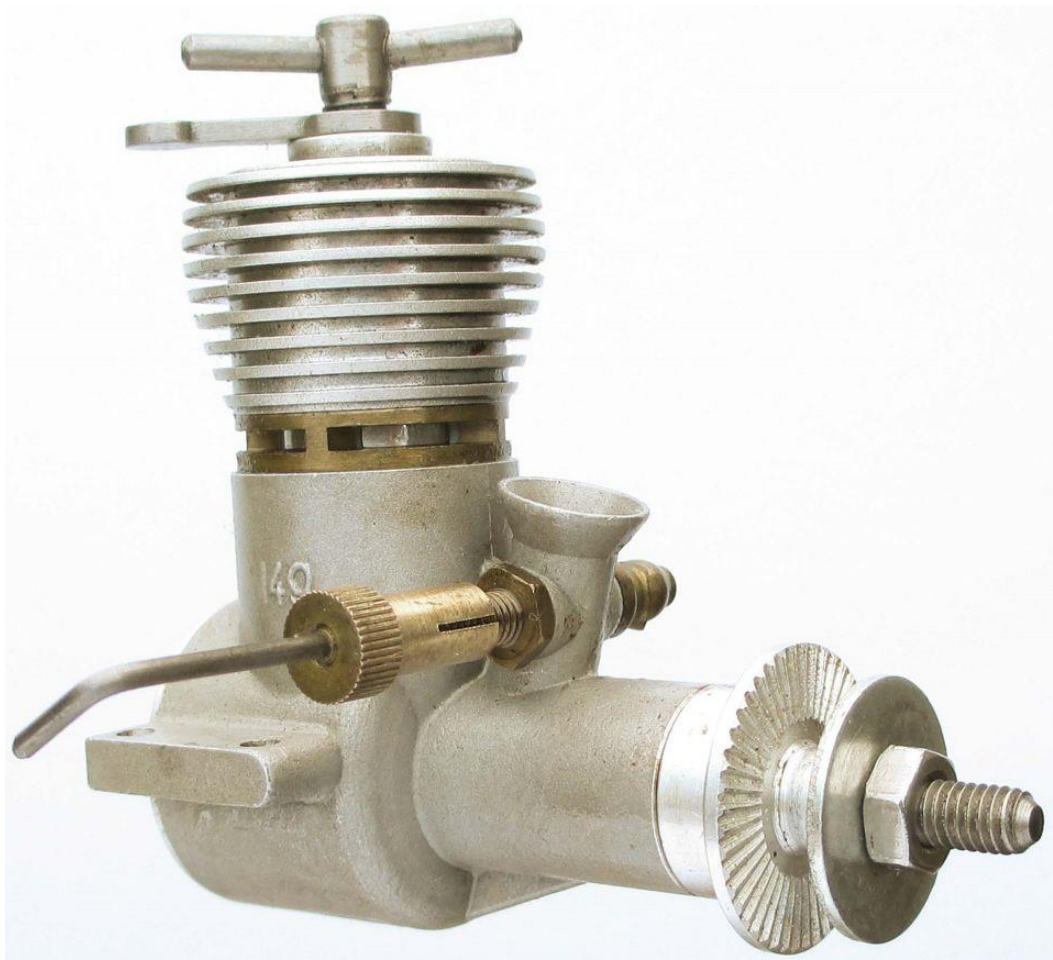
Elfin 1.49 Replicas

I guess most modellers of a certain age will have heard of the Doonside Mills 75 but not so many will have heard of the Doonside Elfin 1.49. Well, here I am very fortunate in not having to write much about these engines as recently Adrian Duncan has produced a comprehensive article on the subject. To access the article Google 'adriansmodelaeroengines' click 'engine articles' select Elfin 149 PB replicas.

I obtained two of these engines the first serial number 045 came with Ivor F's note of approval. The second one 085 has **NOT** got a note and is as far as I can see is identical to the other engine except it doesn't have a compression screw locking bar. They both run well.



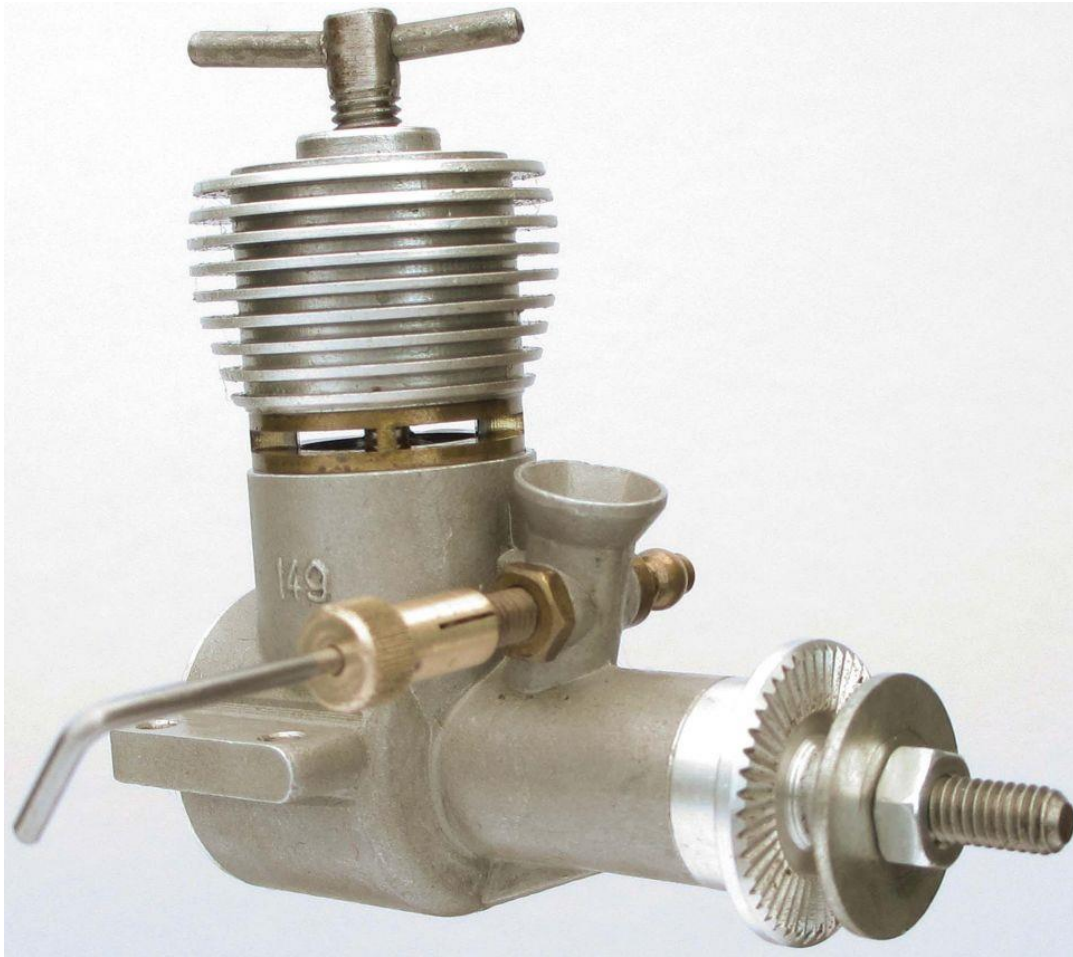
Zeus Elfin Repro 045 1R



Zeus Elfin Repro 045 2R



Zeus Elfin Repro 085 1R



Zeus Elfin Repro 085 2R

From Peter Wallis

Hi James not sure if the sad news has reached you that my lifelong friend Roger Cooper died last Saturday 22 October 2022

Cocklebarrow 2023 Tony Tomlin

The provisional dates for next year's Cocklebarrow Farm events

Are:-

Sunday July 16th.

Sunday August 20th

Sunday September 24th.

Fingers crossed for good weather.

The dates are provisional so please check nearer the time.

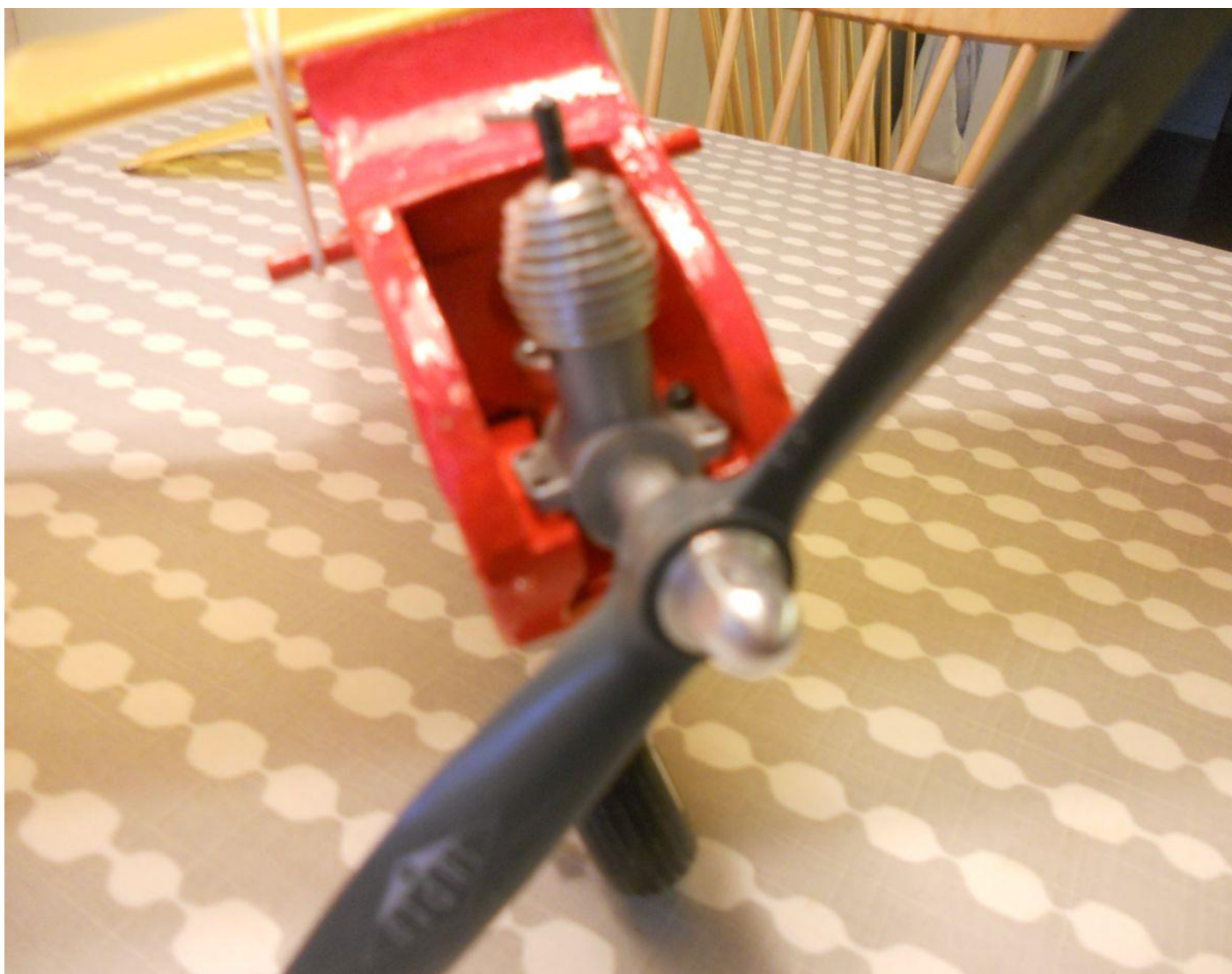
From Jörgen

Hi james sending you some pic,s of my BMJR Rambler 30"span 135 grams single channel with a Mills 0,4 up front not run yet and not flown to a lot of snow as well so I will hybernite for a while and maybe theraby build my BMJR Sniffer pf.

Jörgen

ps Now you seen my kitchen table there it all happens.







From Richard Scott

Here's a couple of pictures of a pair of models that I finished too late for this year's more clement weather, so first flights will not be until spring '23. 'Red Admiral' is from December '58 Aeromodeller and I have attempted to replicate Brewer's original colours. 'Tom Thumb 2' is from June '22 Aeromodeller, power being provided by a new AE 0.2.



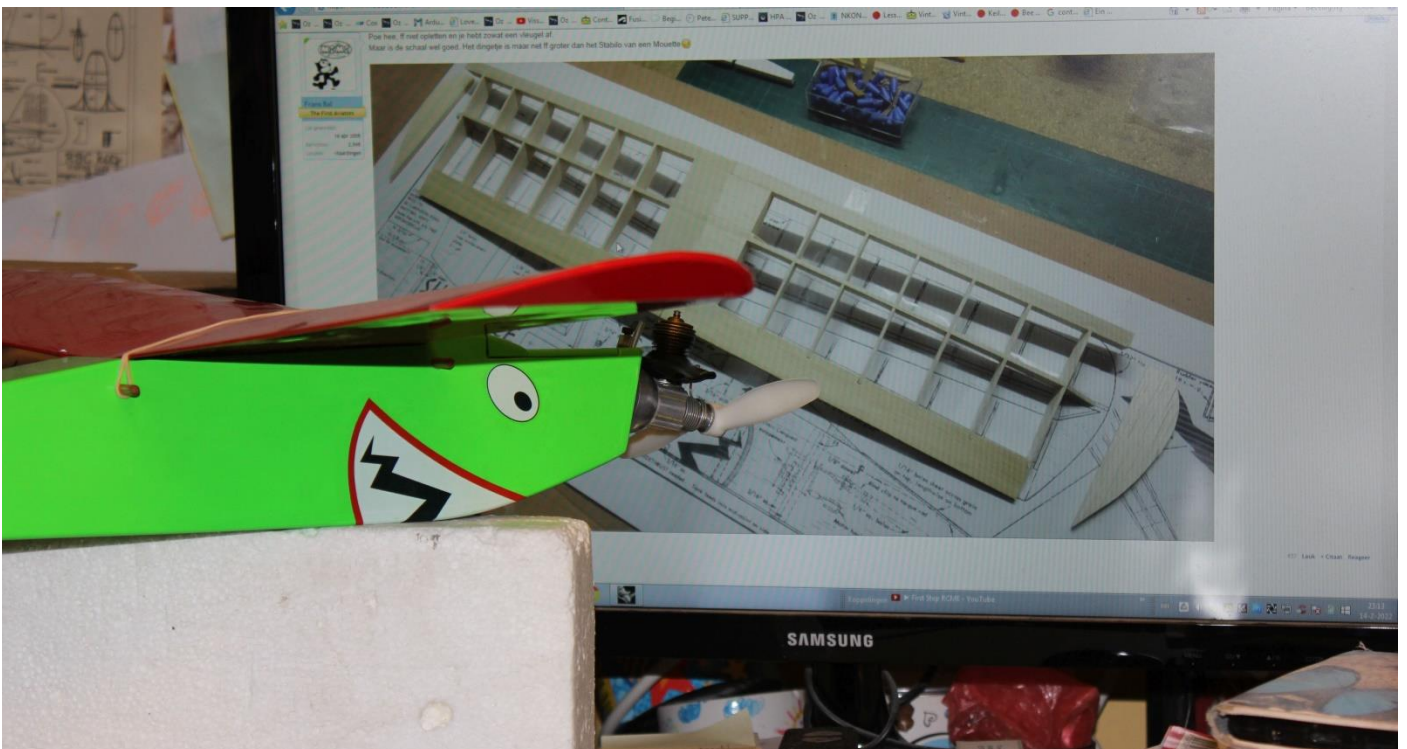
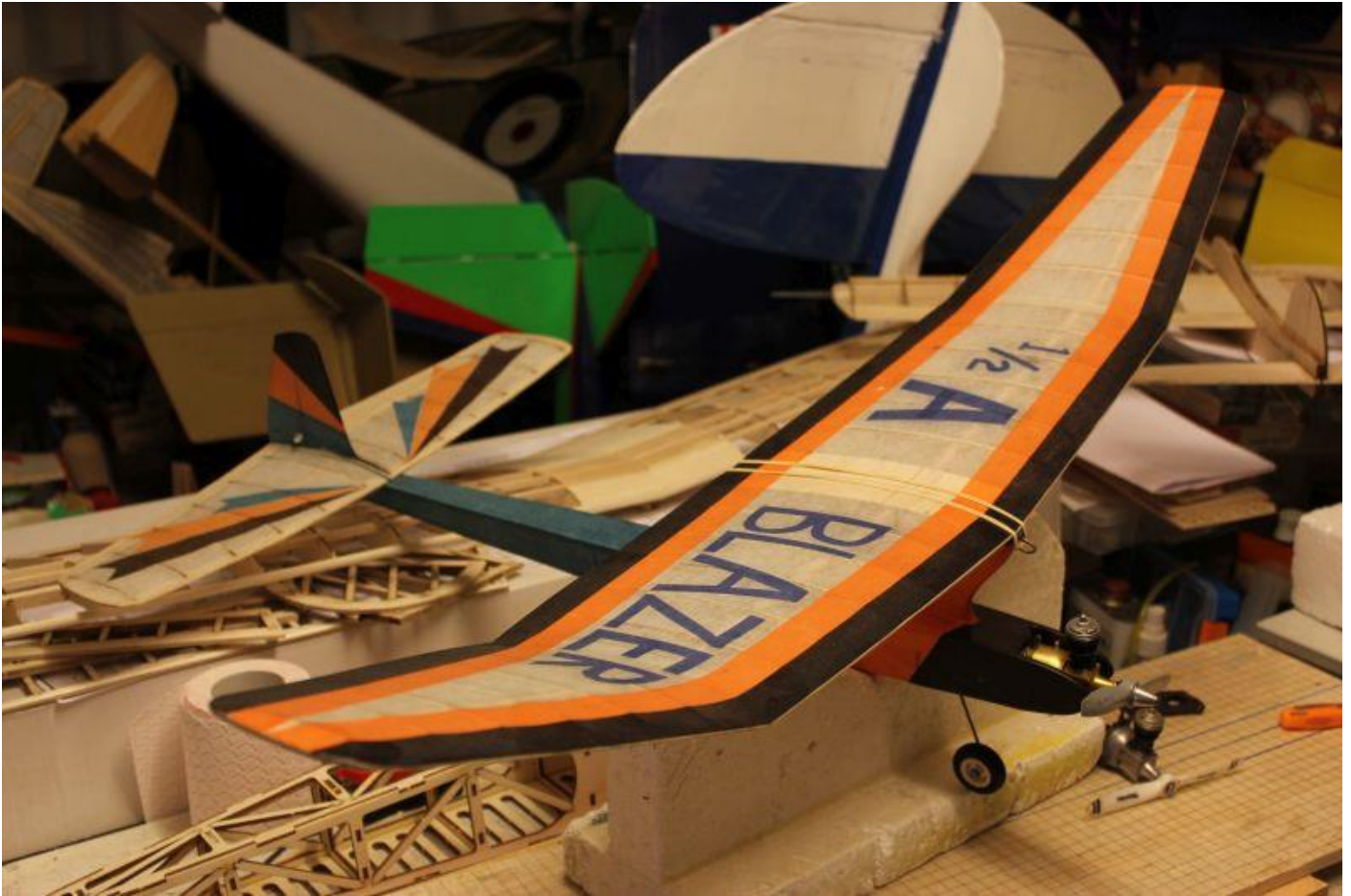
'Red Admiral'



'Tom Thumb 2'

From Ton Van Munsteren in Holland

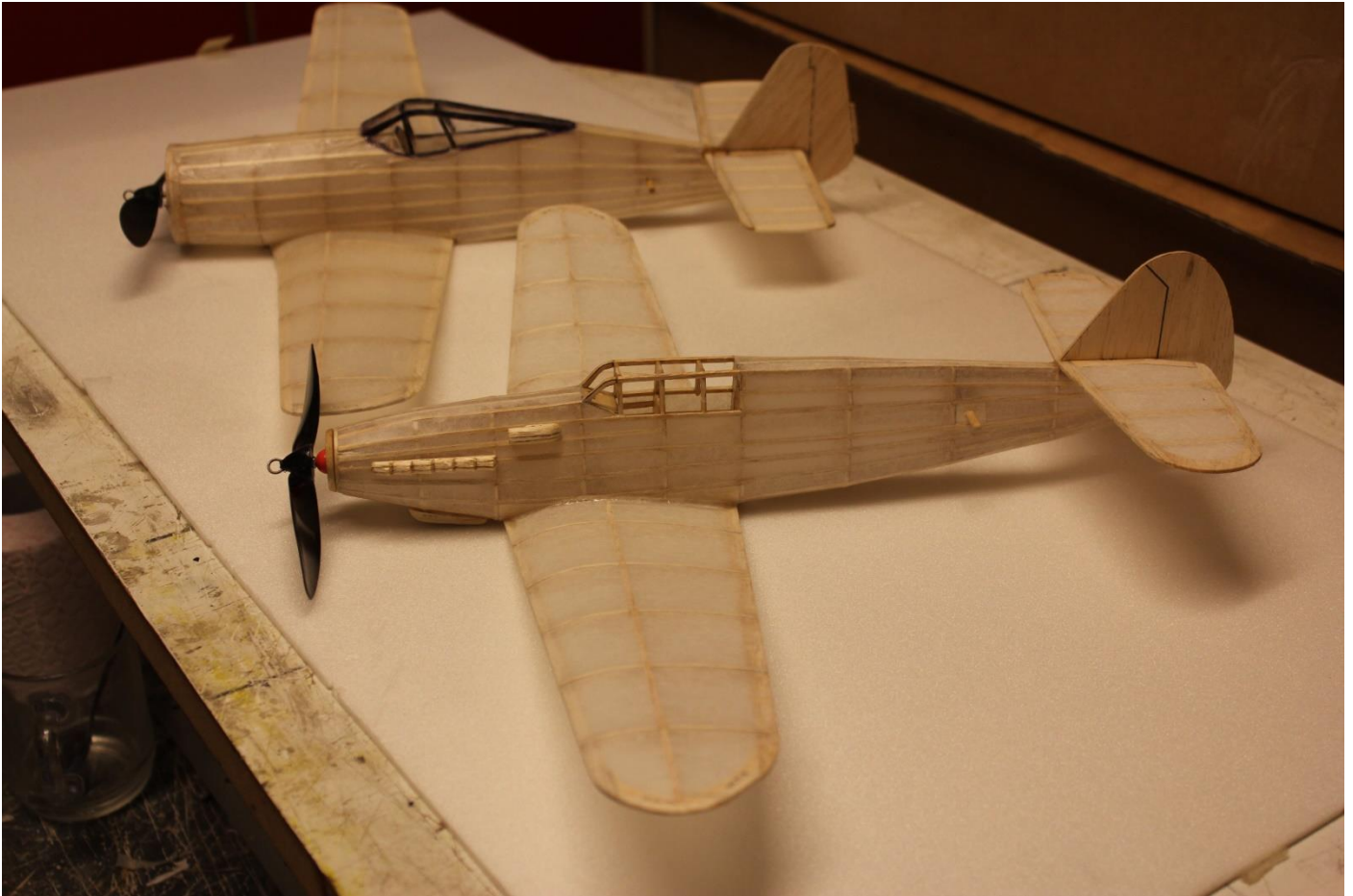
Have attached some pics of some of my models.











From Ross King

Hi James, hope you are well, this is the short version of a lost email I tried to send earlier this evening.

Graham from work and I flew lots of foamie rc this year from Slades farm off Columbia road. Also built and flew from outerzone a 1954 Half Wave, finished it in the last of my plastic cheap film, hence yellow and white. home built radial mount, tank etc. sent pics to outerzone now they are on their site, fame at last!

Boy does it fly, great fun on a p a w 55, take offs landings loops the lot. Three channel. We flew control line and electric small rc once at Meryick park (*Bournemouth*) as it's the only place council allows C /L. see video. I learnt to fly R C on that beastie. See vid.

Have included vid of best flight, a mini peacemaker with 1:5 cc on 52 feet lines! Can only just keep balance on dodgy legs at my age.

Love the diesel love control line.

Hope you managed to get somewhere to fly this year.





RED 3 MAC



As a follow on from Ross yes we did find a permanent site this year. A 5 acre field which is also shared with a clay pigeon shooting club which is not a problem as they only use the field occasionally and we keep in contact.

The poor weather this year, too hot, too windy and too wet slowed things down a bit!

Still we have levelled off a strip which was previously a hay field and hadn't had crops for years.

We had a job levelling it off and whilst not complete, needs rolling next year, is usable with holes etc now gone but some small undulations left which are no real problem as we fly smaller models mainly electric with IC having to be very quiet.

The club name is in memory of one of our flying friends who sadly passed away in 2020, he flew in the Red Arrows as Red 3. He was also a benefactor for the club although he did not know what form it would take or where it would be was being astute as he realised that a new club would be necessary.



Photo taken on day 1



Madcap photo taken as light diminished 1.12.2022



Andrew just after launching his Pietenpol





John's foamy which he can fly with assistance despite having some visual impairment. The model will be used for those who as yet can sort of fly RC but need to have a few practice flights. The model is actually very good for that role.

From Stephen Winkworth

Back in 1990, while helping a friend's son to get into aeromodelling, I bought a small radio-assist free-flighter with a Mills 0.75 in the nose, from a school teacher, a Mr J. Trent, who lived in a leafy lane in Coulsdon, Berkshire. The model was very precise and carefully built, so I couldn't help admiring it. I have never bought ready-made model aircraft, as a lot of the enjoyment of the sport for me lies in the building.

When we moved to France on my retirement, the model came with us, in the special triangular cardboard box I had made for it. The box, shaped like a giant 'Toblerone' and painted deep blue with the last gasps of a used spraycan, was meant to look like the model boxes which used to turn up at Epsom Downs, strapped on the backs of bicycles. The name of the model, I discovered, was 'Hermes', though I used initially to refer to it as 'No-name', and later as the 'Mercury No. 1'.

The radio-assist part was a 27 Mc/s receiver brick from a 'Nikko' ready-made. I had a Macgregor transmitter from the 1970's (get that four-foot aerial and retro styling!)

and with the right crystal the setup worked remarkably well. In fact it worked a lot better than many other radio sets I have had over the years. It was oddly unaffected by rogue 27 Megs

transmissions, and its 110 mAh button-cell nicads remained useful well into the end of their discharge cycle, drawing, it seemed, only a tiny current.

Some years ago I changed the model's original Indian Mills 0.75 for a fine example with a spring cutout lever, bought second-hand from Henry J. Nicholls. Then I built an O.F.W. Fisher 'Ionosphere', where its full power is really needed, as well as its cutout, which operates on low throttle. So the replica Mills went back into the Hermes, where it is quite powerful enough for a lusty climb even at well below peak revs. By the time the standard tank is empty the Hermes is getting worryingly high, and the glide is flat enough to hook the occasional thermal, making for an exciting flight once in a while. The only way to avoid a fly-away is to try and fly a straight course to escape the thermal core, and then spiral down on full rudder. Will the wings stand the speed? They always have so far.

Twice in its thirty-year life Hermes has lost radio while in the air. Both times it has continued flying in large lazy circles and, by amazing luck, has returned to the small field from which it was launched, undamaged: but not before some very anxious moments as it traversed great swathes of mature woodland, not to mention some industrial buildings belonging to a local perfume factory. On neither occasion did the fault lie in the 'Nikko' radio brick: the first time a frayed contact with the external 'jack plug' switch parted company; the second time I found, on picking the model up, that the built-in mini switch on the receiver had been turned off - no doubt by an anxious probing finger during launch preparations. Once it lost its fin in mid-air, performing some very undignified aerobatics but coming to earth unscathed just as the engine cut.

However, now I am left with a dilemma. The Hermes' last flight was four years ago (well, I have twenty or so models in more or less flyable condition, and other life events do get in the way). The problem lies with the receiver batteries. The original nicad button cells were long ago replaced by more modern NiMhs... but not THAT modern, come to think of it - they must be nigh on fifteen years old too, and batteries, like the rest of us, do deteriorate.

So for the past few days (too stormy for flying anyway) I have been running a series of experiments on three sets of the tiny 1/4AAA cells that are the only ones light enough (14gm) for this model. One pack won't charge at all. The other two do seem to accept a charge, but my 'Elysium' charger, when set to discharge, cuts out immediately, indicating very high internal resistance. Not safe. Meanwhile, at Cape Canaveral, frantic efforts are being made to launch NASA's Artemis, the biggest rocket ever built, preparing to return men to the moon. But there are mechanical problems. It kind of puts things in perspective.

It might be possible still to find a newish 14gm battery for sale somewhere, but I don't fancy the idea. Why not replace the old Nikko brick with all-new 2.4GHz equipment? And while one is doing that, why not add elevator control, for virtually no weight increase? The Nikko brick

seemed such a useful miniature radio device back in 1990 that I tracked down the suppliers and ordered a spare! By the time that had arrived and I had started to think of putting it into another model, newer, smaller radios had started appearing, so it never got used. It must be mouldering on some shelf, among broken servos kept for spares and other workshop junk. Ah yes, there it is! So let's put it on the scales. 55gm: hmm... not really so lightweight by today's standards, and with a 14gm battery that gives a total of 69gm of control equipment. Somewhere, I have the specs of the radio I put in my last model - the 'electric Durajet', based on my first ever model (still haven't managed to track down a set of plans for the Jetex - Wilmot Mansour - original, of 1947 - can anyone help???). Servos, 1.7gm each. 2.4GHz receiver, 1.1gm, li-po 6gm - for a total of 10.5gm. Now, the Hermes' all-up weight is only 320gm, and nearly 50gm could be saved: around a sixth of the total weight! That should make a huge difference to flight performance.

Or would it? The reason I don't wish to be too dogmatic about the benefits of saving weight in models is that I have tried this sort of thing before, and it hardly seemed to help at all.

The 'Pirouette' is a 24 inch span model I built for a Clan 0.24cc diesel, and equipped with state of the art radio in 2009. That consisted of a 35 Mc/s Jeti receiver weighing 10 gm, a midget servo, 6.0gm, and that 14 gm NiMh 4.8volt battery. On the few occasions that I managed to get the Clan singing a fine song, it would climb high enough, and then float about in an admirable fashion, catching any scrap of lift that was around; and was indeed quite entertaining to fly. But the Clan was really not a joy to operate, and I began to have negative thoughts about the 4.8volts. Then came Micron R/C, with those tiny geared motors, and the even tinier Spektrum style radio 'bricks' mentioned above. So, masochist that I am, I decided to build a new fuselage, to house this new gear, and why not a new tailplane, to make use of the elevator function on the 'brick'. Only the wing would remain unchanged.



The fuselage was identical, except that I lengthened the nose, to allow for the much lower weight of the electric motor replacing the 26gm Clan. It flies, has a reasonable rate of climb, and a nice steady glide with not the slightest interest in thermals. I have tried all sorts of changes of trim, but it just lacks the sparkle of the old Clan version.

Back to the Hermes. After putting the best of the three batteries on overnight charge, I ventured forth to the flying field. The Mills was, predictably, a bit sticky after four years' idleness. Eventually it seemed to be running well, so I launched it into a nice steady climb... which stopped abruptly after about five seconds, leaving it near the end and on one side of our small field. A sharp turn away from the bushes, but with no elevator function to flatten out the descent, the wheels caught in a rough patch and over she went.

No damage, but the radio no longer worked. And I managed to put a finger through the covering while poking around inside.

Back in the workshop, a wire from the servo was found to have parted from the circuit board. With my finest soldering iron tip, and double glasses perched on my nose like Steve in The Repair Shop, I soldered the little wisp of wire back, and all appeared to work as before. But for how much longer? The interiors of diesel powered model aircraft are racked by bone-shattering vibration of an intensity only found elsewhere in the insides of giant moon-circling rocket engines. Or so I have always believed. I remember Chris Olsen - that quasi mystical figure from the heroic age when transistors were little capsules with three wires poking out, and they were just starting to replace valves, and you built your own radio. There was an even more legendary wizard of radio, R.A. Cookson, who inspired Olsen and his counterpart, Stewart Uwins, to design radio sets (there was even in the days just before transistors, a version of Olsen's 'Uproar' that flew with PROPORTIONAL control, though the combined current drawn by its many tiny valves meant an enormous payload of batteries). All this belongs to the pre-history of experiments that led eventually to the invention of the drone. Who knew then what a mighty instrument that would become?

This is all a roundabout way of remembering that Olsen used to back up every soldered wire connection with a short length of copper wire and a little plastic sleeve to support the join. With several hundred such connections on a 'multi' like the Uproar, with home-built receiver and home-built servos, a few were bound to fail from the furious vibration of an Eta 29 at peak revs, unless thus protected. Even with Repair Shop double glasses on I was not going to be able to make that kind of join, so I simply tied all the wires coming from the circuit board together with cotton thread and dabbed a bit of Evostick over them, to make a flexible support.

Back to the flying field. The first attempt resulted in a sharp right turn - no response to rudder control - and a one-wheel contact with tarmac followed by half a ground-loop and a few millimetres off the propeller tips as tarmac stopped engine. Oh dear the radio doesn't seem to be working - which is not surprising as I had switched the transmitter off and omitted to switch it on again. Now, if this had been an electric model, the motor would not have started with a dead transmitter. A lesson for all who switch back to diesels after years of electric power!

So, back to the starting gate, fill the tank, everything switched on and working, and this time, an excellent flight - though not as long a motor run as I used to get in Hermes' early years. Still long enough to be able to sniff at a little patch of lift and extend the glide for a few minutes. At the next attempt, I learned another lesson for the electrically habituated... You have to be fairly wide awake and adroit, once the motor has been started, to get out of the way of the propeller, while transferring the right hand to the relevant part of the fuselage for the launch. If you are in your eighties, and have just taken some antihistamine tablets to ward off an incipient 'allergic cold', you may fall victim to 'Propeller Rash'.

I have seen pictures of what happens when a clumsy hand gets in the way of a powerful electric motor, and it is a lot worse. Unlike the Mills, the electric motor does not stop: it keeps running until it gets the right radio signal. It doesn't care how much flesh or bone it has to cut through in the meantime. I once had a dog who stopped a screaming Oliver Tigre by biting the spinner. If that had been an electric motor, I don't think the dog would have survived.

Anyway, it is very much a part of the character of the Hermes that the diesel dictates the flight pattern. An electric motor it would be just a little boring - which is ironic, as actually this very model was the subject of an early conversion to electric power, before Mr Trent sold it to me, back in the days when electric power was still considered daring and experimental.

Is there something a little special about still using radio equipment from over fifty years ago? Nostalgia knows no boundaries (does anyone still manage to fly using tuned reeds?) but I'm not

sure it means THAT much to me. Probably the 1/4AAA cells will last for a few more recharges. Still, I don't want to lose the Hermes, and it has already had at least two and a half near-flyaways. So as it's not a cat I think I'd better not tempt Fate much longer. It's time to build a new fuselage, just as I did for the Pirouette, though the Mills will again be the power.

The Hermes is built on the crutch principle, like the Pirouette but with a rounded underbelly. The Pirouette by the way is based on an Aeromodeller design from 1961, P. Gaston's Pee Wit. The fuselage has an interesting structure with a curved beam braced by Warren girders like a miniaturized bridge, allowing the absolute minimum of balsa - the top beam being formed of 1/32" sheet. By comparison the Hermes uses quite a lot of wood: a total of four 1/8x3/8" longerons plus a couple of 1/8" square strips to form the underbelly. And the swayback top, though perhaps prettier than the Pirouette's hump back, is far from ideal from a strength/weight angle.

In use, the Hermes has always had one major drawback. Every now and then, however carefully the rudder is used to land into the prevailing wind, the lack of elevator control would make it impossible to land softly, and the undercarriage would get bent. So conscious was I of this problem that I started practising CATCHING it! Rather an athletic feat for me now, but I see from log-book entries over the past twenty years that I regularly managed to do this, while holding the transmitter in the other hand. So, the new version is going to have elevator control. Examining the structure of the tail end, and the method of attachment of stabilizer and fin, I realise that a full-span elevator would involve some really serious alterations. So I plan to use only half an elevator. Not as much control, maybe, but it should be enough to manage a landing flare. I just need to add the tissue covering over the Mylar, fuel proof, and wait for the right weather! Will it fly better, catch more thermals, and perform perfect three-point landings? Or will it be like the electric version of the Pirouette?









Antikflugtag 11 September 2022

From Peter Renggli, Photos by Urs Brand











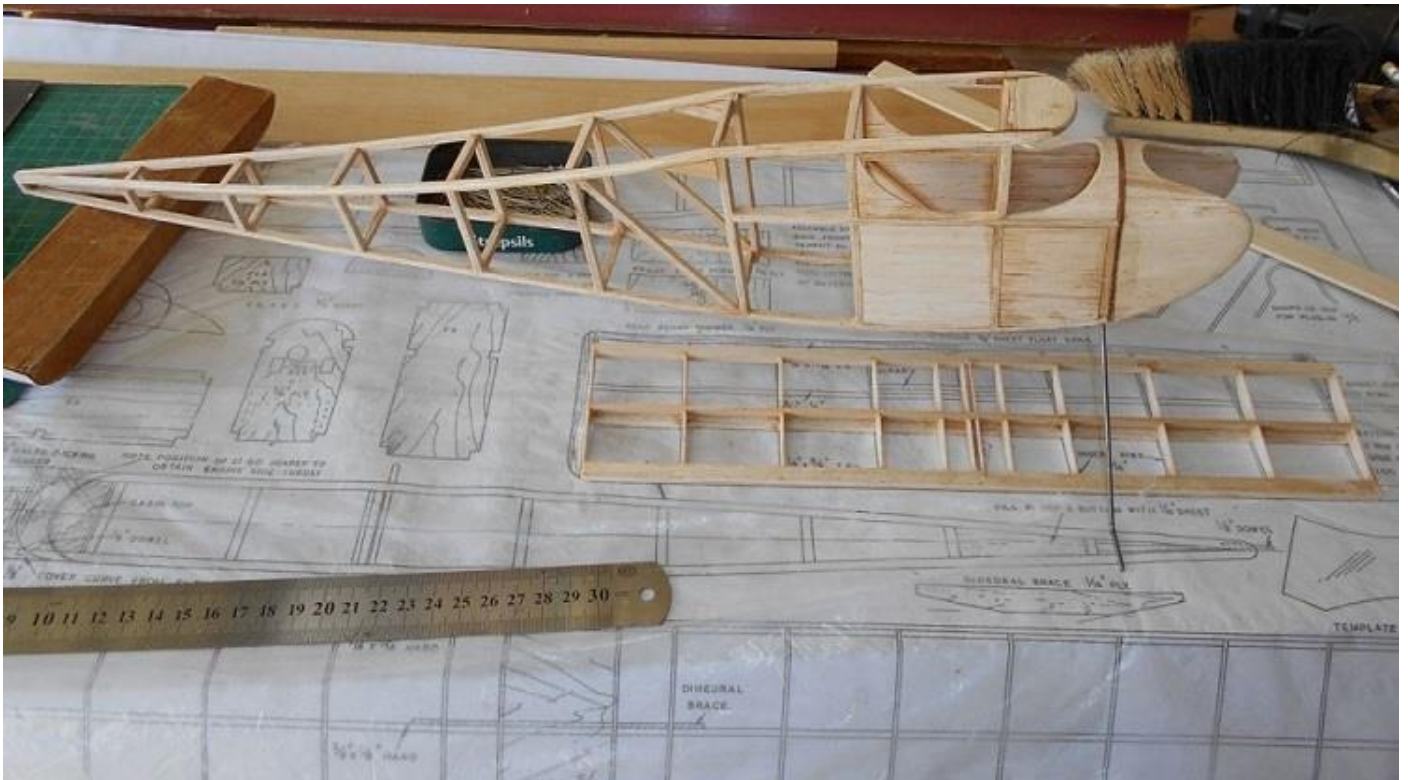


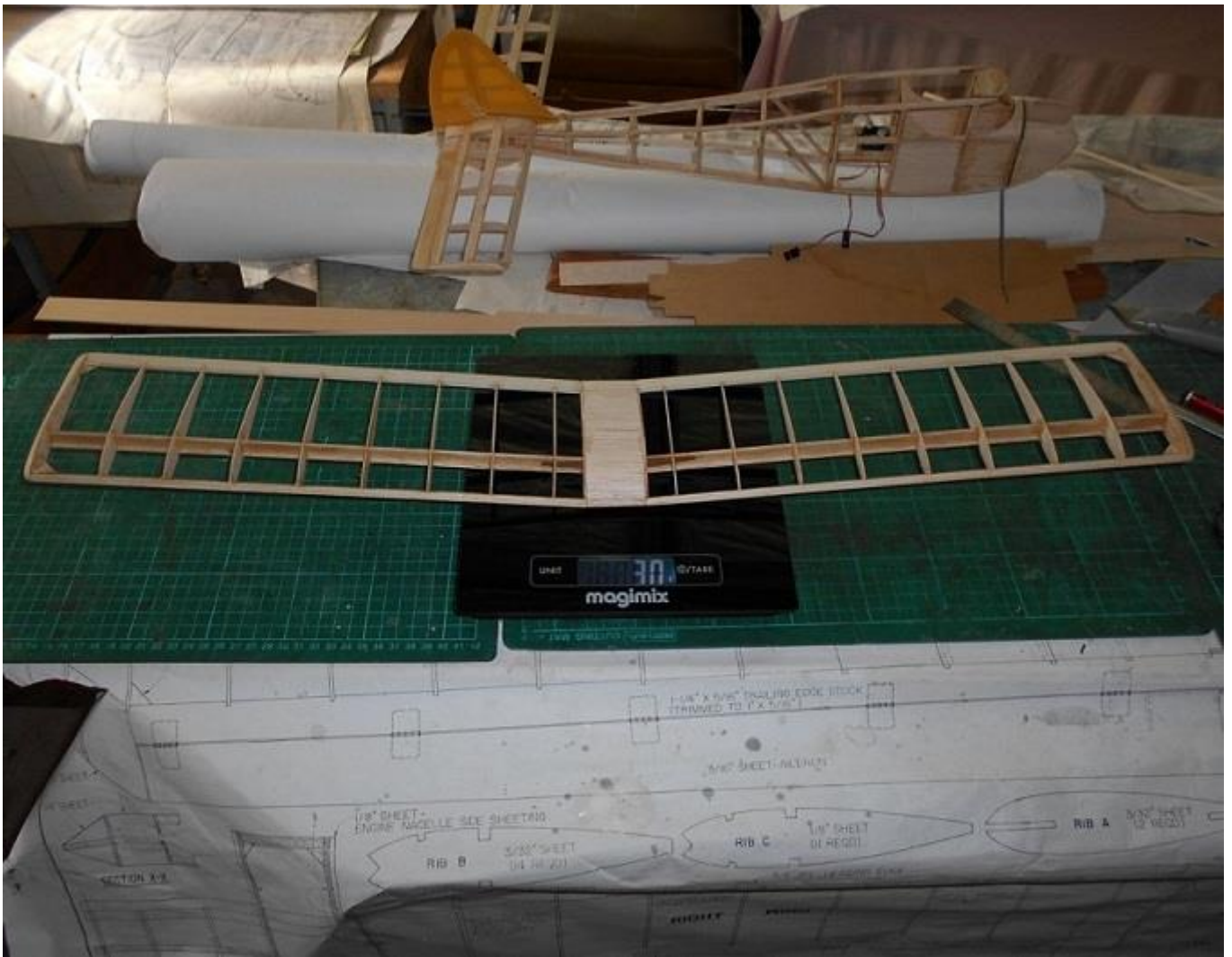
From James Hammond

Gregory Asked me to build a small Tomboy and keep it under 250 Grams

Here is what happened -It weighs 233 grams

The small Tomboy is fitted with 4.5 gram servos 4 gram dsm2 rx turnigy 2 cell motor 10 amp speed control and 8x3.8 prop 2 cell lipo battery 800mah







I've included the information below received in respect of flying indoor aerobatic models not necessarily everyone's pleasure but may be of interest to a few?

I personally have been flying indoor models especially this year as opportunities to fly outside have been very restricted and with the hall being small the model I used was an old Vapor, after flying it on and off for ages I became utterly bored with it so followed a couple of others and bought an AMSXtra, this certainly kept my mind active although I was always 1/4 second behind the model a disastrous situation. That model came to an end early on

when someone flying out of slot (different types of models were segregated by time slots) guided their new B17 straight through it when I was landing, result being a shredded model. All the other similar models gained weight weekly by addition of patches so renewing annually became a ritual. Mine and several other of these models on renewal number two all suffered from a surging motor problem, a fortune was spent in renewing batteries but the problem was never solved until new boards different manufacturer were purchased from Micron, they no longer supply such items or deal with aircraft. However Microaces seems to have filled that gap. Mind you one of the two motors I had suffering the problem I recently sorted out, I noticed that the back of the board had, compared with other working examples far too much silicone which covered all the chips so I wonder if over heating was a problem? The second motor though did not have that problem so is now set aside for the time being. Hopefully I'll forget about it, not difficult as I seem to forget just about everything anyway.

I digress the point I'm making combining the problem of weather with risk of boredom as a result of flying highly passive models or crashing more mobile ones others may wish to attempt the formula below in order to concentrate and improve their flying? JP.

From Russ Bowey

A few of us (based in the Midlands) have been working on some ideas which may help to increase the popularity of indoor R/C flying, by starting to develop some (hopefully) Fun Fly style aerobatic concepts..

Please see the attached .pdf which expands the idea.

If you have any questions or comments, all will be gratefully received!

There is a QR code in the document to directly join a new Facebook group, but if anyone would just like a link instead here it is: <https://www.facebook.com/groups/679041757157225>

Please pass this on to any other clubs/people who may be interested too!

MinIMAC - the Miniature Indoor Model Aerobatic Club...

General concept

The idea of MinIMAC is generally to widen the appeal of indoor flying, using some slightly structured 'aerobatics' which brings together elements of Precision, Fun Fly & Freestyle. This will hopefully increase the skill & fun for those taking part, by giving indoor sessions an aim & some manoeuvres or challenges to practice.

The idea is that MiniMAC can be flown by typical indoor models (Clik21, Synergy etc. & all light shockies), as well as own designs.. (we will develop rules if needed to keep the costs low!). Initially the aim is for people to just have a go at flying some of the ideas below, for fun but hopefully this could then lead, for those who are interested, to a competitive element. This element could range from simply competing against another individual at the same, or a different club (see more details on this later), to inter club competitions & perhaps even larger competitions later. What follows are not definitive proposals, but ideas that hopefully will encourage more people to give the idea a go, which will expand the knowledge base & help develop the concept to be enjoyed by yet more pilots.

If anyone is interested, there is now a MiniMAC Facebook group which hopefully will help to develop the concept further, it can be joined by anyone using this QR Code:



Using a clock & not a judge

Sourcing judges for any competition is generally problematic. Therefore, this basis of this concept, is for indoor aerobatics to be flown against the clock, negating the need for dedicated judging...

this idea has been coined 'Speedobatics'

Timings would generally start when the model passes in front of the pilot & finishes with the same (both can be modified to the start or end of a manoeuvre/sequence where it's more sensible i.e. in a Cuban 8 combo, see below). This prevents rushed T/O & Landings, hopefully, that will help extend model life! To minimise the time that an indoor space is only being used by one pilot, a competitor could take off whilst the previous pilot is landing.

Speedobatics

The timed events could be organised in a few different forms.

- 1) Straight forward to fly a series of set manoeuvres against the clock.
- 2) Flying as many manoeuvre combinations as possible, in a set time.
- 3) Flying a schedule against a target time, where the more advanced pilots could have different target times to newcomers,

Note: Flying against a target time would be done without the pilot seeing/hearing the time, to prevent him flying the sequence too fast & then prop hanging at the end to get a perfect time.

Basic introduction & short schedules

Here are a couple of ideas to introduce the concept of Speedobatics:

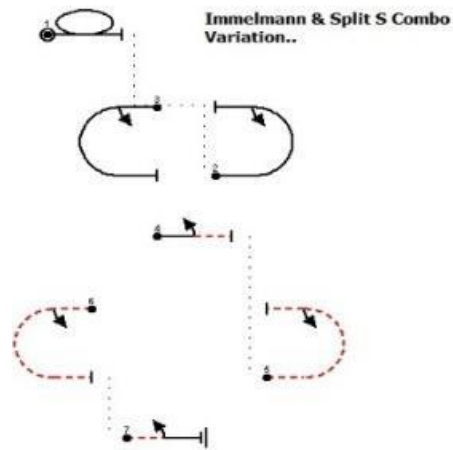
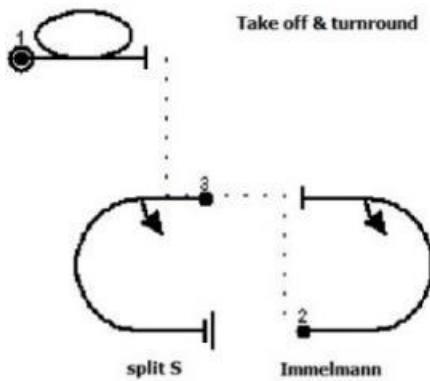
Immelmann Split S combo:

Basic Immelmann turn, after the ½ roll at the top, ½ roll in the opposite direction & for the Split S (the opposite direction roll, stops the ½ rolls becoming just a full roll).

Variation, after the first combo, ½ roll at the bottom to inverted for an outside Immelmann Split S combo, again ½ roll at the bottom to repeat the inside combo & continue for say a total of 6 combo's, or completed as many combos as possible in a set time (say 1 minute).

MiniMAC - the Miniature Indoor Model Aerobatic Club...

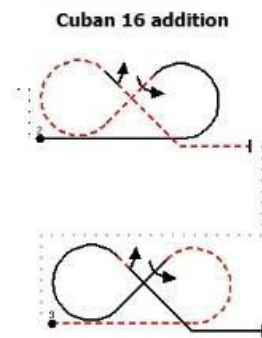
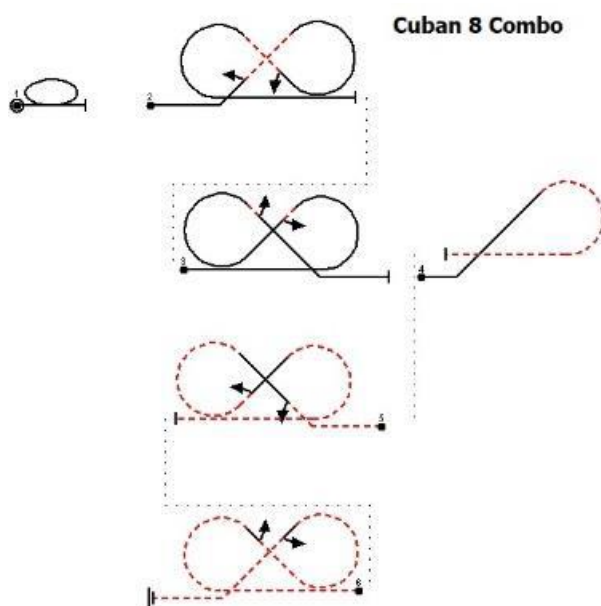
Immelmann & Split S Combo



Cuban Combo

Reversed Cuban 8 (half rolls on the climbing legs) - leading into Cuban 8 (half rolls descending legs) – turn round to inverted Outside Reversed Cuban 8 – leading into Outside Cuban 8

Experienced pilots could always repeat it, or say add the Cuban 16 from the outdoor C test (rolls are full roll, $\frac{1}{2}$ roll, full roll, $\frac{1}{2}$ roll) etc.



More variations could be that both the Immelmann Split S & Cuban combo's can be flown in either direction, reversed for a subsequent flight or even reversed as part of the same flight.

Fun Fly

The fun fly element could include some limbo ideas, either using a tape (probably between badminton poles which are often available in sports halls) or even just flying over a marker on the floor below say head height, again this is to help with model lifespan, then say a combo of aerobatic manoeuvres interspersed with passes under the limbo... Fun Fly style limbo pylon racing & limbo triple trash could both work.

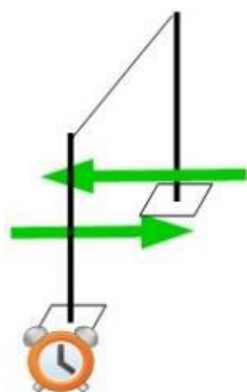
Avoiding Fun Fly touch & goes should help the longevity of model life & most indoor models to not have very strong undercarriages.

Indoor Fun Fly Limbo can make use of the calm conditions found indoors, so that a pass is made one way, followed by a turnaround manoeuvre & a pass made in the opposite direction - the turnaround manoeuvre is aimed to prevent pilots basically prop hanging to & fro!

The poles can be placed further apart & a figure of 8 pylon race, with control line style turns around the poles as shown below:

There should be lots of other events that will work well indoors. Any feedback on the FB group would be very welcome!

MinIMAC - the Miniature Indoor Model Aerobatic Club...



Two way limbo

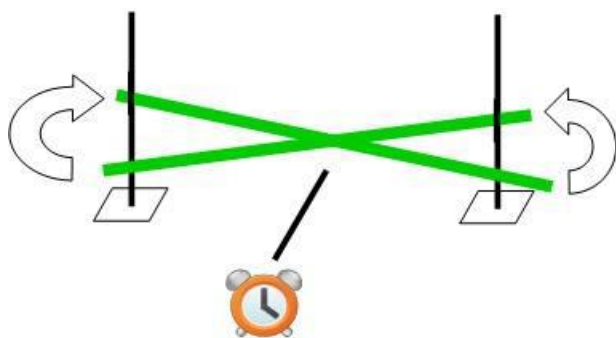
Plane must pass under limbo rope in both directions to count as 1 pass.

Turnarounds are free.

Plane must pass under limbo with wings approx horizontal (no prop hanging or KE.)

Clock starts first pass, finishes as plane completes 10th 2 way pass

Figure of 8 Pylon race could use individual poles set a certain distance apart, then fly flat turns (wings level) around the pylon.



Flat 8 pylon race

10 laps, clock starts as plane crosses centre line, stops as plane crosses same point after 10 complete laps.

Challenges & Competitions

Obviously 2 or more people at any indoor club can have a competition against each other. However, the benefit of indoor flying is that it isn't weather dependent - so people could fly an agreed sequence at their own location without difficulty & simply upload the results via social media etc. negating the need for expensive travelling. Obviously, some people/clubs could get together, with the benefit of a good social event & swapping ideas making such gatherings worthwhile.

Challenges/comps could be given a timescale (say a 7- or 10-day period) as not all clubs fly indoors on the same day.

It is likely that comps taking place at different locations could need something like a video confirmation of the timing, but with mobile phones & plenty of social media video apps, this is easy to achieve.

To prevent someone practicing a sequence loads of times & then just posting the best time. One person could initiate a sequence & nominate a random (not timed) manoeuvre to be flown at the start, another participant (not from the same club) could nominate a second random manoeuvre to be flown after the sequence. The video confirmations will obviously then be current for that event. Larger & even national competitions could all be flown & recorded in the same way

Variety of models

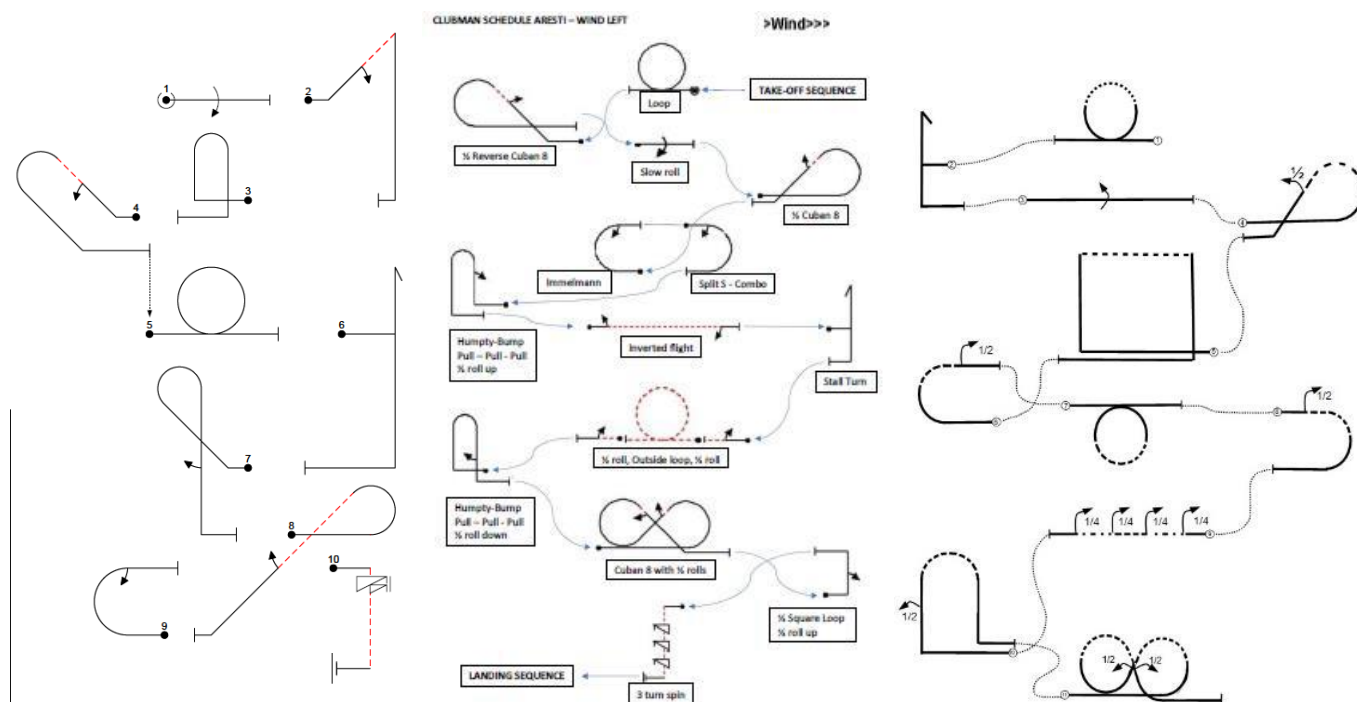
Initially, any type of model could be used for any type of competition. However, classes for shockies, F3P classic, fun fly etc. could be introduced if numbers eventually warrant it. Models should generally be built from foam (such as EPP/Depron or similar material). Contrass & 4D setups would not initially be allowed at club level competitions but could always compete against other similarly equipped models.

Advanced Schedules

For those who like even more of a challenge, some of the basic F3A, IMAC & of course F3P can all be flown against the clock.. See some of the current schedules below – some indoor models will not spin of course so a down line & say ½ rolls can be substituted in place of any spinning manoeuvres) – All more advanced outdoor schedules don't really work due to the increased vertical elements

Some sample schedules are shown below.

MinIMAC - the Miniature Indoor Model Aerobatic Club...



Outdoor practice

Obviously, some of these ideas will work well outdoors too, perhaps both can complement each other & help to widen the appeal & participation of those flying model aerobatics too!

JP's bit

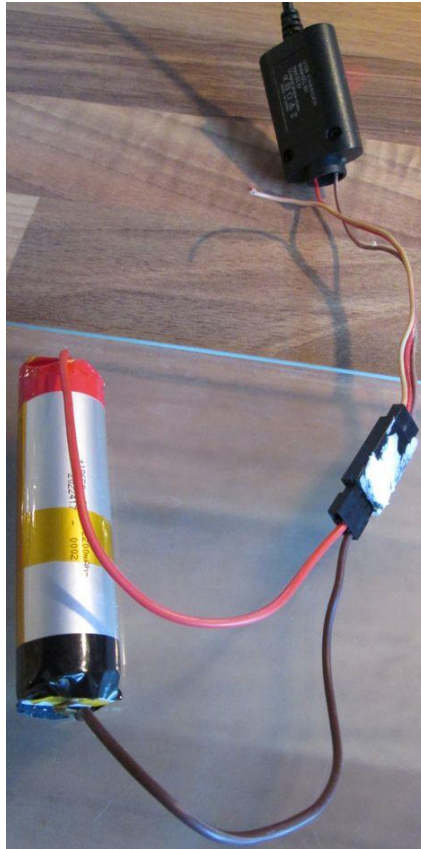
Another item which may be of minor interest comes from the Model Zero whereby Phil Green came up with the idea of "Scavenging perfectly good lipo cells for free"

<https://mode-zero.uk/viewtopic.php?f=62&t=1551>

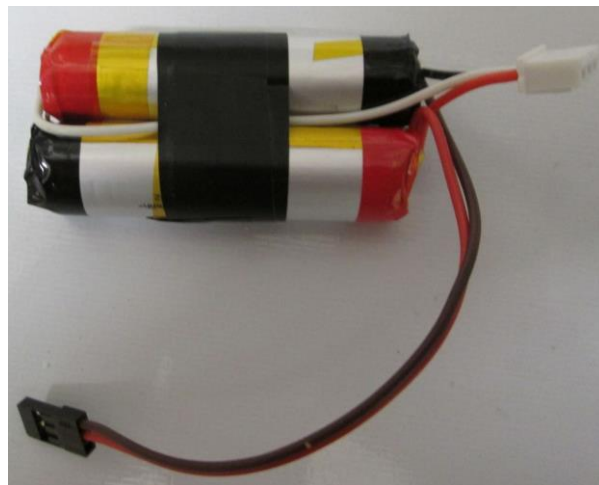
If you go to the site you'll be able to see all about it but I took it all on board and got hold of two destined for the bin Vapes from which I removed two batteries and given four single cell li ion batteries. I wouldn't advise anyone else doing this as you are dealing with electricity and potential disaster so read but don't attempt.



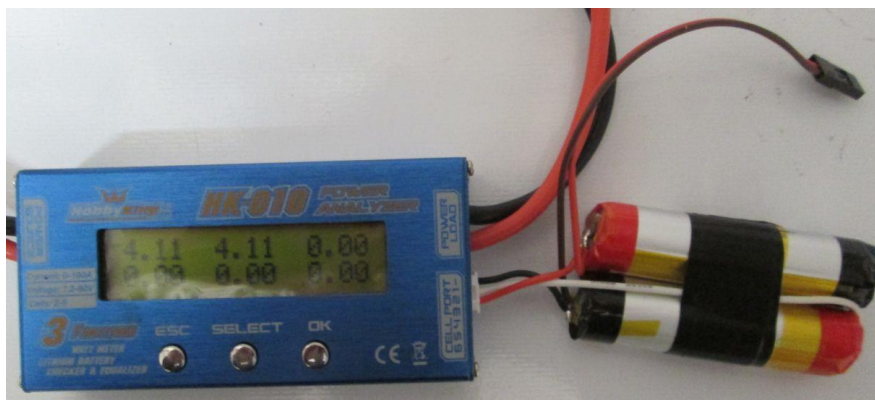
Two 2200 mah batteries and single cell charger which I adapted.



I charged up the batteries individually. I then had a go at making a 2 cell pack for yet another Tx I was converting that is a Futaba M to 2.4.



All wired up but awaiting the heat shrink to cover it all. I've since put insulation tape on the terminals.





When all put together I tested with my battery thingy machine

Model zero is an excellent site with so much information especially my interest regarding conversion and putting back into use old transmitters albeit with new innards in my case.

My current project is conversion of a Futaba M series 4 channel Tx. The one which is covered in a light brown vinyl. I'll hopefully have the rebuild finished, encoder and RF boards, battery, aerial, two switches, refit the sides and trim the name plate to size over the next few days. The Tx is destined to be used on my long time build Vic Smeed designed Cherub. As of five minutes ago I have plenty of time as we've just tested positive for covid!

