

Meadow Flyer

Newsletter of The Oxford M.F.C.

Summer 2023



Dave King launching his Jimmy Allen B A Cabin on a nicely flyable May morning earlier this year. I really don't know why Dave keeps trying to convince me that it's a Jimmy Allen Skokie, though... [Andy Blackburn]



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Editorial

Welcome to the Summer 2023 edition of the OMFC Newsletter – it’s a bit bigger than I thought it might be, so I hope there’s enough to interest everyone. If there’s something that you think should be covered and isn’t, please write and let me know.

This issue of the newsletter should reach you just before the planned OMFC Summer Scale Competitions on Saturday June 17th – please consider going along even if it’s only to have a look – the competitions are worth watching anyway (lots of IC, electric and rubber scale models flying) and the competition will be finished by early afternoon so fun flying can continue all day.

Those of you with rubber powered scale models in a flyable state might also consider entering the Rubber Scale Precision and/or Rubber Kit Scale Duration events; the latter event is a bit experimental, so I’m hoping that there will be enough entries for us to assess how the rules are working.

As ever, the newsletter wouldn’t be possible without members’ contributions, and I really appreciate the effort that people make. I’d like to thank David Lovegrove, David Thurling, Andy Crisp, Simon Burch, Jim Paton, Dave King, Alan Trinder, Andrew Longhurst, Bob Lee and Mike Stuart for input to the newsletter.

From the Chair – David Lovegrove

It's here - Summer weather, at last! As I write this, the week leading up to the Late Spring Bank Holiday has served up warm sunshine, loads of flyable weather and plenty of opportunities to get out on the Meadow for a bit of aeronautical therapy. Lovely. It's great to see new and old members alike out flying, developing, renewing and polishing up their skills.

The day of our Spot Landing comp. dawned grey and breezy – a stiffish northerly greeted us as we assembled on the patch – and an extra layer of clothing was very welcome. Despite that, there were some impressive performances (and some not so good too; that brisk wind affected some models more than others). But never mind; I think everyone had fun and maybe learned a bit in the process. The winner was Ade Pugh, who had literally just joined the Club that week, followed by his son Edward, a developing talent to watch out for.

Owing to a poor weather forecast, our Spring Duration event had to be postponed. It was re-convened at 48 hours notice by CD Gary Law for Thursday 18th May, a mid-week date that may not have suited everyone, as the attendance was modest. In fact, it turned out to be a superb morning. The contrast to the Spot Landing day's weather couldn't have been greater: we had virtually zero wind and 100% sunshine throughout. Again, those who did attend had an enjoyable time, with Andrew Longhurst the predictable winner for the two premium classes, Hi-Start Glider and P.30. Andrew is a formidable contestant! Modesty forbids that I name the winner of the Catapult-Launched Glider class, in which there were only two possible finishing positions, first or last!

If you're able to support the upcoming competitions, if only as a spectator, do come along. If you don't wish to compete, that's fine. Lots of space on the Meadow, so sport flyers are equally welcome.

Spot Landing Competition Report – David Thurling



The OMFC Spot Landing competition was held on May 13th and despite a very cold and breezy day a most enjoyable and entertaining time was had by all the stoic participants.

Models ranging from a 400 mm wingspan foam Spitfire to the Club's Riot trainer made a power-on flight of 10-20 seconds, depending on size, and then attempted a power-off landing as close as possible to a small white target.

The closest landed within a metre, with the furthest, a foam model, being blown way down the Meadow. First prize went to new club member Ade Pugh flying his 11-year-old son Edward's small Volantex foam Spitfire. Edward collected his father's prize on his behalf and was given a BMFA Dart kit for his first free flight building project.

Thanks are due to David Lovegrove for organising the event and providing the prizes. Perhaps we should seek sponsorship from Tunnocks! Hopefully further events of this sort can be held.

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Letters

Andy,

Great newsletter. Three flights in good air is all your P30 needs. Mine have always been overweight. Good job I now fly Andrew's rejects.

Alan is amazing for 90.

Frog Senior series were rather small and optimistically named. They are quite well balanced when electrified.

I hope Bob mounted his dt rearward. That Ace has a long nose. I'm always tempted to modify vintage models. The Senator needs a diesel up front with its short nose so I gave it one and fly it at Old Warden, a Clan 0.46. Lovely motor. Some say it's difficult to start, but I use a half-A starter. Works every time and I still have my original fingers.

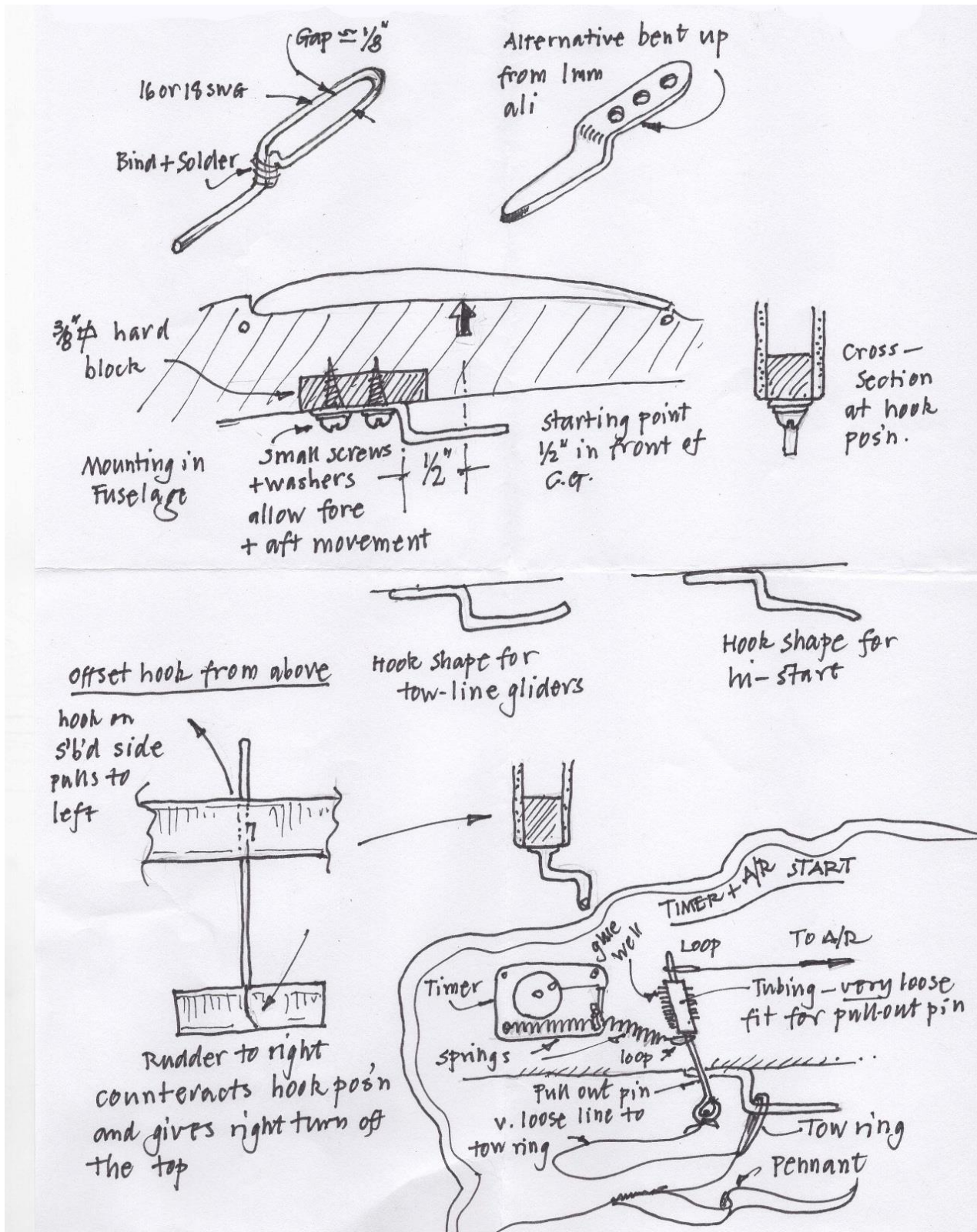
The glider article put me in nostalgia mode. A few decades ago I lived in Worcestershire and was a member of the local club called The Wyre Forest Association of Silent Flight. It was in the days before decent batteries and motors. We launched usually by rubber bungee or traditional head down towing. Winches were introduced and I got one made by a friend. They automatically tensioned the line and were operated by a foot pedal. The club competed in the BARCS (British Association of Radio-Controlled Soarers - shades of the Society of Model Aeronautical Engineers) league. Finding lift was the skill involved and the models were 12-foot wingspan usually. The fuselages and fin were moulded but the rest balsa and tissue. Usually there was an all-moving tail. Functions were rudder elevator ailerons and spoilers. Wing section Eppler 193 was popular for lift and good penetration. Interestingly heavy models often performed well as they could cover more area faster to find lift and get out of sink. I also used to fly in a local field near where I lived and when lipos and brushless motors came in they eventually mostly superseded the gliders. I still have an "Elegant" electro glider. On a good day when there was lift about you could stay up till you were tired or thought the battery to the radio might run out. All from a single short burst of the motor. Another variation was the "Hotliner". This was usually a 2-metre span glider with a powerful motor up front. You could do aerobatics or simply fly on days when it was too windy for other models. I guess they would be good for slope soaring. Which takes me back to my youth when I persuaded my father to take me to Moel Famau in North Wales. I had an own design glider. I got one good flight out of it in the rain and mist.

More successful was slope soaring on the Malvern Hills near where I lived, with a *Soaron Sunrise* model. I thought nothing of climbing to the top with model and bungee just in case it was too calm. That was in 1984. In retrospect I think slope soaring was the most enjoyable part of RC glider flying. Although lying on my back in my neighbour's field on a summer's day circling the glider in lift till I lost confidence and opened the spoilers wasn't too bad either. Landing in a small field with an efficient glider was facilitated by flaps, spoilers and ailerons both in full down. I think it was called "crow".

Regards
Jim Paton

Offset Towhooks for FF Gliders – Andy Crisp

The following was sent to David Lovegrove by Andy Crisp after David asked a question about offset towhooks for Hi-Start free-flight gliders, and it's such a beautiful piece of work that we felt we had to publish it here.



Autumn Competition Reminder– Staff

This is a reminder that the Autumn Duration competition will be run on Saturday 9th September 2023; please keep a close eye on the club website (<https://oxfordmfc.bmfa.uk/club-events/>) in case the event has to be cancelled due to inclement weather.

The plan is that we will arrive in the car park ~ 9:00 and walk out to the Meadow. Briefing at 9:45, 10:00 start. 13:00 finish. Fly off at 13:10 if necessary.

Class	Flight Time	Flights	Notes
Coupe d'Hiver	2 minute max	3	BMFA rules
Frog Senior	45 second max	3	Peterboro' rules
Rocket Plane Duration	1 minute max	3	Part Peterboro' rules
Kit Scale Duration	1 minute max	3	OMFC rules

Unlimited 10-second attempts in all classes (again, a little tweaking of the rules for simplicity). If there is a *large* clamour of dissent in favour of 5 flights in Coupe (as permitted in the BMFA rules) then this *could* be changed.

Competition flights must be 'announced' to your timekeeper before the start of a competition flight.

Rules Summary

Coupe d'Hiver

Min. weight of model less rubber: 70g. Max weight of lubricated motor:10g. Models of any design date will be flown against each other with no preferential points for older designs.

Frog Senior

A range of six 18" wingspan, rubber powered, semi scale models from the 50s and 60s which were kitted by the Frog model company. If built light they fly quite well, flights of over one minute are achievable. See Mike Stuart's brilliant [House of Frog web site](#) for plans and details.

Following an analysis of the performance of examples of each of these models and a good look at the Peterborough rules, it's clear that all of them are capable of flying for around a minute, so contrary to SAM 35 rules, there will be NO flight bonuses for any of the Frog Senior designs.

Rocket Plane Duration

This is a 'Test the Water' competition, and is open to any size model, any size Rapier, Tendera or even Jetex motor. Hand launch only. No catapults. Motor must be held securely in place with wire clip or similar.

Kit Scale Duration

This is another 'Test the Water' competition and is open to any rubber powered scale model ever sold as a kit. Enlargements are OK, as is almost any reasonable structural or outline improvement.

There's no static judging, just a simple "Pass/Fail" judgement by the CD; workmanship doesn't matter, it can be as scruffy as you like. The colour scheme can be tissued but must be "in keeping" with the full size, and a small bonus is available if you can provide some

documentation (picture, plastic kit instructions, profile, etc.) which matches the colour scheme. The OMFC Website has a [“How To Do It”](#) article as well as the [official rules](#).

The final score is the total of the three flights + a few bonus points.

OMFC Postal Competitions – Staff

Someone has just told me that they weren't aware of a P30/Coupe postal comp, which is understandable, I guess, as there are at least three postal comps this year and it can be a bit confusing with everything else that's on at the moment.

Postal Competitions are a cheap and cheerful way of getting people involved with club activities, and if they're well-supported they can indicate to the committee areas of interest to the membership, which helps when deciding what events should be run during the year.

On the other hand, they can be a bit speculative so if few people enter a competition, we'll know not to run it next year. However, this policy does fall apart somewhat if we have failed to communicate to the membership in a timely manner!

The remaining postal competitions for this year are:

- The Under 25” Vintage Cabin Postal Competition will be run during 2023 in two rounds. Round 1 (Spring) will be complete by the time you read this, Round 2 (Summer) runs from 1st June to 31st July inclusive.
- The Coupe d'Hiver and P30 Postal Competition will run from 1st September to 31st October.
- The VMC Pilot Postal Competition will run from 1st May to 31st July.

Spoiler Alert Part 1 : Flaperons and Spoilerons – Simon Burch



Mixology

Are you mixed up about mixes? In your RC system's manual, you'll probably have seen reference to 'flaperons', 'spoilerons' and/or 'airbrake'. Were you confused by these terms and, after reading the manual, gave them up as a bad job? Or perhaps you know what flaperons and spoilerons are, but wondered whether they'd be any use to you? If so, this article is for you.

It's quite a long and complex subject, but one that deserves more than a cursory discussion, so to avoid overload, it's split into two parts. Part One appears in this edition of *Meadow Flyer*; Part Two, where specific

applications are discussed, will be sent out in a separate email in a week or so.

Primary Control Surfaces

Unless you're a complete newcomer to flying, you already know what an aeroplane's primary control surfaces (ie rudder, elevator, and ailerons) do and understand, more-or-less, how they work. You'll also probably know that most full-size aircraft have other so-called 'secondary' control surfaces, perhaps the most common being flaps, slats, spoilers and airbrakes. These are normally used to improve take-off, climb, descent and landing performance. RC model aeroplanes may be fitted with one or perhaps more of these secondary control surfaces but they're not commonly used. Despite their advantages the vast majority of models don't have them. Why? Because at model size, their aerodynamic advantages are outweighed by the problems associated with controlling them.

This is because each secondary control needs at least one servo to operate it, together with its associated wiring, mountings, linkages, hinging, and additional channel(s), which add weight, complexity and cost. The good news is that, if you own a suitably configured model and a computer TX, the 'flaperon' and 'spoileron' mixes can offer a useful work-around: a way of achieving the benefits of flaps and spoilers without actually fitting them.

Flaps, Flaperons And Spoilerons

On a model aircraft that has only ailerons, the effects of flaps and spoilers can be to some extent replicated by moving both ailerons together in the same direction.

If the ailerons are both moved *downwards* together, they may be referred to as 'flaperons', i.e., they can provide similar effects to dedicated flaps while retaining their normal aileron functions.

Conversely, if they move *upwards* together, they may be referred to as 'spoilerons'. Although they function in a slightly different way from dedicated spoilers, they can provide similar effects.

In both cases, normal aileron/roll control is superimposed onto the lowered or raised position of the ailerons. In this article, I'll be dealing with flaperons and spoilerons as replacements for secondary control surfaces. However, they may be used for other applications, notably for enhancing aerobatic performance, adjusting wing camber or reflex, and working in conjunction with dedicated secondary control surfaces to enhance their effects. I won't be dealing with those in this article – maybe I will in later ones.

Why Use Flaperons or Spoilerons?

Assuming your model isn't fitted with any secondary control surfaces, flaperons or spoilerons might help to improve your model's performance during critical stages of flight. For instance, Flaperons normally enable a model to make a slower and slightly steeper landing approach, resulting in a shorter landing run.

This is particularly useful if you have a fast(ish) model that would benefit from a slower landing speed, and/or if you are flying from a small, rough landing area. They may also be used to provide a shorter take-off run and a steeper climb angle after take-off.

If you have a glider or a 'floaty' model, high touchdown speed is less of a problem but you might find that your model's shallow glide angle makes landing approaches long and low, especially in light winds. If so, spoilerons might help you to lose height quickly and safely without having to resort to 'S' turns, sideslipping or lowering the nose and gaining unwanted speed.

Spoilerons might also improve the chances of your glider escaping from a 'boomer' thermal without overstressing the airframe. Or you might simply want to improve your chances in a spot landing competition.

Whatever the reason, if you're beyond the 'beginner' stage and you have a suitable model, I suggest that you should give flaperons or spoilerons a try. If nothing else, you'll find that learning to set them up, test and use them adds a new challenge to your flying.

Take care though. There are pitfalls for the unwary and the terminology used by the RC equipment manufacturers can be confusing, misleading, or both. Flaperons and spoilerons won't work as well as dedicated flaps and spoilers, and they might not be suitable for your model. They can also introduce some unwanted or even dangerous side-effects which, hopefully, this article will help you to avoid.

For beginners, I strongly recommend that you don't bother with flaperons, spoilerons, or secondary controls in general. They introduce a complication that you don't need at the beginner stage, and setting up mixes is not simply a matter of following the instructions in the manual. You'll need to test-fly your model with the mix activated, recognise problems, and make appropriate adjustments. You'll need flying experience and confidence to do this properly.

The Purpose Of Secondary Controls And How They Work

Before trying out flaperons and spoilerons, it's important to be clear about the purposes of the three **main** secondary controls, ie flaps, spoilers and airbrakes, and how they work. This will make it easier to understand how flaperons and spoilerons work to replicate their effects.

Flaps are control surfaces that extend downwards at the trailing section of both wings. They effectively increase the camber of the wing to increase lift and drag and reduce the aircraft's stalling airspeed, enabling it to fly at a slower airspeed with less risk of stalling.

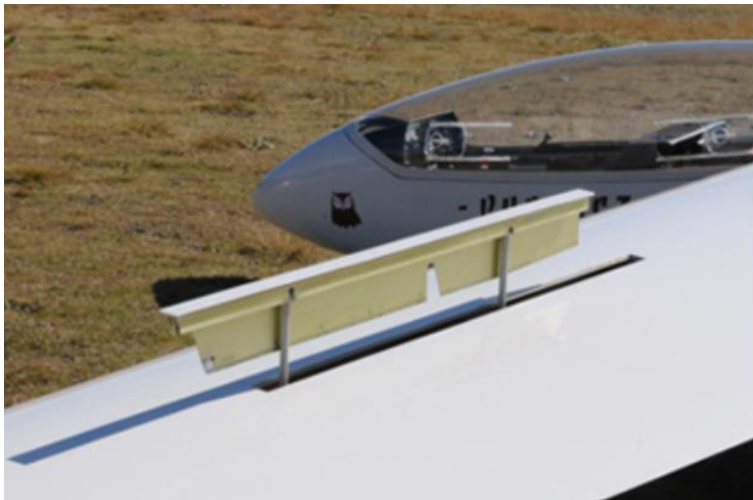
This means the aircraft should be capable of making a steeper and slower landing approach, touching down at a lower speed. Flaps also create additional drag, especially when extended beyond about 15° down, so they can also have a helpful braking effect which allows an even steeper approach and shorter landing run. Flaps may also be used to provide more lift on take-off, thus reducing the length of the take-off run and providing a steeper climb angle. Take-off settings are usually 10° -15° to gain maximum lift benefit without creating excessive drag.

Spoilers are control surfaces that rise upwards on top of both wings. They disrupt (spoil) the airflow over the top of part of the wing. This reduces lift, enabling an aircraft to lose height quickly without necessarily lowering the nose and increasing airspeed.

Spoilers also increase drag. This can have a useful braking effect in the air and on the ground.



Aeroplane with Flap Fully Extended



Airbrakes are control surfaces that increase the form drag of an aircraft. They allow the pilot to reduce excess speed without changing the aircraft's attitude.

Fuselage-mounted airbrakes provide this effect without directly changing the amount of lift developed by the wings, although lift will reduce as the aircraft decelerates.

Glider with airbrake extended

Which Functions Would I Want?

Fixed-wing power aeroplanes, especially those which fly at higher speeds, usually benefit more from flaps, while gliders and powered gliders, which usually have comparatively low approach speeds and shallow descent angles, tend to benefit more from spoilers. Spoilers may be also used to aid escape from strong thermals.



Jet with airbrake extended (behind canopy)

Of course, 'aeroplanes/flaps; gliders/spoilers' is an over-simplification, and it should not be regarded as a hard-and-fast rule. Slope-soaring gliders often have characteristics more akin to powered models, while 'floaty' powered models can perform like gliders; moreover, there is a degree of crossover between the effects of the secondary control surfaces. They can offer other features too, such as crow-braking. In many cases, you can have both flaperons and spoilerons available on your model although, if you only have the primary control surfaces, you cannot use both at the same time! For the purpose of this introductory article, I'll keep it simple.

With respect to airbrakes, if you're flying a model that has only the three primary control surfaces, there is no mix available that will provide pure airbraking - despite the fact that Futaba refers to one of its useful pre-programmed aileron-elevator mixes as 'airbrake'. However, both flaperons and spoilerons create additional drag, so both will have a degree of braking effect.

Equipment You'll need a model with aileron and elevator primary control surfaces (rudder is highly desirable but not essential), a six-channel RC system with a computer TX, individual

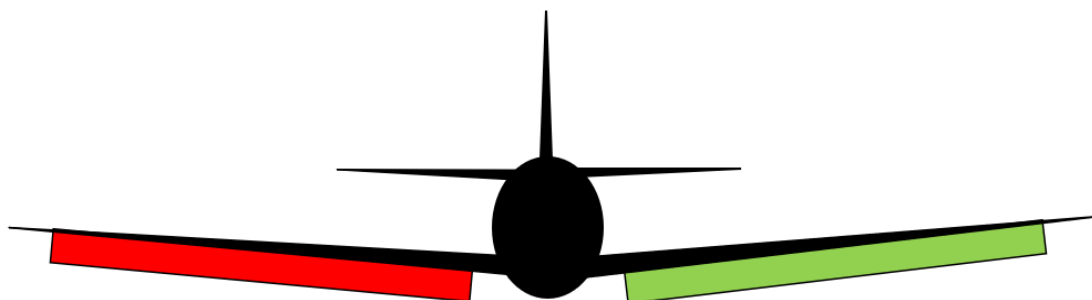
servos for each aileron ('dual aileron servos'), and plenty of unrestricted physical movement available at each control surface. For old-school purists, don't bother trying to set up mechanical aileron differential. Range of movement in both directions is the important thing and, if required, you can set up aileron differential on your TX.

Both Aileron Servos are Operating Correctly from Separate Channels. How Do I Now Set Up Flaperons or Spoilerons? Confusion Point 1: to set up flaperons and spoilerons with equipment made by certain manufacturers, you might need to activate a mix called 'flaperon' on your TX even if you're going to use only spoilerons. As far as the TX is concerned, flaperons and spoilerons are the same thing...they just operate both ailerons downwards or upwards together.

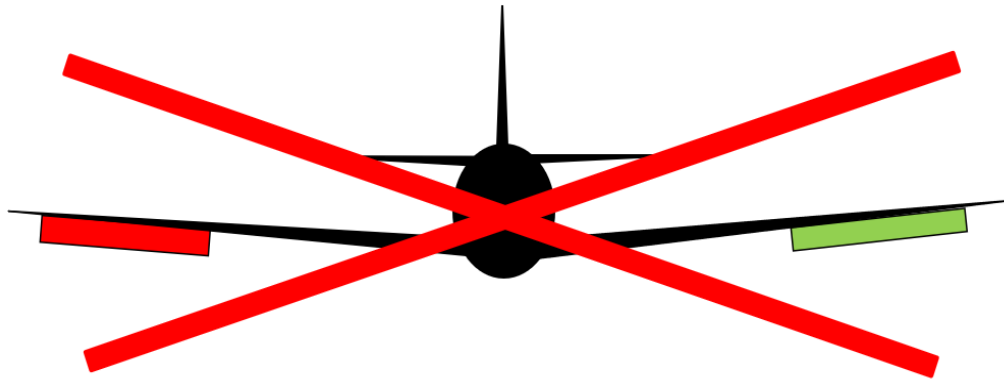
Confusion Point 2: throughout this article, I'm going to refer to the angle that control surfaces are deflected in degrees, because this measure will apply to all models regardless of the size of their control surfaces. Model manufacturers and plans often refer to control deflection in millimetres or fractions of an inch, but this measurement is unique to a particular model because it depends upon the chord of the control surface.

Just to add to the confusion, on most TXs' systems interface screens the angle of deflection is given as a percentage. Full deflection on your TX might be -100% (+100% on Spektrum) which might produce a control surface deflection of, say, down 20°. In this case, a setting of -50% would produce a control surface deflection of 'down' 10°. You'll need to check the relationship between percentage and control deflection angle on your own model.

Using Ailerons as Flaps i.e., 'Flaperons' This facility enables you to lower both ailerons together as though they were flaps. When activated, both ailerons should move downwards by the amount you've set on your transmitter and roll control inputs will automatically be superimposed upon this new setting. An important word of warning: be aware that, if your ailerons are mounted on the outboard section of the wing, flaperons can lead to a nasty handling characteristic called **tip-stall**. If this occurs near the ground it can lead to a cartwheeling disaster - so take care. My advice is to only use flaperons if you have full-length ailerons – that is, ailerons that stretch along the full-length (or almost the full-length) of each wing's trailing edge. If your ailerons only occupy the outboard section of the wing, do not use flaperons.



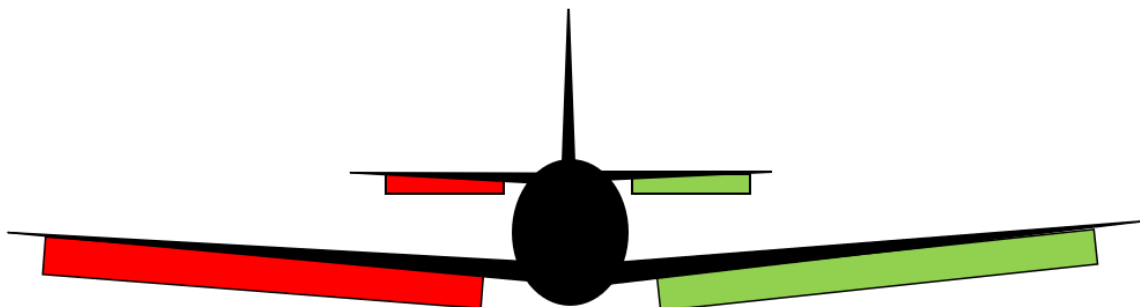
Flaperon (aircraft view from behind)



Wingtip Ailerons - DO NOT USE FLAPERON (aircraft view from behind)

Activating flaperon in the air will almost certainly cause your aircraft to pitch nose-up – perhaps quite rapidly. One way of preventing this is to program a mix to provide some down elevator at the same time as you activate flaperon. The amount required will vary from model to model. Hopefully, you'll find some advice in your manual, but if you set your flaperons at, say, 'down 20°' then a good starting point for your elevator mix would be $\frac{1}{3}$ of the flaperon setting 'down 7°'. Unfortunately, the only way of finding out for sure is by test flying and then, if necessary, making adjustments.

Futaba users might have an advantage here. Using the (confusingly-named) 'airbrake' pre-programmed mix feature to set the amount of travel, you'll be able to programme in an elevator response without setting up another mix.

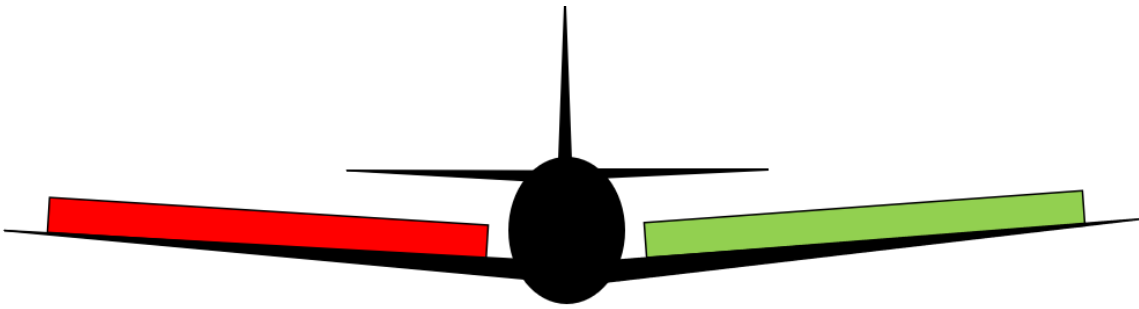


Flaperon – Elevator Mix (aircraft view from behind)

The amount of 'down' travel that you set on your ailerons is up to you. As a general rule, the first 15° of travel should produce extra lift, a little extra drag, and a useful reduction in stalling speed. Beyond about 15°, flaps will produce more drag. This drag can provide a useful braking effect, which permits a steeper approach, but it might make a go-around manoeuvre a little more demanding to fly because the drag affects the model's acceleration. In practice, the amount of movement available to you is likely to be limited by physical control throw and linkage constraints, and you probably won't be able to set much more than 20° down.

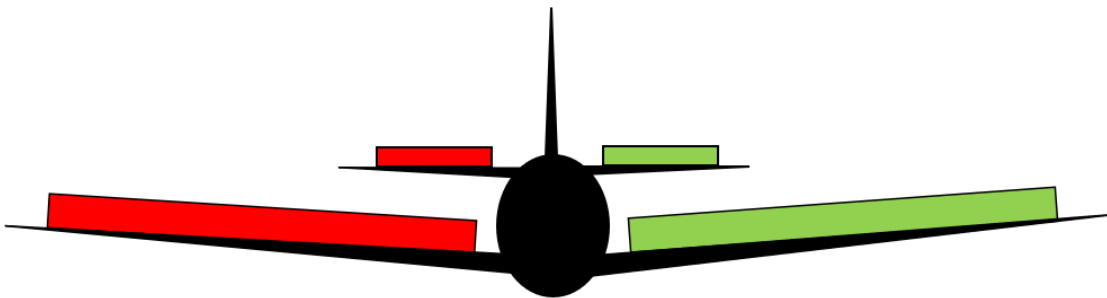
Using Ailerons as Spoilers ('Spoilerons')

This facility enables you to raise both ailerons together, which reduces lift by introducing a negative wing camber. It also generates additional drag, increasing the overall effect.



Spoileron (aircraft view from behind)

Activating spoilerons in the air will usually cause your aircraft to pitch nose-down so, you'll need to programme a mix to provide 'up' elevator to compensate – i.e., the reverse of flaperon.



Spoileron – Elevator Mix (aircraft view from behind)

Once again, Futaba users may use the 'airbrake' pre-programmed mix to set the amount of spoileron travel, and you'll be able to programme in an up-elevator response without setting up another mix (the *Spektrum* mix is the same). Again, the amount of elevator required will vary from model to model, but 'up' 20° spoileron and 'up' 7° elevator is a good starting point if you can achieve it.

Of course, the amount of up travel that you set is up to you but, for spoilerons, I suggest that you need as much as possible to achieve the maximum spoiler effect. In practice, as with flaperons, the amount of movement available to you is likely to be limited by physical control throw, linkage constraints, and or servo travel. You probably won't be able to set more than 20° up.

Unlike flaperon, I don't know of any particular handling specific to spoilerons vices [*Other than reduced aileron effectiveness - Ed*] but, if you're flying a powered model, flying with them deployed will certainly reduce your model's climb performance; indeed, they might even prevent your model from climbing at all - even under full power. If you want to perform a go-around ('overshoot') manoeuvre, you'll need to retract them as quickly as you can. Also, when using spoilerons to descend, you'll need to monitor the model's height carefully due to the increased rate of descent, and any landing risks being a little harder if you don't correct for it.

That's it for this introductory bit. The next article will go on to explain the ways in which to set up the model's controls and the relevant transmitter settings to make it all work.

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On The Building Board – OMFC Members

Dave King

VMC Spitfire



This was a 'seconds' kit and the only thing wrong was that a few of the formers required freeing where the laser had not cut through. The model is that of the gate guardian at RAF Benson. The undercart has been made as plug in although I doubt if I will fly it indoors. Total weight with rubber and lead to balance is 40gms.

VMC P51D



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Again, a 'seconds' kit although I could see nothing wrong apart from the canopy which has no trim markings on it, making it very difficult to fit. It was a really enjoyable model to build though. *[looks very attractive - Ed]*.

Covering is Esaki tissue, doped, with a very very light dust coat of Silver from a Halfords rattle-can. Other markings are brushed or sprayed (from an aerosol) Humbrol Enamel. The markings are home-made waterslide decals, the paper markings in the kits were printed onto white decal sheet. After application, the decals were sealed with a final spray of Halfords Clear Lacquer

The colour scheme is that of an aircraft that flew from USAF Station 234 (Now Berinsfield) as the station hack.

Final balancing is still to be done but it looks as if it will be of a similar weight to the Spitfire.

Keil Kraft Piper Super Cruiser



This was an old kit (not VMC) that had printed parts as opposed to laser cut. Some of the kit wood was consigned to make a coffee table and substituted by wood from my own stock. The model has been made for an original Mills .75 and a balsa cowl was made instead of the rather nasty and oversized ABS cowl included in the kit.

Covering is:

Fuselage – tissue over mylar and sprayed white. Still awaiting addition of red trim.

Wings and tail unit – Orallight (left over from a 2m RES glider).

The glazing might cause a little problem as the material (cut to shape) supplied in the kit has been bent to b****ry over the years but hopefully it will be ready to take to the Meadow in the summer.

Peter Miller's O-four9ier-E



I didn't want to build any more radio models but when I saw this free plan and having built the original model powered by a PAW 80 RC from a free plan some years ago and as I had a motor of the right size (200 watts) I had to have a go. I bought the laser cut parts and canopy from Sarik.

The only alterations I have made is to web the spars on both sides with 3/32" and to make the cowl from laminations of 1/16" with 2 layers of 0.5oz glass and laminating epoxy instead of the built-up cowl from 3/8" sheet.

In the article Peter Miller says his model weighed 680 gms, mine comes out at 635 gms so I'm hopeful the motor I have will be man enough (is that politically correct these days or should I say non gender person enough?).

Fuselage and fin are tissue covered and sprayed red. Wing and tailplane are white Solarfilm with red Oratrim registration. Motor is a Turnigy 2830-11 running on 3s 1300 LiPo with a 30amp esc and a 9x4.5 CF folder with 30mm spinner.

Alan Trinder



Jonathan's Meadow Flyer article on 2 metre electric powered sailplanes caught my eye as I remembered I had, somewhere, a 2 metre tow-line sailplane that had not been out of the shed for some years – “find it and put an electric motor up front” was my immediate thought.

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The sailplane's airframe weight is around 650g so it's not going to be competitive but at least it will, hopefully, be flying rather than festering in the back of the shed. I followed George Worley's (4-Max) advice and purchased his suggested motor, ESC., and folding prop which await installation. As seen in the pictures, the conversion is not yet far ahead.

Had I thought more carefully I would not have sawn off the complete hardwood nose. It would have been useful to leave short lengths of the ply fuselage sides to help firmly attach the motor support bulkhead. But shouldn't be too difficult and the model will, with luck, be flying on the Meadow in a week or two.

Andrew Longhurst



My latest creation below. Plans etc on Outerzone, more Anon. Andrew.

Andy Blackburn



My FROG Linnet - quite a quick build but at about 29 grams it's still rather heavier than Mike Stuart's latest Linnet. My excuse is that I haven't stinted with the dope because it's an outdoor model and I don't want it sagging on damp mornings.



This is a peanut Miles Sparrowhawk built with mods from a Walt Mooney plan, wing decals (G-AELT) aren't on yet in case the wings need some washout steamed in. It's considerably lighter than Walt's original at 10.5 grams empty, but I'd hoped for less than 10 grams – I really don't know where the additional weight has come from.

More Wallfoam Creations – David Lovegrove

Foamie Challenge Bob Lee's *Foamie Challenge* earlier this year certainly hit the spot for quite a few OMFC members. There were some excellent creations, though not all managed the second element of the exercise, which was to get them to fly! My own efforts included a couple of 'Stik' models (the design clue is in the name) powered variously by rubber and electric, plus a rubber-powered delta and yet another iteration of my very long-in-the-tooth *Wot Ho* rubber design. My flying success rate was 75%, only the *Stik-E* proving to be a disappointment.

At this point I have to introduce the name of former OMFC Member Albert Platt, which will be familiar to only a few current Club members. He has a small claim to fame in that, back in the January 1996 issue of *Aero Modeller*, there appeared his distinctive and, to the best of my knowledge, only-ever contribution to aeromodelling history.

A tall, quietly spoken man, not long after his design appeared in print Albert disappeared from the Club. But he'd left behind a model design whose name remained stuck in my memory - the *Shadow 11*. This 16" wingspan, rubber-powered delta was constructed almost entirely of 2mm wall insulation foam, with just a few balsa formers. Its frugal construction ensured a very light wing-loading and it flew beautifully, indoors or out. I built one back then and again more recently, for the *Foamie Challenge*, this time at 75% of the original size, just to see whether it would work. It did, and the model flies on at the Berinsfield indoor meetings, albeit looking increasingly tatty. With the passage of time, the flimsy nature of wallfoam has become obvious. It is very prone to damage, so when I was planning my later efforts, that was where I focused my efforts. I think I succeeded!

Design Tweaks There were a few aspects of the design that I thought could benefit from further development, although with the wing, Albert's excellent wheeze was obviously the correct way to go. What ain't broke, you don't fix, so when I embarked on the two up-dated versions presented here, I left well alone. A little experiment confirmed that the inherent flimsiness of wallfoam is easily fixed by applying a well-brushed-out coat of full-strength *Eze Dope*. This stiffens it up nicely and adds very little weight. Not available back in 1996, I'm sure Albert would have used it if it had been!

Incidentally, if you were tempted to try this trick with ordinary cellulose dope, you'd have the unedifying experience of watching your lovely handiwork slowly disappear before your eyes. Don't try it!

For the second prototype, which I named the *Vulkano*, the superstructure, but not the wing, was changed by substituting some very light 1/32" balsa for wallfoam. Minimising additional weight was important and being careful with the amount of glue used (mostly PVA), kept the equation nicely in balance. I also couldn't resist the urge to 'go electric' for a different and I think, more convenient power source. Albert wouldn't have minded that!

On the left below is the 75% version of the Albert Platt *Shadow 11* that I built for rubber power and indoor use. It's an arresting sight in the air but it has suffered quite a bit of annoying incidental damage.

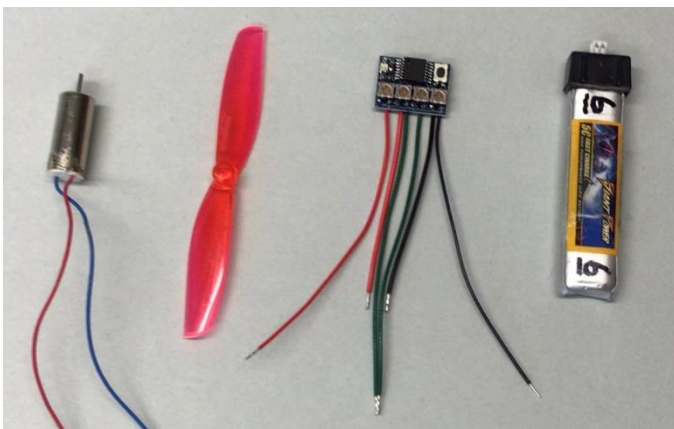
In the middle is the 100%, size, this time electric powered and with hybrid Depron/wallfoam construction that cured most of the deficiencies of the original pure wallfoam structure. A very nice flyer.



Vulkano, on the right, is the latest development of the concept, with a modified, cranked leading-edge wing, again employing wallfoam but this time strengthened with that thin coat of EzeDope. The entire superstructure is constructed from light balsa. Another useful mod was the addition of adjustable elevons that hold their position and prevent unwanted trim changes.

Weighty Matters Between those two modernised successors, there's little difference in weight. Both fly exceedingly well. Incidentally, along the way, Andrew Boddington (A.M.'s Editor) challenged me to install R/C. I haven't tried that - yet. Maybe one for the future? It would probably necessitate a slight increase in span to carry the additional load and I wasn't ready to undertake the wholesale structural revision it would undoubtedly entail. Besides, freeflight has its own unique charm and challenge that R/C often lacks. But, if I were to go down that road, I'd use one of the splendid *Microaces* micro RC units. These are extremely light and operate happily from the power of a single 1S UMX LiPo.

How Do They Fly? Superbly, just like their ancestor. I employed Atomic Workshop *Zombie* Flight Profilers (£24-95 – www.atomicworkshop.co.uk) to look after the avionics management and teamed those with inexpensive 7mm coreless motors (£1-58 from *that* auction site; 3.7V, 42500 RPM). *Giant Power* 1S UMS 260 MAh LiPos (www.componentshop.co.uk) and *Gemfan* 2.5" props (www.bmks.co.uk) complete the power package.



Incidentally, I'm impressed by the diminutive *Zombie*. It has great flexibility. Adjustments are available for the initial power level and duration, cruise power and duration, and several other useful timing tweaks to enable the perfect flight profile. It's also worth mentioning that whilst carrying out *Vulkano's* initial trimming (a simple process), full power was not needed as the little 7mm coreless motor proved to be surprisingly lusty! This reserve of power meant I could be confident the design wouldn't balk at a few extra

grams in weight, although I nevertheless tried hard to keep it as light as possible. As the late, great Ray Mahlström memorably said, "The more lightly, the more flightily!"

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Apart from a little more internal structure to accommodate the cranked leading edge, I haven't changed the basic wing structure. It has a simple, if somewhat crude, flat-bottomed section which works and is best left alone, although I did slim it down a little.

I'm pleased that one particular little modification I made has proved to be very beneficial, i.e., the 'adjustable-reflex' elevons. The stiffness of the mylar RC hinge pieces on the top surface of the 3/32" balsa elevons ensures that they are automatically biased to the neutral position. Tiny M1.6 adjusting screws enable the deflections to be very precisely set and maintained. Having arrived at the ideal angles by trial and error (they are slightly different on either side), the least 'draggy' set-up can be established and maintained.

You Want To Build One? Really? At the moment I've no intention of publishing the plans. However, if any member were to express an overwhelming desire to build one of these futuristic beauties, I could knock something up. I'd assess the building difficulty as 'Intermediate'. In terms of materials, you'd need half a sheet of very light 0.8mm /1/32" balsa; some 2mm wall insulation foam; about 350mm of 6.3mm /1/4" square medium hard balsa; a bit of 1.6mm/1/16" light/medium balsa sheet and little bit of medium hard 0.8mm/1/32" balsa sheet.

For glue, I find a good-quality PVA does almost everything. Beware using cyano anywhere near wallfoam – if it gets on it, say hello to dirty great holes! Epoxy (in tiny amounts) is okay, as is UHU Por and Deluxe Products *Foam To Foam* glue.

I've listed the power system components above, for which you'd need to budget about £35. But remember, the LiPo cell needs a charger - [BMK sells an inexpensive one](#). A few male and female connecting cables from the same source never go amiss either.

That's All Folks! I get a huge amount of enjoyment from experimenting with different styles of model aircraft and *Vulkano* has been particularly pleasing, both from a construction point of view and in flying. Electric power systems have come on in leaps and bounds over recent years, adding considerably to the repeatability of flights and power trim, not to mention cleanliness.

There's so much fun to be had in this great hobby of ours. Never be afraid to try something new! Freeflight has its own challenges and immense satisfaction, whichever power source you choose. RC is great too, but I'd recommend adding to the fun by building your own.

I've also just finished fine-tuning the trimming of another unusual freeflight model – the *Jet Ace* (right). Originally designed by George Woolls in 1958 for the old *Jetex 50* reaction (rocket) motor, the model is 14.5"/365mm wingspan. I converted it to electric power. It's a unique sight in the air and great fun. On Outerzone, if you're interested.



Whatever floats your boat, enjoy it!

Sweet P30 Modified – Andrew Longhurst



When I built a Sweet P30 last year I was somewhat disappointed with its performance. It was difficult to trim for a good climb and the glide was poor. At 48.5 grams it was also a bit overweight against the target of 40g [*Mine was 52 grams – Ed*].

My thought was that it could be improved with a 3/32sq. stick and tissue fuselage about 7/8ins square replacing the balsa tube. Omit the pylon and mount the Tomy or RDT just in front of the wing. The fuselage would be tapered downwards to the rear to lower the stab mount below the wing. An incidence block would go under the stab TE.

I think all our kit P30s were in the region of 50g and probably weight savings could be achieved on the fuselage and prop. Using a Peck prop rather than the kit Igra would save 1.5g and a built-up fuselage without a pylon would save quite a bit more.

You can knock up a stick and tissue fuselage in an evening as most of the struts are the same length. You don't even need a plan. On completion comparative weights were:

Original Sweet P30: Wing 14.5, Fuselage 18.5, Tail/Fin 5.5, Prop 10.0 Total 48.5g
Stick & Tissue mod: Wing 14.5, Fuselage 13.5, Tail/Fin 5.5, Prop 9.0 Total 42.5g

So, 6g was saved in total, about 10% of the flying weight. Climb height would be 10% better as a result so if the glide slope was the same you get more or less than that percentage increase in performance. However, glide slope will also be slightly improved so the exercise translates to in an extra 12 to 20 seconds in duration.

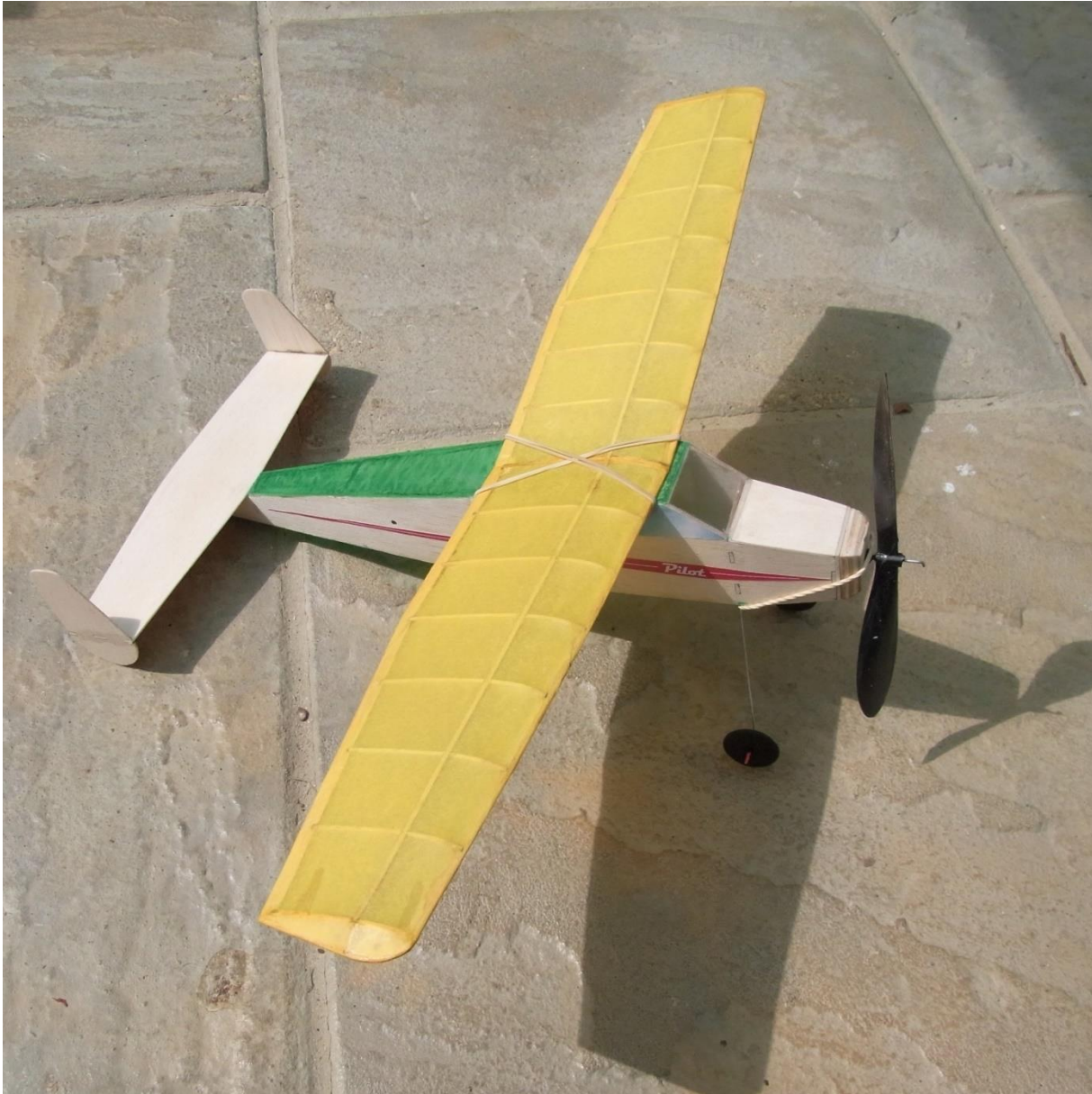
Wedding News – Staff



I'm pleased to announce that Hon Secretary Bob Lee got married to his long-term (37 years) partner Pam on 6th April at Beaconsfield Registry Office.

VMC Pilot Builds – OMFC Members

Alan Trinder



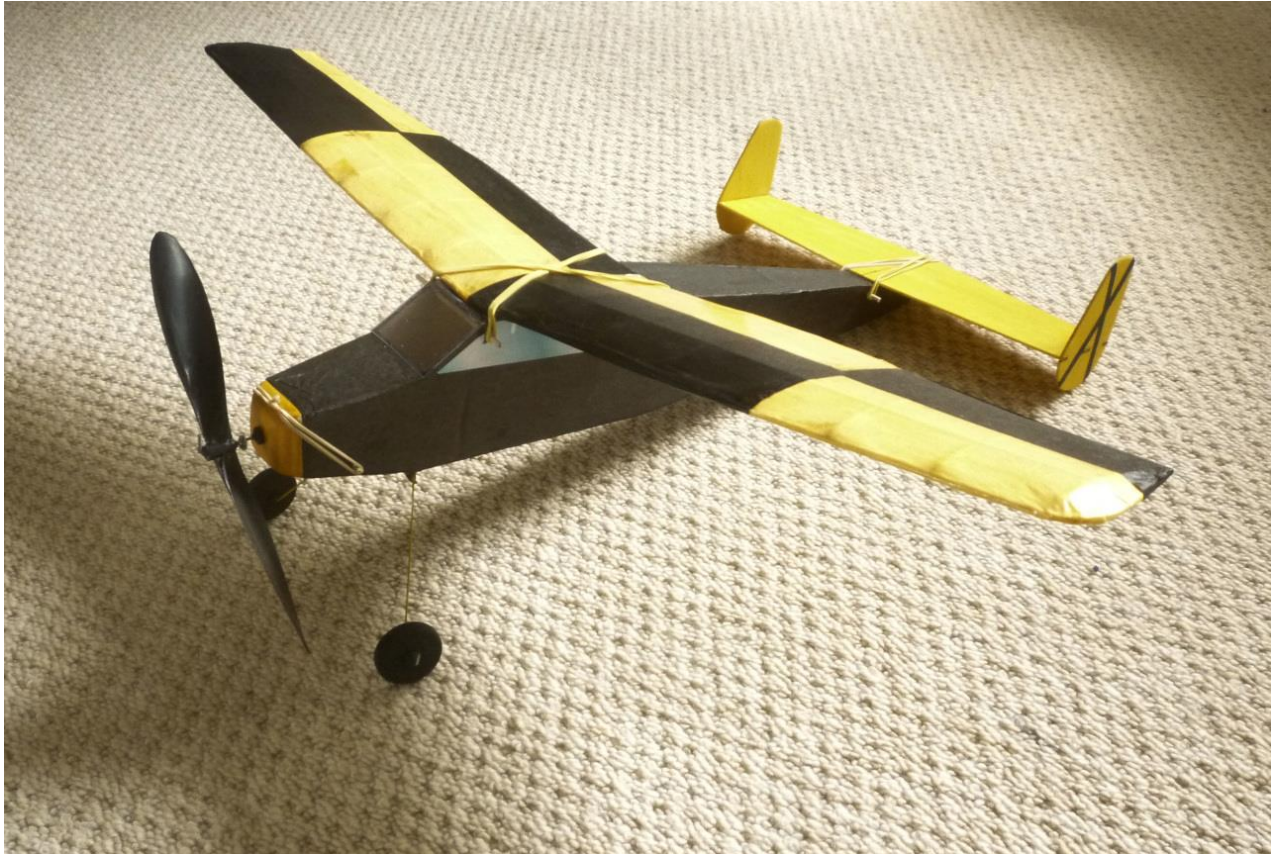
I have to say I found the build frustrating. With such a simple model one would think there was little room for errors. Not so in my case. I managed to fit fuselage former 4, designed to correctly locate the wing, back to front so the flat section needed to be chamfered for the wing to sit properly. (Although this may be useful as it allows the wing to be moved rearwards which could help with the C. of G.).

Then when sanding the completed fuselage my clumsy fingers managed to snap the bottom cross piece of that same former 4. When it came to covering I thought I had some suitable red tissue, but it simply would not shrink to a tight fit. It was removed and replaced with green only to find the green colouring was not water tolerant. At least it did tauten, and I am having to live with the mottled colouring.

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Finally, I only realised at the last minute I was fitting the propeller on its shaft back to front. But the end result has an overall weight without motor of some 24.5 grams, which is more than Gary's 22.6 but he has much younger fingers....

Dave King



Total weight, with ballast to balance, but before rubber is 31.30 gms. A lob onto the bed looks as if it might cope with less nose weight but we'll see how it looks when the rubber is installed. Fus is tissue covered, tail is doped and a light brush coat of 50/50 paint and water. Wing is tissue over mylar. I've made the tail removable so that shims can be added if necessary.

Bob Lee



Here are a couple of pictures of our Pilot - I say 'our' Pilot because Pam built some of it (under close supervision)!

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The wings are covered in Dilly Jap tissue, water shrunk then given two thin coats of shrinking dope. As always, I am meticulous when shrinking structures such as wings and tailplanes and pin it down and leave it overnight before the next stage, for the wings this makes it slow of course since you can only pin down one side at a time. On Chris Brainwood's suggestion I did add 1/16 of washout to each wing. If that sentence makes no sense to you, then maybe that's an idea for a future article!

The fuselage is covered in some of my precious stock of Esaki tissue, applied using EZE Dope, just the one coat. If I get a chance, I'll do a write-up some time on my thoughts on EZE Dope vs 'real' dope, I believe that each has its application, it's a question of using the right thing in the right place.

The fins and tailplane just have one coat of Sand N Seal, and yes, they do warp, however as long as you do both sides at once and pin it down, then it all falls out in the wash and it's nice and flat in the end.

The decoration is from a sheet of Tissue Designer (https://deluxematerials.co.uk/collections/all-products/products/eze-tissue-designer?_pos=4&_sid=f27cd7bee&_ss=r), applied using EZE Dope, as per the instructions. Very easy to use and a wide range of effects are possible.

The model weights 24 grams without rubber and without nose weight. The balance point is not far behind the wing spar so I'll try it without any nose weight at first.

Mike Stuart



Here's my VMC Pilot, it weighs 27 grams without nose weight and rubber. Kit prop used, the yellow tissue is from the kit. Purple is from an old sheet of SAMS Super-Light from a roll of various assorted colours. Not yet glided.

Gary Law



I bought one of the VMC 'seconds' kits via David Lovegrove. The sheet that included the tailplane looked a bit like a propellor. I cut a new tailplane from a light sheet of balsa saving over a gram. I had to cut a couple of new ribs too. Note 2nd rear rubber peg hole. I hope to use a slightly longer motor. Could increase duration by 1.87 secs!

It weighed 22.7g before I added the Gurney strips to try to make it fly. I flew it just before closing time at Old Warden a few weeks ago. Probably managed 15 secs (to the left!) but need to spend more time trimming and increasing the turns. It's definitely not a "flew off the board" model.

I did post a short video of its first flight on the WhatsApp group. That was a strange flight: turned right under power then sharp left on the glide.

A Lightweight Prop for Indoor Rubber – David Lovegrove

This 4.5" (116mm) prop suits small, lightweight models of around 10 to 14 grams in weight. For bigger models, use a *Peck* or *Igra* 150mm prop.



First, Gather Your Materials.

- yogurt pot, preferably white plastic (saves adding extra weight by painting)
- bamboo cocktail stick
- 20mm of RC plastic snake of 3mm outside diameter (cadge some from an RC mate!)
- 60mm of 21 SWG (1/32"/0.80mm) or 18SWG piano wire
- either: 1. a 'Peck' small nose button (fits 21 SWG), or 2. a KP Aero small nose button (18SWG) or 3. a 25mm length of suitable brass or aluminium tube for the shaft bearing
- UHU Por and thick cyano
- scissors
- fine-tipped permanent marker pen
- methylated spirits and clean kitchen towel
- small glass bead or Teflon washers

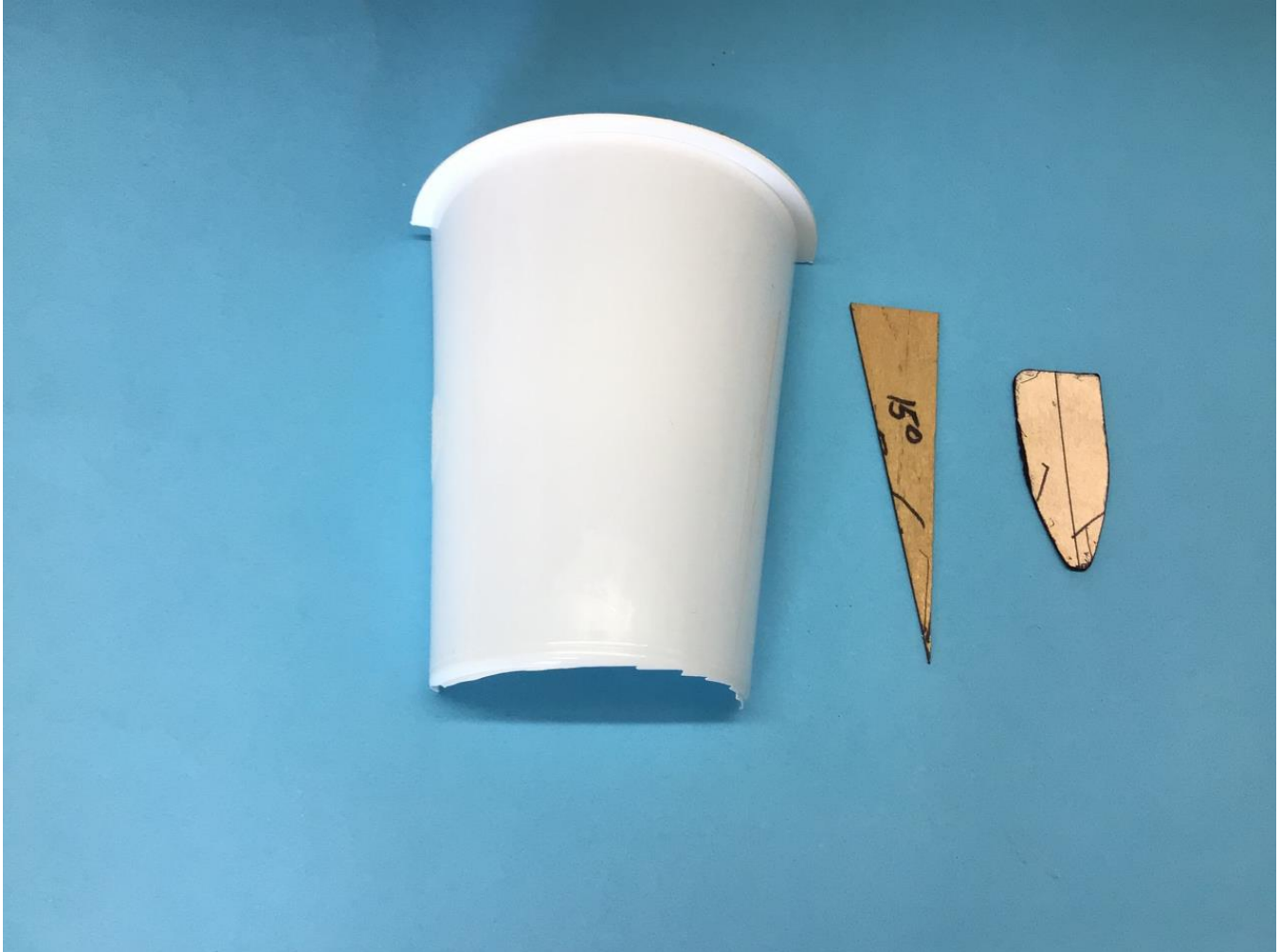
Note that securing the shaft to the prop hub is the very last job. The bearing must be fixed into the noseblock, and the shaft passed through it, before finally attaching it to the prop hub.

And so to work . . .

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The *KP Aero* nose button fits 18 SWG wire. However, I wanted to use 21 SWG wire so I bushed the nose-plug with a short length of suitable tubing. KP nose buttons are available from Freeflight Supplies, in packets of ten.

Now make some simple jigs: a 15-degree right-angled triangle, about 5" in length; a prop blade template and a pitch gauge for accurately setting the blades' pitch. The triangle and blade template are cut from 1/32" ply. Later in the assembly process, you'll need the prop blade incidence jig. Or you could just eye-ball it!



A section of yoghurt pot (a white one, to avoid having to paint), ready for marking with 15-degree angle lines and the blade shape.



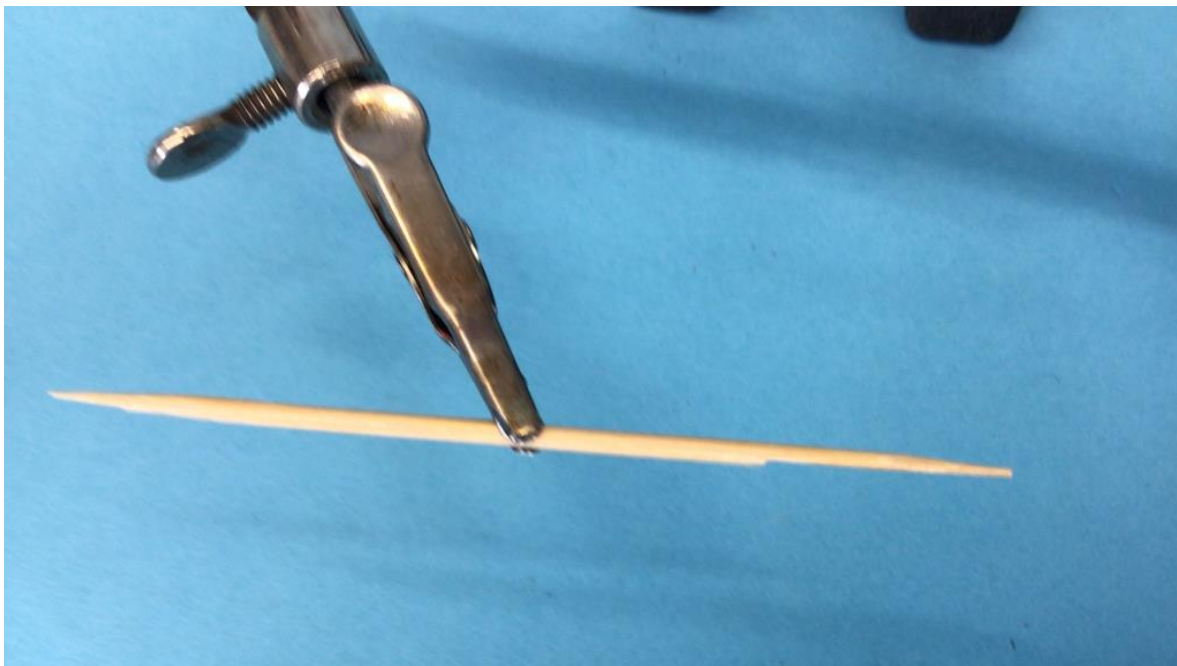
The 15-degree lines are marked before cutting off the flange, then the blade shapes are added using the angled lines for orientation. *Note the orientation of the angled line.* As seen in the photo, this is correct for a normal tractor prop. Angle the lines the other way for a pusher



Blades cut out and tidied up

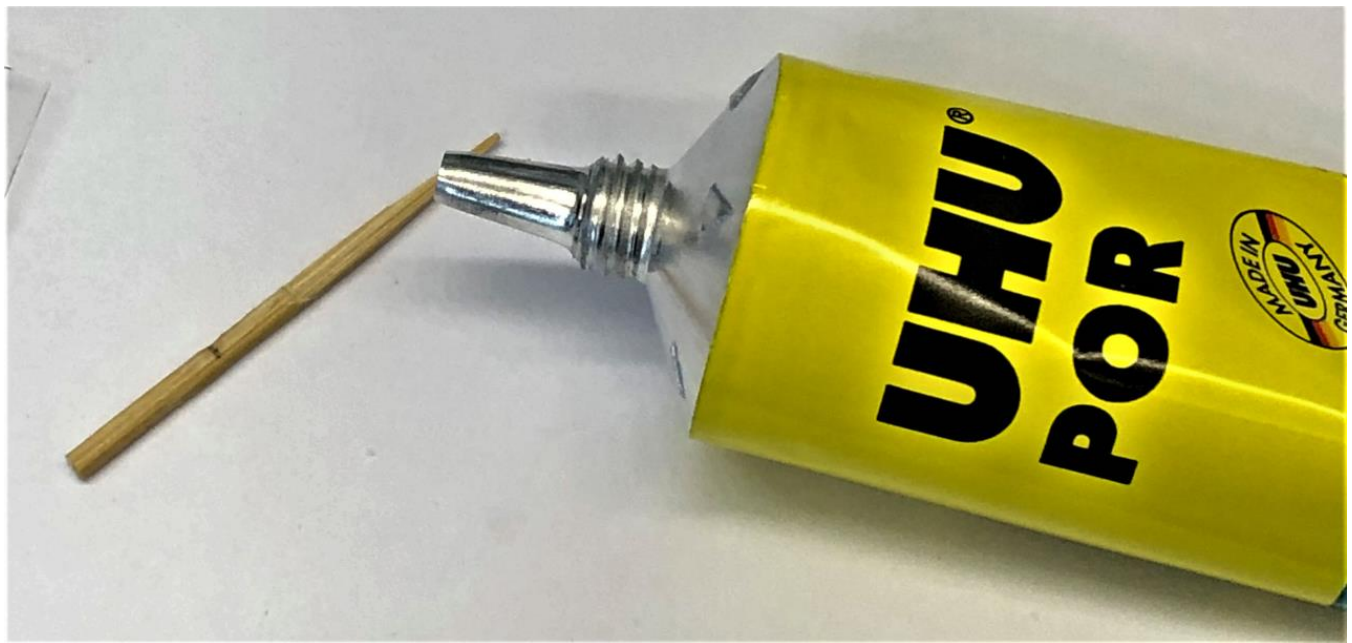


Marking the 80mm bamboo cocktail stick. One stick makes two stub shafts. Make shallow vertical cuts 20mm from the pointed end and carefully trim/sand in the step, as in the next photo; use an emery board or small sanding board to smooth out irregularities.





Drill a 0.8mm/1.2mm hole through the dead centre of a 20mm length of snake. Start the hole with a stout pin to stop the drill bit 'wandering'.



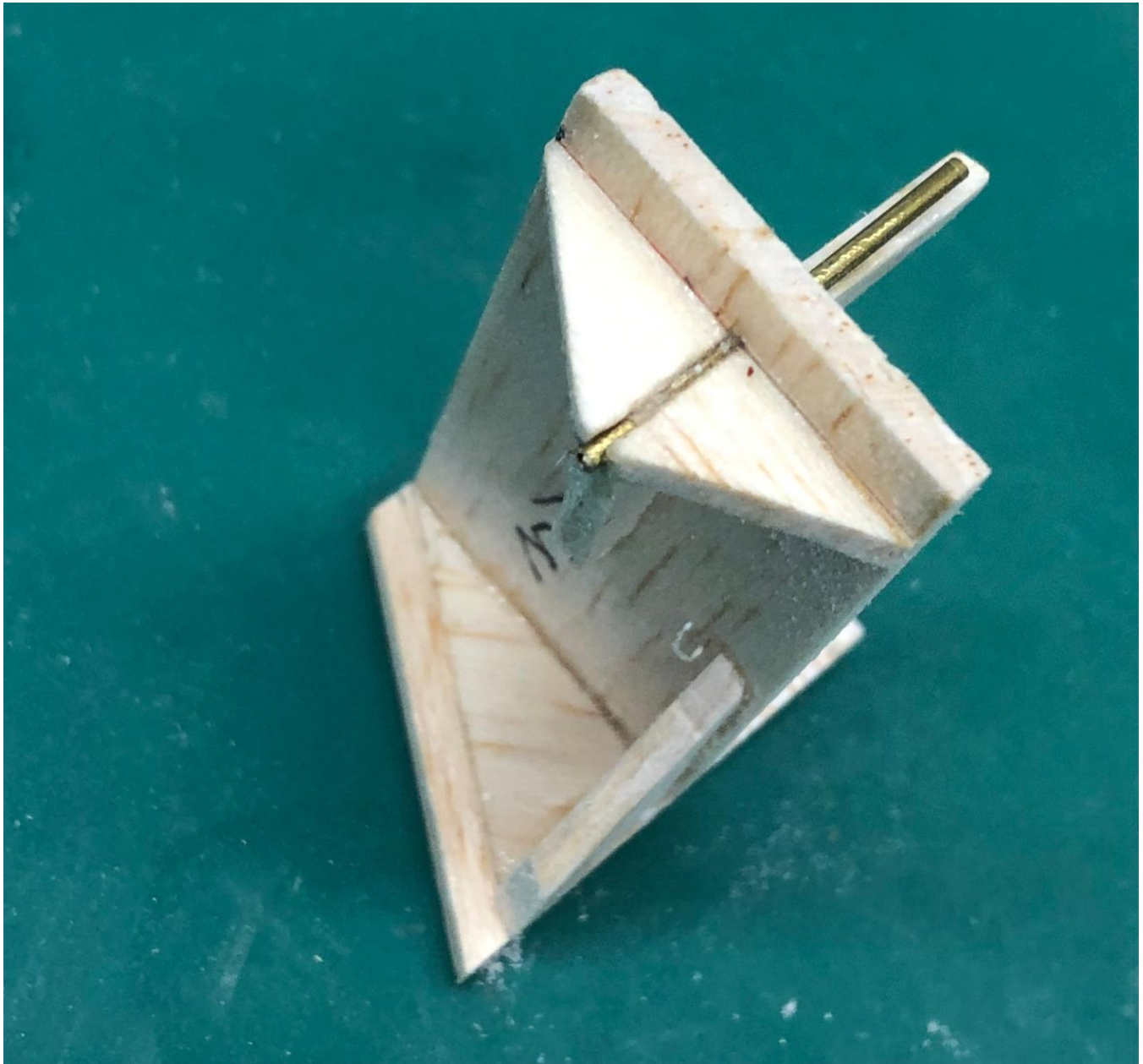
Apply a bead of UHU Por to the shaft 'flat', before carefully positioning it on the back of the blade. Use the vertical line and the shaft's step for alignment.



A finished blade



When the glue is dry (60 -90 minutes), remove the ink lines with methylated spirits



The blade pitch angle jig. Assemble from balsa and a scrap of suitable brass tubing (to fit the chosen wire shaft). The distance between the vertical tube and the 45-degree angle piece is 45mm. This orientation is correct for a tractor prop'; reverse for pusher. Secure the shafts in the hub with UHU Por or thick cyano (very sparingly!) before carefully removing from the jig



The finished propellor. Note the short 90-degree bend on the end of the shaft, secured to the hub with a few turns of cotton and a tiny drop of cyano (care!)

Now finish off as follows:

1. trim the over-length shaft to length and bend a rubber hook
2. fit the noseplug in the model's noseblock, then pass the shaft through the nose button or bearing tube
3. add a small glass bead or a couple of Teflon washers before fitting the prop
4. add a short, 90-degree bend to the shaft and secure it to the hub by binding it with a few turns of cotton and thick cyano (but first check that the prop runs true).

That's it – happy flying!

OMFC FF Duration Competition Saturday 20th May – Gary Law



A great way to spend a morning [photo: Andrew Longhurst]

At 10:00 the weather was perfect for free flight with a gentle breeze, increasing a little towards the end of the competition. The sun shone almost continually; just a few cumulus clouds drifted by to give a little shade. By 1:30, the chocolate coated “help yourself” tray bakes were difficult to eat; with fingers becoming as chocolate coated as the cakes themselves.

Early arriving competitors had already decided the best position for the flightline in relation to the wind (which later on, blew gently from all points of the compass – possibly thermal activity). The gazebo was quickly set up and score sheets taped to the table. We were off!

In P30 Jim Paton and Andrew Longhurst were first away. I didn't recognise Jim's model and Andrew's looked like the 'own design' model he described in a previous Meadow Flyer. Jim returned a creditable 1 min. 18 secs. for his first flight. Andrew radio DT'ed his model for the first of his three perfect maximum (1 min 30 sec.) P30 flights. Jim and Bob Lee both maxed on their last flights but Andrew remained unchallenged. Andy Blackburn's very promising first trimming flight of his Sweet P30 (which Maxed), deceived when the number of turns was increased and he confidently announced his first competition flight. The resulting fast and low circles of the gazebo and 31 sec. flight time was cruel, but illustrated that you can't chop a chunk out of the fuselage the night before and fly successfully without trimming time! Andy will be back! Dave King beat Andy Blackburn's now improving model by just 2 secs. for fourth place. Aubrey King and I were at the back, neither of us having DTs fitted so going very easy on the number of turns in the buoyant air.

Having secured three maxes in P30, Andrew Longhurst now set about the 36" hi-start glider competition. I think Andrew's model was a reduced Corsair. In its original form, a successful 48" wingspan A2 glider with an incredibly low aspect ratio wing. The 36" span Corsair has been used successfully by several modellers in hi-start competition and in Andrew's hands

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was an easy winner on the day, with three straight 1-minute maxes. David Lovegrove's beautifully finished Gnome came a worthy second with a three flight total of 114 secs. David's Gnome is enlarged from the 1950s Mercury design of 33" wingspan and has been successfully campaigned by a number of modellers over the years. It is very simple, quick to build and a reliable flyer. My Andy Crisp-designed May Morning took third place and Alan Trinder's elegant Keil Kraft Conquest, still at its original 30" wingspan was just behind. Incidentally, the Conquest was designed by Neville Willis of Caprice fame. Perhaps one to enlarge up to 36" span, Alan?

My idea of adding a catapult hook to a reasonably performing chuck glider the night before (see Andy Blackburn, above!), was a failure. I assume that it was the higher launch speed of the catapult that caused the model to describe a large loop into the ground at my feet and time ran out on my efforts to retrim. That left David Lovegrove and Alan Trinder to fight for the honours. David's average flight time over the seven flights was just 0.15 secs. short of 30 secs. and Alan's longest flight was 44 secs. Both were flying Andy Crisp-designed 12" wingspan Oxcats and showed just what can be achieved with Andy's small, simple design.

A brief prizegiving was held to applaud and present certificates and Tunnocks (they were in a coolbox with ice blocks so in good condition!), to the winners. Unfortunately Andrew Longhurst had to leave early for another engagement but he was loudly applauded in his absence, with one competitor suggesting the introduction of a handicap system for the next competition! Well done Andrew, you are an inspiration.

A big thank you to Alan Trinder and David Lovegrove for helping to set up and clear away on the day and still finding time to enter the competitions. And to Andy Blackburn, for handling the publicity.

Footnote. As I added up the competition scores in the gazebo, a short whooshing noise was followed by Alan Trinder's Conquest, minus wings, bursting through the gazebo roof and landing just a foot away! Apparently when climbing on the hi-start, the wings had folded and the fuselage, with hi-start still attached, accelerated rapidly earthwards. Next time, the hi-start will be located further away from the centre of operations!

The hole in the gazebo roof has since been successfully repaired!

Club And Other Local Events, 2023

Club Meetings at Begbroke

Wednesday Jun 21	<u>Club Night</u> Fun flying on the BVH playing field
Wednesday July 19	<u>Club Night</u> Fun flying on the BVH playing field
Wednesday Aug 16	<u>Club Night</u> Fun flying on the BVH playing field
Sunday Aug 20	OMFC Begbroke Summer afternoon fly-in and social.
Saturday Sep 9	<u>Autumn Duration Competitions</u> on Port Meadow + general fun fly
Wednesday Sep 20	<u>Club Night</u> Talk: Designing a Flying Wing. OMFC member Alan Smith

Competitions on Port Meadow

Saturday June 17 - **Summer Scale Competitions** on the Meadow for OMFC & BMFA Members. Classes are BMFA Flying Only + small static realism score, Kit Scale / Precision Rubber to BMFA rules and Kit Scale Duration – for detailed rules see <https://oxfordmfc.bmfa.uk/omfc-rubber-kit-scale-duration-competition/>.

Arrive 9 am for event start at ~10am. Event finishes approximately 1-2pm but fun-flying continues all day

Saturday July 8 - Backup Date for **Summer Scale Competitions**

Saturday Sept. 9 - **Autumn Duration Comps.** on the Meadow for members and guests. Classes: Coupe d'Hiver, FROG Senior (Peterborough rules), Rocket Duration and Kit Scale Duration – for detailed rules see <https://oxfordmfc.bmfa.uk/omfc-rubber-kit-scale-duration-competition/>

Arrive 9 am for event start at 10am. Finishes approximately 1pm

Club Postal Competitions

The *Under 25" Vintage Cabin* Postal Competition is in progress, Round 2 (Summer) runs from 1st June to 31st July inclusive. For full details see the Club website

<https://oxfordmfc.bmfa.uk/2022-under-25-vintage-rubber-postal/>

The *VMC Pilot* Postal Competition consists of one round which started on 31st May and runs to 31st July inclusive. For full details see the club website <https://oxfordmfc.bmfa.club/vmc-pilot-postal/> .

The combined *P.30* and *Coupe d'Hiver* Postal Competition will consist of one round which will be run between 1st September and 31st October inclusive. For full details see the club website <https://oxfordmfc.bmfa.uk/p30-and-coupe-dhiver-postal/>

Please let me have your contributions by 10th September for inclusion in the Autumn 2023 newsletter. Send them to: Andy Blackburn at newsletter@oxfordmfc.bmfa.uk.

If submitting photographs (which we all enjoy) it's best to send the files separately, using www.wetransfer.com.

Tailpiece



Jim Paton was one of the hardy souls who attempted to commit aviation on Port Meadow early in the morning on Wednesday April 5th but was unfortunately tempted into navigating a puddle that was just a little too deep and got stuck. Looks to me as though he's about to call the RAC. [photo: Andrew Longhurst, standing on firmer ground]