Meadow Flyer
Newsletter of The Oxford M.F.C.

Spring 2024

The end of a day's winter flying [Laurie Syrjaniemi]

In This Issue

Editorial

You may remember Steve Edward's idea for an "RC Assist Vintage Glider" competition, based on a KK Dolphin with single-channel RC? We're going to have a go at it on Cloud Tramp Day in August, details on page 18. It should be fun, and I know of at least one build in progress, please consider having a go.

It's the start of the year and as usual, I find that haven't got enough models. There are club competitions planned for this year and some external events that I'd quite like to go to so I need to think very carefully about what I can enter, which will in turn dictate what I should be building and when. It looks as though everything will be driven by the planned OMFC events on Port Meadow so the obvious thing to do is make a list in a spreadsheet. Then when I discovered that didn't much help (yes, yes, I know) I sat down and thought about it…

Spring duration 27th April: P30 (would really like a new, sub-40 gram airframe), Frog Senior (old Linnet) and Rubber Scale Duration (new Chambermaid, which is part-built in need of repair).

[If you absolutely must know, I needed somewhere to put it whilst clearing the building board, so left it on the bed in the spare room. However, it turned out that the duvet camouflaged the Chambermaid quite well and I forgot that it was there. Then, later on, I needed to look in a wardrobe and, without thinking, sat down - on the Chambermaid… There was some damage, but it doesn't look to be terminal].

Summer Scale 13th July: Flying Only (KK Cessna 170, build in progress), Rubber Scale Duration (see above), but Scale Glider Duration might be too much of an ask.

Autumn Duration 14th September: Vintage & Classic Glider (new A/1 TBC), Coupe D'Hiver (new Garricoupe from the Aeromodeller plan), Rubber Scale Duration (see above)

There are two or three own-design FF rubber scale models that I want to fly for fun (24" Fairey Barracuda, 25" Fairey Gannet)

Clearly, priorities will have to be established but I think the key point is to make sure that a lot more time is spent at the building board; maybe watch less TV?. And I probably need to accept that things don't have to be perfect…

I'd like to thank Laurie Syrjaniemi, David Lovegrove, Bob Lee, Chris Brainwood, Simon Burch, Steve Edwards, Simon Milan, Andrew Longhurst, Jim Paton, Simon Richardson, Dave King, Derek Knight, Alan Smith and Ian Melville for providing content for the newsletter.

Chairman's Chat – Bob Lee

During what seems to have been a long-drawn-out winter, the club has fielded some very successful winter meetings at Begbroke, the Feb, 'bring a model' resulting in a very good display of models and is a format we will be sure to repeat in the future.

However Spring is just about upon us and it's time to think about getting out on the Meadow, but I expect it to be a couple of weeks at least before it's dried out and it's got warm enough. Until then, for many of us it's indoor flying either at Henley Leisure Centre or Trinity school.

The next Begbroke event (March 20th) is a talk by Tony Gaunt on the 'History of the Martin Baker company', Martin Baker of course being famous for ejector seats. We would like a good turnout for this so please feel free to invite a guest to this event.

The club has a full programme of competitions on Port Meadow for the summer months and would welcome other suggestions, particularly RC competitions, it's all a bit 'free flight centric' at present. We also hope to be able to resume RC training shortly and Paul Thomas has joined the committee to facilitate that. We will also, weather permitting, be flying on the Begbroke field during the summer months with possibly some indoor 'round the pole' flying as well.

Looking ahead a bit, most of you will remember the 'Foamie Design Challenge' from last year. We are planning a follow on for next winter which will be the 'Cartoon Foamie Warbird Challenge'. You will hear a lot more about this in the newsletter, but again will we be offering kits of materials and suitable props as well as 2 or 3 designs to get you going, these will have simple semi-profile construction. The hope however is that you will also produce your own designs so in a few spare minutes it might be worth trawling the web for some suitable WW2 warbird 3 views.

On the personal front, being in the area I visited the Military Aviation Museum at Tangmere, near Chichester. Most museums don't like you touching the exhibits but while I was examining a Hawker Hunter cockpit, I was asked by one of the staff if I would like to sit in it. I have never been asked a sillier question! I also got to sit in their SE5 mock-up cockpit, this has all original instruments and controls and is complete with engine and gun sounds and a draught on your face. Worth a visit if you are in the area.

Scale Free Flight Gliders – Chris Brainwood

Simon Rogers' Hotspur on approach [Andy B photo]

For 2024 the club are running a new event at the summer Scale Fly-in on Saturday 13th July. In addition to the All in Flying Only and Kit scale duration we will be running a scale glider competition.

The event will be a flying duration competition open to any scale glider with no static element and will flown as a total of 3 flights (TOTF). There will be a Peterborough Rules 30m Hi-Start bungee (7.5m of 1/8" rubber + 22.5m of line).

If you've not flown bungee launch FF gliders before it's a very enjoyable form of free flight, no thrust lines to worry about just the silent pull of the line guiding your models aloft. The scale element adds a bit more visual spectacle to the flying as well, as your chosen subject floats majestically overhead.

For those who fancy building one over the next few months there are quite a few possible candidates, particularly with the Peterborough Hi-Start bungee in mind. Kits are available from VMC, their reissue of the West Wings Slingsby Swallow at 35.5" span would work well with the bungee. They also have some of the 1950's designs from Keil Kraft and Veron.

The KK Kirby Prefect is perhaps a bit small at 20" while the Veron Slingsby Prefect designed by Phil Smith is slightly larger and more suited to the bungee at 30" span. The Lurker, who has designed a few FF gliders, has updated the plans with a few useful modifications, a markings sheet and some comprehensive build notes if you would like a copy email webmaster@oxfordmfc.bmfa.uk

The Lurker's modified Veron Slingsby Prefect [Lurker Industries photo]

Simon Rogers has completed a very nice example; he changed the sprung skid arrangement to a single hard balsa keel as the delicate sprung arrangement can have a tendency to come off with bungee use, though The Lurker's modifications address this too.

Simon Roger's modified Prefect skid

Another design that could prove very popular is the Schweizer SGU 2-22 designed by Tom Hallman *[otherwise known as maxfliart, look up his many magical videos on YouTube – Ed]*. It has a 36" span with parallel chord wings and looks to be a good performer. It's available as a short kit from Volare Products in the US so shipping costs would be higher.

Simon Rogers also has a recently completed Schweizer, it makes a very attractive model. Simon's Schweizer is the same weight as Tom Hallam's original so could be a great performer too. On the Volare website Tom describes his first official flight as being over 91s.

Simon Rogers' Schweizer 2-22 from the Volare kit

Aerographics also did a kit that builds into either the Slingsby Kadet at 25” or the 30” Tutor, although no longer produced they do come up second hand occasionally.

Several plans have also been published by Aeromodeller magazine in recent years. The Airspeed Horsa (Outerzone), Minimoa (Jan 21), and Airspeed Tern (Sept 21) would all make good candidates.

The Lurker's Minimoa; an impressive model.

The Minimoa and Tern were designed by The Lurker specifically with a small Hi-Start bungee in mind, they are both very attractive designs. The Minimoa with its round fuselage and stringer construction is perhaps the more complicated build of the two but is slightly larger at 34” and has a lot more wing area than the smaller Tern so could be a good choice. The Minimoa design uses the half shell method where one side is built flat on the plan around a central keel with the formers added to the other side once the structure is built. Both plans have very detailed build articles so it’s worth hunting out the relevant Aeromodeller back issues if you fancy building one.

Looking further afield to Outerzone the list of plans grows particularly if you are prepared to re-scale them to a size better suited to the Peterborough Rules bungee. In practice we have found the bungee will cope with models up to about the size of an A1 glider

Dave King has re-scaled the Zlin 24 designed by Antonin Alfery to 36” which is another great alternative with almost parallel chord wings. David has fitted a flip up tail DT as well which could be useful addition in the warmer summer months.

Dave King's enlarged Zlin 24

For my own entry I have built an Airspeed Tern from Lurk’s Aeromodeller plan. I decided to try a different wing section to Lurk’s original Eiffel 400 and went for the thinner under-cambered section used on the Aiglet A1 glider.

The Author's Airspeed Tern from the aeromodeller plan

I think the jury is still out on whether this has improved things, but early performance is very encouraging. As the wing tapers in section as well as chord I had to add an extra 1mm carbon rod to the spar due to the very thin nature of the tips. I also changed the band on wings to separate plugin wings using some 3mm carbon tube as wing joiners located in rolled paper tubes. The gaps between the tubes were filled with some light 1/16" sheet. The wings are retained by an internal elastic band fitted onto hooks attached to the root rib running inside another paper tube. This allows the wing centre section to be built into the fuselage and give a slightly more scale appearance. There's also some additional sheeting around the lower part of the nose. It's worth noting that most scale gliders will need a fair bit of nose weight as they will be missing the 10 stone pilot the original had up front.

Many of the designs here will show the position of the tow hook but if not, it should be forward of the CG for free flight flying. For the Hi Start it may need to be slightly further forward still than for hand tow launching, which would be favoured launch method on older designs. The correct position is such that when the model is near the top of the line the towline, tow hook and CG are in a straight line. On a 36" model this is likely to be roughly around 3/4" in front of the CG. The more forward the hook the more stable and positive it will be on the line though it may not reach its maximum height if too far forward. Some plans like Lurks Tern may show two positions, if so use the forward one for the Hi-Start.

The Hi-Start gives a long soft pull compared to the type used for RC bungees which can be quite fast and fierce but keeping the model straight on the line is still very important, both to get maximum height and to avoid the model turning and being pulled into the ground.

As free flight models are trimmed to fly in circles, they may need help to keep them straight on the towline. There are simple auto rudders that can be made using a pivoted pin on the tow hook which pulls a line to the rudder to correct the turn while under tension of the line, when released the rudder then springs back to the normal setting to begin its circular glide. Another and much easier way of achieving this is to use an offset tow hook. The hook is bent to the same side as the glide turn, 1/4" offset is perhaps a good place to start with a 36" model but exactly how much is matter of trial and error - some designs may not need any.

The other thing to consider is when the model comes off the line. Ideally the model should climb nice and straight and be pulled to the top of line, near vertical to the ground stake and then slip the tow ring and begin its glide down. To achieve this the tow hook needs to be in the right position but the shape of the hook plays a role too. Sometimes a model can stick on the line, this can be corrected by opening out the tow hook from its usual 90 deg bend slightly, conversely closing the hook up can help keep a model on the line longer if it's coming off mid-climb.

Flying gliders can be very rewarding and a great way into free flight flying and with simple kits like the VMC Prefect available why not give it a go?

In addition to the designs described above these designs are on Outerzone

Falke (35")
Grunau Baby 2b (30")

And here are some suitable designs that may need re-scaling:

Waco troop carrier glider
Avia 152-A

Bowlus sailplane
Bowlus baby albatross
Castel Mauboussin 301-S
CB 28
DFS 230
Gotha Go 242
Hamilcar I
Hutter H-17
Kirbys in different sizes and versions
Schleicher K8B
Zlin 24

If you are building something or if you have some shots of your finished scale gliders, please do send them in to webmaster@oxfordmfc.bmfa.uk and we'll feature them on the website.

Living With The Autopilot – Simon Burch

A few years ago, I watched a high-wing trainer-type model being flown over a largish field. It was not a recognised flying site but, as far as I knew, there was no reason not to fly there. The model's flight pattern was most unusual: neatly flown loops and rolls were followed by erratic link flying and eventual loss of control. The model would then recover and continue flying normally. I assumed that an experienced flyer was mentoring a beginner; however, when we reached the site fence, I was surprised to see only one person with a transmitter. I could see now that the model was an E-Flite Apprentice – a model often sold on the capabilities of its so-called Sensor Assisted Flight Envelope (SAFE) technology – ie a combined auto-stabiliser and autopilot. The pilot positioned the model to land, but he lost control again - this time with insufficient height to recover using his 'panic button'. The model smashed into the ground.

Auto-stabilisers and autopilots: some traditional RC flyers might regard them with disdain, even outright hostility, but the fact is that they are becoming ubiquitous and, like it or not, they are here to stay. There is no doubt that they offer advantages for beginners, manufacturers

and retailers alike; indeed, the miniaturised autopilot technology that is now being fitted in some Ready-to-Fly (RTF) RC models means that a complete novice can buy a relatively inexpensive sub-250g fixed-wing foamie and, with just a little care and preparation, fly it successfully with minimal risk. However, it can be dangerous to place too much reliance upon this technology, especially when flying larger models.

The aim of this article is to highlight some of the advantages and disadvantages of using electronic auto-stabilisers and autopilots for RC training, and how to get the best out of them. It focusses upon conventional fixed-wing RC trainer-type models that, in the past, would not normally have been fitted with such devices. While the same broad principles apply to helicopters and multi-rotors, they use the systems in a slightly different way; indeed, some rotorcraft cannot be flown safely without auto-stabilisation and, in many cases, the systems cannot be deselected.

What are Auto-stabilisers and Autopilots?

Before delving further into this subject, it is useful to clarify the terminology. An auto-stabiliser is a system which helps the pilot by making the aircraft more stable and predictable to fly. In normal flight, following any disturbance resulting from control inputs or turbulence, a stabilised model tries to return the aircraft to its normal flying attitude. If the controls are released for any reason, the system will try to return the model to broadly straight-and-level flight.

An autopilot, on the other hand, effectively replaces the pilot – but only in terms of physically handling the model. An autopilot cannot, in isolation, maintain appropriate separation from uninvolved people, avoid obstructions or avoid other aircraft. Importantly, the remote pilot is always responsible for determining the model's flight path. In standard fixed-wing RC models, autopilot systems are used mainly for 'fly home' systems; pre-programmed flightpaths; automatic landing systems; virtual 'fencing'; pre-programmed aerobatic manoeuvres and 'panic button' systems. 'Panic button' systems rapidly return the model to straight and level flight should the pilot lose control – assuming there is sufficient height and airspace to carry out the recovery manoeuvre.

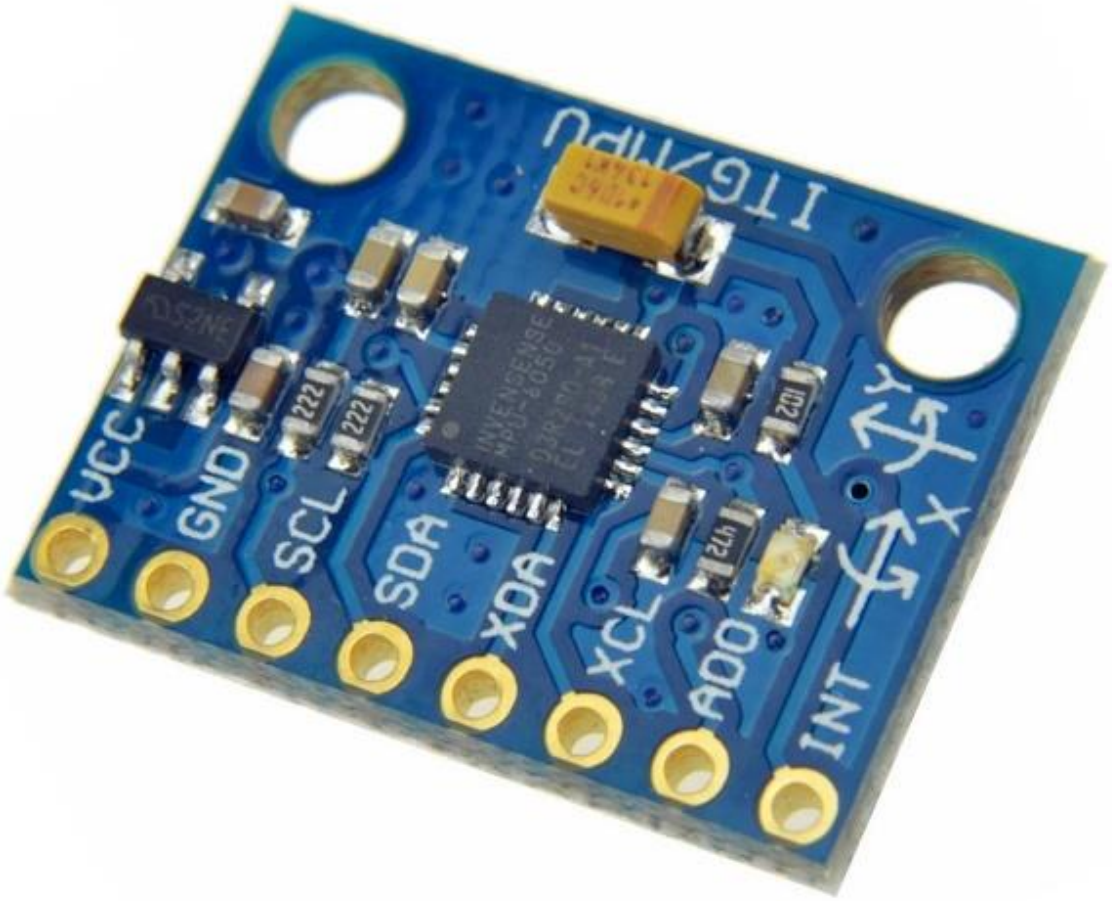
For the vast majority of model aircraft, the terms 'auto-stabiliser' and 'autopilot' do not refer to distinct systems; rather, they apply to the way in which a single system is used. Many RC models use only an auto-stabiliser, whereas other, more sophisticated, models might incorporate an auto-stabilisation facility and one or more full autopilot facilities all combined within the same system. Consequently, the terms are sometimes interchangeable.

How do They Work?

Traditional models without electronic stabilisation employ 'natural' means to enhance their stability. For example, many trainers have high-wing airframes, which provide pendulum stability, perhaps combined with dihedral or even polyhedral wings, and large tail surfaces. These features provide natural aerodynamic stability in pitch, yaw and roll. Electronic stabilisation/autopilot systems, on the other hand, actively move the control surfaces to enhance the model's stability - or even take full control of it.

These systems work by sensing changes in the model's attitude using miniature solid-state 'gyros' and accelerometers. The output from these sensors is processed, and appropriate control corrections are fed through the receiver to the servos. The system is usually activated by the pilot using a switch on the transmitter; if it is being used for stabilisation alone, the level of stabilisation can usually be adjusted to suit the experience level of the flyer. Any autopilot

functions which require the system to take full control of the model (eg automatic aerobatic manoeuvres, ‘panic buttons’ etc) may be selected by using a separate switch or button. With some more sophisticated models, a mixture of programming, on-board sensors and perhaps GPS, the system may be used to achieve automatic flight path control.



Typical 3-axis Gyroscope and Accelerometer Module 21mm x 15mm x 1.2mm Amazing technology for less than £5

Auto-stabiliser Settings

Most stabilised models have three auto-stabiliser settings: for example 'beginner'; 'intermediate'; and 'expert'. In 'beginner' mode, the attitude stabilisation is very strong, and large control inputs may be required to overcome it. In ‘intermediate’ mode, the attitude stabilisation is slightly less effective, and the model responds more positively to the pilot’s control inputs - while retaining a reassuring level of stability.

‘Expert’ mode usually disengages the stabilisation system completely. This mode should be treated with caution, because electronically stabilised models tend to have comparatively large control deflections (throws). If your model has autopilot features such as ‘panic button’ or automatic aerobatic manoeuvres, the control surface throws need to be particularly large in order to execute the manoeuvre or rapidly recover from a ‘panic’ situation (usually the pilot losing control). In un-stabilised manual flight, these large control throws can make the model very sensitive to pilot control inputs, making it all too easy to overcontrol. For this reason, many beginners find RTF models difficult or even impossible to fly in ‘expert’ mode, which can be demoralising.

A more experienced RC flyer might recommend trying to ‘tame’ the control response in ‘expert’ mode by using ‘low rates’ or ‘expo’ but, frustratingly, many RTF models with cheaper transmitters do have not have these options. In most cases, ‘intermediate’ mode is almost always the best compromise.

A Typical RTF Transmitter; Note the 3-position ‘Expert, Intermediate and Beginner’ switch (top right), and the automatic aerobatic manoeuvre button (top left). Note also the lack of adjustable rates, and no computer power for expo.

Using Stabilised Models for RC Training

Reading some of the marketing material for stabilised and autopilot-fitted models, it is easy to believe that they make learning to fly an RC model a straightforward matter. Anyone who has tried it will know that this is certainly not the case even when using models that can, allegedly, almost fly themselves. Regardless of the level of stabilisation or autopilot assistance, beginners are still faced with the familiar RC difficulties regarding orientation, wind effects, allowing the model to ‘get away’, and general situational awareness.

Fortunately, more recent marketing associated with larger trainer types weighing more than 1kg, such as the E-Flite Apprentice and Max Thrust Riot, now emphasises the importance of learning within a club environment with the help of and instructor. It is strongly recommended

that, regardless of the level of autopilot assistance, a beginner should not attempt to learn to fly an RC model without the assistance of an experienced flyer. That goes for sub-250g models too; while the consequences of losing control and crashing are likely to be far less serious, unnecessary damage can be frustrating and demoralising.

Sensor-Assisted Flight Envelope (SAFE) Marketing Material - Sounds great, but help from an experienced flyer is still essential

This does not mean that auto-stabilised models are entirely useless for training; indeed, the reverse is the case. A stabilised model, particularly one with a panic-button, can be a significant confidence-booster. It can help the RC beginner come to grips with orientation, wind effects, and circuit patterns without being overwhelmed by the difficulty of controlling a fully manually-flown aircraft.

The reduced pilot workload also enables the beginner to develop his or her awareness, by making it easier to glance away from the model to check for people, animals and other hazards. However, it is equally important to understand that a stabilised model is not 'flown' in the traditional RC sense; rather, it is directed by the pilot while its on-board ‘robot’, to a greater or lesser extent depending upon its settings, keeps the model under control.

I have no evidence for this statement but, in my experience, most RC beginners aspire to the challenge of flying traditional manually flown model aircraft - ie those which rely entirely upon the pilot’s own skill and judgement to complete a successful flight. Moreover, for those who plan to take a BMFA Achievement Scheme ‘A’ certificate, auto-stabilisation and autopilot systems cannot be used during the test. For those flyers, the time will come when they must make the break from the autopilot. (Note – auto-stabilisers are permitted for the BMFA Basic Proficiency Certificate (BPC) Test).

Breaking up With the Autopilot

As I see it, there are three main problems that beginners face when moving away from stabilised models: their own confidence (or lack thereof); the model's set-up; and flying technique differences.

While using auto-stabilisation and autopilot systems might improve a beginner's confidence, there is also a risk that they can become a psychological 'crutch'. This is to some extent inevitable, and it's worth noting that the same applies to buddy-box training too; eventually, the connection with the instructor's transmitter must be broken. I'm not a psychiatrist so I cannot recommend a cure; all I can say is that confidence in one's own ability to fly is the key, and that this can only be developed through practice. Unfortunately, flying sessions may not be frequent enough to develop this confidence. This continuity gap can, to some extent, be plugged by using a good PC-based RC simulator. Another way to practice alone within the club's rules is to use an inexpensive sub-250g model, and this will be discussed later in the article.

With regard to the model set-up, it is important to ensure that its control throws, rates and expo are properly set up before attempting un-stabilised manual flying. I have some experience with flying auto-stabilised models in manual control, both large and small, where this was certainly not the case; the large control throws necessary for the autopilot made the models over-sensitive and thus difficult to fly. Certainly, a beginner would not have coped easily with them. However, once their controls were adjusted, the models' handling characteristics were transformed, making them ideal for RC training.

Finally, technique. An auto-stabilised model cannot properly replicate a non-stabilised model's handling characteristics. Indeed, there is even a risk that they may instil incorrect techniques that need to be un-learned – so-called 'negative training' - something which can be both demoralising and confidence-sapping.

For example, when a turn is initiated in a non-stabilised model using aileron or rudder, the nose will drop and it will descend; if no corrective action is taken, the model will eventually commence a disconcerting spiral dive. To prevent this, the pilot needs to correct (or better still anticipate) the nose-drop by applying 'up' elevator to maintain height. Coordinating a turn in this way is a fundamental RC flying skill that needs to be learned at an early stage. A stabilised model, on the other hand, will tend to maintain its pitch attitude automatically as the turn is commenced. This is a great help to the pilot, but it means that the skill of applying timely 'up' elevator is not learned. Perhaps worse, manoeuvring a robustly stabilised model in 'beginner' mode often requires large control inputs. Sometimes, those inputs might need to be held on in order to make the model respond. In a traditional RC model, large control inputs can lead to erratic flying, and holding on control in any direction is a sure way to disaster.

In summary, to make the break with the autopilot, a beginner will need to feel confident to do so, and the model must be properly set up for manual flying (experienced help required!). Ideally, the flyer should practice flying techniques on an RC simulator but, even if they haven't, the instructor will need to be ready to correct the common handling errors that might arise as a result of using an auto-stabilised model.

Lightweight (Sub-250g) Models

A word about lightweight models (ie sub-250g). Previously I've recommended lightweight RTF foamies (ie those sold with their own dedicated transmitters) as a good way for uncertified flyers to gain 'solo' unaccompanied experience with RC models – as is currently permitted within the Club's rules. Despite their drawbacks, specifically their inability to cope with anything more than a light breeze, and their low inertia, they enable beginners to fly a proper RC model on their own with minimal risk.

Unfortunately, it seems that it is no longer possible to purchase a lightweight RTF foamie that isn't fitted with some form of automatic stabilisation; even models such as the 'F595 Sky King' and 'Ranger 600', despite being naturally stable powered glider designs, are fitted with them. Admittedly, this can make them more manageable in slightly windier conditions; however, in my opinion, auto-stabilisation markedly reduces their value as RC trainers. Not only do they suffer from all the drawbacks that have already been outlined, but also their rates/expos cannot be adjusted to compensate on their simple transmitters. It is possible to reduce the control throws by repositioning the control rods on the servo arms or control horns, but this impacts upon the auto-stabiliser's efficacy. Also, the lightweight servo arms, linkages and control horns are quite flimsy and thus easily damaged. A better approach is probably to accept the shortcomings and operate the model in 'intermediate' mode. The handling might not be quite right, but it is still useful for gaining confidence, improving orientation, practicing flight patterns, anticipating wind effects, and improving general awareness.

It's important to emphasise that I think the Ranger 600,e F595 Sky King et al, are excellent models; they are well-designed and their natural handling characteristics, when the controls are properly set up, are first-class. The over-wing motor mounting protects the vulnerable motor and propeller from damage in nose-first crashes and, in the right conditions, they are capable of extended flights.

Volantex Ranger 600

Here is a quote about using the Ranger 600 as a trainer from a recent post on the RCME Forum which, despite the wording, neatly outlines the problem that beginners might face:

'Been using Ranger 600s to teach myself to fly. They are stable with gyro so much so that I have had 3 flyaways. However in advanced mode it becomes unstable and I have great difficulty keeping it up. I have only recently seen one review noting this. Should I move on to something larger and more stable?'

The writer refers to 'beginner' mode as 'gyro'; in this mode, his model is so stable that he is unable to turn it, and he thus experiences a flyaway. Hopefully, he closed the throttle. When the writer refers to 'advanced' mode, he means 'expert' ie no stabilisation at all, which he finds too difficult.

Finally, it is possible to purchase non-RTF lightweight models (eg Multiplex Funnystar – excellent but comparatively expensive), or even build your own – for example, an electric RC conversion from a lightweight rubber-powered model or a Flite Test foamie. Admittedly, this is a more expensive and/or time-consuming route, and you will need to purchase an RC system. It also demands more aeromodelling skill….although that is not necessarily a bad thing!

Multiplex 'Funnystar'

Should You Buy a Stabilised/Autopilot-equipped Model?

Electronic stabilisation systems are ubiquitous now, and there is no doubt that they can make RC models easier to fly. Perhaps some would instead ask 'should I buy a non-stabilised model? Fundamentally, the answer lies in what you yourself want from model flying. If you are enthusiastic about the tech involved in operating remote flight control systems, and/or you're more confident about RC flying in the knowledge that you have the backup of a 'panic button' and/or a 'get you home' facility, you would certainly prefer a model that has a sophisticated autopilot facility.

However, if your primary goal is to learn to fly the model yourself, and perhaps take the BMFA Achievement Scheme to 'A' Certificate level and beyond, then you will want to buy a model which has a fully deselectable auto-stabilisation system or none at all. That said, auto-stabilisation is permitted for the BMFA Achievement Scheme Basic Proficiency Test (BPC), and this qualification permits unsupervised flying on the Meadow in accordance with the Club Rules.

It is worth remembering that most RC trainers, even those with electronic stabilisation systems, will normally have a good degree of built-in natural stability. Indeed, they almost certainly have it as a primary design consideration. Most are high-wing designs with a slight dihedral and comparatively large tail surfaces to enhance stability. Provided they are properly set up, purpose-designed trainers such as the Max Thrust Riot, Uno Wot, and Tutor have excellent natural flying characteristics and they can fly quite happily without electronic stabilisation. Even the E-Flite Apprentice, which uses its sophisticated auto-stabiliser as a particular selling point, has good natural stability, and it is easy to fly without stabilisation provided the control throws are properly set up.

E-Flite Apprentice – sold with 'SAFE Technology', but it's still a fine trainer without it

What is the answer to the question? In my opinion it is a qualified 'yes', but if you are looking to progress to a BMFA 'A' certificate, make sure that it is suitable for flying in full manual control. Another reason to say 'yes' is the fun factor. Lightweight semi-scale foamie warbirds like the Volantex Spitfire, Bf109, Mustang et al are very appealing, but very difficult to fly without stabilisation. With stabilisation, they are well within the capabilities of almost anyone to fly with minimal preparation, and the ability to fly pre-programmed aerobatic manoeuvres make them very entertaining.

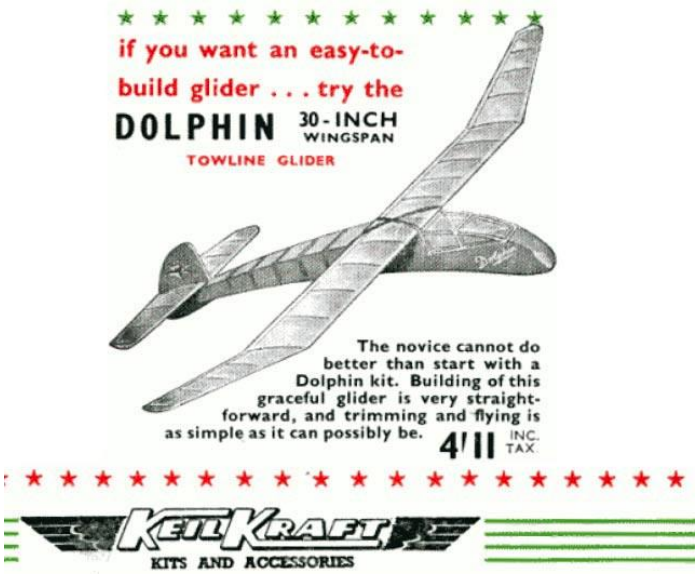
They are not much use for serious RC training but they look great in the air, and they bring a model type that would have been the preserve of experts within the reach of ordinary mortals. Who wouldn't want one?

Volantex Lightweight Warbirds

In Summary…..
When it comes to RC training, those who aspire to take a BMFA Achievement Scheme 'A' test and their instructors need to be aware of the advantages and limitations of electronic pilot assistance systems. Certainly, they have the potential to make life a little easier during those early steps into RC flying, but it's not long before they start to interfere with the learning of basic manual handling techniques. When the time comes to switch the auto-stabiliser off, the model's control set-up will almost certainly need to be adjusted.

However, auto-stabilisers and autopilots are here to stay, and they are already an integral part of model flying. Indeed, I am sure that there will be many flyers for whom the setting up, programming and management of these systems will become the primary focus of the hobby. Perhaps even the most sceptical traditionalists should welcome the fact that the advent of cheap, miniaturised electronic pilot assistance has the potential to make RC flying more appealing, and more accessible, to more people.

Keil Kraft Dolphin Single Channel RC Assist



We're going to have a go at Steve Edwards' KK Dolphin RC Assist competition on "Cloud Tramp" day (Saturday 3rd August).

The rules will be on the website at some point, but essentially the only changes allowed are a) the addition of single-channel radio operating the rudder, and b) hardwood spars. We'll use the standard Hi-Start and you won't need a D/T because you'll have the rudder.

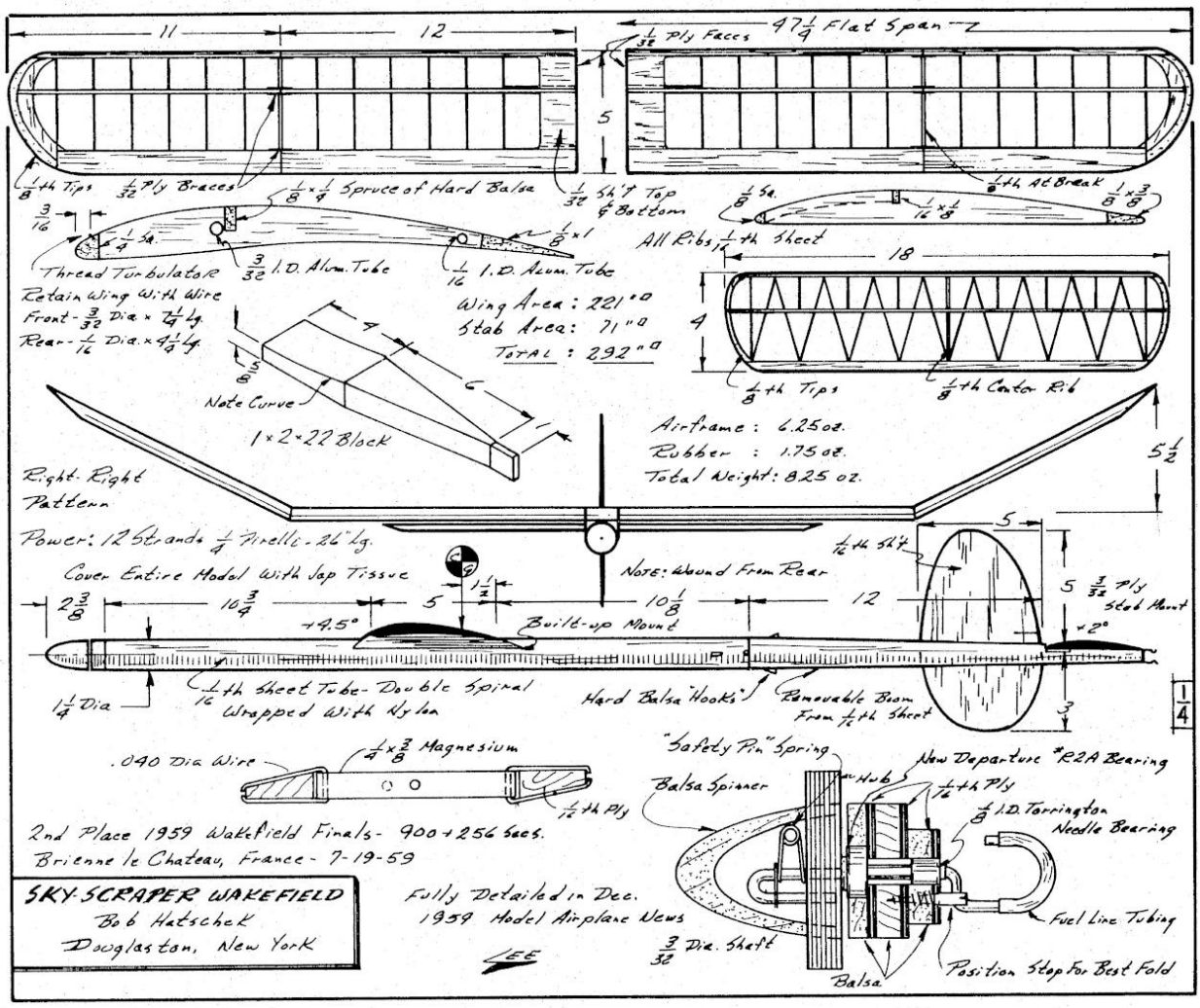
The whole ethos of this idea is to have a go with something that doesn't have a huge performance using limited radio equipment (as it was back in the days of single channel R/C, escapements, valve radio and DIY Radio books by R H Warring), with the advantage that you should be able to land the model close enough to avoid the need for a long retrieval walk.

If you want to join but don't want to build a Dolphin (perhaps for religious reasons, or maybe you lack confidence in your ability to fly a low-performance glider for 60 seconds using just one channel) then we'll allow a second, separate class of any British Kit glider up to 36" span (still single channel), enlargements and reductions are allowed.

Skyscraper P30 – Simon Milan

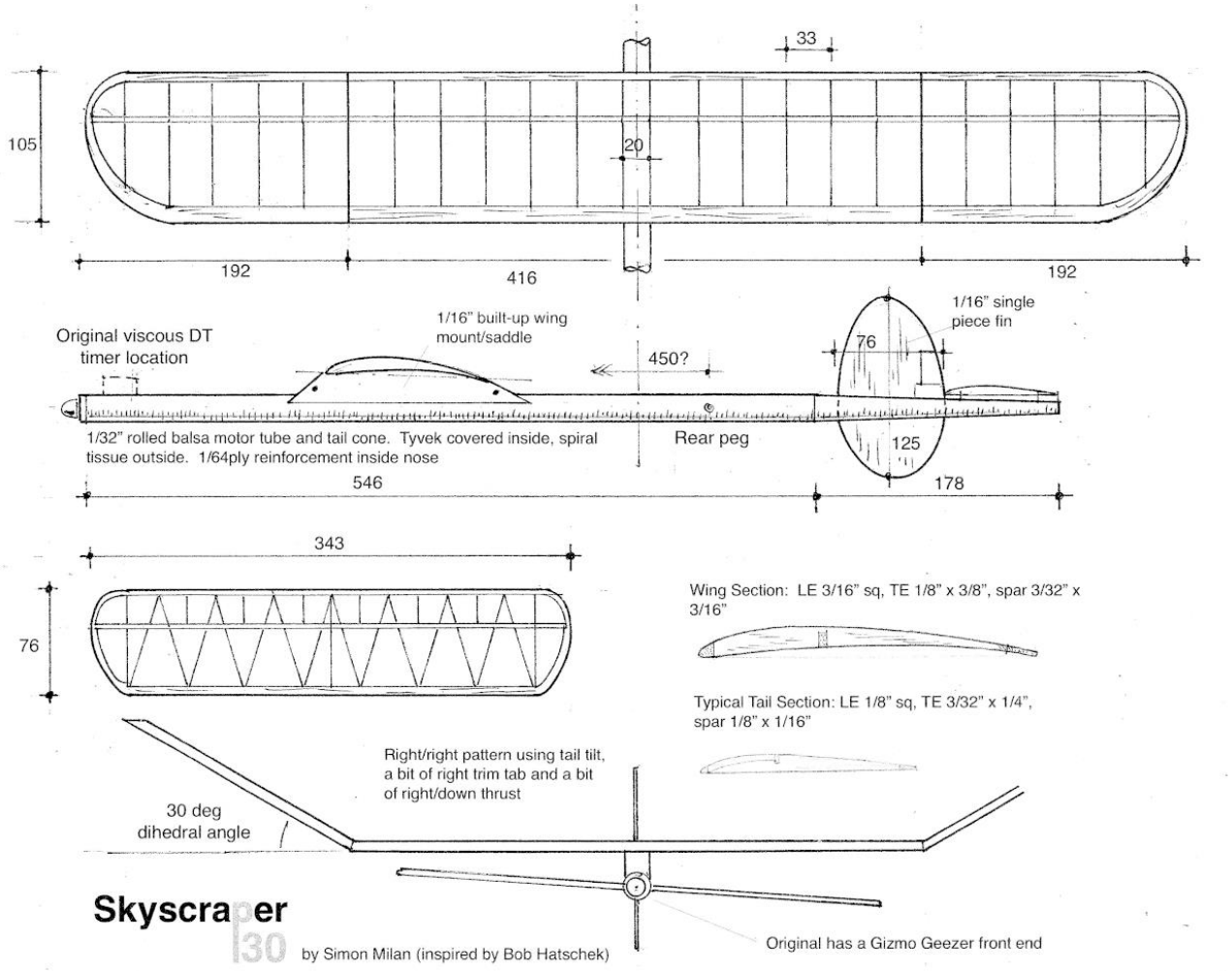
Our revered editor asked me if I could do an ”Aeromodeller Annual” style general arrangement drawing of my Skyscraper P30 which I’ve been flying – with varying success - on The Meadow for the past few years. So here it is, and I hope it’s of interest.

By way of background, way back in my teenage years in the late 50s/early 60s, I used to buy the current Frank Zaic Yearbooks and spent hours studying their wonderful drawings of free-flight contest models. I always had favourite models, either because their aesthetics appealed to me or (sometimes ”and”) because I reckoned that their construction was within my limited competence. One of these was Bob Hatschek’s “Skyscraper” Wakefield (aka F1B) which came second in the World Championships held in France in 1959.



I never built the Skyscraper – or any other contest rubber model for that matter – but when I returned to the aeromodelling fold following retirement, the (apparent!) simplicity of P30s seemed a good place to start. Even simpler with the Gizmo Geezer front ends by then being street legal. So, I looked up Bob H’s Skyscraper again…

My Skyscraper P30 turned out like this. There are a few bits missing from the drawing (e.g. the usual LE and TE gussets and ply braces at the dihedral breaks, curved wing tips 3/32” balsa, tail tips 1/16”, everything covered in tissue), but otherwise it’s all generally there. If some of the dimensions seem a bit odd it’s because I drew it up using a mixture of imperial and metric but have converted to metric for the purposes of this plan.



As sticking tissue to undercamber has never been one of my core skills, I put the wing spar on the undersurface of the wing rather than on top just to give me more gluing area. I thought Bob H's original wing section as drawn looked a bit thick for a P30, so chose a section from one of the F1B plans in the NFFS International 1993 Plan book - simply because I liked its shape! I guess anything not too thick with some undercamber will do (sorry, purists!). I just hand drew a simple flat-bottomed section for the tail. Late last year, in the interest of reliability, I swapped the viscous DT timer for a clockwork Mini DT timer mounted just in front of the wing. It didn't look as neat…

Now for some "weights and measures" (with my far more pristine and less-flown Sweet P30 for comparison). The Skyscraper weights are those after about 5 years flying, with the inevitable repairs to numerous bits of damage (including the wing ending up in two pieces on one occasion), and no doubt the motor tube soaking up a bit of lube:

Skyscraper		**Sweet P30**	
Fuselage*:	23.6g	Fuselage*:	18.6g
Wing:	14.6g	Wing:	14.2g
Tail:	4.6g	Tail:	5.5g
Gizmo front end incl prop:	11.2g	Gizmo (different prop):	10.5g
Total	**54.0g**	**Total**	**48.8g**

*Fuselage = motor tube, rear peg, fin and viscous DT timer (both models).

So, allowing for the consequences of wear and tear and the weight penalty from using Tyvek (and maybe the Gizmo front end), I reckon that, weight-wise, for a simple P30, my Skyscraper design is probably just about OK. Sure, it'll never be a world-beater being that much over the 40g minimum, but that was never the idea. My intention was simply to build a reasonably faithful P30 interpretation of Bob H's Wakefield. Anyway, my 3 maxes to get into last year's Club P30 fly-off just show that finding decent lift (more by luck than judgement in my case) can more than compensate for more grams than are ideal.

As for the rubber, I've flown it with 10g of both 6 x 1/8" and 8 x 3/32" strands of Mike Woodhouse's finest. Similar turns on both and no real difference in overall performance.

Finally, a slight word of caution - as mentioned, I lined the motor tube internally with Tyvek to make it more burst-proof, as recommended in Don Ross's "Rubber Powered Model Airplanes". When I flew the Skyscraper on The Meadow after my fly-off attempt last year, a partially wound motor broke and disappeared into the motor tube. I managed to remove it using a long wire hook, but in so doing must have torn the Tyvek – which is quite fibrous. I loaded a new motor and had a couple more flights with relatively few turns but found it impossible to remove the motor at the end of the day's flying.

When I got home, I managed to pull most of the motor out of the motor tube, but found that it had been inextricably wound up with the torn Tyvek. Sadly, the only solution was to destroy the motor tube to get everything out, so my next motor tube will probably be lined with tissue. That'll save a few grams….

Give it a go?...

Oxford MFC's Cartoon Foamie Fighter Challenge 2024 – David Lovegrove

A while ago, a few members of the Committee were tasked with devising a proposal for a Club Group Build to take place later this year. I'm sure you'll remember last year's highly successful Foamie Challenge which was a lot of fun and produced several original designs. This suggested a great place to start.

Cheap and cheerful wallfoam is a such a useful medium for experimentation that it seemed almost perverse to ignore its possibilities. And the chances are that many of you will have plenty left over from the rolls you bought, just begging to be used up!

This time though, instead of allowing free rein to concoct/design your own flying(?) model, the guys are asking you to work with the idea of a 'cartoon-scale' WW2 fighter. The choice of subjects is huge - Axis or Allied, USAF, RAF, French, German, Russian or whatever takes your fancy. And don't forget those radical 'conceptual' German and Japanese fighters towards the end of WW2, few of which ever got further than the drawing board.

These now-iconic aircraft will lend themselves well to rendition in wallfoam. The only missing ingredient is your imagination. The simple rules appear in the full list below.

The finish is your choice: bare white foam or a full camo scheme – it's up to you. The main aim is to demonstrate airworthiness. But if you do go to the trouble of a full 'camo' scheme, your enterprise will certainly be rewarded. And you never know; your masterpiece could end up reproduced in the hallowed pages of the Aero Modeller!

But, as we've said, there will be RULES. Notionally, these are:

- The model must represent a genuine WW2 warbird, regardless of whether it ever entered service.
- The fuselage can be a simple rectangular section.
- The fuselage must be no less than 17 mm wide at its widest point.
- "Cartoon" outline shapes are expected and are acceptable.
- The plan (hand-drawn is OK) must fit onto one A4 sheet of paper. If there is no plan, then the entrant must demonstrate to the judges that it would be possible to fit the plan onto the specified paper.
- The model must use either;
    - The approved propellor (we may be able to supply a few of these), or
    - A propeller from the previous foamie challenge, or
    - A scraped plastic propeller (cut down if necessary) of no more than 4" diameter.
- At least 50% of the construction must be from wall Insulation foam.

The more devious amongst you will have spotted that this list contains a few loopholes. In the usual light-hearted spirit of our indoor comps, to add to the fun we'll reserve one or two prizes for those who can make the best and most imaginative use of them.

To summarise, the event will be similar to last year's 'Foamie Design Challenge', this time focussing on foamie warbirds built as semi-profile, 'cartoon' scale models. A lot of you have seen models using this technique flying very well, so you'll know they're worth keeping after the event.

We'd like to encourage everyone to come up with their own design, using the construction technique shown on the three example plans shown here. Should inspiration desert you, the

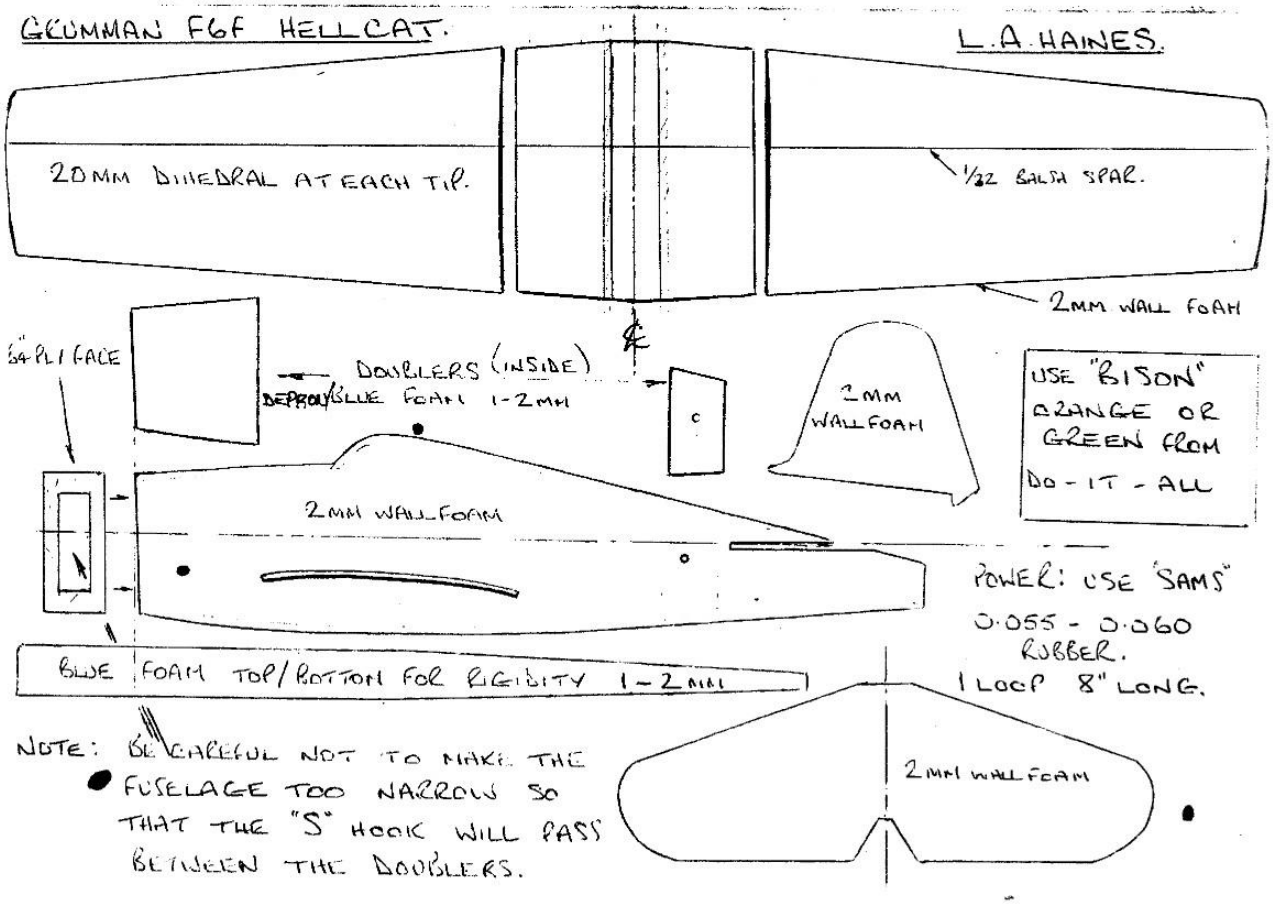
well-proven F6F Hellcat design by OMFC member Lionel Haines (thanks Lionel) is a sure-fire flyer.

We're planning for the **September 2024 Club meeting at Begbroke** to be an early opportunity to get to grips with the construction techniques and might also involve the opportunity to make a prop (the only really taxing bit) from a kit of parts. 'Expert' guidance will be on hand. If time allows, it might also include preparation of the foam pieces and collecting all the other bits and pieces needed.

And to round it all off, a flying evening/mêlée at the **January 2025 Begbroke meeting** will decide the lucky/wily/skilful winners! Flying will be a simple duration event, flying points will the usual Total of Three Flights. Time to start researching your winning entry!...

How to Design Your Own Foamie Warbird – Andy Blackburn

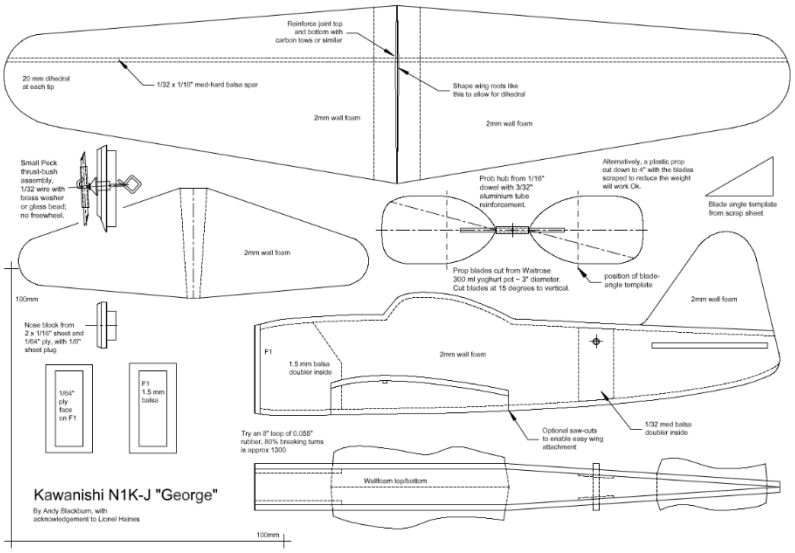
Having designed a couple of foamie warbirds I thought it might be a nice idea to write a few words on how it's done – it really is very straightforward, and the outlines don't have to be dead accurate, all we're looking for is something that captures the essence pf the real aircraft.



All this started with a one-model event for Lionel Haines' foamie F6F Hellcat that was held at Trinity some years ago; however, it was a one-model competition so I thought it might be quite amusing to try and subvert the proceedings…

Kawanishi N1-K "George"

In WW2 the real F6F was sometimes confused with the Kawanishi N1-K "George", so I evolved a devious plan:



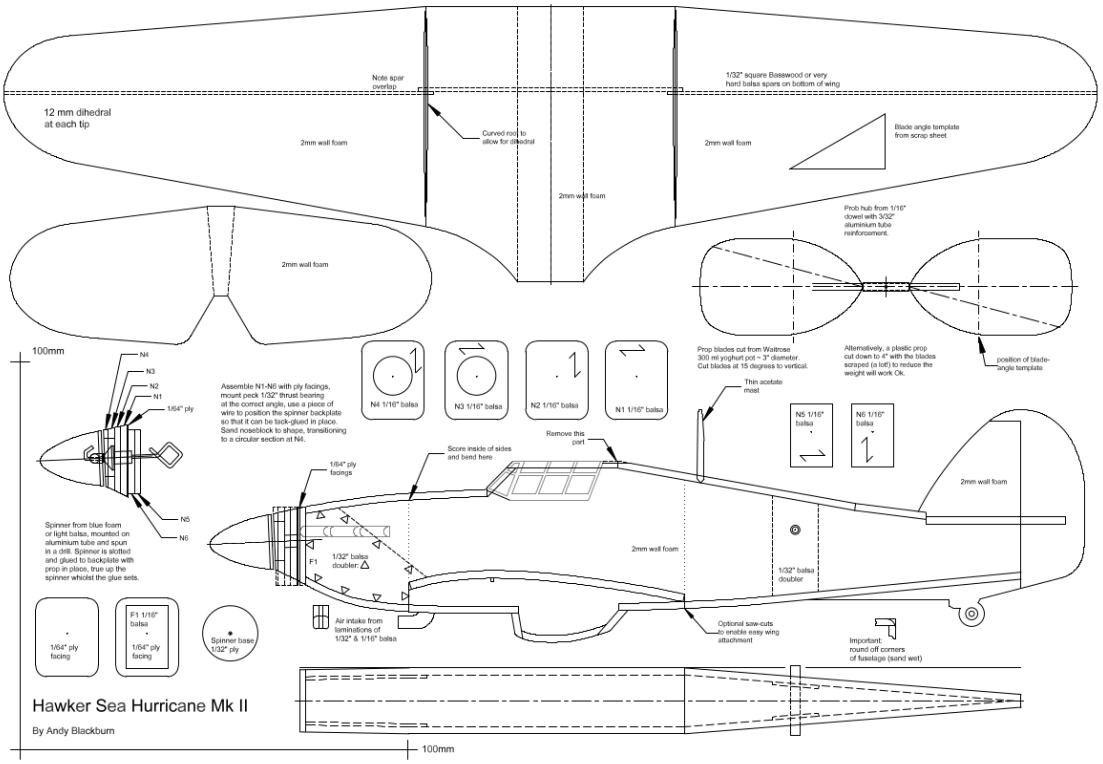
First, draw up a copy of Lionel's F6F plan with the outlines changed to represent a Kawanishi "George" (left).

Second, build the model and swear blind that it was built from Lionel's plan, just not very well (impossible to disprove).

Finally, finish the model in an Authentic Japanese Navy colour scheme and claim that it represented an F6F Hellcat that had been captured and was undergoing evaluation (also impossible to disprove).

In the event that the model was excluded I was going to make a song and dance about it, with a pre-prepared speech including phrases such as "manifestly unfair" and "travesty of justice"... It would have been interesting to see whether I could have got away with it, but fate intervened, and I didn't get the model finished. But David Lovegrove has built one and it's quite impressive.

Hawker Hurricane Mk II



I recently drew up this Hawker Hurricane plan to the same basic principles; as it's an inline engine with a spinner, it's a little more complex. But it looks nice, and David is building one (can't stop himself).

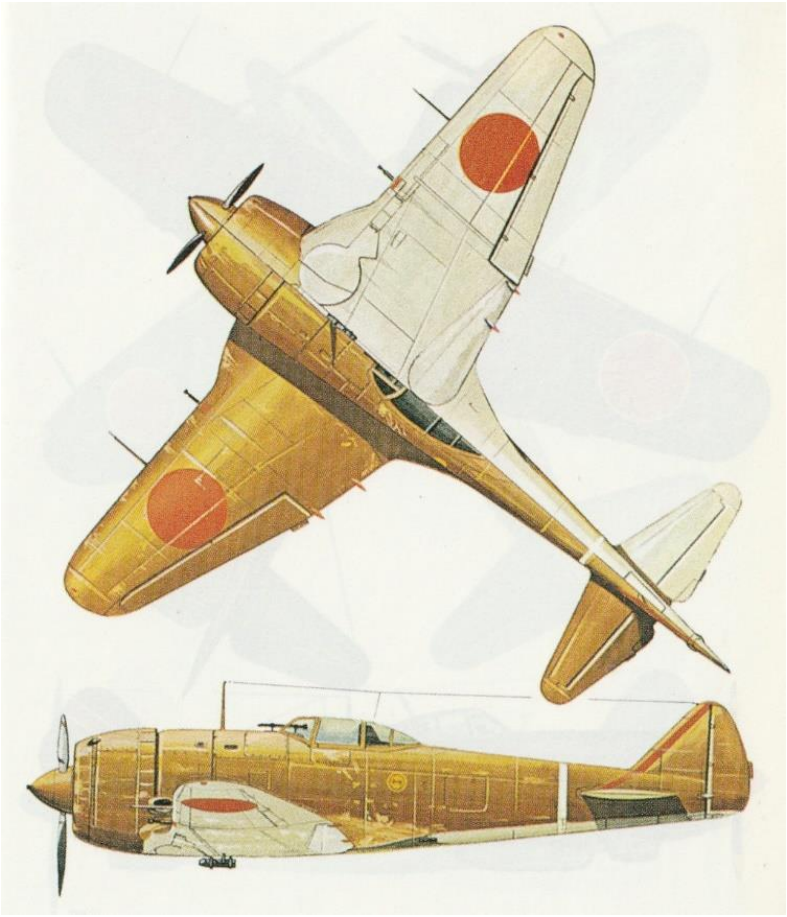
Doing It Yourself

Drawing up these things is really easy because you usually don't need to worry about finding a front view – if built to the A4 sheet size, models always get 20 mm of dihedral each side unless they have a noticeably flat wing (e.g. Hawker Hurricane), in which case they get 12 mm. The fuselage top view is always 17 mm wide, tapering behind the wing. The wall foam itself is a little less than 2 mm thick, I usually use 1.8 mm in TurboCAD and that seems to work OK.

The design process is very simple; assuming that we're using pencil and paper (experienced CAD users will be familiar with duplicating this process electronically):

1. Choose the Subject

Find a drawing or colour 3-view of a subject that you like; there are loads of scale drawings at https://drawingdatabase.com/category/aircraft/air-force/fighter/ but the drawing below is from the well-known series of books by Kenneth Munson (in this case, "Fighters 1939-45") originally published by Blandford.



Don't worry too much about the fin and tailplane sizes because they'll be enlarged to a decent size anyway – it's only cartoon scale. Radial-engined aircraft are easier and simpler. Let's assume that we're going to do a Nakajima Ki-44 Shoki (drawing on left).

2. Make a Copy to the right Size

Print the drawing, measure the wingspan and then re-print at the correct size – you want a wingspan of about 11" (281 mm) to make it fit onto A4 paper if you're showing both left and right wings together, so if the span of the drawing is 104 mm, you need to print it out at 281/104 = 2.70x or 270%

3. Trace the Outline and Adjust as Necessary

Tape down the drawing and tape some tracing paper over the top, trace the outlines and any important areas such as the canopy framing, re-positioning the tracing paper as necessary. Stop at this point and have a good look at the tail surfaces – are they a bit small compared to the available plans (Hellcat/N1-K "George"/Hurricane)? If so (as in this case), re-draw the outlines until they look about the same size as the reference designs (you could use the enlargement facility on your scanner). If you're unsure what to do about the fin, leave it alone. For aircraft such as this Ki-44 which has a titchy tiny fin, enlarge it by 50% of the tailplane enlargement (so if the tailplane was enlarged by say 30%, enlarge the fin by 15%).

4. Add the flying surfaces in Side View

Copy the wing section from one of the existing plans, enlarge/reduce using your copier and add it to the side view, making sure that it has +2.5 degrees incidence. Tailplanes should be set at 0 degrees. The wing might need moving up a little bit so that it doesn't interfere with the foam sheeting on the bottom of the fuselage.

5. Finish off with Details

Finish off with the top and bottom sheeting, doublers, noseblock, prop assembly, and so on, and you're almost finished – don't forget the downthrust. Make up some cardboard templates from a cereal packet for cutting foam to shape, and you're done.

6. Test flying

This is one model that you ***must*** test-glide, because the wing incidence and decalage is already set, so the safest way of getting a good set-up is to test-glide the thing in the living-room. You might find it easier to remove the noseblock and adjust the glide until it floats nicely, then find out where the c.g. is by taping a couple of short lengths of cocktail stick to the wing top surface and balancing it in the fingers upside-down. Then install the rubber and prop and, wind some turns on to stop the motor flopping around and messing things up, pin the prop in place and then balance in the same place. Then you can wind on a few turns and see what it does.

Keil Kraft Caprice Recollections – Andrew Longhurst

This is my new KK Caprice; "the compact glider that was too large for A1 comps but with A2 performance" is what we knew it as when I was 13 and a proud member of Feltham and

District. That district went as far as Richmond Park when we congregated for our annual free flight competition as we were primarily a C/L club. I would take a glider or two by bus from my home in Hounslow and walk quite a way before I got to the part where we flew. I can't remember if I did very well with the gliders, but some things happen which are unforgettable.

On that day John, one of the senior members who could build really well bought over his new KK Caprice. He also brought his friend who was not terribly interested in model aircraft but was enjoying a day in the sunshine. There was something remarkable about his friend. 5ft 6ins high but also 5ft 6ins in girth with arms down to his knees, and he wasn't fat. Us juniors decided he couldn't be a Neanderthal because he had sandy hair and was very friendly!

He was, we were told, a member of the British athletics team and went all over the world chucking javelins about. Well, it happened that John ran a bit too fast and busted the wing on the Caprice, the denuded fuselage arced into some soft turf where it remained sticking up like a fence post. The bits were retrieved and clearly the balsa wing spars provided in the kit were too weak, but the fuselage and tail were OK. However, us juniors wanted a demo of how far John's fuselage might go if his friend were to pretend it was a javelin. Eventually John said he didn't mind, and his friend grasped the fuselage, took two steps and launched it. But instead of going for distance, perhaps for safety reasons, he went for height heaving it almost vertically. I had never seen a human being expend such enormous force before and never will again I expect. The fuselage went up and up to an impossible height upon which it turned over and came down and was just about to pass the sound barrier when it hit mother earth. This time the fuselage snapped at the cockpit on impact resulting in more damage to John's new Caprice, only the tailplane of which was now intact!

Letters to the Editor

Dear Editor,

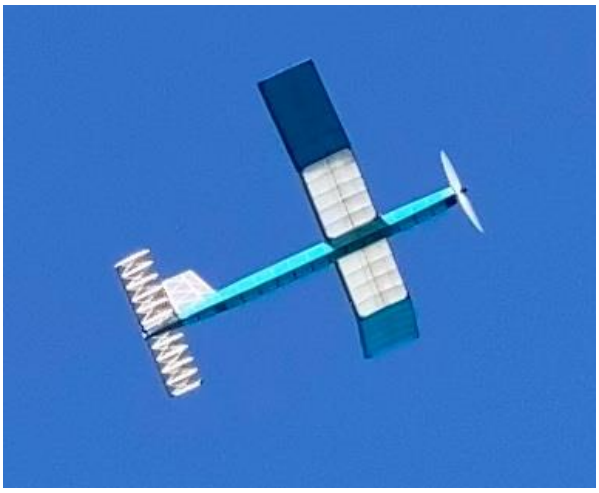
The Christmas Meadow Flyer sure was a bumper edition.

I would like to support the idea of a KK Dolphin. RC or otherwise. Having had a long spell flying RC gliders in the past (as evidenced by my second recent photo to you), I have to agree, you really need a wing section that penetrates. Eppler 193 or similar. However, from a bungee launch it's a choice between circling downwind in the good air that you have chosen, or just staying near base for an easy retrieve. The Dolphin has been on my wish list for a while. BMK mini-Rx, Lipo and 2g servo with leads and connectors come out at less than 10 g which I guess might be the nose weight required. That's only a few grams more than RDT or Tomy timer systems.

Regards
Jim Paton

[We're going to run an experimental competition for Dolphins and the like on Cloud Tramp day (Saturday 3rd August), it's a fun-fly day as well so please turn up and either watch or take part; it doesn't take long to build a Dolphin – Ed.]

A P30 Roller Coaster – Simon Richardson



JGP30 climbing away for another max.

I wrote about flying the Sweet P30 model in the Jan 2022 Meadow Flyer. It is a good design and my model often flies over two minutes, but it is overweight at 50g and not consistent. So based on a recommendation by Andrew Longhurst I built a JGP30 over the winter of 2021/22. This still came in heavy at 47g, but it has a wider chord, so the wing loading is reduced by 25% compared to the Sweet P30.

Performance was a step change, and the JGP30 consistently flies over two minutes. It is tolerant of my air picking mistakes - any hint of lift and it is up and away. My first ever competition was the 2022 Nationals, Inexperience meant I launched into very poor air on the first flight, but the other two flights were maxes which was good enough for third place.

JGP30 with Paisley Trophy. A corny photo I know, but I could not resist showing off the silverware!

I entered several more competitions that summer and the high point was winning the Paisley Trophy at Newbigging in September. This is a highlight of the Scottish free flight calendar - an open event where all classes compete together on equal terms. The JGP30 was a better

match for the blustery conditions than the open rubber, power, electric and A2 gliders competing that day.

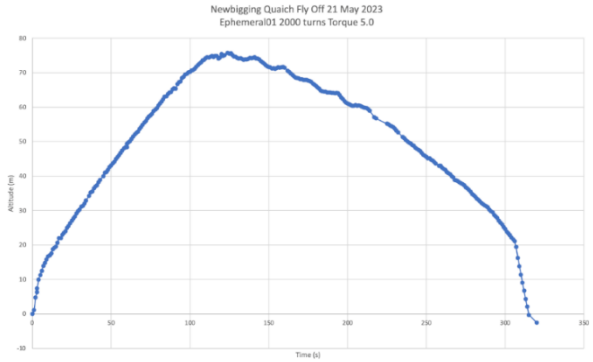
Buoyed by this success, my plan for 2022/23 winter was to build a P30 down to the 40g minimum weight. I kept the JGP30 layout but redesigned and slimmed down the structure and fuselage. Although it's not strictly an own design, I decided to name the model Ephemeral. The transitory or fleeting meaning of the word seems particularly appropriate for a P30.

Building a P30 to 40g is quite a challenge, especially with a large wing area to cover. I also wanted to include an RDT and a GPS tracker. After building four fuselages, three tailplanes, three fins and two wings I finally ended up with Ephemeral01a which weighs in at 40.5g. I had to substitute a band burner timer for the RDT. It was a steep learning curve where every 0.1g had to be accounted for.

Ephemeral01a. Made up from discarded components from Ephemeral01. It's a bit untidy with several repairs, but my best performing P30 to date!

The spring of 2023 was poor, especially in Scotland, and I only managed one short trimming session. On a rare calm evening in Aberdeen, I was achieving consistent flights of a minute on one-third turns but it was so cold that the band burner would not cut the DT bands. I took Ephemeral01a down South for the OMFC duration event on Coronation Day, but conditions were not good enough for trimming on the Meadow beforehand, and then of course, the weather on the day was poor and the event was sensibly postponed.

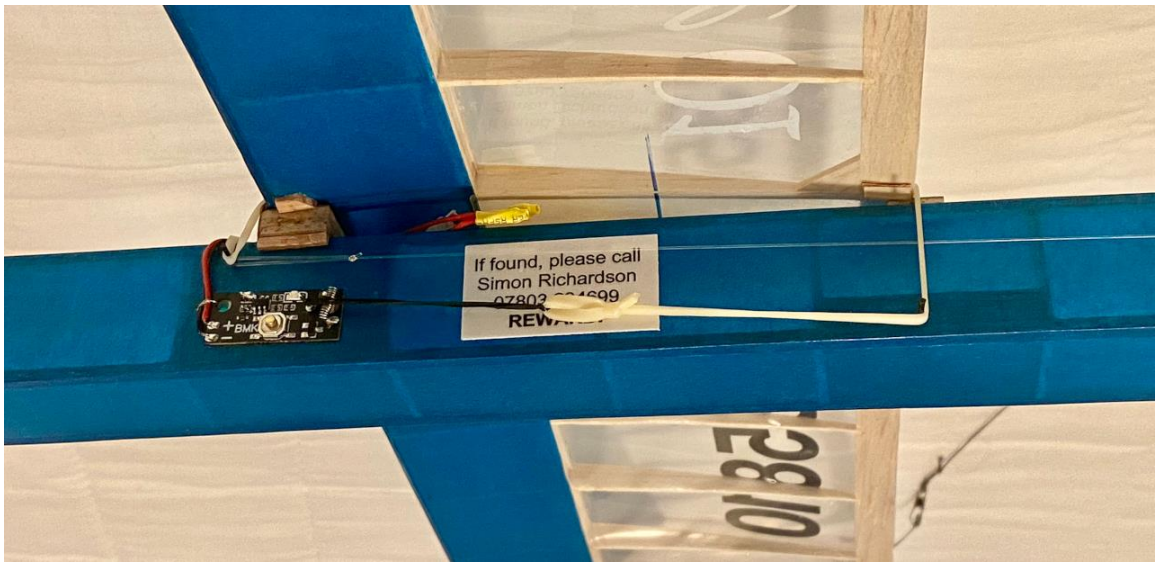
Back in Scotland, I entered the Quaich Cup at Newbigging. I'd left E01a down South but made up Ephemeral01 from cast off E01a components (weight 45g with RDT). The Quaich is another all-in open event that requires successive maxes of 1:30, 2:00 and 2:30 which provided an ideal opportunity to trim E01, and I made the fly off along with three others. The air had become very calm and two open rubber models were first away with flights both over four minutes. Chris Edge then flew his E36 which recorded 5:15. I changed the motor to 4x1/8, wound 2000 turns and launched Ephemeral01 for a magnificent flight. I RDT'd to win the event with a time of 5:17, but the model was well on its way to six minutes.



Altitude log for Ephemeral01a from Quaich Fly Off at Newbigging May 2023. Note 2min motor run to altitude of 70m and RDT at 20m for total time of 317s.

I hadn't met Chris before and he took great interest in my model and its pop off wing DT. Chris coached me carefully on the features of the BMK GPS system, so I felt well prepared for the Nationals. I had two well-trimmed models - my trusty JGP30 and Ephemeral01 that had performed spectacularly well. I spent a full day preparing for the competition, making up rubber motors and sorting out model boxes for the flight from Aberdeen to Heathrow. I even colour coded the components so I wouldn't mix them up in the heat of competition. At Newbigging, a power model had spectacularly crashed into a barbed wire fence when the wrong tailplane was fitted.

On the morning of the Nats at North Luffenham the winds were a persistent 10 mph with gusts, so I decided to start with the tried and tested JGP30. I don't normally test fly at the start of a competition, but I decided to do so this time. It was a good decision as the model was down in under a minute - the poorest flight the JGP30 had ever made! I was perplexed, but after a couple of more test flights I (incorrectly) traced the problem to weak rubber bands holding down the tailplane.



Ephemeral01 band burner and pop off wing DT. The DT can also be set to standard tailplane DT mode by using monofilament line secured to forward wing dowel.

It was still not properly on trim for the first competition flight and power spiralled at the start, but the faithful JGP30 picked up a thermal and was soon on its way to a clear max. Unfortunately, the tip up tail DT made no difference to its upward progress and the thermal sucked it skyward to an altitude of over 300m. By this time, it was well clear of the airfield, but I was tracking the GPS so was confident I wouldn't lose it.

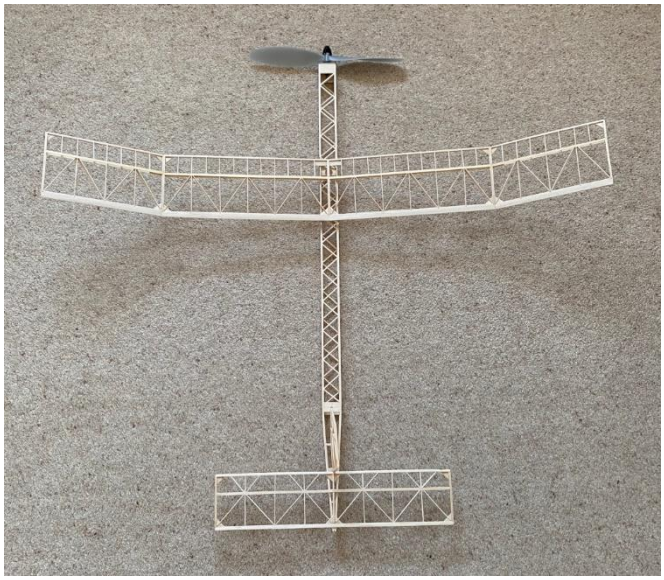
After six minutes it started to descend but then the GPS signal abruptly stopped. I nearly panicked but carefully preserved the data and took them to Chris who predicted its flight path and kindly worked out a retrieval strategy for me. This involved driving off the airfield, and as time was ticking by, I flew Ephemeral01 for my second flight before the long retrieve. Once again there was an unwelcome power spiral, but E01 picked up good air for an easy max and I

collected it on my way out of the airfield. I recovered the JGP30 from the exact field that Chris predicted - that's experience for you!

Although I had two maxes on the board, I'd been very fortunate as both models were not performing as they should. The day was moving on and I'd already lost a lot of time. My third flight was with the JGP30, but the wind had changed direction, and the air was unpredictable. In hindsight, I should have waited. Once again there was a power spiral but luckily the model hit good air and climbed well. But then my luck ran out. It hit a downdraft, rapidly lost height, and disappeared behind a tree to record 1:52. At this point, five others were on their way to full houses, but in the event two failed to complete, another did a poorer last flight than mine, so I scraped through into third place. Chris appeared even more disappointed me - he'd already written his Aeromodeller report with the fly off contenders in his head! The event was won by David Norwood from North Wales. I was delighted for David who had put a lot of thought and preparation into his model for a well-deserved win.

On the way home I realised why the models were not performing correctly. When I colour coded the flying surfaces I'd put a circular self-adhesive paper dot on the top of the tail plane mount. This increased the positive incidence of the tail plane just enough to impact the early, high-speed part of the climb. It was a tiny (0.12mm) but critical mistake. And it was compounded by making the same change simultaneously to both models. Doh!

The rest of the summer was taken up by other things, but the OMFC P30 Postal Competition provided welcome focus for the autumn. Achieving three 1:30 flights for the first round was reasonably straightforward, but the fly off period of 1 November to 10 December was a significant challenge, especially up in Scotland! Fortunately, I lucked out in Hazelhead Park on an unexpectedly calm November afternoon and recorded my flights with E01 in a 40-minute period just before nightfall. It was damp and only 3 deg (there was frost on the grass) so condensation quickly formed on the model and it never climbed very high, but it lazily circled at about 15m altitude with little drift.



Ephemeral02 bare structure. Airframe weight (without prop) is 15.8g.

So, the challenge this winter has been to build a P30 complete with RDT and GPS down to the 40g minimum weight. I'm a slow builder, but after three fuselages and two wings, Ephemeral02 is taking shape. It has a smaller chord than the E01 series and a thinner wing section, so hopefully it will climb higher and perform better in turbulent conditions. The airframe (without prop) weighs just under 16g, so with some careful covering it should just squeeze in at 40g.

Fingers crossed for some good free flight weather this summer and a fun P30 OMFC competition on 27 April. Many thanks to Chris, Andy and Gary for their hard work organising the competitions and events.

Winter Builds – Dave King, Derek Knight, Alan Smith

I'm pleased to report that a couple of people have shared news of their feverish winter activity at the building board.

Dave King

Peanut Chambermaid

From Volare Products. This is essentially a reduced dime scale model. The notes on the plan still give the washout measurements for the dimer and need halving for the peanut.

Ideally the strip wood etc should be 1/20 but as I didn't have any (then) I used light 1/16. The build is the same as the dime scale version in that the wing needs to be built, covered and shrunk before fixing to the fuselage which then has the top stringers added. The model is finished in a sort of buttercup yellow which, apparently, matches the fabric remnant from the original aircraft. Registration and race numbers are printed onto the tissue prior to covering.

Final weight without rubber is 19.35 g which is a bit heavy for an indoor peanut but bear in mind the fuselage is 18" long so a fair amount of rubber can go in for outdoor use.

Zlin 24

The Zlin was built from an Outerzone Plan for an RC slope soarer but reduced to 36” and is a first attempt at a free flight scale glider.

A similar construction to the RC version was followed for the fuselage but obviously using thinner wood. The wing was built without leading edge sheeting, but I did add 1/16” wide Carbon Fibre cap strip along the bottom of the spar. Probably not necessary but just in case I get enthusiastic in stretching back the hi-start.

The wing was built in 2 halves for ease of transport and has a 16swg joiner with aluminium tubes in the wings and 1.5mm carbon fibre tube locating pins to the rear of the wing. The radio DT is operated by a band burner with the LiPo and Rx in the cockpit.

Two tow hooks have been used both offset to the right to enable a turn to be used when off the line (hopefully). Total weight is 67 g including 6 g of lead shot in the hollow nose block. As the cg is set for a slope soarer, as per plan, I am hopeful that some lead can be removed once flight testing takes place.

Three Nites P30

The kit, again, was a laser cut short kit from Volare Products, and took my fancy as it is a bit unusual in that the wing has no dihedral but uses end plates for lateral stability.

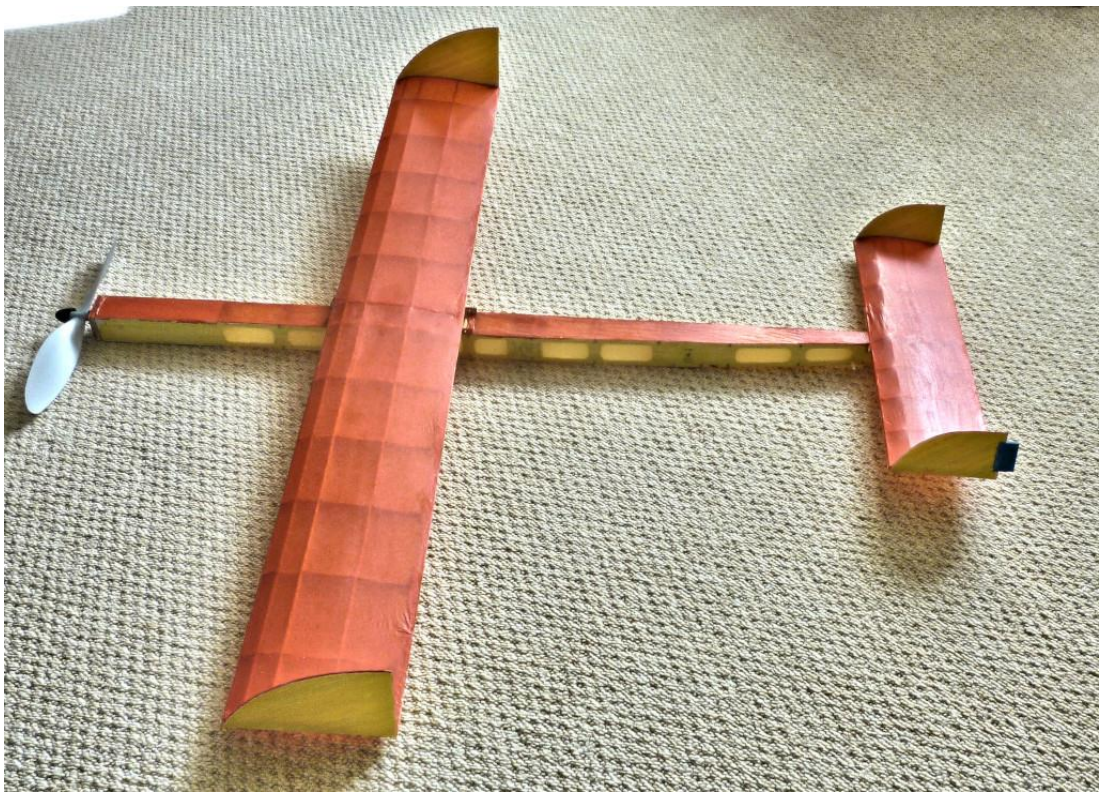
The fuselage sides are from 1/16 sheet with lightening holes, it’s built in two parts and is joined together by a dovetail joint with a strengthening doubler over the joint.

Top and bottom at the front end are sheeted with 1/16 cross pieces along the rest of the fuselage. The method makes for a very easy construction. The wing has a flat-bottomed section with 3/32” main spars top and bottom and leading edge plus 2 x 1/16” spars on the top surface. Tailplane is conventional flat section with twin fins.

The wing is held on a shallow pylon with rubber bands, and it is suggested in the instructions that the pylon is held to the fuselage in a similar way and moved back or forth until the glide is satisfactory and only then glued in place.

A radio DT with a band burner is installed. I had originally intended to use a 1.7gm servo in the pylon but the pylon height is just not quite enough. I didn't want to alter the design by increasing its height so went with the band burner. The fuselage under the pylon is sheeted under the cross pieces to give additional room for the LiPo and Rx.

It was going to be covered with tissue over mylar. I started with the fuselage and made my usual hash of this method and so the wing and tailplane are just tissue covered.



I am trying the Gizmo P30 prop assembly as the prop itself seems quite good and thrust adjustment will be easy. Weights are: Fuselage 14.20 g, Wing 15.95 g, Tail 5.29 g and Prop assembly 10.35 g. Added to that will be band burner, Rx and LiPo so a total weight before rubber of about 47g, fairly close to the minimum required weight of 40 g.

Derek Knight

VMC KK Cessna 170

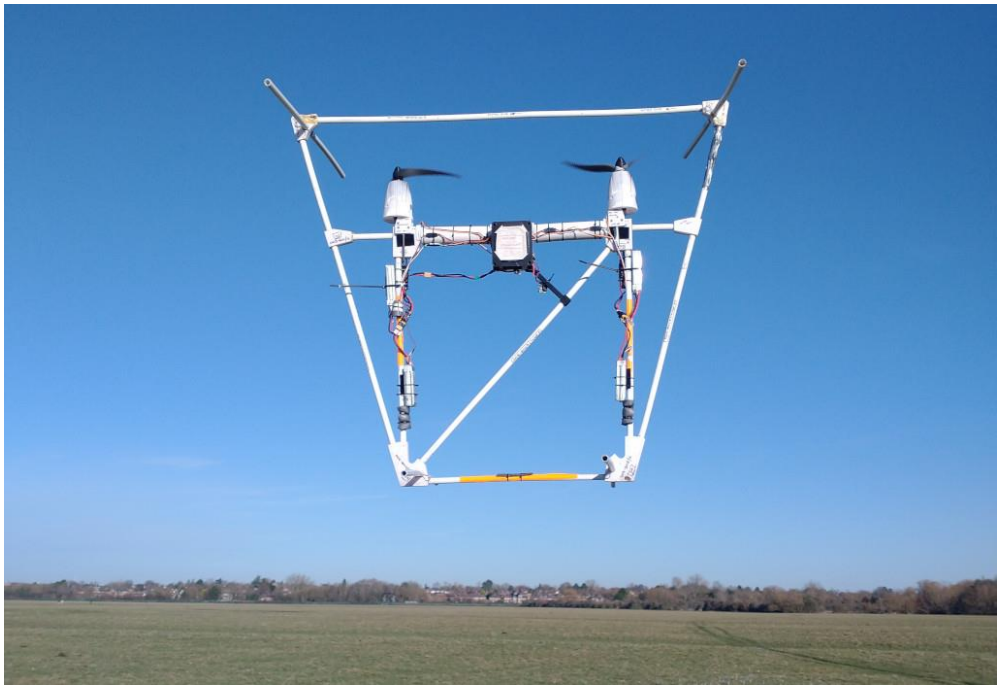
Laser-cut Piper Super cruiser

KK Percival Provost

The Cessna 170 is the VMC kit but modified with a Dural U/C, still got scraps left over from being in the aircraft industry 60+ years ago! It is now covered and waiting colour dope when I sort out my cellulose and get improved weather conditions. It will be powered by the KP 02 with a flexible drive to an adjustable (side & down thrust) nose button.

The Provost is the Keil Kraft kit and the Piper Super Cruiser is my first attempt at Laser cutting, it took loads of time digitising the drawing and a stack of waste balsa to get this far, hope to be faster on my next attempt. Flew the Piper at Burgess Hill a week or so ago and quite pleased with the result.

Alan Smith



Here’s a photo of the flying bedstead in the air over Port Meadow this afternoon. It was stable enough to just hang there on its own whilst I took the photo. I was very pleased with this. Somewhat smug, in fact. However, about 10 minutes later a minor structural failure meant the end of play so I was lucky! No significant damage, fortunately.

The bedstead acts as a test bed for the engine installation on a flying wing project so I've also attached a photo of that. It's a work in progress at the moment - the photo was from a trial assembly including the tripod that I intend to launch it from. I hope to have the flying wing itself hovering as soon as the spring weather arrives.

Club And Other Local events, 2024

Spring Duration Competition & Fun-Fly Flyer

Forthcoming OFMAC Meetings – Ian Melville

OFMAC

2023-2024 Season Dates

Indoor Model Flying

Funfly for all. Freeflight, Rubber, CO2, Electric

Venue:
Henley Leisure Centre
Gillotts Lane
Henley-on-Thames
Oxfordshire
RG9 1PA

Dates:
Sundays 10:30 to 16:30
1st October 2023
5th November 2023
3rd December 2023
7th January 2024
4th February 2024
3rd March 2024
7th April 2024
5th May 2024
2nd June 2024

Contact:
Ian Melville
07545158177
ofmac@redkite.aero

Club Meetings at Begbroke

Wednesday 20 March 2024 Club Night: Guest Speaker, Tony Gaunt, 'The History and Development of the Martin Baker Company'. Martin Baker of course are famous for their ejector seats so this promises to be an interesting evening. Feel free to bring a guest along so we have some good numbers for this.

Wednesday 17 April 2024 Club Night: Fun flying on the Begbroke Field

Wednesday 15 May 2024 Club Night: Fun flying on the Begbroke Field

Wednesday 19 June 2024 Club Night: Fun flying on the Begbroke Field

Competitions on Port Meadow for 2024

Definitions:

The "Peterborough" bungee = 7.5m of 1/8 rubber and 22.5m of line.
TOTF = Total of Three Flights + Fly-off if required

Spring Duration + Fun-fly (Saturday 27 April)
P-30: 30" max span & length, 40g min empty, 10g motor, max 9.5" plastic prop. TOTF.
E20: 20" max span & length. Any motor, battery, and timer. Max motor run 8 secs. Score is TOTF.
36" Glider: Any glider max 36" span launched by 30m (Peterborough) Hi-Start bungee. TOTF.
Frog Senior: Duration competition for Frog Senior models (see http://www.houseoffrog.co.uk), no bonuses, TOTF.
Rubber Scale Duration: Simple TOTF duration competition for rubber scale models + bonuses, no flight or static judging. Kit and Open classes.

Midsummer Scale (open to BMFA members) + Fun-fly (Saturday 13 July)
Scale Glider: TOTF duration, launched by 30m (Peterborough) Hi-Start bungee. No static judging.
Rubber Scale Duration: Simple TOTF duration competition for rubber scale models + bonuses, no flight or static judging. Kit and Open classes.
Flying Only: IC/CO2/Electric/rubber, Flying Only rules (judged flight, no static judging).

MIMLOCT Cloud Tramp & Fun Fly + RC Assist Glider + Fun-Fly (Saturday 3 August)
A fun-fly afternoon on the meadow with Cloud Tramp mass launch @ 5.00 PM followed by the Hi-Start RC Assist FF Glider competition (KK Dolphins), 5.30 to 7.00.

Autumn Duration + Fun-fly (Saturday 14 September)
Vintage & Classic Glider: Two classes (55" Span Open and A1) for kits and designs first published pre-1961, launched by either 50 m Hi-Start bungee or towline. Re-issued kits (e.g. Spencer Willis Aiglet A1, Ripmax KK Caprice & Invader) are allowed. TOTF.
Coupe D'Hiver: Standard coupe - 70g empty, 10g motor, TOTF.
Vintage & Classic British Rubber Kit Revival: 30"-34" British rubber kits pre-1961, also open to re-issued Ripmax/KK kits. TOTF.
Catapult Glider (e.g. Oxcat): max 2 gm rubber (e.g. 12" x 1/8") on a 6" max handle., 9 flights, best **6** to count.
Rubber Scale Duration: Simple TOTF duration competition for rubber scale models + bonuses, no flight or static judging. Kit and Open classes.

The **2024 Under 25" Vintage Cabin Postal Competition** will be run in three Rounds.
Round 1 (Spring) runs from 1st May to 30th June.
Round 2 (Summer) runs from 1st July to 31st August.
Round 3 (Autumn) runs from 1st September to 31st October.
For full details see the Club website https://oxfordmfc.bmfa.uk/2022-under-25-vintage-rubber-postal/. In case of questions/issues, the Virtual CD is Andy Blackburn.

Contributions to the Newsletter

We're always looking for contributions to the newsletter and almost anything relating to aeromodelling will be most welcome. Please let me have your contributions by the last week in May for inclusion in the Summer 2024 newsletter. Send them to: Andy Blackburn at *newsletter@oxfordmfc.bmfa.uk.*

If submitting lots of photographs (which we all enjoy) it's best to send the files separately, using www.wetransfer.com. However, anything less than 20 MB is usually OK on email.

Tailpiece

Laurie Syrjaniemi showing how it's done [Laurie Syrjaniemi photo]