



## The Journal of Wessex Soaring Association. February 2022

## From the Editor

This seems to have become a special small model edition of Glidepath as both the main articles are about models of limited size. Ian Duff writes about the new competition class of F5k, a sort of electric launch chuckie, while Dave Camp describes the completion and test flying of his Wisel Light S, a 940mm wing span flying wing. Though they have more limited performance, smaller models have a number of advantages in terms of cost, easy of transport and storage. As they say, all nice things come in small packages.

#### From the Chair

At the start of 2022 it seems like a return to some sort of normality is steadily on the way, hopefully no more lockdowns !

Planning ahead for the new season, remember it is a good idea to check through your gear, cycle NiMh batteries, make sure Lipos are on storage voltage and generally check airframes etc.

#### Plans for 2022

Slope fly-ins are likely to continue as the first Sat/Sun in the month with the second Sat/Sun as fall back. I will be sorting out the calendar for this year's E Soaring events based on the usual 3<sup>rd</sup> Sunday with the 4<sup>th</sup> Sunday as fall back, starting on May 22<sup>nd</sup> (*though that is the 4<sup>th</sup> Sunday, Ed*) with the 29<sup>th</sup> as fall-back. I also plan to hold a **pre-season meeting** at the Horton Inn on **TUESDAY 15<sup>th</sup> MARCH**.

#### "Winter" Warmer

It looks like it MAY be possible to hold something later in the year (Summer/Autumn) so watch this space !

#### Slope Tour

I am planning to run this year's tour on **SUNDAY** 6<sup>th</sup> **MARCH** this event is mainly aimed at new members, but anyone is welcome to tag along. If you are interested please email me at <u>martinburr9@gmail.com</u> and I will add you to my list.

#### Slopeside by Pete Carpenter

As far as I am aware there is no change regarding the Oxo/Swallowcliffe situation. There is also still no change with Stoney Down so for the time being we can continue there as we have done. The situation regarding the other slopes is shown below. Please use your own common sense and apply the countryside rules. Therefore if things look different at a site, particularly if it involves crops or livestock, please do not enter and contact me on <u>pete.carpenter12@gmail.com</u> or 01722 328728.

1) Winklebury (W to NE wind) - Available.

2) Norrington Down (S to SW wind) - Available.

3) Donkey Valley (SE wind) - Available.

4) Swallowcliffe (NW to NNE wind) - Available but have to park on track

5) Quarry (W to WNW wind) - Available. Access to the slope must be via the Stony Down / Berwick St John route only. Launching and landing from the slope face is OK, but the slope is perfectly flyable from the Berwick St John field. You may encounter some paragliders as they also have permission from the farmer to fly there. In this case it is best to have a friendly chat with them and see if you can agree separate airspaces for models and paragliders.

6) Oxo (WNW to NW wind) - Available but have to park on track

- 7) Horses/Barbara's Field (WNW to NW wind):- Available.
- 8) Daltons 1&2 (NW to NNW wind) Available.
- 9) Crockerton (NW to NNW wind) Available subject to rules in slope guide.
- 10) Death Valley (SW wind) Not Available.

11) Berwick St John (SW wind), Stony Down (ESE to SE wind) - Available. Code on gate padlock is 5823 . Please do not over fly the parked cars on your landing approach at Stony Down.

12) East Bowl (NEE to E wind) - Available. There is a gate with a keycode, which is 7850. The shepherd is Mr.Fletcher (red Toyota pick-up) and he has asked that anyone parking on the track put a little note on the dashboard of their car, letting him know that they are a WSA member.

There are also a number of public slope sites, particularly in the Purbecks that anybody can fly form. A list of these is maintained on <u>Christchurch Club's website</u> so please have a look there for details.

## Flat Field Update

- 1. The field number to be used is determined by the farmer to suit his activities and is liable to change periodically.
- The current chosen field is shown by the number on the hook located on the front of the club (green) cupboard in the yard opposite the Farm House. <u>Leave this where it is.</u> NB, after a period of strong winds the number may be blown off its hook and might then be found nearby on the ground.
- 3. The location of the fields is shown on the numbered map to be found in the club cupboard.
- 4. If you are the first to arrive, take out the red sign from inside the cupboard which reads (WSA ON SITE) and slip this into the grooved slot on the front of the club cupboard.
- 5. On competition days take out the required equipment; tapes, cones etc. and take to the flying field.
- 6. After the flying is finished return any used equipment to the club cupboard and remove the "WSA ON SITE" red notice and put back in the cupboard.

# Ensure that the field number remains where it is, hooked to the front of the club cupboard.

Be aware of the field condition, e.g. after rain. Do NOT leave wheel spin marks. If in doubt, park off the lane outside the field. Leave space for farm traffic.

Be aware of footpaths across the fields, Do not launch if walkers are on the paths. Do not launch if horse riders are nearby.

No low flying over power lines. No flying over farm buildings and the cottage, AT ANY HEIGHT, or immediately upwind of the farm complex.

Fly SAFELY at all times. Especially launching and landing. Do not launch over cars and do not approach a landing over other flyers, fly a proper circuit.

Report any problems to the flat field rep, Doug Bowmann.

## The Next Big Thing: Small things in 2022 by lan Duff

Well, if you immediately understood the enigmatic title of this piece you are certainly a lot smarter than me. However, if it caught your attention and has encouraged you to read what follows then it will have achieved its purpose.

I think we are on the cusp of an exciting period in the development of small electric launch gliders and I expect we will see an increasing number of new high performance, full house, e-launch models being offered in 2022. By small, I mean 1.5m span or less. With the development, and now formal recognition by the FAI of the F5k competition class of glider, a number of manufacturers of chuckies (F3k gliders) immediately started to offer an electric motor fuselage for their existing 1.5m chuckies last year. However, and here is the good news for club flyers, the clever people behind the development of chuckies have already recognised that the modern thin F3k wing is both over engineered for F5k and optimised for high speed/low drag launching rather than out and out soaring.

What we are now seeing for 2022 is a new generation of 4 to 6 servo 1.5m composite model gliders utilising the light weight construction methods of the F3k model but with wing plan and wing sections purposely optimised towards e-launch lightweight soaring (e.g. larger wing area, thicker wing sections). With the F5k configuration not being so focussed as in F3k expect to see a range of easier to fly models. The weight of 2022 model now offered in e-launch configuration ranges from about 260g to 300g depending on how 'ding proof' you want the model. Those quoted weights are an all-up ready to fly weight ! With the lighter stress loads on the airframe of F5k , manufacturers can now offer 2 and 3 piece wings and demountable fin and elevators to make transportation a lot easier. I can also see a number of case manufacturers looking at offering hard cases like they do for transporting model helicopters.

In terms of bits and pieces for the new F5k model, Vladimir Models have already put together an 'all in one' ready to fit F5k 'powerset' kit comprising;

- An Outrunner motor
- A Spinner (25mm diameter)
- A Folding carbon prop
- An ESC with built in BEC



The powerset will fit most of the F5k models and runs off a 2 or 3 cell Lipo setup. As the ESC uses Blheli (drone) software, it is both a doddle to programme and offers a wide range of performance tweaks. With Blheli now offering a smartphone app, you can fine turn the ESC down the field between flights and the whole lot together weighs only 34 g. I expect with careful searching you could find the individual components slightly cheaper but as the soldering etc is already done it is a simple instal.



Needless to say, I now have one and am in the throws of fine tuning and learning its flying characteristics. I went for the heavier, more ding proof model weight as it offers a wider performance window in windier conditions (UK conditions) and I cannot see me competing in F5k anytime soon. I just wanted a nice handling model I could enjoy flying down the club field. That said, it flies at around 300g using a 850mAh 2S lipo and that gives me anything up to 5-6 launches. With 2 batteries I reckon that will do me a day's flying. I went for the Armsoar Fury, which is a purposely designed F5k model rather than a modified F3k, for no better reason that it is a good company with a serious F3k pedigree, I loved the look of it and it was available there and then; I just could not resist.



Alternatively, and these are only other two that have especially caught my eye, Vladimir models are offering a polyhedral F5k 6 servo Yoda and Aer-O-Tec have developed a V tail F5k model for 2022 called the Hornet. There are and will be many others, and expect a lot of the more traditional balsa/ built up models to come on the market.

As to the Fury, I am very impressed by it, seriously impressed with the easy handling and soaring performance so much so it will be probably the first model out of the car when I am down the field. That from a 'dyed in the wool' F5j pilot is saying something.

### Wisel Light S – Part 2 By Dave Camp

In the December Glidepath I gave a summary of my progress with the building of the Wisel Light S, a 940mm wing span flying wing from Dane RC. The build time suggested on the manufacturer's web site was about 10 - 15 hours and I think that is probably not far out; I took longer as I wanted to make 2 fuselages/bodies, one electric and one pure glider. Although that did not need a whole load of parts it did need a bit of creativity to adapt from the plan (designed for laser cut parts with intricate interlocking parts) to a simpler style but retaining the same dimensions.

So on to completion and flying. The build of the remainder of the wing progressed really well, everything fitted perfectly and it became a very rigid structure once all the parts were in place. One or two ribs suffered small breaks to the fine webbing due to my mishandling, easily fixed with thin super glue. In fact things went so well I forgot to take pictures of the finished uncovered completed parts! For covering I chose transparent film for the wing, I reckon the nature of the structure and that I had made a pretty reasonable job of assembly, no big globs of glue etc., made a transparent covering an obvious choice. I selected transparent yellow Oralight for the wing and transparent blue for the elevons and fin, while the two fuselage bodies were covered in white Profilm.

Final assembly and balancing gave only a minor issue. As per the plan it needed some lead weight in the nose to balance as stated and I know from experience with flying wings that getting the balance point right is critical; you deviate from the position stated by the designer at one's peril. A small difference on a conventional type of glider will likely make little difference and can normally be coped with on maiden flights, but with a flying wing it is more likely to be unmanageable or even a model breaker. Unfortunately for the pure glider body of my own construction I could not quite squeeze enough lead into the access point. In hindsight I should have either made the nose, say 10mm longer to allow the battery to be further forward, or copied the laser cut parts a lot closer internally. So I ended up taping a small amount of lead to the outside for the maiden flight, also giving a thought that fine tuning may allow the CG to be a few mm aft of the designed point.

For the electric version the main issue was as raised in part one of this article, namely I had not been able to get hold of the specified slim-line Hacker LiPo pack. The Overlander substitute did fit OK with a couple of mm spare in height, but that has made connection to the ESC a little fiddly. Oh by the way, the receiver fits inside the wing between the centre ribs, with the elevon servos in the rib bays alongside and a nice short run of carbon fibre pushrod to connect to the control horns. So for flying the electric version I will be connecting the BEC lead to a short extension lead that is plugged into the receiver. Talking of receivers I have finally started a move to 2.4GHz, sticking to Multiplex to save my brain cells having to learn new programming, and I do like the whole feel and layout of the MPX Evo transmitters (now discontinued, typical !). So I am using a 5Ch 'Lite' receiver that is so small it fits easily into the wing, and then an extension lead a few cm long provides an easy socket to plug the BEC lead into. So for the electric version I will need to make the connection and then do the final battery connection, with power off safety setting active on the TX, and then screw the wing onto the body. For the pure glider version I have put a simple short extension lead in place that can be accessed from a hatch after fixing the wing, so that allows a simple 'switch' with the Eneloop receiver battery. In practice the pure glider version can be transported ready assembled, so just open the hatch, connect the battery and fly. Once completed I did add some colour contrast to the wing; solid white bands on top and dark blue underneath. I reckoned there would be a good chance of getting disorientated without that which has proven to have a good prediction!

So to flying and that has been frustrating, waiting for a combination of free time and a reasonable wind direction and strength to use Oxo. Finally at the end of the third week of January there was a chance with wind about 10mph N to NNE, so the corner of Oxo or just past the gate would work. I was only going to try the pure glider version first to ensure the CG and control throws were sorted before adding a power element for flat-field use. From static runs the Hacker A-10 with 4.1:1 gearbox and 10x12" propeller is giving a lot of draft at close to full power, so I am expecting a rapid climb and want to be sure that I am not going to get caught out by wrong CG or over-controlling. So some pure glider time makes sense to me.

For the first lob I did move quite a bit back from the slope edge and the flight was short needing some up trim, so it was a short quick landing but also showed it was extremely sensitive in pitch and roll. Now I must confess here I initially set up with the recommended control throws, but to me the amount of elevator did not look enough and also a 60% expo recommendation was given, but I hate Expo so I ignored that and also increased the throws! Maybe not such a wise move however I had rates programmed, so for a second launch I moved through the gate to where the lift was better and with some up trim added the Wisel was away. Well it was certainly extremely lively but rates helped a lot. It did need a touch of up trim but otherwise was already proving to be a real lively fun model. I landed and made the dumb move, well it was cold and the brain cells no doubt not fully functioning, of taking off the small amount of lead that I had taped in place rather than work with a bit of up trim. Well the next flight was really on the limit, hard to fly smoothly as it was so pitch sensitive; I was certainly thankful for having applied the colour bands on the wing to help see which way was 'up'. After landing I put back about half the original bit of taped on lead and reduced the elevator throws. That certainly settled things down and I started to really enjoy throwing it around. Although early days it does seem to sort of accelerate out of turns, and despite the small size and low mass it rode the bumpy air well; although I think that straight and level flying is hardly going to be 'normal' flight. Height gain was easy and I was surprised to find inverted flight very easy. Rolls were quick and loops were much better and of a smaller diameter than I had expected. Oh, I reckon I will add back the original nose weight that had been taped on and that sets the CG as per the plan!

So all in all I am very happy with the pure glider Wisel Light S. It was a pleasure to build and I am sure it is going to give a lot of fun, just needing some fine tuning of controls and fixing the lead inside the body. As for the electric version, I will have to wait until I have had a bit more stick time as a pure glider. I am actually wondering if it would be better kept as a pure slope glider, but it will be interesting to see how good the glide is in light air after powering up to height. Now, can I keep my credit card locked away to stop buying the Wisel Light XL, a 1.9m span version that might be more practical on the flat. Dane RC specify a more powerful geared Hacker setup, but maybe the lower powered version I have would be OK for a less than stellar climb.



#### A Source for LiPos by Darren Bumpass

A number of people have recently commented that LiPos are becoming more expensive and difficult to find . However I recently came across <u>https://chinahobbyline.com/</u> where, at the time of writing, you can still buy them for a good price.

I am intending on doing an order for some myself. If the order is over 158 US dollars postage is free, so if a number of people got together to buy some they might reach that amount. I had a look at the reviews on them and they were good.

### <u>Calendar</u>

Sun 6<sup>th</sup> March Slope Tour Tues 15<sup>th</sup> March, Pre season meeting, Horton Inn 2<sup>nd</sup>/3<sup>rd</sup> April Slope Fly-in O/1<sup>st</sup> May Slope Fly-in Sun 22<sup>nd</sup> May E Soaring, Round 1 4<sup>th</sup>/5<sup>th</sup> June Slope Fly-in Sun 19<sup>th</sup> June E Soaring, Round 2 2<sup>nd</sup>/3<sup>rd</sup> July Slope Fly-in Sun 17<sup>th</sup> July E Soaring, Round 3 6<sup>th</sup>/7<sup>th</sup> Aug Slope Fly-in Sun 21<sup>th</sup> Aug E Soaring, Round 4 3<sup>rd</sup>/4<sup>th</sup> Sept Slope Fly-in Sun 18<sup>th</sup> Sept E Soaring, Round 5

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