

APRIL 2025

Flypaper



Alpha Jet

Clive Upperton's EDF conversion – see page 8

Hornet Moth

Alex Blok electrifies an old IC model – see page 22

Chris Foss Fly-in
Wot's it all about? – see page 3



srfc.bmfa.org



Sussex Radio Flying Club
(SRFC)

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Cover: *Clive Upperton* with his Alpha Jet. See page 8.
Photo: *Grahame Pearson*

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FlyPaper is published at the beginning of January, April, July and October.

Submissions for the July issue must be submitted by 15th June.

Text for articles should either be in a Word document attachment or simply as plain text within the email message. Photos should be high-resolution JPGs.

FlyPaper back-issues may be downloaded from the SRFC website: srfc.bmfa.org

If you would prefer your name not to be in the website version please notify the Editor when submitting your article.

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SRFC invites you to Coombes for a **CHRIS FOSS MODELS FLY-IN & Barbecue**

Saturday 3rd May, 3pm to dusk

We are all familiar with the ubiquitous models designed, manufactured, and flown by our very own club member Chris Foss.

SRFC invites all members, families and guests to this event.

We look forward to members flying their own Chris Foss models, and Chris has agreed to fly a display which we can all try to emulate.



The versatility of his designs are legendary and the Wot series of aircraft are in abundance with our members and it would be great to see how many of his designs – of both traditional or foamy constructed power models and also his gliders – can be assembled for the obligatory group photo.

If you own a Chris Foss model please bring it with you.

We look forward to YOU joining us at Coombes

From your Chairman

Derek Woodley gives a post-AGM round-up

Another year has gone by and the SRFC AGM was held on 7th March.

Again this year there was a low attendance. Maybe this was because members are quite happy with the way the club is being run, and there was nothing that they wished to bring to our attention or change?

Firstly, I would like to thank all Committee members and non-Committee position holders for their work and support during the last twelve months.

The club accounts were approved and the club is in a sound financial position. Thank you Tom Gaskin for auditing.

Two members of the 2024 committee have stood down: Shaun Tatchell who was our Treasurer and Clive Upperton who was Power Representative. Both have devoted much time and effort to their roles with great success and we owe them a great vote of thanks. They will be hard acts to follow.

We welcome Mike Henderson to the committee as our new Treasurer. Thank you Mike for agreeing to take over from Shaun.

All other committee positions remain unchanged, and all nominations were agreed unanimously at the AGM.

You will note, however, that the position of Power Representative remains vacant. Normally a task of the Power Representative is to organise the monthly power competitions at Coombes. Fortunately, Paul Gladstone, Keith Miles and Colin Lucas have got together and will between them be organising the Power Competitions for this season, details of which are listed in the *Diary Dates* page.

The winter series of Hanky Planky events will continue to be run by Clive Upperton. It is a shame that at present the power flying community at Coombes has no say in the running of the club.

Changes that have taken place during the last year have generally been well received, and you will be pleased to learn that there are no changes to club rules expected this year.

I would like to welcome those members that have joined the club recently. I hope you feel welcome and enjoy the excellent flying facilities we are able to offer.

We like to think we have the best flying site in Sussex! This is largely down to those that cut the grass and do the necessary maintenance of the strip. These folk certainly deserve our grateful thanks, and if you are able to help we would be very grateful.

A reminder that IC powered models now need to be noise tested before they can be flown. The test can be completed by any member of the Committee, just ask.

We are able to fly from our Coombes site thanks to a Memorandum of Understanding agreed with Brighton City Airport. Our Coombes site lies within the Flight Restriction Zone of the airport and we are therefore limited to flying not above 400ft and remaining within half a mile of our patch. Exceptionally, gliders weighing less than 2kg are permitted to operate up to 900ft providing the airport ATC have

been informed. Please be very careful to comply with these arrangements; the continued use of our site is dependent on our compliance.

Our next meeting will be the Spring Auction on 4th April at our new venue of The John Selden pub Worthing (<https://thejohnselden.co.uk>). We have the use of a large room at the back of the pub within easy reach of the bar! There is good parking and no stairs to negotiate.

I look forward to seeing you there.

Happy flying!



Diary dates

Indoor Meetings

At The John Seldon, Half Moon Lane, Worthing, BN13 2EN

Friday 4th April Spring Auction
7.30-10pm
Sell unwanted models or bits and bobs and
stock up for summer flying

Themed barbie & fly at Coombes

*Spring/summer Saturday afternoon/evenings from 3pm,
first Saturday of the month*

3rd May	Chris Foss models
7th June	Warbirds
5th July	Gliders
2nd August	Vintage & Biplanes
6th September	Anything that flies

Bring something to fly and enjoy the company of other club members.
The barbecue will be fired up at some stage and tea and coffee will be available,
please bring your own mug if possible.

Donations towards the cost of the food always welcome.



*What's a little rain between friends!
Photo: Robin Strange*

Glider Competitions

*Dates for both Coombes and Ashurst gliding competitions are
listed on our website <https://srfc.bmfa.club>*

Additional social glider days at Ashurst will take place on these Sundays:
13th April, 11th May, 15th June, 13th July, 17th August and 14th September

Power competitions

At Coombes on the following Thursdays starting at 1pm

17th April, 15th May, 12th June, 10th July, 7th August and 4th September

Following previous years styles, these will be simple competitions aimed to appeal
to all flyers and not just 'Fun Fly' types. This will include such tasks as touch and
goes, number of rolls or loops, climb/glide spot landings, etc, mostly in a set time
typically two minutes. We hope to see as many as possible.

This year Contest Directors' duties will be shared between Keith Miles, Colin Lucas
and Paul Gladstone.

Putting digit to keyboard!

Your chance to be in the next issue!



As your *FlyPaper* Editor I am extremely grateful to those
members who send in articles and photos for each issue;
without you there would be no *FlyPaper*. However, it would
be great to receive an article from someone who has not
written in before.

If you have never sent in something for *FlyPaper*, or are a
new SRFC member, your contribution would be especially
welcome.

Don't worry if your grammar, punctuation or spelling is not
the best. My day job is in publishing and magazine design so
I will do my best to make your article look pretty!

Finally, articles do not even have to be about R/C model
aircraft. This may surprise you, but as long as it is likely to interest other members
and is vaguely connected with aviation that's good enough for me.

Grahame Pearson, Editor

Alpha Jet – from glider to EDF

**Clive Upperton converts a 467mm wingspan
FMS Alpha Jet foamie glider to EDF**

During a pre-Christmas visit to Sussex Model Centre to purchase of a couple of APC propellers – which surprisingly were not for my prop-hungry ‘Hanky Planky’ – I came across an FMS Alpha Jet foamie glider for the princely sum of £14.25. This little model was too tempting to be left on the shelf so naturally it came home with me, although why I needed yet another model was beyond sound logic. However, believing it would be a simple conversion to ducted fan using various items readily available from my stock of come-in-handly items I convinced myself – why not?



The box picture gives a clear picture of the Alpha Jet. The original full size was a joint collaboration between Dassault and Dornier to produce a jet trainer as well as a light attack version for Germany and France.

The aircraft was fitted with twin jet SNECMA turbo-fan engines.

Work on the conversion to a powered EDF jet model commenced with the inevitable search of the internet to see how fellow modellers had already converted this FMS glider to R/C and more importantly to EDF power. The most popular conversion was to a PSS (Power Slope Scale) style glider by adding two-channel

Manufactured between 1973-1991, the **Dassault/Dornier Alpha Jet** is a light attack jet and advanced jet trainer co-manufactured by Dassault Aviation of France and Dornier Flugzeugwerke of Germany. It was developed specifically to perform trainer and light attack missions, as well as to perform these duties more ideally than the first generation of jet trainers that preceded it.

Following a competition, a design submitted



by a team comprising Breguet Aviation, Dassault Aviation, and Dornier Flugzeugwerke, initially designated as the TA501, was selected and subsequently produced as the Alpha Jet.

Both the French Air and Space Force and West German Air Force procured the Alpha Jet in large numbers, the former principally as a trainer aircraft and the latter choosing to use it as a light attack platform. As a result of post-Cold War military cutbacks, Germany elected to retire its own fleet of Alpha Jets in the 1990s and has re-sold many of these aircraft to both military and civilian operators. The Alpha Jet has been adopted by a number of air forces across the world and has also seen active combat use by some of these operators. (Source: Wikipedia)

Length: 13.23 m (43 ft 5 in)

Wingspan: 9.11 m (29 ft 11 in)

radio typically to aileron and elevator. Attempts to include an electric ducted fan were less numerous so I decided to develop my own modifications.

The model as purchased is to my mind is very scale-like and has an all-up weight of 76 grams less decals. Being a small airframe with a wingspan of 467mm (not 600mm as stated on SMC's website) it had to be kept as light as possible, bearing in mind the extra weight to be added by the new power system.

The search through my aforementioned come-in-handly stash resulted in a GWS 40mm diameter fan and motor, a Hi-Fly 12A ESC, a 2S 740mAh LiPo, two mystery 3.7 gram aileron servos and one Ripmax RD100 elevator servo. The approximate weight of the significant items required for the EDF conversion being 125 grams giving a total estimated weight of 184 grams after an amount of material was removed from fuselage; hollowing out the fuselage for wiring and servos as well as the cockpit area for battery and receiver would offset some of the increased weight, resulting in a bare airframe weight of 59 grams, a saving of 17 grams.

However, the addition of adhesive, carbon-fibre reinforcement, pushrods, bifurcated duct, foam finish and decals were to add more weight. It seemed likely at this stage that after the EDF conversion an increase would be in the order of three times the original weight, giving a potential AUW of 190 to 210 grams.

In terms of scale fidelity, as I said earlier, this model is very scale-like but having been designed as a chuck glider the mainplane has a marked dihedral unlike the full-size which has an anhedral wing. This I decided to remedy by cutting partially through the upper wing surface outside of the fuselage so that the wing underside was flat, and re-gluing the cuts and once dry, reinforcing the wing with carbon spars. The tapering chord thickness reducing from wing root to wing tip gives the optical impression of anhedral. One other significant modification was to fit an all-flying tailplane. Finally, the chosen EDF was to be a single unit not a twin as per the full-size with a bifurcated duct to give the effect of a jet outlet each side of the rear fuselage.

The model, out of the box, has three parts: fuselage, wing and tailplane. The conversion proper starts by dismantling the fuselage which means ungluing the jet pod and the canopy, both of which require the glued edges to be wetted with denatured alcohol. This softens the glue enabling those parts to be removed.



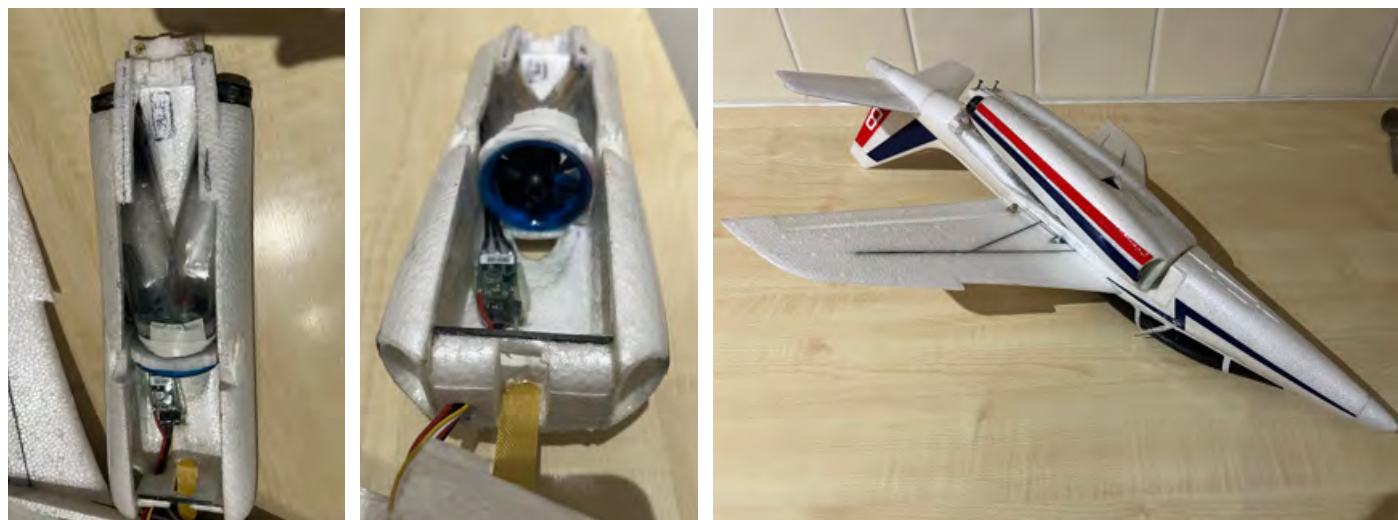
Photos: Clive Upperton



The original glue can now be removed and further work undertaken to the jet pod enabling the fan and bifurcated duct together with the ESC to be positioned after a

degree of trial and error with the fan being on the centre of gravity. The canopy and the nose area can be hollowed out with either a suitably sized heated metal tube, boring tools made from old 35 MHz ariel sections or a Dremel. I found that a large diameter heated metal tube to be the ideal tool to remove the foam.

The pictures below show the jet intakes have been opened up and enlarged and also the rear jet outlets opened up to allow the bifurcated duct to be fitted once the fan with motor is installed. A fibreglass tongue locates into the nose space whilst two screws at the rear secure the jet pod which also contains the ESC.



The next area to modify was the wing. Having had the dihedral removed the placement of the servos and cutting out the ailerons was next and is illustrated below left. The servos were glued into the wing section and the wing stiffened with the addition of the horizontal A-spar and a balsa plate. Ailerons were chamfered on the underside and secured using Doculam as the hinge material. (*Doculam is a document laminating film which can even be used to cover small models – see https://www.youtube.com/watch?v=_pe2M8UhD8g. It is light and inexpensive. Ed.*)



The all-flying tailplane (above right) was made by inserting the tailplane into the fuselage slot and marking each half close to the fuselage, then removing and cutting into three pieces. The centre section was bored through with a 3mm tube cutter. Using the centre section as a guide each tailplane half was bored ready to take the pivot bearing. A suitable servo arm was fixed to the central pivot pin and each tailplane half permanently attached to the pivot pin enabling the movement to be

transferred from the centrally connected RD100 servo mounted in the rear fuselage, access being available when the jet pod is removed. The pivot can just be seen as a shadow on the underside of the tailplane. The fuselage was cut vertically from the underside to the tailplane slot to enable the all-flying controls to be glued in place and the fuselage section glued and replaced.



The next major activity was the fuselage with much boring of holes for servo wires along the inside top of the fuselage and the rearmost cockpit area to create room for the Spektrum receiver.

With the installation nearing completion, the power system was run up but did not supply adequate power in my estimation and the move to a 3S LiPo was tried but this resulted in a blown ESC (despite it being rated for 2S-3S) and a burnt-out winding on the Feigao inrunner motor. In addition, the motor mounting was broken resulting in a need for a replacement GWS fan. A search on the internet failed to locate the specific size fan I was seeking so I turned to George Evans who kindly gave me a 40mm fan with his own wound motor which was fitted to the Alpha Jet and used for the maiden flight. See below.



With a final flourish I added a selection of the decals and coated the airframe with Deluxe Materials Foam Finish and determined the centre of gravity from a scale drawing of a larger version of the Alpha Jet which necessitated adding 6 grams in the tail.

I used a low capacity 2S LiPo of 360 mAh capacity for the maiden flight which took place in early January on one of this winter's few calm and sunny days. Tom Gaskin launched the model successfully whereupon it made a gradual sink to the ground and landed undamaged. It was clear that it was significantly underpowered, but undeterred another attempt took place with the same result and again no damage.

An early decision was made regarding how to improve performance with an alternative fan being required together with an increase in battery capacity and a subsequent need for a new ESC to match an increased current draw. The availability of my chosen 35mm EDF from AEO RC was, or so I thought, only available from China and hence an order was placed. The day after I had ordered said fan, John

Ivory came up with an identical fan enabling me to complete the power system changeover within a week or so including the delivery of a Hobby Wing Flyfun 20A ESC and programmer whilst using an existing 2S 900 mAh 35c LiPo. The new LiPo weighing in at 50 grams needed to be fitted closer to the tail hence more foam was cut away in the battery compartment, and a further 4 grams added to the far rear of the fuselage. his set-up gave much increased thrust, see table below.



AF35213A	ADF35-100 11000KV						wight:18(g)
With Motor	With EDF	Volts	Amps	RPM	Thrust (g)	watt(W)	Eff.(g/W)
1408 11000KV	35mmEDF	7.4	18.9	51540	170	139.9	1.22
		8	21	55100	186	168.0	1.11
		8.4	22.8	56700	200	191.5	1.04



With new parts fitted as shown in the photo on the opposite page, the re-maiden flight took place on 14th January and the improvement was significant with plenty of power, a four-minute flight time. Roll was twitchy so aileron movement was reduced and roll control was improved with good aerobatic ability. All up weight finished at 208 grams. (Flying photos on next page.)

And so concluded an enjoyable project. My grateful thanks to those who assisted me, in particular, George, John and Tom.





Photos: Grahame Pearson

SRFC spring collection!

Check out our Regalia shop on the Logo That Polo website

New members may be unaware we offer a branded regalia service to members. Regalia simply means clothing and other items embroidered (clothing, etc) or printed (mugs, etc) with a club's logo. I am sure most of us already own branded items, with the logo of a football club, charity or other club or organisation we belong to.

Traditionally, clubs would have to stock such items in a variety of colours and sizes which required storage space and tied up club funds. Logo That Polo is an online company with a difference. Club members order direct from LTP via our page on their website, items are then embroidered or printed to order and posted to the club member. Prices are very reasonable and best of all, 12.5% of every sale goes to SRFC so by buying from LTP you are supporting SRFC!

Have a look at the SRFC shop (clickable link below) for the full range of items available. If you have suggestions for new items just let Grahame Pearson (*FlyPaper* Editor) know. Grahame is SRFC's LTP contact. grahame.pearson.srfc@gmail.com

<https://logothatpolo.co.uk/store/SRFC>



**Below are a few of the spring items available.
Check out the website to see all items.**

All have the SRFC logo in blue or white.
Prices shown are correct at March 2025



Baseball Cap £15	Gilet/Body Warmer £38	Rugby Shirt £25.99	Soft Shell £34
Fleece Zipped £25	Polo Shirt £21	Mug £10	Enamel Mug £12

SRFC weather station at Coombes

Derek Woodley explains the SRFC weather station

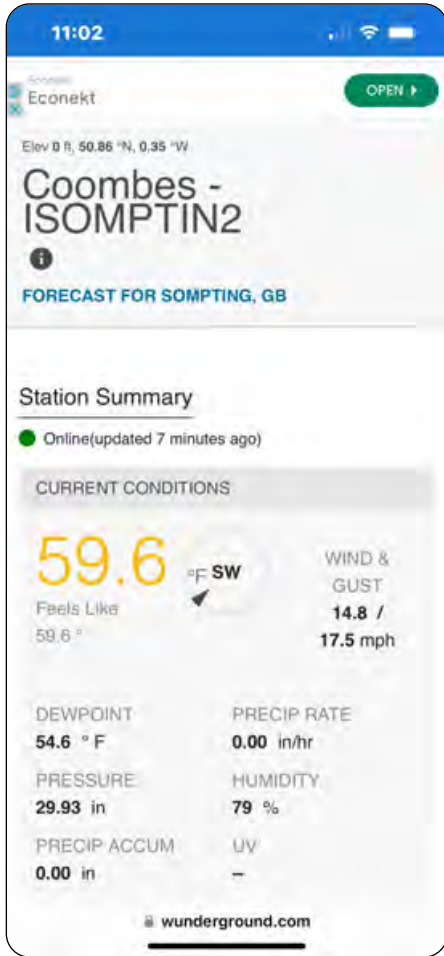
You will be aware, I hope, that we have our own weather station at Coombes that feeds data every seven minutes into a weather modelling system in the USA currently owned by IBM (that ownership may change).

We club members can access this real time data from our Coombes weather station in a number of ways...

1. Via our Club Website <https://srfc.bmfa.club>. You can access this via a computer or smartphone. Clicking on the SRFC logo on the home page will bring up the latest weather report from Coombes and access to forecast including the all important wind speed and direction. Clicking on the BMFA 100 year logo, also on the home page, will take you to the latest weather report from Shoreham Airport. This can be useful because the cloud base and visibility is included in the Shoreham report and, as our field is 430ft above sea level, low cloud can be a factor to consider. The 'TAF' tab on the top of the page will take you to a detailed forecast for Shoreham.



SRFC and BMFA logos on the SRFC website home page



Clicking on the SRFC logo brings up our weather station at Coombes



Clicking on the BMFA logo brings up the latest weather report from Shoreham Airport

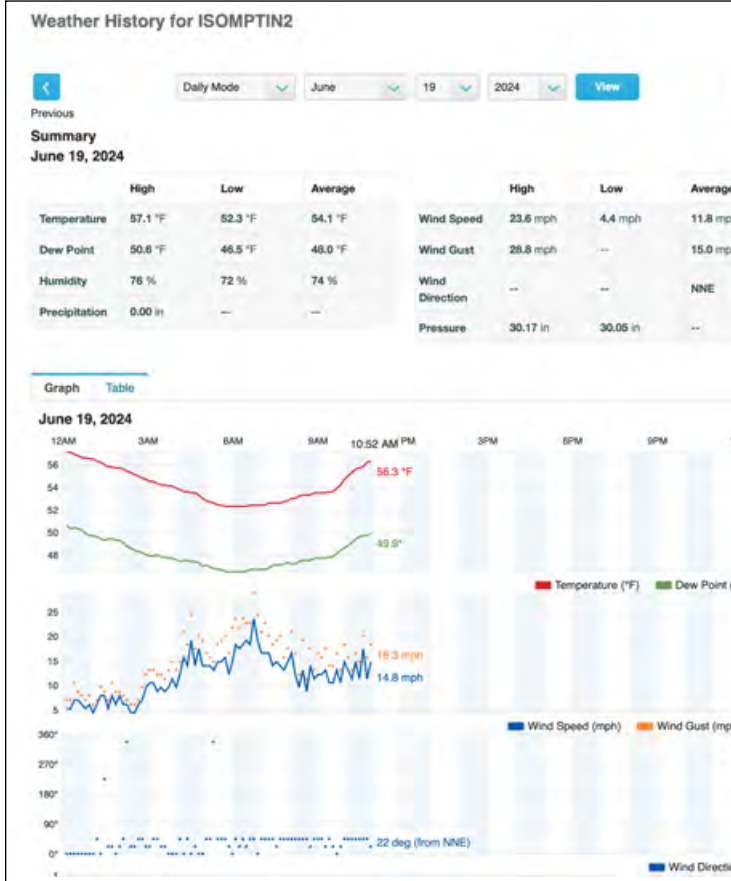
TAF EGKA - Brighton City Airport

Valid from June 19, 2024 10:00 to June 19, 2024 19:00

Time	wednesday 11:00	wednesday 12:00	wednesday 13:00	wednesday 14:00	wednesday 15:00	wednesday 16:00	wednesday 17:00	wednesday 18:00
Code	VFR	VFR	VFR	VFR	VFR	VFR	VFR	VFR
Weather	Scattered clouds	Scattered clouds	Scattered clouds	Scattered clouds	Scattered clouds	Scattered clouds	Scattered clouds	Scattered clouds
Visibility	10 km+	10 km+	10 km+	10 km+	10 km+	10 km+	10 km+	10 km+
Ceiling	-	-	-	-	-	-	-	-
Wind	060°	060°	060°	120°	120°	120°	120°	120°
Speed	9 kt	9 kt	9 kt	11 kt	11 kt	11 kt	11 kt	11 kt
Gusts								
Temp/Sun								

From the Shoreham Airport weather report clicking on the 'TAF' tab will access a detailed forecast

2. Another way with a computer or a laptop is to go to <https://www.wunderground.com> and type ISOMPTIN2 (our station identifier) in the 'Search Location' box at top right of the page. You will then see the latest report and can select units of either mph and °F or km/hr and °C using the cog symbol next to the 'Search Location' box. Forecasts are also available for hours ahead and up to ten days, but bear in mind they are computer predictions and therefore do not take into account local influences.

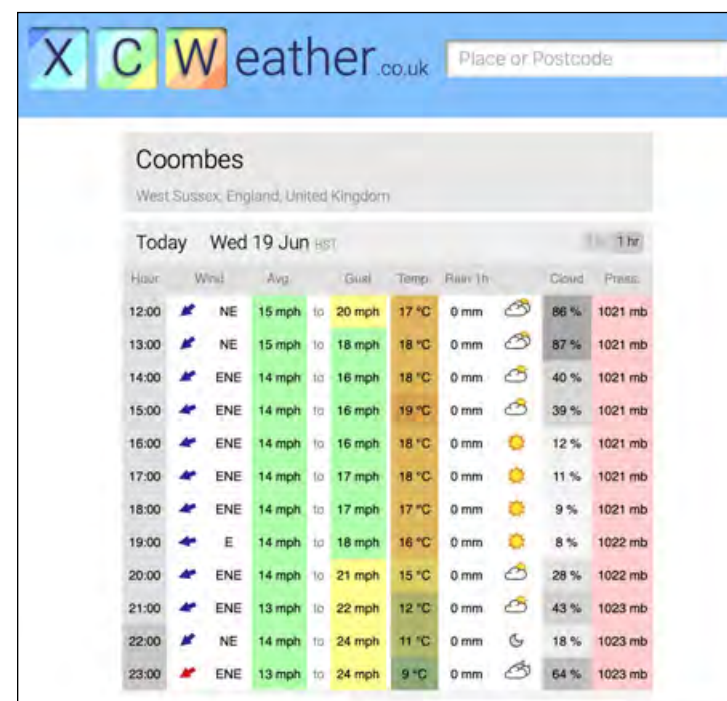


SRFC's anemometer is mounted atop the storage box at Coombes so is highly accurate. Information and graphs update every seven minutes

If you have a smart phone there are a number of apps that will report conditions at Coombes. 'Weather Underground' and 'PWS Monitor' are good choices for free iPhone apps and in each case scrolling down will show graphs depicting changes in conditions over time. Type ISOMPTIN2 to bring up our station.



PWS Monitor



XCWeather

The smart phone app for forecasts at Coombes that I use is 'Windfinder Pro' using Truleigh Hill as the location. There are plenty of other apps, XCWeather is very popular.

I cannot advise on any apps for an Android phone as I use an iPhone but I believe Weather Underground have an Android app and I'm sure a search for a Personal Weather Station app will produce something.

Saving the app to your smartphone works extremely well but remember, if you prefer, you can access the weather station via our website, just save it to the home page of your smartphone.

Good luck and happy flying.

WhatsApp groups

Joining a WhatsApp group can help you get the best from your SRFC membership



What is the biggest unknown for new or existing members? Simple, knowing when is the best time to go flying so that you don't arrive at the field and find yourself on your own. That can be demoralising but is easily avoided. Just join and be active in a WhatsApp group.

The club has four official groups at the moment and all members are welcome to join one or more to suit their flying taste and time availability. While they were originally set up to find out who is flying when and where, their use has widened considerably and now encompass almost any flying related issue, e.g. a mass build as undertaken by the glider group this winter which included advice, photos, discussion on problems, etc, or what engine/power train to put in a model, the weather forecast for a particular day/event and even birthday greetings or get well soon message to a member. The groups are informal, sociable and not without humour! Just choose the group(s) that suit your needs best and give your mobile number:

Coombes Flyers. This group is used predominantly (but not exclusively) by those who fly in the morning, lunch time and early afternoon, fixed-wing power and e-gliders. To join e-mail Robin Strange: srfcsec.srfc@gmail.com.

Flying Today? This group to a degree is similar to Coombes Flyers but is used, as it says, to find out who is flying on that specific day. To join e-mail Grahame Pearson: grahame.pearson.srfc@gmail.com.

Happy Flyers. This group is predominantly used by flyers looking to fly afternoons and evenings but also for modelling chat. To join e-mail Grahame Pearson: grahame.pearson.srfc@gmail.com.

SRFC Gliders. The name gives it away. Unlike the other two groups, the glider section has two club sites (Coombes and Ashurst) plus a number of other venues, some close, e.g. Mill Hill, Beeding Hill or Chantry Hill and others further away, e.g. Itford Hill, Firle Beacon or BoPeep. Thus, being in this group also lets you know where they will be flying on a particular day as well as who is going. To join e-mail Robin Strange: srfcsec.srfc@gmail.com.

At the moment the club is not aware of any helicopter/drone WhatsApp groups.

The Committee is aware that over the years the flying emphasis has changed from mainly weekend flying to weekday flying so if there are members who would like a weekend group to be formed let us know.

It is the club's firm intention that new members are made to feel welcome and inclusive from Day One and, apart from attending our indoor and outdoor meetings, there is no better way of becoming involved than joining and contributing to one of the WhatsApp groups. Apart from knowing who is flying, where and when, the groups provide a whole raft of support, help and encouragement – plus the usual ribbing if you suffer a 'senior moment' when building or flying!

Tony Nijhuis Spitfire

Paul Gladstone models a two-seater Spitfire

The wet and windy winter weather has meant more workshop time and the Spitfire Trainer is now also ready. The version modelled is the prototype TR8 and was the very first Spitfire I saw as a youngster at the Kings Cup Air Races.

This is the second attempt to make this aircraft type. The first was a modified Top Flite kit which flew atrociously. I crashed it twice and gave up. This one is a modified Tony Nijhuis model which I had already flown numerous times as a single-seat MkIX so am reasonably confident of the outcome, fingers crossed!



*The full-size Spitfire MkIX, G-AIDN
Photo: ArtHistory.net*



*Paul Gladstone's two-seater
Spitfire MkIX
Photo: Paul Gladstone*



Stop press!
The Spitfire TR8 has now had three very successful flights. The trainer in the photo above is a restored Cambria Instructor which I have rebuilt as a three-channel club trainer.



Photo: Brett Wellby

DH 87A Hornet Moth

Alex Blok converts his Hornet Moth from IC to electric

With the aim of extending my skill set beyond gluing broken foamies back together, I purchased a de Havilland Hornet Moth from SMC in February 2023 as a project to convert from IC to electric. The first phase was to extract the IC motor components (except the motor – that was not with the model). This involved thinking about how much space would be required for the electric motor mount and a battery bay, whilst taking the structural integrity of the fuselage into account. I didn't want to remove any essential beams so she didn't suffer a failure in the air under stress.

I purchased a 1500kV motor from SMC that was a tad over spec from that advised by a fellow club member, but which fits snug in the hole in the nose of the model. I enlarged the hole slightly using a Dremel to allow for any motor wobble if the prop was damaged and put it under strain.



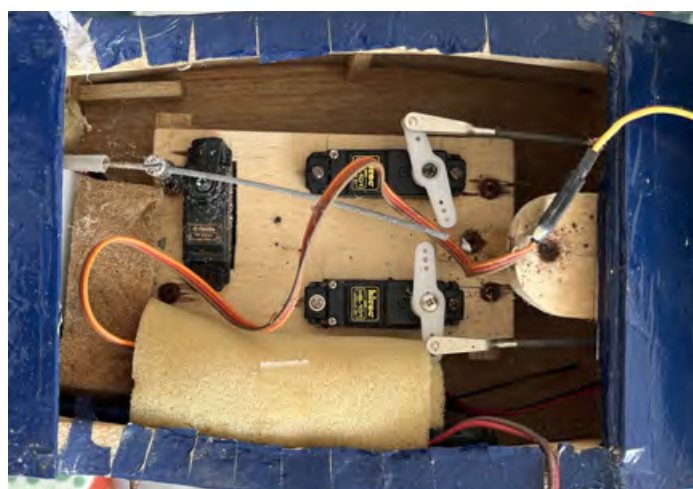
Original engine bay



Using Dremel to clean out the nose area

To servo and protect

I removed the throttle servo, left over from flying pre-history, and shortened the servo board.



Original servo board...



...shortened

Work pressure meant I had to take a break of almost exactly two years, and then I continued to clear out the forward section of the fuse, see what other work would be required to make the model airworthy (and attractive!) and finally begin to design the engine mount, with a plan to 3D-print the first version.

Nose job

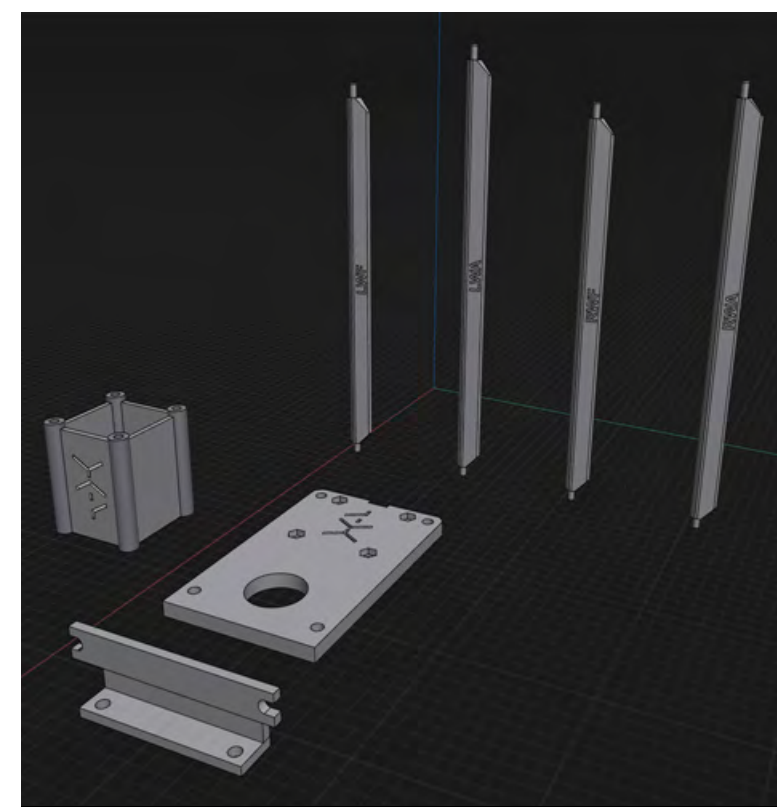
With the model being pre-built, taking measurements inside the nose was somewhat hit and miss. I tried a 3D scan using an iPad, but the app crashed due to the rough complexity of the interior, so I bought a decent set of Japanese Mitutoyo calipers (no six-month lifespan Chinese tat!) and reverted to the old way.

Taking the tablet

As *FlyPaper* readers may have noticed, I have a penchant for gadgets, and created sketches on my Amazon Scribe elnk tablet. For us creative types, full of ideas, these are easier to lug around than thick heavy notepads.

We're in good Shapr!

At work we use the Shapr3D solid modelling CAD app for concepts and then move onto Autodesk Fusion for more ambitious work. For the Hornet Moth work, I stuck to Shapr3D and designed my own mount whilst reviewing photos of mounts in similar models on the Internet. The objective was something robust that could be mounted into the fuselage in such a way it could handle the thrust and any G-forces if excess throttle was required. Bear in mind, this project is my first ever where I have built out a major mission-critical component assembly, namely, an engine mount. All a learning process, but highly enjoyable and therapeutic!



3D model of motor mount components



Sliding battery hatch in action

Hatching a plan(e)

Learning from lessons of batteries falling out of models with an insecure battery hatch fitted on the underside of the fuselage, I devised and 3D-printed my own sliding door hatch to survive loops and other sources of G-forces.

Although the first 3D print of the motor mount was almost perfect, during a test throttle up, the top section of a forward bulkhead failed. It became apparent a more robust solution was required, so I designed an angle bracket to keep the motor mount plate secure. This is why testing is so important on the launch pad prior to launch!

Spar non

The wing spars were in bad shape, the tips damaged and beyond repair. I created 3D models using the same aerodynamic shape as the originals, with a tapered trailing edge. Although the forward spars were 10mm shorter than the aft, only after the first 3D print did I discover each of the four spars are a different length, another characteristic of a hand-built model that is also decades old where some



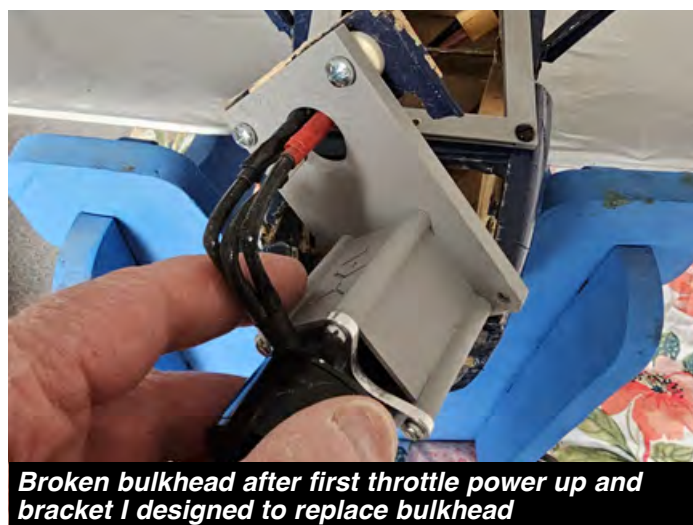
3D printed spars with identification letters

wing warping may have occurred. I embossed text on each of the spars so I knew which was which, i.e., LWA for Left Wing Aft, RWF for Right Wing Forward, and so on. I did not have the precise dark blue filament to match the original spars and fuselage, so used a light blue and then after fitting the spars, painted them using Humbrol enamel. Perfect!

There were a few minor issues to refurbish. One half of the elevator was damaged, the rudder was out of alignment and the rear tailwheel axle had suffered the affects of corrosion so didn't rotate. All quick fixes, but all in all, she was not too much effort to restore. Although after the maiden, I will tidy her up more. (Don't want to tempt fate!)



Job done! RTM – Ready To Maiden!



Broken bulkhead after first throttle power up and bracket I designed to replace bulkhead

The biggest challenge

By far, I spent more time trying to fit nuts on bolts when constructing the engine mount than anything else. Because this was a pre-built model with limited access to the interior, gaining access was very fiddly. I tried using Blu Tack to hold nuts in place whilst I tightened bolts, but they kept falling into the model. Naughty words were uttered! Just as I was about to give up for the day, I found a tiny wrench in my toolbox and could just get my hand and the wrench into the interior. Sorted!

My next project is entirely my own design and build, so such issues will not be faced.

Job Done!

To test the strength of the motor mount and see if there was any prop pull, I carried out some test taxiing of *Ruth* on the sand at low tide in front of my flat. All seemed good.

Of note, the first production Hornet Moths (August 1935) had tapered wing tips, as this one does. This gave the full-size aircraft a propensity to stall on landing approach, so I will need to take this into account. (Later Hornet Moths – designated DH87B – had non-tapered square wing tips.)

I'm very conscious that 3D printing components requires considerable less skill than crafting the parts from wood, as many of you do. If I get time (a precious resource) I may try to replace some, if not all, of the components with wood.



Ruth on the beach



All photos (unless otherwise stated): Alex Blok

Maiden England

On Wednesday 19th March, with a slight crosswind, *Ruth* (as I named her, after my late mother) took off nicely, with no pulling to one side or any sensation of an impending tip stall, something I was concerned about if I applied the wrong amount of elevator on rotation or the CG was way out. She was light in the air, a tiny bit tail heavy, but nothing dramatic. I performed a few circuits, whilst my flight instructors encouraged me to trim the elevator in the air. I was nervous enough and because it was my first flight with her, terrified of losing control of *Ruth* if she was to stall so kept my fingers firmly on the sticks! She landed smoothly after a small bounce. All in all, the maiden went better than I had expected.

There is a video of the maiden flight on the club's YouTube channel. Click this link: <https://www.youtube.com/watch?v=xyTbDdVm96g>

Back at the workshop, I removed a tail weight to balance* the CG, built a balsa battery cradle, fitted a metal clevis to the rudder servo rod, strengthened a motor mount join, and for the first time in my RC flying history, used a heat gun to smooth ripples in her pretty wings!

*There is no space in the battery bay to move the battery forward or aft to adjust CG.

On Saturday 22nd March, in perfect flying conditions, whilst the committee did some maintenance work on the club storage box, I flew *Ruth* twice more and she was perfect in the air.

I am most grateful to SRFC members for their tips and advice during *Ruth's* conversion and first flights.



At Coombes awaiting maiden



Maiden flight. Photo: Grahame Pearson (screengrab from video)



Third flight. Photo: Charles Pringle

Tony Nijhuis Harrier

Paul Gladstone's winter build was this Tony Nijhuis EDF Harrier

The December 2024 *RCM&E* included a free plan for an EDF Harrier GR7 and of course I couldn't resist. While in the RAF I spent nearly 15 years on Harriers, starting on the GR3 and then on the RAF project team set up to bring the GR5 into service. This latter time was spent mostly with BAe and included several annual visits to McDonnell Douglas in St Louis where a lot of our project team was located because of so much commonality with the AV8B.

Anyway the opportunity to build a model of the GR7 was too tempting and rather than use the free plan I opted for the kit from Tony Nijhuis which was supplied by SLEC. The kit included all of the necessary laser-cut parts, sheet and strip materials plus moulded canopy and intakes.

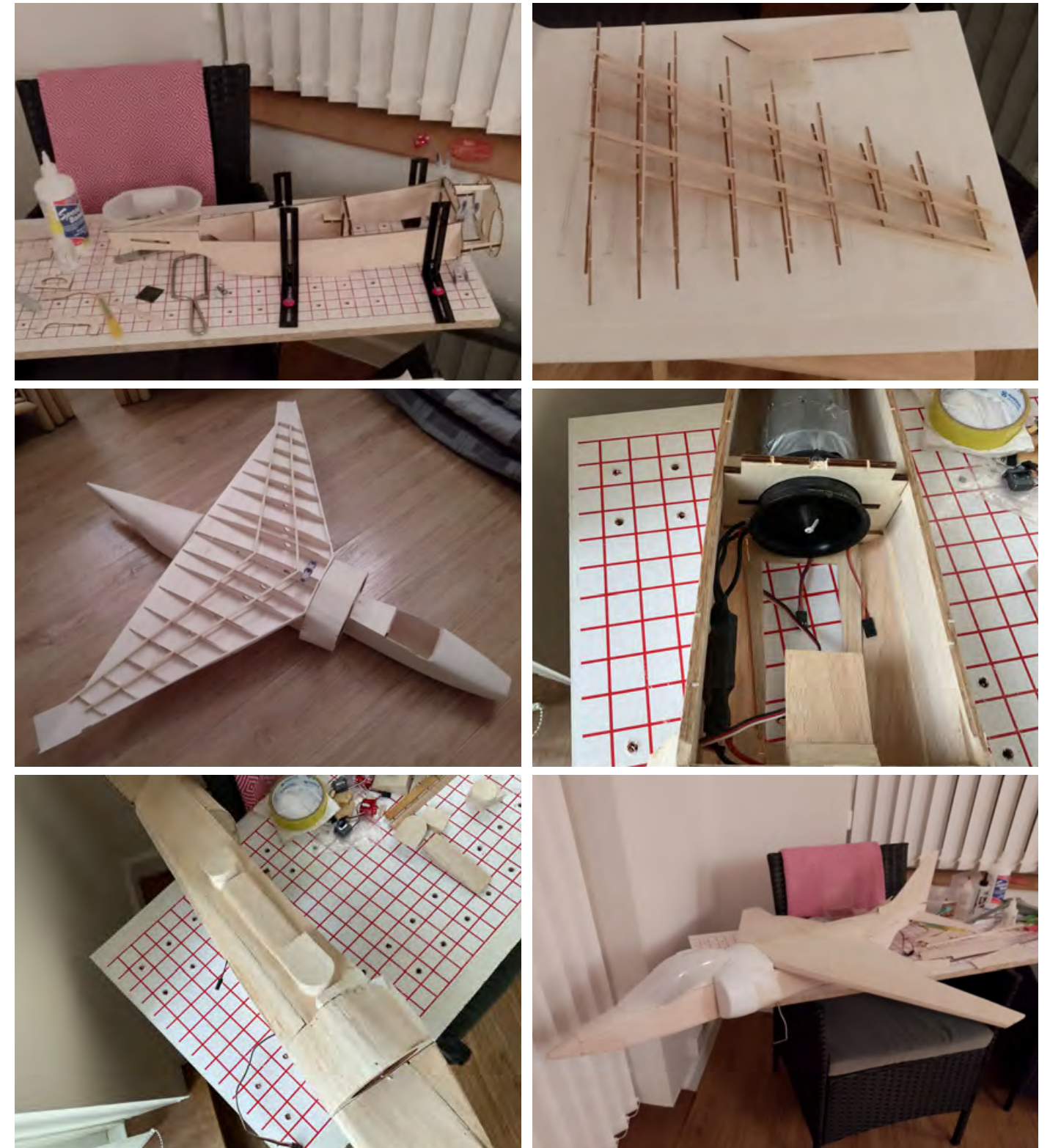
It would also need a 4S 70mm fan unit, for which – shock horror! – I had stock! Also required would be a 60A ESC and four micro servos and here again I had those in stock too. I must say that I am really pleased with the kit parts' quality.

The build has gone well and using the recommended SLEC building jig for the fuselage went without any issues. The kit included a full-size plan rather than using

the segmented magazine free plan so that made the wing build quite straightforward too and so far I'm pleased with how it has gone together. I have made my own balsa jet nozzles rather than use the 3D offerings, primarily to save a bit of cash but also because the kit ones are not the correct shape. The adhesives I used were Deluxe Materials Speedbond PVA and a little CA superglue. For covering I used the Ripmax light grey film which has gone on very well and at less than half the price of Oracover has to be a win.

I have added a small number of details which make for a more accurate

Below: construction photos



Paul Gladstone with Harrier GR9
gate guardian at RAF Wittering.
All photos: Paul Gladstone

representation of the GR7/9 and have based it on the No. 1 Squadron final display scheme when the GR9 was retired, far too prematurely in my humble opinion.

At the time of writing (January) the model has yet to fly but will do so once warmer weather arrives.



Completed model. Flies conventionally, sadly not VTOL



GR9 in its final display scheme on display at Duxford

Spring quiz

By an anonymous SRFC member

You can Google the answers but I urge you not to

Answers on page 32

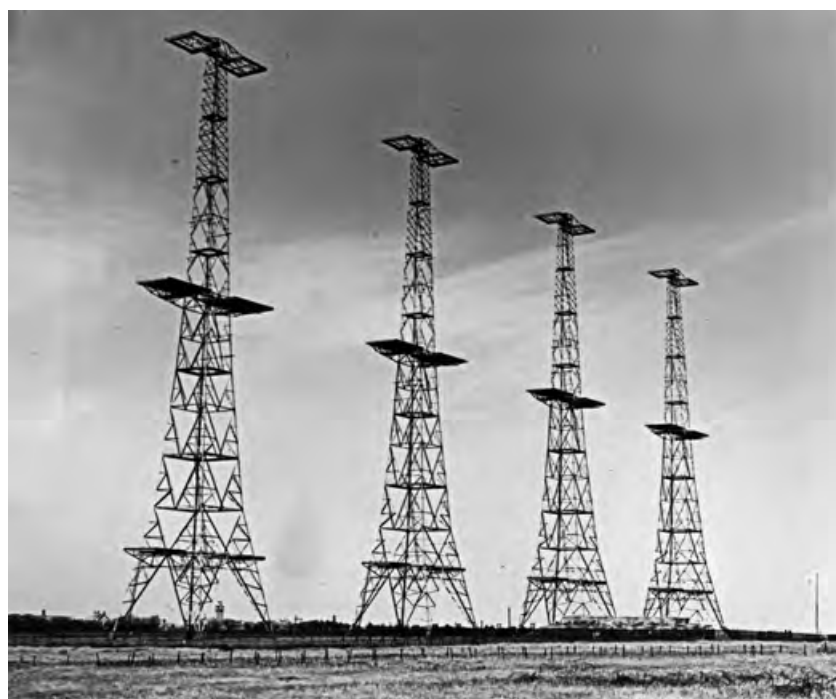
- What do the following mean in English?
a) *Kamikaze*
b) *Okha*
c) *Blitzkrieg*
- Who was the Prime Minister who declared 'peace in our time' in 1938?
- What post did Winston Churchill hold when war was declared in 1939?
- What do the following mean?
a) *Zerstorer* (Messerschmidt Bf110)
b) *Schwalbe* (Messerschmidt Me 262)
c) *Wurger* (Focke Wulf Fw190)
d) *Reisen* (Mitsubishi Zero)
- Who led Fighter Command during the Battle of Britain?
- Who led 11 Group during the Battle of Britain?
- Who led 12 Group during the Battle of Britain?
- Where was Fighter Command HQ during the Battle of Britain?
- Who was the top scoring allied pilot during the Battle of Britain?
- Which was the top scoring squadron during the Battle of Britain?
- Which RAF station was known as 'on the bump'?
- What were 'Chain Home' and 'Chain Low'?
- Who were the LDV?
- Who was the top scoring Japanese pilot during WW2?



Spring quiz – answers

Quiz is on page 31

1. A) Divine Wind
b) Cherry Blossom
c) Lightning War
2. Neville Chamberlain
3. First Lord of the Admiralty
4. a) Destroyer
b) Swallow
c) Shrike
d) Zero fighter
5. Hugh Caswell Tremenheere Dowding
6. Keith Park
7. Trafford Leigh-Mallory
8. RAF Bentley Priory, Stanmore
9. James Harry 'Ginger' Lacey
10. 303, one of the Polish squadrons
11. Biggin Hill
12. The RDF (radar) stations – home was for higher level coverage, low for low level.
13. Local Defence Volunteers, forerunner of the Home Guard. Name changed partially due to the unfortunate nickname the LDV acquired: 'The Look, Duck & Vanish Brigade'!
14. Hiroyoshi Nishizawa



SRFC now on Facebook

Dan Fallowfield-Cooper with all you need to know...



As a Facebook user, I have launched an SRFC page.

There's not a lot of content on there at the moment but I'm sure this will change as more people discover it. The majority of the content will come from SRFC members who post asking for advice, posting events, buy and sell items, general discussions, show off a new model and even show an unscheduled landing!

To be clear, our Facebook group is not going to replace the good work that Grahame does with the *FlyPaper* or indeed the website. It is an additional resource and has immediacy as its main appeal.

The page will be private meaning it's just for SRFC members.

Like any resource, the more people who use it, the better it is. It's free so what are you waiting for!

If you have Facebook, click on the link below and join today. And if you have never used Facebook, why not give it a try?! Just click on the link below:

<https://www.facebook.com/groups/www.srfc.bmfa.club>

SRFC videos online

We now have over 100 YouTube videos for you to watch!

If you have not yet discovered the club's YouTube channel you are in for treat. Just search YouTube for 'Sussex Radio Flying Club (SRFC)' or go to the club's website – srfc.bmfa.org – for a direct link to the channel.

The videos will play on any device but the bigger the screen the better.

Tip: Consider 'subscribing' to the channel – once on the SRFC page hit the 'Subscribe' button. Subscribed channels are those you visit frequently and saves you from having to search each visit (a bit like Favourites or Bookmarks on your web browser). Additionally, if you click the 'bell' icon you will be notified via your smartphone when a new SRFC video is uploaded.



Sheeting – dry-glue method

Robin Strange explains how to apply sheeting using PVA glue and hot iron – the dry-glue method

As I have been progressing the build of my current glider project I arrived at the point of sheeting the 'D' box of the wings. Normally I would apply glue and hold the requisite balsa or ply in place with a combination of pins and masking tape or similar but the question arose as to whether to use an alternative method. Well fortunately there is another method, one I have seen videos of online; it's called the dry-glue method which works with glues that are heat activated such as PVA.

I'm sure many of you will have planked a 'D' box using traditional methods of retention while the glue dries only to find that some of the sheeting hasn't quite adhered to the ribs, which can be simply rectified by applying heat with a covering iron to the affected area and, hey presto, the sheeting will adhere to the ribs.

This method can be expanded and used to sheet a whole section rather than rectify minor issues. The method is simple:

1. Apply PVA liberally to the ribs.
2. Lay the sheeting on the ribs as if you were going to attach them and then lift the sheeting off.
3. Using a wet finger run it over the PVA on both the ribs and sheeting where the PVA can be seen and ensure the PVA has full coverage where the two items will attach and smooth out any lumps. *Photo, right.*
4. Allow the PVA on both the ribs and sheeting to dry.
5. Turn your covering iron on to max and allow to heat up to 200°C.
6. Correctly position the sheeting on to the ribs and when satisfied alignment is correct apply heat using the heat gun at the contact areas only – not in between.
7. When you have applied heat as above the sheeting will be adhered to the ribs and the job is done



Photos: Robin Strange

I've described the use of this method on a 'D' box but there is no reason why you can't sheet a fuselage or similar: I can see significant advantages of planking the nose of a fuselage using this method where it can be difficult to hold the planking in place while the glue dries particularly when the curve is tight.

For more information take a look at these really good videos to see the method and more in action:

http://www.ghostsquadron.co.uk/construction_videos_and_tips.html.



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Dave Knott

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Safety Marshall 3

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** If you feel you can fill a vacant position please contact the Secretary for details*