APRIL 2024

Flypaper

RADIO FLYING CLUB SUSSEX srfc.bmfa.org

Depron Harrier

Clive Upperton builds a Harrier in Depron – see page 44

SRFC shop open!

Online regalia shop launches – see page 5

Noise annoys!

82dB limit explained – see page 20

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Cover: Clive Upperton (left) built this superb Harrier from Depron over the winter, seen here with Pim Smith. See page 44.
Photo: Mark Vale

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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.

From your Chairman

Derek Woodley reports following our AGM

The Sussex Radio Flying Club AGM was held on 1st March. Judging by the weather of late who would have guessed this was the first day of Meteorological Spring? A fairly low attendance on this occasion, but maybe this was because there was nothing too controversial to discuss.

The nominated committee members for 2024/'25 were approved, see back page.

Our club accounts were approved, thank you Tom Gaskin for auditing. Money held in the account shows a 5% increase over the last twelve months which is good.

David King has very kindly agreed to take over the administration of our website to allow Robin Strange more time to concentrate on his new duties as Secretary. Please support David with input of suitable posts and photos for inclusion on the website.

I would like to take the opportunity, on behalf of all club members, to say a big thank you to George Evans for all the work and time he has devoted to our club as Secretary during the last three years. George has been an absolute rock. His dedication and competence has been unfailing; he embraced the position and fulfilled the role without complaint and has been an excellent communicator. Thank you George. George's retirement has resulted in some seat changes within the Committee.

Robin Strange is our new Secretary, John Ivory has moved from Power Competition Secretary to be in charge of the Gliding Competitions and Clive Upperton has taken over as Coombes Power Representative.

It is pleasing to welcome Dan Fallowfield-Cooper to our committee as Poling Representative, looking after our helicopter and drone interests. Dan will look after the day-to-day club operations at our Poling site, and as he flies both helicopters and drones. I am hopeful he will be able to encourage more use of this facility and we will see an increase in club membership. Attracting a younger age group to model flying has proved difficult in the past, but maybe drones are the future?

I think it is good to make changes from time to time. New ideas may well evolve as a result of the change of responsibilities. Please look out for the competition dates and details on our website www.srfc.bmfa.org.

The adoption of the new noise limit of 82dB by the club has not been challenged and this club rule will be fully adopted and enforced from 1st July. There are noise meters and instructions available at Coombes and Poling and I would suggest members use the period between now and 1st July to test their models and make any necessary modifications to ensure compliance.

Whenever a committee member is present at a flying site a noise reading may be taken and officially recorded. During the outdoor club nights at Coombes we will have the sound meters available and will be noise testing and recording readings. At each flying site there will be a clipboard and form to record the noise data.

Be advised that we are taking the subject of noise seriously, and if a model (even if not I/C powered) is perceived to be noisy or is flown in an inappropriate way we will

judge the impact by an observation from the gate and may advise the flier to take action to reduce the disturbance. Please also see the article on page 16.

On another note, a presentation on the introduction of SRFC branded items such as caps, sweatshirts, jackets, etc was given by Grahame Pearson (FlyPaper Editor). There was considerable enthusiasm from the floor for this initiative, so we have decided to proceed and make the necessary arrangements. For details of what's on offer and how to order please see page 5. The purchase of any items with our logo on it will result in a commission payment into club funds.

Enough from me, I remain very confident that our flying activities will be able to continue unchanged during the coming year despite all the prophecies of doom that have appeared on the internet.

Ads

For Sale – or giveaway!

Peter Plank Canard. Unfortunately my Peter Plank Canard has to go. Comes complete with engine (make unknown) or convert to electric. Has all servos, etc. Far too good to bin, besides being disrespectful. It loops, rolls and flies fine and now just needs a new appreciative owner. Would be great to see this lovely model flying again at this year's Peter Plank Memorial Day. I'd suggest £10 but will haggle! Jerry Hansen, e-mail: jerryhansen@live.co.uk .

SRFC Regalia shop now open!

Grahame Pearson (FlyPaper Editor) introduces our new Regalia shop on the Logo That Polo website

As outlined at the AGM we now 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. Not any longer! 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!

Please bear in mind that as items are embroidered or printed to order delivery is around ten days – it's not Amazon!

Have a look at the SRFC shop (clickable link below) for the range of items available, more will be added. If you have any suggestions for new items just let me know (my e-mail address is on the back page) and I will ask our contact at LTP.

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

Below are just a few of the items available, many more are shown online.
All have the updated SRFC logo in blue or white

Baseball Cap

Body Warmer/Gilet

Tea/Coffee Mug

Fleece Zipped

T Shirt

Hoody Overhead Zipped

Beanie

Sticker sheet

Diary dates

Indoor meetings at Worthing Leisure Centre

5th April **Spring Auction, 7.30-9.30pm**
Grab a bargain at the first club auction of 2024!

Peter Plank Memorial Day

14th Sept **Coombes, 10am-5pm (15th Sept if 14th wet or windy)**

In celebration of long-standing SRFC member, the late Peter Plank, we are repeating this event. Flying is primarily for ex-'Planky' models.

Outdoor barbie 'n' fly evenings at Coombes
1st Friday of the month

Club evenings:	**3rd May**	**Old Timers/Vintage**
	7th June	**D-Day 80th Anniversary**
	5th July	**Chris Foss models**
	2nd August	**Gliding, Aerotow, Bungee-launches & Electric gliders**
	6th September	**Anything goes**

All are on the first Friday of the month, 5-8.30pm. Weather dependent! Come along and enjoy the company of club members and bring your models to show them off and fly. Enjoy a top quality burger or hot dog from the barbecue and a tea or coffee. (If you bring your own mug it would be appreciated). Donations welcome!

Indoor flying at Worthing High School (South Farm Road, Worthing BN14 7AR). With thanks to Dave Knott for making it happen

19th April **8.00-10.00pm**

£5 to fly, £1 to watch – pay on the night. Lightweight planes, helis and drones only.

Power Competition dates

Coombes Power Representative Clive Upperton invites members to have a go this spring and summer!

Monthly competitions:	**First**	**18th April**
	Second	**16th May**
	Third	**13th June**
	Fourth	**11th July**
	Fifth	**22nd August**
	Sixth	**19th September**

All are on Thursday and are at 12.30-2pm at Coombes. As always, weather dependent!

Glider Competition dates

Glider Competition Secretary John Ivory invites members to have a go this spring and summer

Every second Thursday, 1pm-2pm at Coombes on the dates below. 2024 competitions take place from April until mid-September.

Competitions:	**11th & 25th April**
	9th & 23rd May
	6th & 20th June
	4th & 18th July
	1st, 15th & 29th August
	12th September

In addition, new for 2024, RES (rudder, elevator & spoilers ONLY) competitions take place at Ashurst on the dates below. As always, weather dependent!

Competitions:	**28th April**
	26th May
	30th June
	28th July
	25th August

Your new Glider Competition Secretary

We welcome John Ivory who took over as Glider Competition Secretary from Robin Strange at the AGM

If you attended the AGM this year you will be aware that there was a reshuffle of some of the committee members and some additions. I have handed over the running of the power competitions to Clive Upperton and have taken on the role of running the glider competitions from Robin Strange.

The format of the glider competitions will remain the same being held at Coombes on a Thursday afternoon at 1pm on the following dates: April 11th & 25th, May 9th & 23rd, June 6th & 20th, July 4th & 18th, August 1st, 15th & 29th and September 12th.

In addition, this year we are going to try something different at the Ashurst meetings, namely F3-RES (bungee launch) and F5-RES (Electric Power) on the following dates: April 28th, May 26th, June 30th, July 28th and August 25th. In case you are wondering, RES stands for Rudder, Elevator and Spoiler only.

Following this introduction Tom Gaskin has kindly outlined the rules for both F3-RES and F5-RES which has now kicked into action as I'm in the process of making a two-metre F5-RES model for the Ashurst competitions. This year any glider can take part in the competitions as long as they do not use ailerons.

Well that's all for now. I look forward to seeing you all at one of the glider competitions.

RES: Rudder, Elevator & Spoiler

Tom Gaskin elaborates on our new F3-RES and F5-RES competitions to be held at Ashurst this summer

A different class of glider has been gaining popularity globally recently, and has been run in the UK, championed by Andy Sephton who became disillusioned with 100S competitions. A simple model that could be seen as a reaction to the increasing complexity and cost of the thermal soarers that are dominating the sport at the moment, the RES models are resolutely 'old school' being predominantly of balsa and ply construction with only a few parts of carbon-fibre allowed.

Reading through various social media threads, it would appear that the UK competitions are all 'north of Watford' so do not appeal to us soft southerners.

I would like to suggest that we organise a club summer series of F5-RES (the electric self-launching version) sessions at Ashurst with a view of perhaps running an open comp in 2025 if the support is there. To get the ball rolling as we are getting close to those balmy summer days that we thermallers dream of, the only 'rules' for us to contend with is that the model should only have RES controls. Any size will be acceptable this year, with the standard height-limiter setup that is currently used in our Thursday thermal meetings. I for one will be using my 35-year-old Bowmans' Silver Cloud two-metre glider that I electrified some years ago – I'm just working out how to retrofit spoilers to the built and covered wing!

Tom's Bowmans Models Silver Cloud, a two-metre glider from the last century. Suitably modified it will be his RES entry for 2024.
Photo: Tom Gaskin

There is an interesting thread on the BARCS website on design philosophy. Click this link: https://www.barcs.co.uk/forums/topic/12516-f5-res-raven-design-build

Next year, popularity depending, we should be running models more to the F5-RES rules below (pinched from the BARCS website):

1.1. 'F5-RES' is a competition class for radio-controlled glider models with a maximum of two-metre projected wingspan constructed predominately of wood. Control is via elevator, rudder and spoiler. Launch phase power is provided is by electric motor-driven propellor.

1.2. Definition of a radio-controlled glider: a model aircraft that does not use any form of propulsion beyond the launch phase and depends on aerodynamic forces on fixed surfaces for lift. Models must be remotely controlled by a pilot at ground level, using a radio transmitter for control.

2.1. A model usually consists of wing, fuselage and tail surfaces. Flying wing models are also allowed, if there are only two movable surfaces for pitch and roll control, each with only one servo for actuation. Otherwise, construction rules apply to both model types.

2.2. A model must be predominately wood construction. The following construction methods are allowed:

2.2.1. Open ribbed flying surfaces, solid wood surface, ‘D-box’ wood surface or a combination of solid wood and ribs.

2.2.2. Leading edges, spars and spar caps of composite such as carbon-fibre are allowed, which can be wound or formed of rods or extrusions.

2.2.3. The surface of the wing and tail may be iron-on film or foil, silk, paper or polyester fabric.

2.2.4. The spoiler if fitted must be upper surface only, and at least 5cm forward of the trailing edge. Spoilers may be single or dual, but no more than one servo each.

2.2.5. The fuselage must be wood, but a tail boom of composite material in the form of a tube is allowed. The tail boom may not extend further forward than the midpoint of the wing chord, at the wing root.

2.2.6. The predominantly wooden fuselage may be covered with composite material such as fiberglass, carbon, or Kevlar for abrasion protection or local strengthening around the motor mount. Otherwise, covering is the same as for the wing and tails.

2.2.7. The electric motor, battery and control electronics are at the competitor’s discretion. The motor mounting plate may be constructed from wood, metal or a composite material. (removed flat descriptor).

2.3. The following are not allowed:

2.3.1. Wings, tail or fuselage produced with the use of positive or negative moulding forms.

2.3.2. Fixed or retractable devices to decelerate the model when landing (examples: skegs, bolts, teeth).

2.3.3. Nose or spinner radius may not be less than 5mm.

2.3.4. Ballast that is not inside the model, and not securely attached to it.

2.3.5. Any transfer of information from the model to the contestant, except for telemetry receiver signal strength, receiver temperature and receiver battery voltage. No variometers or altimeters are permitted at any time. If a variometer is fitted as standard to a receiver, then this must be declared to the Contest Director at the start of the contest and altitude telemetry disabled for the duration of the contest. This will be subject to random spot checks during the duration of the contest.

2.3.6. Telecommunications on the flight field between competitors and helpers (radios and telephones included).

2.3.7. Carbon-fibre wing rib cap strips and/or trailing edge.

Your new Power Representative

We welcome Clive Upperton as our new Power Representative at Coombes

I have been a member of SRFC since the early ’90s. A regular flyer and model builder, I fly a variety of fixed-wing aircraft including EDF jets, electric soarers, vintage diesel and I/C four-stroke and electric sport models and some indoor fixed-wing. I regularly fly in the club’s gliding and power competitions. I have been invited to join the committee as Power Representative for Coombes.

Aims

1. To maintain the current Coombes ethos of considerate and safe flying whilst maintaining competent levels of airmanship when using our sensitive site in the South Downs National Park and flying in airspace controlled via our local airport.
2. To encourage members, particularly new ones, to use our biggest resource, the club members, to assist in providing a large amount of knowledge of aeromodelling and flying R/C aircraft.
3. To encourage members to participate in the BMFA Achievement Schemes under the guidance of our Training Team.
4. With the coming reduction of noise levels to a maximum of 82dB(A)* for our I/C powered planes, to assist in providing solutions for reducing exhaust and propeller noise.
5. To organise themed club nights at Coombes during the summer months, May to September.
6. Engage with members to encourage participation in club competitions. See our website for dates of both power and e-soarers.
7. To ensure flyers provide feedback to the Committee regarding the Combes site.

**A-weighted decibel (dBA or dB(A)) is an expression of the relative loudness of sounds as perceived by the human ear. A-weighting gives more value to frequencies in the middle of human hearing and less value to frequencies at the edges as compared to a flat audio decibel measurement. A-weighting is the standard for determining hearing damage and noise pollution.*

Your new Poling Representative

We welcome Dan Fallowfield-Cooper to represent all who fly helicopters and drones at our Poling site

I thought I'd write a little article to introduce myself as I'm now the Poling Representative. My name is Dan. I currently drive a grab lorry for a living but before that I was a steeplejack for 14 years. I've always had a keen interest in R/C models from a young age and started off with I/C cars then as I got older progressed to flying electric helicopters.

I've been flying rotary wing (badly) on and off for about 15 years. Over the last three years I've been putting more effort into the hobby and have been deriving a lot more enjoyment out of it and with fewer unscheduled landings.

I've only been a member of SRFC for just under a year, but in that short time I've met some like-minded people with a wealth of knowledge and experience which in turn is pushing me to progress further with my flying.

That's all from me for now, let's hope the weather gods are good to us this season.

Dan flying his Trex 550X electric helicopter at Poling

Poling receives its first grass cut of the year. Photos: Dan Fallowfield-Cooper

Your new Webmaster

We welcome David King who took over as Webmaster from Robin Strange at the AGM. Here are a few words from David…

I returned to the hobby at the end of 2022, after going part-time and approaching retirement.

I was a keen glider flyer with the SRFC in the early ’90s, flying thermal competitions in the Southern League on summer weekends and slope soaring on Cissbury in winter. I have fond memories of SRFC’s barbeque and scale evenings at Shoreham airport and the camaraderie of the club. I have not been disappointed on rejoining, freely being given help and advice.

Now I plan to give something back to the club, by helping to keep the website fresh and up-to-date with events, your model and flying photos and reports or posts.

You will find my email address at the end of each *FlyPaper*. I have created one that can be transferred to future webmasters: webmaster.srfc@gmail.com .

So every time you are out flying or at a scale event, please take a few pictures and send them to me with model names, location, date, who was there, how the crash occurred, etc, and I will put them in the relevant photo galleries or create a ‘post’ for you.

These are clickable hyperlinks to the pages where you and your flying companions will be able to see them:

https://srfc.bmfa.org/photos
https://srfc.bmfa.org/posts

This is our HOME page, gving access to the above and more:

https://srfc.bmfa.org

The HOME page links you to our events calendar and the Coombes weather station. The menu at the top has already been updated with the 2024 Power and Glider competition calendars. The website has links to the *FlyPapers* for easy reference and also our YouTube channel which now has over 100 videos.

So I look forward to your e-mails and likely you will see me out and about with my camera, capturing some of the action. If you want any of my website photos for your own articles for the *FlyPaper*, let me know and I should be able to supply high resolution copies.

I look forward to meeting everyone this year.

David King with his Great Planes Spirit. He has owned this model for 30 years and it is his favourite summer light wind slope soarer

The Quest for Less... (Noise!)

Derek Woodley on the thorny subject of model engine noise and how it can be reduced

A number of years ago – probably more than 40, truth be told – and before the electrification revolution, complains of model aircraft noise started to present a real problem for model flying clubs.

At that time I gave considerable thought towards solutions for the reduction of the noise created by my two-stroke glow-powered models.

Initial thoughts turned towards constructing add-on extensions to the not-too-effective, manufactured silencers that were commercially available at the time.

The result was a simple aluminium tube expansion-style silencer as shown, below.

Derek's home-made but very effective add-on silencer extension. All photos: Derek Woodley

The construction was very simple and lightweight with the end pieces made from 1/4" balsa liberally coated with Araldite inside and out. The centre tube was crimped closed in the centre with hacksaw cuts halfway through either side. These add-on silencers were reasonably effective, survived the exhaust temperature well, generated not too much back pressure and gave no trouble during use. The biggest downside was their size.

However, with more time and some lateral thinking, I eventually came up with an alternative approach: *fit a bigger engine!*

That may sound counter-productive, but I intended to detune the motor and use an oversize propeller so that it ran at a low rpm even with full throttle. The theory being that a big motor running at well below peak power was likely to produce far less noise than a smaller engine running at a higher power setting. High revs equals noise!

I had a couple of Webra 61 two-strokes that were a long-stroke version of the popular and powerful Webra Speed 61 much in favour at that time. Webra had introduced an effective, although rather bulky, silencer and the combination of this silencer and a long-stroke motor with high torque turning a large 13x7" propeller at a lower rpm proved a very effective combination for reducing noise.

When tested this motor/prop arrangement gave a 79dB average noise reading.

If you ever see one of these very effective Webra Reso-Silent Silencers (below) on eBay buy it. They can be adapted to fit any motor but do not come up very often.

Thought now turned to a suitable model. I wanted something aerobatic, that would 'do the book' and be able to deal with the extra weight and bulk of my proposed power arrangements. Chris Foss came to the rescue here, and his aesthetically pleasing Acro Wot design met my requirements.

In the quest for less noise it was going to be helpful to have a model that would fly most of the time using a low power setting with additional power only being needed for vertical manoeuvres, climbs, etc.

Weight and drag reduction were going to be vital modifications to incorporate in my model.

To save weight I simplified the fuselage structure where possible and opted for a dope and tissue finish to add strength. I also dropped the foam-cored wing supplied by Chris in favour of a conventional lightweight wooden wing which again was covered using dope and tissue. An advantage of the built-up wing structure was the ability to easily add a retractable undercarriage arrangement which would give a noticeable reduction in the overall model drag.

Less drag, therefore less power needed from the engine, so less noise!

Was all this effort worthwhile and did the end result meet the objective of producing a quiet two-stroke powered model that was capable of all aerobatics?

The answer was definitely yes, and the underlying secret was to mount the engine very rigidly and to fit a larger propeller to reduce the maximum rpm of the motor.

The aforementioned test result of 79dB was certainly pleasing, and well below our club's new 82dB limit!

More than just the actual noise measurement, it was great to be able to fly this model at a power setting of between one-third and half throttle most of the time while performing all the normal aerobatic manoeuvres.

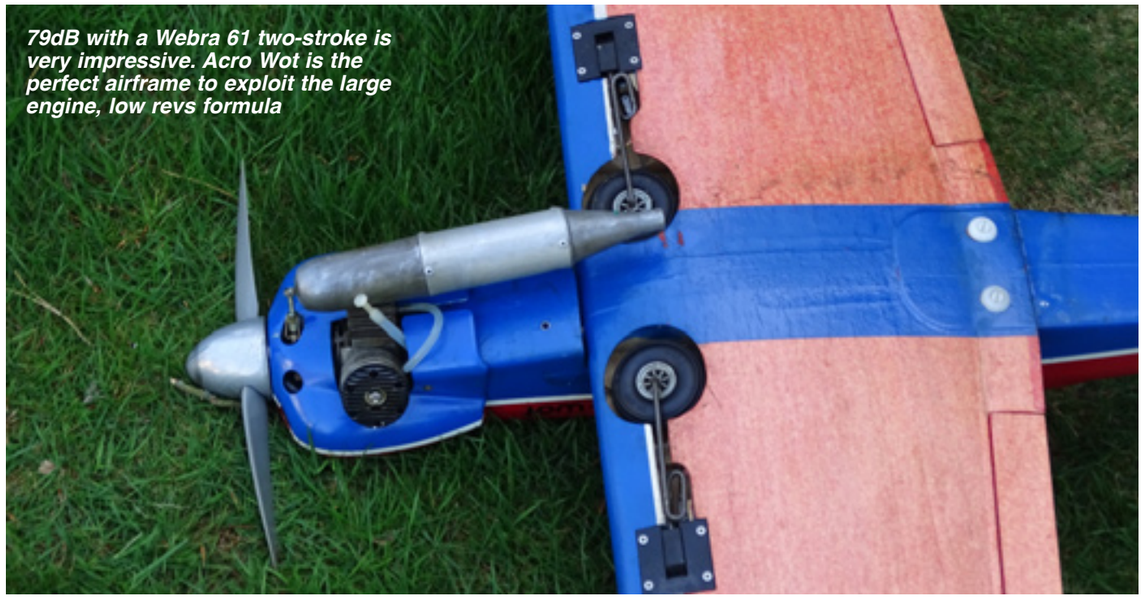
It really was noticeably quiet in the air at a time when I/C motors were the norm

and before electric power became universally available and affordable.

Those of you in the club in the ’90s may well remember seeing this red and blue model at Coombes on very many occasions. I still have the plane. Sadly it has languished in the garage for many years so would probably need considerable attention to be made airworthy again. Maybe I should dig it out as an alternative to the battery-powered foamie planes I seem to have become addicted to more recently?

You can draw your own conclusions regarding the viability of the ‘fit a bigger engine’ approach to noise reduction. The key to noise reduction was certainly to fit a big propeller and operate at lower revs.

I hope this article was of interest and maybe it will inspire others to give some further thought to this currently topical subject of noise reduction.



79dB with a Webra 61 two-stroke is very impressive. Acro Wot is the perfect airframe to exploit the large engine, low revs formula

Reducing noise levels at Coombes

The following was written by Derek Woodley circa 2009 but the tips it contains for reducing noise are particularly relevant today

The recent [2009] noise complaint at Coombes has I’m sure generated a lot of thought on the subject of noise reduction.

I have decided to put pen to paper to generate a higher awareness of the impact of our activities on the South Downs.

I think we need consider how our presence at Coombes effects other people and maybe we will need to change our flying habits.

Until now, we have all regarded this flying site as being fairly remote and therefore almost unrestricted in how we fly and how much noise we make.

We now know better.

Flying our models high and far from our strip makes our presence very visible to a large number of folk and the noise we generate can obviously attract attention.

Perhaps as a club we should adopt a much lower ‘profile’ and try as far as possible to become much less ‘visible’ to the public.

Can I make some suggestions?

1. DO NOT habitually fly high.
2. DO NOT habitually fly far away from our strip.
3. DO NOT fly towards the South Downs Way which runs along the north edge of our field.
4. Try and keep circuits tight, perform your aerobatics over the strip and not high up.
5. Give some thought to how many models are already airborne before you consider flying yourself. It may not be safe to have more than three models in the air if all are flying close to the strip and performing aerobatics. Fewer models airborne means less noise!
6. Take serious steps to reduce the noise engines and models make.

Regarding engine and model noise, can you take some more suggestions? (Apart from going electric!)

1. Try and build your models light. Heavy models require more power than light models and therefore will make more noise.
2. Stop those annoying vibration noises. They come from anything loose. If the wheels are loose, wrap thread around the axle next to the wheel and oil it well. This should stop the noise without restricting the free rotation of the wheel. Control surface pushrods can create a lot of noise, install them carefully. Make sure the flying control surfaces have no slack in the hinges. Ensure the silencer is really firmly attached to the engine and the engine is firmly mounted.
3. If possible cowl the engine. There is no reason why the cowl should not be lined with resin-coated balsa to make it stronger and more rigid. A cowl can have a surprising effect on overall engine noise level.
4. Think about using a larger engine in the model than is strictly necessary. A big engine running with RPM restricted will produce a lot less noise than a smaller

engine that needs to be run at high power settings.

5. If you use a large engine for the model, arrange the throttle linkage so that full throttle is not available. Restricting the maximum RPM of the engine is the single most effective way of reducing the noise level. Also, a surprising amount of noise is emitted through the carburettor of a two-stroke engine, so restricting the throttle opening will cut the noise in two ways.
6. Increase the pitch of the propeller. Again this will help in restricting the RPM of the engine and, if you choose the propeller with care, performance will not suffer. For example, a restricted 61-size engine should handle a 13 x 7 or 13 x 8 without trouble. Never use a propeller with a 6 inch or lower pitch. *(Also, some makes of propeller are noisier than others. Size for size, APC are quieter than most while Master Airscrew are much noisier. Ed.)*
7. Use an add-on silencer. I have shown below a design I have used in the past when flying at a very noise restricted flying site. *(See previous article. Ed.)* It worked well and the effect on engine power was modest. Mount it firmly.
8. Lastly, and perhaps most importantly, when flying throttle the engine back whenever possible. Is it really necessary to use full throttle for takeoff with most models? The need for full power should be rare, maybe only briefly for the odd climbing aerobatic manoeuvre. Try flying your aerobatics with low power settings. It may take a little more skill, but can be very satisfying. Treat flying with low power settings as a challenge!

All the above are purely personal thoughts and suggestions, I am not a committee member. *(He is now! Ed.)* The committee alone have the power to instigate club rules and procedures. However, with thought and common sense there is no reason why we cannot impact our noise and nuisance footprint at Coombes greatly. Give this great consideration.

SRFC Noise testing procedure 2024

1. Whilst being tested the model shall be held at waist height.
2. If the exhaust exits from the side of the model the handler should stand on the opposite side.
3. The person testing will stand 7 metres from the propeller with his back to the wind, after the reading from the front has been recorded the person holding the model will turn 90º and the test continues like this until all four directions have been tested and recorded.
4. During the testing the engine speed must be at maximum revs.
5. If it is deemed unsafe for one person to hold the model, then a helper may be employed as long as neither handler shields the engine from the meter.
6. Meter readings will be rounded down to the nearest whole number.
7. It will not be permitted for an engine to be made quieter to pass a test by reducing the maximum throttle opening using transmitter settings.
8. For the sake of impartiality the owner may choose to hold the model or to witness the meter readings, but should not be holding the transmitter or recording the readings.
9. For a model to pass the test, the no reading must exceed **82dB**.

An Evening of

VINTAGE & Old Timer

Model Aeroplanes

at our

SRFC Barbecue Evening

3rd May, 5.00-8.30pm

There will also be a Single Channel Diesel Powered Competition

General flying is also welcome – all types

We look forward to YOU joining us at Coombes

Tiny Tiggie

David James builds a delightful miniature Tiger Moth

I've been a 'sleeping' member of the Sussex Radio Flying Club since before we downsized, since I'd taken on too much and something had to go, if only temporarily. Time still seems to be tight, but before Christmas I thought I might be able to ease myself back in by going along to the indoor flying sessions organised by the club. The only problem was, I didn't have a suitable model.

So I started searching the internet and came across a company called BangGood, which seems to be a trader based in Hong Kong. They were advertising a 'MinimumRC Tigermoth DH-82A Micro Scale 360mm Wingspan KT Foam RC Airplane Biplane KIT+Motor', which looked promising since, before my 'sleep' I had started building a 50" wingspan Tiger Moth from a plan. This kit came with a motor and there was a link to a collection of a receiver and three servos.

So I ordered both the kit and the receiver/servos on 6th November, both arriving on the 17th. I then bought a 1S battery and connector from Sussex Model Centre in Worthing.

The kit contained:

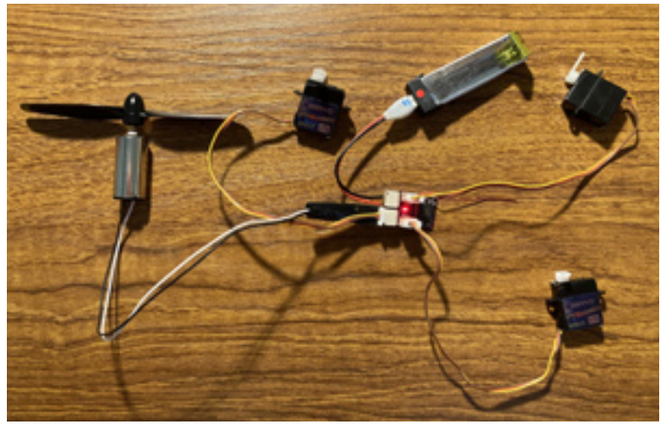
- Laser cut 2mm ply components for the main frame
- 1mm laser cut ply for the struts and control horns
- 2mm foam fuselage panels, wings and tailplane
- Undercarriage wire and tyres
- 1020 brushed motor and propeller
- Self-adhesive stickers to cover most of the bare foam parts
- Carbon pushrods and wire clips for the servo to control horn linkages

The receiver was a RX42-D mini 4-channel item compatible with Spektrum DSM2/DSMX while the three servos were 1.7g analogue micro items.

The PDF assembly instructions could be downloaded from either the BangGood or the MinimumRC websites. They contained few words, but plenty of photos showing each stage of the construction.

Test binding

Although the kit was essentially my Christmas present, I wanted to check that the receiver and servos worked and that, in particular, my Spektrum transmitter would bind with the receiver. So, towards the end of November I soldered the battery connector to the receiver, along with some strip-board connectors to make a plug and socket for the motor.

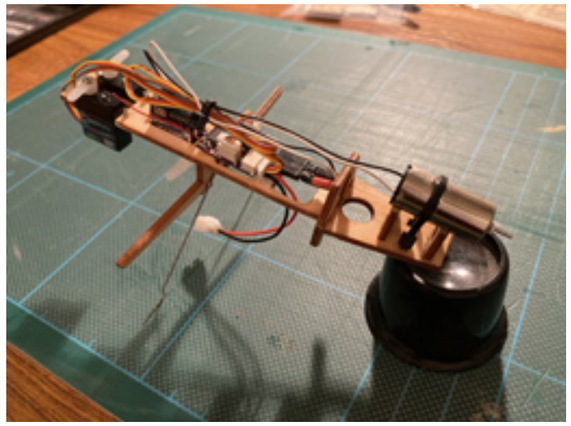


I had to set the 'modulation type' in the TM-MICRO profile on my transmitter to 'DSM2 only' in order to get the DX6i transmitter to bind to the RX42-D receiver. But then it worked, although I need to rebind the transmitter and receiver every time that I turn them on.

Frame

The laser-cut ply components were attached to the sheet by very small uncut spots, which could be easily cut with a sharp blade. The parts fitted together well and dabbing a little thin CA on each joint fixed them together.

The photo shows the assembled main frame with the undercarriage wire fitted, along with the motor, receiver and three servos. The tie-wraps (for the motor and the wiring) were supplied in the kit. Some CA also helped secure the motor.



Fuselage panels

The coloured foam panels had a very thin plastic layer on each side and were attached to the frame and to each other using UHU POR glue. Aligning the side fuselage panels was a little uncertain, although the lower wing spar did pass through a slit in the panel. Rather than use the POR in its 'contact' mode, I assembled the parts while the glue was still wet, so that I could manoeuvre them into place. Also, I found that using the end of a cocktail stick was useful to apply glue in some parts.

As can be seen from the photos, some of the plain panels were scored and had to be bent before fitting and the coloured engine cowl pieces also needed to be shaped. Coloured stickers were then applied to the fuselage top and front. These included the seat covers and instrument panels.

The only deviation from the instructions that I made was the fitting of the propeller. It was a very tight fit so I pushed it on to the motor spindle while I could still access the rear of the motor. This meant that I had to cut the front sticker, which just had a hole to fit over the motor spindle.

Tailplane, fin and wings

Assembling the upper wing support and fuel tank was probably the most difficult part of the build. Although the supports located over ply sections joining the two sides of the fuselage, getting all the parts square and fitting the foam over the curved tank took some manipulation.

Fitting the tailplane and fin was the first introduction to the hinging of the control surfaces. The 'hinges' are just squashed lines in the foam. The instructions suggested that you should use the end of a screwdriver to score through the 'half-cut' lines for the rudder and elevator. Luckily I tried this on a scrap pice of foam, since the screwdriver end simply ripped the foam. Consequently I used the edge of a steel rule to crush the foam on each side. Then I worked the control surface up and down until it became sufficiently flexible.

When fitting the tailplane I had to pack one side very slightly with a sliver of foam so as to get the tailplane to sit horizontally. The fuselage sides were clearly very slightly mis-aligned. The other problem that I had was with one of the ailerons. One end started to come away from the rest of the wing when bending it, so I applied a small amount of glue. Since the POR glue is flexible I'm hoping that this will still allow the aileron to move.

All four wings had to be 'curved' by again crushing the foam, but this time only on the underside. The thin ply outboard wing struts slotted into the lower wing, but there was then just a faint mark on the underside of the upper wing. Getting the struts to remain in place while holding them until the glue set was quite tricky.

Control linkages

The kit was also supplied with wire clips to connect to the servos and control horns, and a length of transparent shrink-wrap tubing to connect the clips to the carbon rod or to each other (the rods were only used to reach the tail). I adjusted the length of each linkage so as to leave the control surface in a neutral position and then found that a hairdryer was hot enough to shrink the tube (with some card to protect the foam). However, I also applied some CA to help hold the joins in place. Connecting up the control linkages was probably the most fiddly part of the whole build.

The finished model.
All photos: David James

Flying

On the underside of the fuselage is a flap of foam (hinged by part of the front sticker), with a small magnet that holds it closed. This gives access to the battery compartment, although it is quite difficult to get the battery in and out. Having charged the battery I took the plane to the SRFC indoor flying session on Saturday 27th January.

The plane was checked by Clive Upperton who thankfully spotted that the ailerons and rudder were reversed in the transmitter. He corrected this and also increased the throw on the elevator. Then Tom Gaskin gave the plane its maiden flight. This image is quite 'grainy', since it was taken from the video of that first flight. It flew faster than I'd expected.

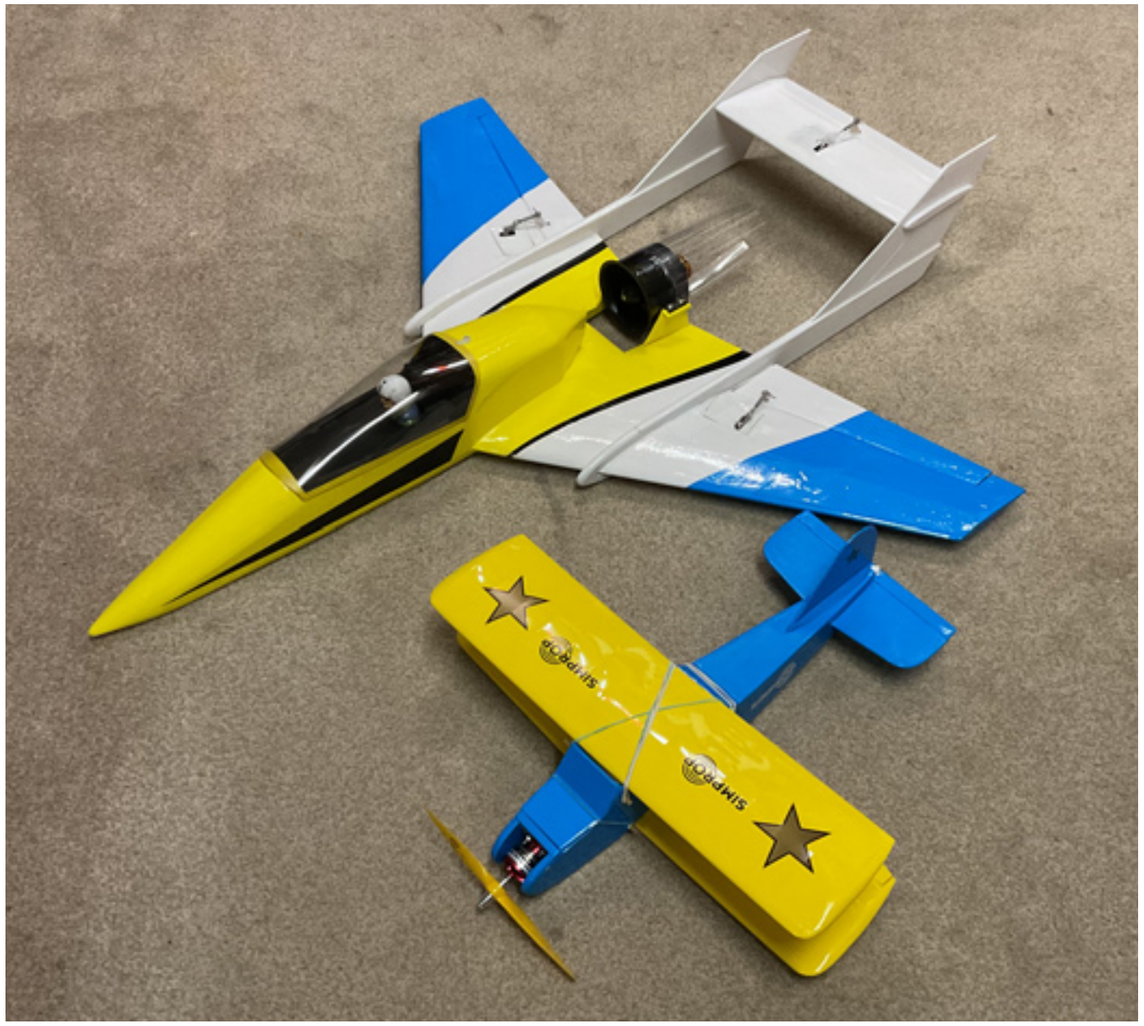
When I tried flying the tiny Tiger Moth, the walls kept getting in the way! Then a collision with the floor (I still don't know what I did to make that happen) slightly crumpled the nose and broke the propeller. Luckily the MinimumRC website had propellers for sale, so I ordered two. However, I discovered a fault in that the motor ran all the time when the receiver was connected to the battery and refused to respond to the transmitter's throttle stick so I had to send for a new receiver also! That meant taking off the top wing, along with the front/top of the fuselage so as to extract the receiver. At the time of writing, the new receiver has not arrived (from China), so I missed the February indoor flying session. If the receiver arrives and I can get the plane glued back together then I hope to get to the March session and keep a better watch out for the walls!

Christmas builds

Paul Gladstone found time to build two little beauties over the festive break

The twin-boom model is from the RBC Bobo Cat kit. Very reasonably priced laser-cut kit using a stock 70mm fan running on four cells. Test flight awaits once time and weather permit.

The little bipe is a Simprop Zaunkönig. I found the plans and decided to make one on my lap over Christmas! My original dates back to my RAF days when stationed in Germany, 1978-1981. We used to fit .049 cu in Cox Bee motors then. Nowadays a quieter power unit beckoned so I used a 2212 motor and small 3S LiPo so should still be quite quick! I also found some original Simprop decal sheets which surprisingly proved useable.



Hanky Planky competition update

Clive Upperton rounds up the competition using the RCM&E Hanky Planky in memory of the late Peter Plank

My last report in January's *FlyPaper* left off in November and we were aiming to run events each month into March with the next round scheduled for December. However, the weather gods were against us and the December event was cancelled.

January arrived and the weather window for the planned date proved acceptable and we scraped together the minimum of four flyers to participate.

One of the tasks was the Dead-stick Spot-landing and considering the skill of the participants when flying in glider competitions which always have a spot landing, the Hanky Planky presented more of a challenge than expected. To improve our spot-landing ability this task was included not only in the January round but in all subsequent rounds.

The Limbo Challenge is often a model breaker but there were no broken models this time. It proved harder than expected to attain high numbers of passes under the tape although I did manage to cut the tape which duly wrapped around my prop bringing my flight to an end, but no real damage was caused.

John, Keith and Tom discuss model set-up. Photo: Derek Woodley

Clive lands close to the marker in the Spot-landing task. Photo: David King

The final challenge in January was the Spins of Death which saw three participants take place, the fourth having damaged his Hanky Planky with a heavy landing in the spot-landing task. The task begins with a six-second motor run to height, motor cut and into a spin which is usually a spiral. The model with the most 360-degree rotations wins. The challenge is to judge when to pull out of the spiralling dive. Yes, you've guessed, a poor decision will result in the 'death' of the Hanky Planky. John Ivory nearly achieved this inauspicious feat but did a touch and go just in time.

The event that day resulted in a tie for first place with John maintaining his first place overall.

Mist greeted contestants at the March Final but thankfully cleared. Photo: David King

Moving onto to February and March I took a flexible approach as to which day to hold the competitions and we were able to select two days at short notice which proved ideal although the March one saw the field covered in mist until gone midday.

February saw five participants taking part with three of the group achieving equal scores. Keith Miles flew his Hanky Planky for the first time in competition and helped by winning the spot-landing task he subsequently became one of those with a joint first. Well done Keith.

Balloon bursting was attempted for the first time. This was a bit hit and miss. In fact, it was mainly a miss. George Evans and Tom Gaskin burst one each whilst I managed two touch and goes between the balloons but joined the zero-score brigade. Finally, another go at the Spins of Death which resulted in no near-death experiences and two joint winners with nine spirals each.

George makes last-minute adjustments. Photo: Derek Woodley

John, using his own Hanky Planky, took the bull by the horns and persuaded our reluctant chairman Derek Woodley to fly this Depron version model. I am not convinced that this changed Derek's opinion of the model but we tried.

The February event concluded with our trademark presentation to the first two

Above: balloon bursting contestants, left to right: Clive, Keith, John, Tom, Robin and George. Photos: Derek Woodley

places or in this case the first three.

At this point in the competition, we had John remaining in overall first place. However, if several of the regular competitors were to do well in the March competition, places could easily change hands.

To ensure the maximum number of Hanky Planky flyers turned up for the *finale* we managed to get all the seven regular flyers together on the same day at the beginning of March. David King was available to take photograph the activities and both he and Alan Lamb took charge of timing and scoring the event.

The Spot-landing task saw John, myself and Tom yet again putting in a good performance and generally everyone had improved over the earlier events. However, the final task of the day was to prove we hadn't quite reached a consistent result.

Tom with his Hanky Planky. Photo: David King

The second task was a pylon-style event to score as many laps around two poles approximately 25 metres apart in two minutes. Depth of perception created some degree of difficulty and a rhythm of flying an accurate circuit was the key to maximising scores. Tom won with 19, followed by me with 18 and Keith with 17.

Finally, the Viagra Challenge, a mass launch, All up with a six-second motor run, cut motor, last one down the winner. Planes have to land on the mown patch to qualify and of the seven launched only one landed on the nominated area. It was that man

Miniature photos: David King

Clive with his Hanky Planky. Photo: Derek Woodley

John Ivory again! He even managed to hook a thermal!

Clearing the patch to allow general flying to commence the numbers were crunched and the results announced. The third place was Tom, second myself and first John. See table attached for full results.

I hope my report gives you a better insight into our attempt to stimulate more of an interest in competing with this easy to build fun model. However, I am sure the photo-graphs supplied by Derek and David will, as the saying goes, prove 'a picture is worth a thousand words'.

HANKY PLANKY TRIATHLON WINTER COMPETITION
FINAL RESULTS

No.	name	Competetion month points							Total points	position
		Sept	Oct	Nov	Dec	Jan	Feb	Mar		
1	John Ivory	15	cancelled	14	cancelled	10	7	17	63	1
2	Clive Upperton	11		8		10	10	14	53	2
3	Tom Gaskin	6		7		9	10	12	44	3
4	George Evans	DNE		7		1	8	8	24	4
5	Paul Gladstone	14		DNE		DNE	DNE	6	20	5
6	Keith Miles	DNE		DNE		DNE	10	7	17	6
7	Mark Vale	8		DNE		DNE	DNE	5	13	7
8	Robin Strange	DNE		5		DNE	DNE	DNE	5	8

key	DNE = Did not enter

The Final. Left to right: Grahame Pearson and Alan Lamb (timekeepers), John, Keith, Tom, Mark, Clive, George and Paul. Photo: David King

Winners. left to right: Tom (3rd), Clive (2nd) and John (1st). Photo: David King

Winter Builds

Les Crane reports on winter builds and flying

A bitty period as I was not able to spend long on any project but progress made on several fronts.

Miles Gemini. I have completed the sheeting of the model and built the ailerons and flaps, which I test fitted but have not fixed at this stage. I also added three new attachment points where the rear fuselage joins the front to give a much more solid attachment. I have also applied sanding sealer and started applying glass cloth, being about one-third covered at this point.

Above: Miles Gemini now fully planked.
Left: Aileron and flap loosely fitted.
Photos: Les Crane

Crescent Bullet. I have flown this model a few more times, using greater aileron throws and the performance is improved but it could do with a little more. Overall performance is fine but not outstanding and perhaps a more powerful motor would be better.

Crescent Bullet at Coombes.
Photos: Grahame Pearson

Flair Giles 202. I have repaired the holes in the cowling which are OK but definitely not pretty. It is now electrified (orignally I/C), balanced and awaiting a maiden. It was necessary to cut a hatch for the battery in the cowl and down through what was

Flair Giles now electrified and ready to maiden.
Photo: Grahame Pearson

previously a box to which engine bearers were attached. As this originally belonged to Ivan's late son, Jason, I took it to Ivan's home where he was able to taxi it on the patio. I hope he will be able to see it fly soon.

Right: Overlander 500kV motor fitted to Giles. Photo: Les Crane
Below: Ivan takes the sticks for taxi trials! Photo: Grahame Pearson

Vintage models. In the last *FlyPaper* I reported on buying two vintage models which had no hardware and were formerly I/C, a Red Zephyr and a Quaker. Both have now been electrified, servos fitted and balanced. Both have been maidened. The Zephyr needed tailplane incidence altered as it climbed dramatically and the Quaker a bit more lead in the nose. The problems persisted on the next flights and Clive Upperton spent some time flying and assessing them, suggesting quite a bit more downthrust was needed on both plus extra incidence on the Zephyr. Thanks a lot, Clive, I have added the incidence and downthrust and await the next opportunity to fly them.

Ivan Thomas with Flair Giles. Photo: Grahame Pearson

LiPo fires

Robin Strange witnessed a crash and subsequent fire at Coombes

If you have never seen a LiPo (Lithium Polymer) battery catch fire you will be in for a shock. A LiPo fire doesn't need oxygen as it is a chemical reaction and a violent one at that. Water will not put it out.

I've had the misfortune to see a couple of LiPo fires at close quarters. In February at Coombes an electric powered Spitfire crashed from quite a height hitting the ground at high speed. The pilot wandered towards the wreckage, transmitter in hand, muttering under his breath and then after some seconds started running towards his model as it caught fire.

I ran to help reminding the pilot not to get downwind of the fire as a LiPo fire gives off toxic fumes. Other club members ran over with the pail of sand and the fire beater which are kept at Coombes for such eventualities. The beater helped with the grass and model but not the LiPo, the sand was employed to cover the parts of the model that were on fire, particularly the nose and battery. In this way the fire was controlled and the LiPo was allowed to burn itself out under the sand. Our assumption is that on impact the battery moved forward rapidly, hitting the rear of the motor and was punctured hence the fire. A LiPo fire gives off a lot of heat and by the time it was under control very little of the model was left and all electronics were destroyed.

Sand is heaped on the LiPo fire.
Photos: Mark Vale

Having successfully extinguished the fire we had of course to clear up the site as the chemicals would be harmful to any wildlife and the sheep.

Reducing the risk of a LiPo fire

'Prevention is better than cure' as the saying goes. Although not a factor in this particular incident please ensure that any bolts holding your motor mount to the nose of the model do not penetrate into the battery compartment as they could easily puncture a LiPo in a crash. Bolts should be no longer than necessary (shorten them with a hacksaw) and dense foam or packing should be placed in front of the battery if you feel it could move forward under the inertia of a sudden impact with *terra firma*.

If the battery does not become punctured or badly deformed a fire is unlikely.

Summary

1. Smoke from a LiPo fire is toxic. Do not stand downwind
2. It's a chemical reaction
3. Cover the fire with sand
4. Clear the crash site afterwards of debris
5. Ensure the fire is 100% out before placing the model's remains in your car. Preferably enclose the remains in a fireproof container.

‘Who?’ Aviation Quiz

By an anonymous SRFC member

You can Google the answers but we urge you not to

Answers on page 42

1. Who flew the Fairy Delta 2 at 1172mph?
2. Who achieved the first official speed record for a jet aircraft in a Gloster Meteor in 1945?
3. Who broke the world speed record in a red Hawker Hunter in 1953?
4. Who was the famous RN pilot who got his nickname because he was so small?
5. Who was the first official breaker of the sound barrier?
6. Who was the pilot for the maiden flight of the Spitfire?
7. Who was the pilot for the maiden flight of the Hurricane?
8. Who rolled the Vulcan at Farnborough?
9. Who was killed testing the DH Swallow in 1946?
10. Who led Operation Jellicoe on Amiens Prison?
11. Who was the deputy commander of the Allied Expeditionary Force on D Day?
12. Who led the assault on Pegasus Bridge on D Day?
13. Who was known as the Father of the RAF?
14. Who was in charge of Bomber Command in 1944/5?
15. Who said, “Give me a squadron of Spitfires” in 1940?
16. Who was the originator of the Vulcan design?
17. Who commanded 11 Group in the Battle of Britain?
18. Who commanded 12 Group in the Battle of Britain?
19. Who was the famous surgeon at the East Grinstead burns unit in 1940?

‘Who?’ Aviation Quiz – answers

Quiz is on page 41

1. Lionel Peter Twiss
2. Group Captain HJ Wilson
3. Neville Frederick Duke
4. Eric Melrose ‘Winkle’ Brown
5. Charles Elwood ‘Chuck’ yeager
6. Joseph ‘Mutt’ Summers
7. Paul Ward Spencer ‘George’ Bulman
8. Roland ‘Roly’ John Falk
9. Geoffrey Raoul de Havilland Jnr
10. Group Captain Percy Charles ‘Pick’ Pickard
11. Air Marshall Lord Arthur William Tedder (1st Baron Tedder)
12. (then) Major John Dutton Frost
13. Marshall of the Air Force Hugh Montague Trenchard (1st Viscount Trenchard)
14. Air Marshal Arthur Travers Harris
15. Adolf Josef Ferdinand Galland
16. Roy Chadwick
17. Keith Rodney Park
18. Trafford Leigh-Mallory
19. Archibald Hector McIndoe

WhatsApp groups

Les Crane explains how 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 three 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: robin.srfc@gmail.com.

Flying Today? This group comprises (again not exclusively) those who fly in the afternoon and evening, fixed-wing power and e-gliders – normally, therefore, from the south or west side. 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 I am not aware of an SRFC Helicopter WhatsApp group but if one exists I will circulate details.

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 like me you suffer a senior moment when building or flying!

A winter Harrier build

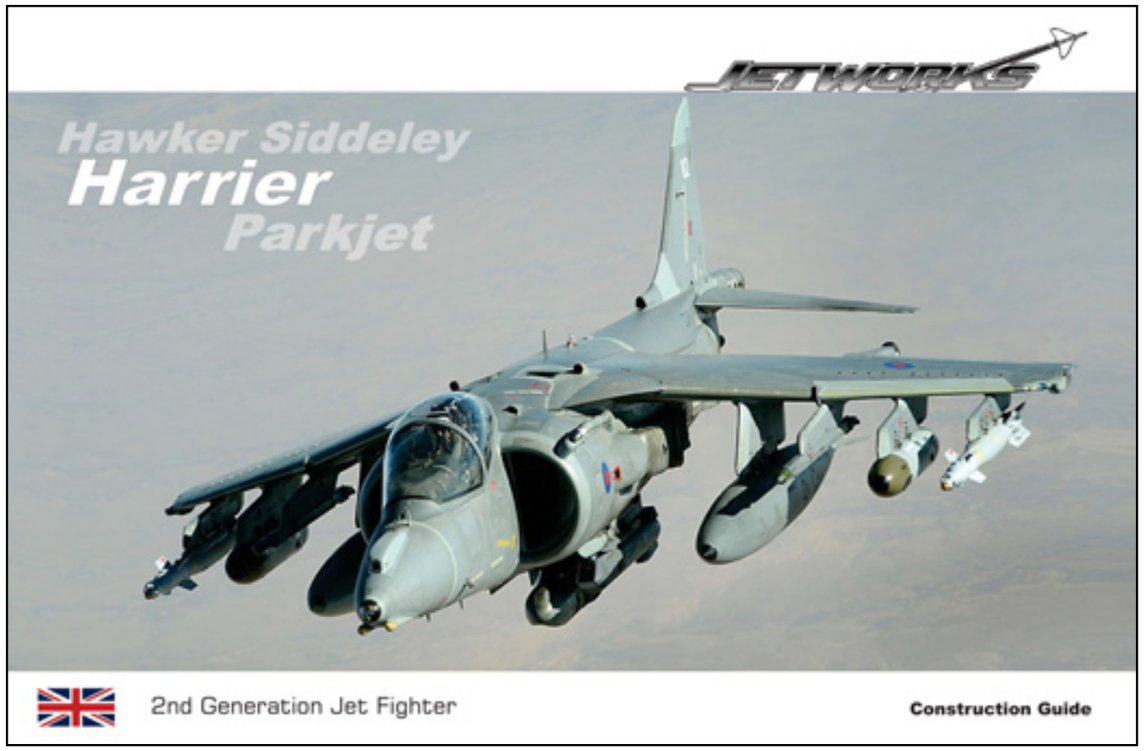
Clive Upperton built a Harrier from Depron over the winter

Way back in the autumn of 2022 in discussion with fellow club members, Pim Smith and Paul Gladstone, we mulled over the possibility of building a Harrier VTOL jet model. I undertook some research primarily based on the work of Tony Nijhuis printed in *RCM&E* magazine, and via the internet the development of a large EDF Harrier (Google 'Joel Vlashof Harrier').

It was immediately evident that the knowledge, skills and funds necessary to build a VTOL Harrier was beyond my pay grade hence the subsequent search for a more practical solution.

I had previously built a Depron model of a Saab Viggen powered by a 50mm FMS EDF using a plan produced by Jetworks and reduced to suit the small diameter fan. Knowing they offered a large range of Depron Jets (See https://jetworks.online) a quick search highlighted a Harrier offering with the option of building five variants: Kestrel/GR1, Sea Harrier, GR5/AV-8A, GR7 and GR9/AV-8B.

I sent off for the digital package which included the PDF files of the plan containing all the variants for cutting parts out of 6mm Depron, plans for 3mm Depron items and plans for jigs to form the ducts and for setting up the wing and elevator anhedral. The comprehensive 40-page instruction manual is in PDF, easily viewable on a tablet. The cover is shown below. All of this cost about £4 – an undoubted bargain in my eyes.

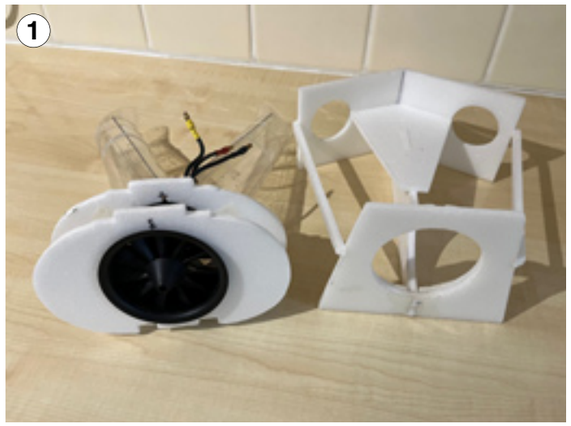


Those of you who are familiar with Depron modelling will be well aware the parts need laminating together when dealing with components that need greater dimensions than 6mm thickness or require a rounded profile. To overcome this problem many of the complex components have STL files available for 3D printing, again for very reasonable costs. (STL – or stereolithography – is a CAD file format commonly used for 3D printing.) However, being a low 'tech' sort of guy, I used Depron for every item.

Having received the files, I downloaded them to my laptop and thence a USB stick and there they stayed until awoken in late summer of 2023, when on a trip to the local printer – https://www.pep4print.co.uk – the plans were printed out as well as tiling a set on my home printer to cut up as cutting templates.

The model can be fitted with either a EDF power source or a conventional rear mounted electric motor-driven propeller. I chose the specified 64mm diameter FMS 3S fan-powered EDF meaning that a bifurcated duct had to be constructed and I decided this would be my first task. (Photo 1.)

The next task was to cut the 6mm parts. (Photos 2 and 3.)



Work continued as per the instruction booklet and the model began to take shape. (Photos 4 and 5.)

The components were cut as required and affixed with UHU POR although care must be taken to keep the adhesive away from any edges that need sanding. The build was at times tedious especially when cutting out and laminating items like the canopy and nose which comprise of 13 pieces and 11 pieces respectively. (Photos 6 and 7.)

Following the build sequence and spreading the work over many weeks the model progressed from a pile of Depron to bundles of laminated Depron glued together into a number of sub-assemblies.

The most significant deviation from the design was the mainplane which was designed as a flat plate wing and, having experience of such wings, I felt it necessary to modify the wing section to semi-symmetrical. Created by using the original 6mm thick flat plate wing and adding tapered spars of Depron at about 30% of chord on the top and bottom of the plate. The wing surfaces were covered with 3mm Depron top and bottom and sanded to profile. To ensure sufficient torsional strength the wing was covered with dampened nylon and then coated with a water-based laminating solution to seal the surface followed by the application of Tamiya paints.

During the build process the R/C control equipment was fitted in stages whilst access was available as this is a one-piece model with wings permanently affixed to the fuselage. Access for the 3S 2200mAh Li-Po is via a hatch behind the wing and this also enables the receiver to be reached.

Controls are ailerons, flaps, all-flying elevator and throttle with an ultra-bright LED nose-light accessed via the removeable canopy.

The version I chose to model was a GR9 of No. 4 Squadron mainly because I wanted to use the larger AV-8 wing and despite liking grey paintwork the colourful fin does enable an improvement in visibility. The real aircraft also flew at Shoreham in August 2010.

The model was completed around Christmas time (Photo 8) and its maiden flight on 6th January proved successful and the flight is available to see on the SRFC You Tube channel (https://www.youtube.com/watch?v=jHE0fXol7Eg&t=3s). It was a grey day and one flight was sufficient for that day, the model was launched by Pim Smith. A second visit to Coombes in late January resulted in two flights culminating in an unplanned landing in the outfield due to a pilot error of mis-orientation. Fortunately, the plane landed upright and undamaged so we lived to fly another day. That day came a few days later on the 1st February. I performed a maiden flight on a refurbished pre-war vintage design, a Long Cabin, and enjoyed several flights before the Harrier was again flown twice, launched each time by Pim.

On the final flight fate dealt a second unplanned landing. I had completed my flight and was committed to landing but arrived too high so I flew a second circuit and whilst

flying crosswind about to fly downwind ready to land the model slowed and spun in from about 40 feet straight into the ground.

This time it was severely damaged and I returned to the pits to investigate muttering, “I am not going to rebuild this.” (Photo 9.)

I found no obvious equipment failure at the field, all controls continuing to work and those members who observed my flight confirmed nothing looked wrong outwardly. I checked everything out once at home and retested all controls, motor, ESC and battery, etc. All equipment worked correctly. My conclusion was I had flown too slowly crosswind and stalled the plane.


9

Well, it only took a day or two before work commenced on rebuilding the nose area and this was completed a few days before I typed this article. (Photo 10.)

I hope to re-maiden the Harrier in the next few weeks weather permitting.

If you have any questions regarding this article please contact me on clive.coombes.srfc@gmail.com.


10

Clive with his Harrier. Photo Mark Vale

It had to be done!

John Ivory – prolific builder of small models – builds a miniature version of the two-seater Spitfire he flew in 2023

In June 2023 I was lucky enough to have a flight in a two-seater Spitfire, MT818, at Biggin Hill (See *FlyPaper*, September 2023: 'A day I will never forget'.) What a fantastic day that was.

While talking about my experience over coffee Paul Gladstone put a plastic bag in front of me saying, "Any good for you?" the bag contained a partly constructed Spitfire fuselage from a 36" wingspan model and a lot of other bits including a plan of the fuselage only but nothing else. Well, that started the ball rolling…

The next day, looking at all the bits, I decided to make a Spitfire. Not just any Spitfire you understand. This would represent MT818, the two-seater I went up in.

Fortuitously, tucked away in the garage roof was a foam wing for a 40" Spitfire that again Paul gave me some years earlier. With a bit of trimming this would do nicely.

It took quite a lot of effort to work out how to add the second cockpit as various bulkheads had to be repositioned. Work was also extensive on the wing as it needed to be reduced from 40" to 36". That may not sound much but it affects the whole wing – chord as well as span – and what was initially thought to a quick job actually took ages. The tail plane and fin were one of the last jobs. Relatively simple being made from 6mm Depron sheet to reduce weight at the tail section.

A reminder of John's Spitfire experience last summer – as reported in FlyPaper, September 2033 (new members can download from the website)

With the bulk of the construction complete I just needed to paint the plane, mould the two cockpits and spinner, paint the pilots, fit the motor, ESC, servos and radio… not much left then!

Last was to check the CG. I needed to add 80g of lead to the nose increasing the all up weight to 820g with a 3S 1350mAh battery fitted – a bit heavier than I wanted. Now I'm just waiting for a nice dry warm sunny day to test fly it.

Bare arframe completed

The finished model. Photos: John Ivory

Seventeen year old Gnat

A tribute to a long-lived ducted fan Gnat

AUTHOR:
TOM WILKINSON
PHOTOGRAPHER:
PETER DAWSON

'Pim' Smith can be justifiably proud of his seventeen year old model

For several years I have had the privilege of running the flight-line at Dick Spreadbury's Classic Jets meetings at Abingdon, near Oxford in the UK. In recent years the gas turbine power plant has almost totally taken over at these and all other meetings. However, there is an exception – one ducted fan powered model just keeps on appearing. It got to the point where I found myself looking for it, feeling that the meetings were not complete without it.

The aircraft in question is a 1:5.5 scale Folland Gnat built in 1988 from a John Carpenter semi-kit by James "Pim" Smith. It was Pim's consistent flying style which gradually got my attention over the years, no matter what the weather or wind state the Gnat would be seen to take off in a very scale-like manner, perform a typical Red Arrows 'singleton' display and land without a bounce. Pim hasn't kept a record but he estimates that the aircraft has had close to, if not more than, a thousand flights! It says something for the original build quality that it has survived so long, considering the effects that glow-plug fuel and ducted fan vibration can have on airframes. Then there is the wear and tear of a thousand landings – however well executed.

The aircraft has a glass fibre fuselage with obechi clad foam cored flying surfaces. It was first flown in 1988, without landing gear, off a dolly. Rhomair retracts were fitted in 1989.

It has flown at many locations in the UK including Abingdon, Bentwaters, Benson, Elvington, Hucknall, Kemble, Long Marston, Lords Hill, Odiham, Shoreham, Swinderby, Weston Zoyland, Woodbridge & Wroughton.

Pim gives the following account of flying his Gnat:

"The anhedral shoulder wing of this light-weight model makes it very easy to fly.

Take-off is no problem, just line her up on the runway and progressively open the throttle to full. At around 70 yards pull on a little up elevator and she's airborne. Wheels retracted and into a circuit at speeds around 130 mph (she has been officially timed at 156 mph) all jet style manoeuvres are possible with this very smooth agile model. After six minutes it is time to land. This is done from the usual rectangular circuit. The final leg is entered at a height of 50 feet from 400 yards away. Wheels down and lined-up with throttle at tick-over and speed and height start reducing. With a nose-up attitude and a little up elevator held she will settle down to a perfect landing. If she is landing a little short a small amount of power will keep her airborne until reducing power will let her settle onto the chosen touch down point. Then just taxi back towards the pits." ✈

The Gnat at speed

Model Data:
Wingspan: 52 inches (1320 mm)
Length: 69.5 inches (1765 mm)
Weight (dry): 11.5 lb (5.2 kg)
Fuel: 24 ounces (710 ml) Castor based with 5% nitro methane
Engine: OS91 with Tom Cook pipe
Fan: Ramtech impeller with Dynamax shroud
Retracts: Rhomair

A flight sequence captured in July 2004 at Abingdon - take-off with a nice rich mixture

Approach

...and touching down

Reproduced from Radio Control Jet International, October/November 2005

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

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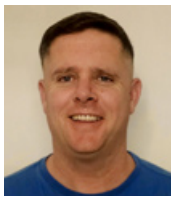
Dan

Non-Committee Positions

Website & Data	**David King webmaster.srfc@gmail.com**
Field Maintenance (Coombes)	**Ken Hamer**
Social Events	**VACANT***
Safety Adviser	**Dave Knott**
Safety Marshall 1	**Paul Gladstone**
Safety Marshall 2	**John Wase**
Safety Marshall 3	**VACANT***

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