



Newsletter

No.31: April 2023

In this edition: entertaining and informative articles from members, an Item for sale, and updates from the flying field for February and March.

KRMFC current committee members are:

Tom Wilson – Chairman

Neil Grayson – Secretary

Mike Hill – Treasurer

Bill McDiarmid – Committee Member

Jim Walsh – Committee Member

Neil Gourlay – Committee Member

Bob Gadd – Honorary Committee Member

Contacting the Committee

An email address has been created for members to contact the Committee about Club matters. If you have any questions, suggestions or general comments, then please send them to the following email address:

KRMFCcommittee@gmail.com

Memberships and Registrations

BMFA, SAA member subscriptions and CAA Registrations are now due for 2023. All information was given in the February Newsletter No.30 with relevant links. If you have any questions, please contact the Membership Secretary Mike Hill or the club Secretary Neil Grayson. After a committee meeting held on 22nd January it was decided that KRMFC membership fees will remain the same: Adults: £65 and Juniors (U18): £33. This was due on or before 31st March 2023.

The BMFA in Scotland

The following was received recently in regard to the merger of the SAA with the BMFA. Nothing has yet been received by the club secretary or chairman of KRMFC. Any thoughts?

"From: Unadopted Minutes of the BMFA North Eastern Area Meeting held on 1st February 2023 at Burnmoor Cricket Club, Burnmoor, Co. Durham, DH4 6EX

The merger with the SAA (Scottish Aeromodellers Association) has stalled and is not expected to happen this year, in the meantime the Chairmen Secretaries and Delegates of all Scottish clubs currently affiliated to the BMFA via our area are being contacted for their thoughts on the proposed merger, a similar email will also be going to the members of the affiliated clubs".

Models over 7.5kg flying above 400 ft.

We have applied for and been granted a BMFA flying site permit to cover this activity. To comply with this permit a site risk assessment had to be carried out, one action on the risk assessment necessitated an update to the club rules. The permit, updated rules and the risk assessment were sent out as an attachment to an email dated 12th March 2023. The updated rules are also hanging in the club hut. Until our application is registered in the CAA AIP register a NOTAM is required, we applied for a NOTAM starting at the end of March for the year and this is now active. Get your jets out!

The committee would like to ask that all members read the updated rules and comply with them. All members are expected to act as safety officers and ensure that all club rules are followed by all club members. The rules are for each and everyone's safety and must be followed. Should any member have an issue with another member not following the rules then the matter must be reported to a committee member for follow up.

Ochroma *by Ian McLuckie*

I'm building a 'Mascot' by DB Sport and Scale Ltd. The laser cut kit was fine but a bit tight on sheet Ochroma pyramidal, so...onto the internet to see what's available. Shock horror, the prices seem to have gone through the roof. Why is this?

Of course, I am talking about balsa (the Spanish word for raft), where would we be without it? We could mention carbon fibre, foam, even special plastics, etc, but we all need a bit of balsa now and again for repairs, certainly for fixed wing craft.



But, it's a sad day when we have to take a bar of gold to the model shop to get a sheet of Ochroma.

It begs the questions...what is Ochroma? Why the high price?

The arboretum people say that 'the balsa wood tree, scientifically named Ochroma, is a relatively fast-growing plant found primarily in Central and South America and a member of the Bombacaceae family (there are other species). They grow best under the conditions found in rainforests, ideally in mountainous terrain between rivers. Ecuador is perhaps the largest exporter of balsa wood, although many local farmers consider the plant to be little more than a weed'. However, I see on the internet that balsa trees these days are big business in plantations where there used to be green jungle (deforestation) in places shown on the map.



Wiki says....'The wood of the living tree has large cells that are filled with water. This gives the wood a spongy texture. It also makes the wood of the living tree not much lighter than water and barely able to float. For commercial production, the wood is kiln-dried for about two weeks, leaving the cells hollow and empty. The large volume-to-surface ratio of the resulting thin-walled empty cells, give

the dried wood a large strength-to-weight ratio because the cells are mostly air. Even so it is classed as a hardwood'.

Well, now that we know what it is, why the high price?

It appears that balsa is a key component of many wind turbine blade cores. The market price has almost doubled in the past 12 months and suppliers are warning that the balsa shortage threatens a bottleneck in new wind turbine developments next year. Apparently wet weather in Ecuador this year has not helped.

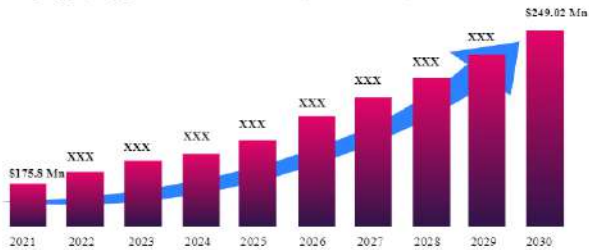
The 'financial market people' say the plastic material PET (polyethylene terephthalate) is increasingly been used as a substitute for balsa in turbine blades accounting for about 30 per cent of the market. But the boom in demand, on the back of the balsa



problems, has created a shortage of PET. PVC seems to be an alternative. They say that China has been buying up balsa for its wind turbine programme, but the programme is slowing down because China does not have a mature national electricity grid to connect all the turbines up. Will the price of balsa therefore drop? The 'market media' thinks not.

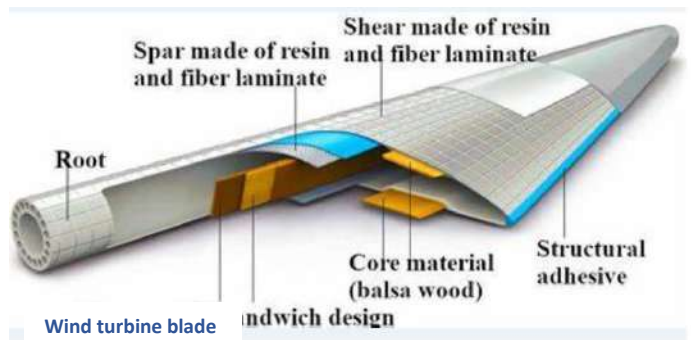
Balsa Core Materials Market

Size by Type, Application 2021-2030 (USD Billion)



According to the Financial Times, the balsa market for industrial core material (not RC-aero which in terms of quantity, is probably irrelevant) was valued at US\$ 195 million in 2019 and is expected to reach US\$ 249 million by 2030. The supply may not meet the demand so up the prices go. OUCH! But we all know about the frailties of economic forecasting.

I only need a 3/16" x 4" x 36" balsa sheet (old school - metric dimensions available on request) to finish my job. On the internet one sheet was quoted at a staggering £5.65... with shipping at £8.20 totalling £13.85*. Maybe it's the shipping I should be complaining about as well!! However, DB Sport and Scale Ltd kindly sent some extra sheets at no cost.



At one-point last year, or was it the year before, there was a shortage of toilet rolls, and panic buying ensued worldwide. I don't think worldwide RC -aero builders will emulate this... not for toilet rolls ...but for balsa! But you never know.

**Typical internet hobby shop Feb 2023 price, shipping varied.*

Demise of the Super Stearman *by Neil Grayson*

The Seagull Super Stearman was given to me by Billy Dunn in early 2020 and he stated that he wouldn't fly it again. It was very dusty, 3 of the 4 wingtips were crushed and the tailplane had loose spars internally. The firewall was fuel soaked and had numerous holes in it where various engines had been fitted over the years. I found out recently that before Billy, it also belonged to Tom Wilson! Eagerly, I started work on it in April 2020 and I featured the repair in an article in the No13 January 2021 newsletter.



After buying a brand new OS 46AX II, lots of Oracover and spending many hours reconstructing the wingtips and fitting the electronics it was completed. I even ran in the engine down the field one day. Then... it hung in my garage collecting dust whilst I contemplated what I was going to do with the cowl. Dave Kelly suggested strongly that I shouldn't attempt to fly it without the cowl due to biplanes having a lot of drag and flying without a cowl would increase that drag. Dave kindly volunteered to fill in the large hole in the cowl which he did using his great skill with a mould and glass fibre. I fitted it successfully and,



on Dave's advice, didn't paint it (how wise he was!). Then the plane hung in my garage again for many months whilst I fixed the Maricardo (which is another story).

Now I had the cowl on I found another problem. I couldn't fill the tank! The tank only had 2 tubes fitted; one to the carburettor and one for pressure from the exhaust. I couldn't now access the carburettor feed so I extended the exhaust tube so that I could fill it up with that, even though as the engine was inverted there was a good chance it would get flooded.

Finally, I got the Super Stearman down the field for its maiden flight on 25th February 2023. Unfortunately, I don't have a picture with the cowl fitted ready to go, but trust me, it looked fantastic! The engine started first time with just one flick, but after that it didn't go well as the engine did indeed flood every time I filled the tank unless I was very careful with the fuel pump. With much trepidation, up it went on its first flight. It went nose up and veered left as soon as it left the ground. Thankfully, it didn't get too high so there was no damage. Phew!

Up it went for a second time....and the biplane did exactly the same again, added to which, one of the wire supports pulled out of the wing. We, (me and the plane) retired for the day until it could be repaired. I added lead weight to the nose as I suspected that the C of G was still a bit too far back. The instructions show the optimum as 1.5cm to 2cm back from the lower wing leading edge.

Fixed again and the next opportunity for a test flight was Friday 10th March. There was just me and Ian McLuckie at the field. This time I had fitted a valve in the carburettor feed tube which stuck out of the cowl. Pull the valve out and the fuel flows to the tank, push it in and put the cap on for flight and fuel flows from the tank to the carburettor. (Diagram below).



With the engine started I proudly walked to the runway and lined the biplane up into the wind. Full throttle applied.... and the engine died... it was too lean! After getting it back to the bench I noticed that the silencer had come loose so I had the faff of taking the prop, spinner and the cowl off, tightening the silencer, putting everything back on, then starting the engine again. With the engine started it was back to the runway again and the plane took off. Suddenly there was a shout from behind me! Ian had noticed that the glow starter was still attached to the glow plug! The plane landed untidily again but only slightly damaged a wingtip.

We were now on our third attempt. With the engine running well, glow starter removed this time, silencer tightly bolted and 10g of weight added to the nose we were ready to go again. What could possibly go

wrong! Full throttle diagonally across the field to take account of the cross wind, it took off, rose to 20 feet, then climbed steeply to the left and then almost a complete balletic inversion, before plummeting to land just in front of the fence on its left wings. Perhaps if I had got it to track straight along the ground so that I didn't have to give up elevator to clear the fence after it swung to the left, I may have prevented the stall. Who knows, not me! Once it had got above a certain angle, down elevator wasn't going to do anything.

Ian and I rushed over to inspect the damage. The bottom wing had been ripped off along with the wing bolts and the ply plate holding the washers. Both left wing tips were smashed and the top wing had a large chunk of balsa missing where the wire struts had been ripped out. We took it all back to the bench and I further dismantled as much as I could, then loaded the remains into the car. It certainly fitted in the boot more easily than when I loaded it up!



After sleepless nights and careful consideration, I decided ultimately to 'retire' the Stearman biplane. Sorry Dave, I do appreciate your work on the cowl. I have spent a lot of money on it and many long hours over the Covid lockdown and recent winter days trying to get it to fly, but to try and fix it again would be a waste especially as the spring and summer months are almost upon us and actual flying calls. The Stearman was also a pain to bring down the field due to its size. It was impossible to fix the wings on at the

field, so I had to assemble it at home which meant it barely fitted in the car and there was no room for any other plane.

I have kept everything worth saving, stripped the Oracover off it and taken the wood away for recycling. The OS 46 AX II is now fitted into my Boomerang 2 and awaiting its first flight with more power. It fitted the Enya 40 engine mount holes perfectly so it was a simple job.

I hope Tom and Billy as previous owners will understand. Did the Stearman fly successfully under their ownership? Did they just see my fresh, keen face and take advantage? Maybe it was just my flying?

As we know, there is certainly a lot of skill and effort involved in building and repairing a model plane to get it flying successfully. Especially a biplane.... and I met my match!

80" Mosquito *by Richard Blanski*

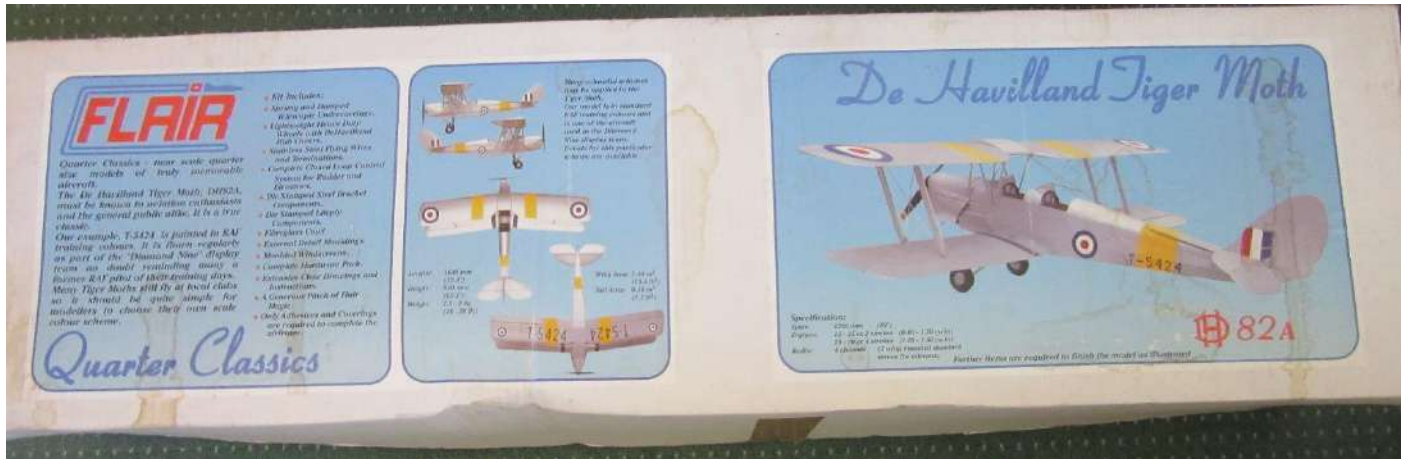


Richard informs me that he has completed his Mosquito. We will hopefully see it fly at KRMFC soon.

For Sale

Flair 1/4 scale Tiger Moth kit for sale. Looking for £200.

- Length: 1840mm (72.3"). Wing Span: 2260mm (89").
- Weight: 7.3 – 9Kg (16 -20 lb.).
- Engines: 15 – 25cc 2 Strokes (0.90 – 1.50 cu in).
- 20 – 30cc 4 Strokes (1.20 – 1.80 cu in).
- Radio: 4 Channel (2 wing mounted standard servos for ailerons).



Contact Ian Sutherland on Mobile: 07824702995

Upcoming Events in Scotland

 **SAA FLY-IN**

Sat/Sun 22nd/23rd April at Glenrothes Aeromodelling Club Site
Near Coalton of Balgonie Fife

Come along and Join us for the First SAA Fly-in of 2023

 **BBQ Food and Drinks**

Camping and Caravans

Site open from Thursday afternoon after 2pm
20th April until Tuesday morning 25th April 2023

Toilet waste disposal Available
Water available at farm but please bring some initially.

Over 400ft greater than 7.5kg permit in place
All pilots must show proof of valid insurance.

Everyone Welcome

Please Come Join Us for the SAA's First Event of 2023

Toilet facilities will be available.

Burnhouse R/C Helicopter Club Open Day
Sunday 14th May 2023
09:00 - 17:00



Location:
Latitude:55.7146, Longitude:-4.5894
<https://www.ma-db.com> UK12470
On the road between Barnhead and Irvine
Lochilbo Road
Ayrshire
KA15 1LD

Proof of Insurance Required
Contact: Mike Gillilan
mikegillilan@hotmail.co.uk

Fly for fun - Scale - Sport - 3D
Help for beginners
SAA Safety Award Coaching
Bring & Buy Sale
Tea & Coffee Available

Glenrothes Aeromodelling Club
Summer Fly-in Sat 10th Sun 11th June



Come and enjoy a weekend flying with us
Car Boot model sale on the
Sunday £5.0 per car
Raffle

Camping / Caravans etc.
Toilets Available
BBQ -- with Hot Food,
Drink and Snacks available

The Site will be open from :-
Thursday 8th 12am to Tuesday 13th 12am
Water will be available at farm if required Bring some if possible
Toilet waste disposal available

Contact Details -- for further information Tele 07896334651

SCOTTISH F3A COMP CALENDAR 2023			
MONTH	VENUE	DATE	DAY
APRIL	DREM	01/04	SATURDAY
APRIL	GLENROTHES	29/04	SATURDAY
MAY	DUMFRIES	27/05	SATURDAY
JUNE	KINROSS	04/06	SUNDAY
JULY	ANGUS (coaching)	01/07	SATURDAY
JULY	ANGUS comp	02/07	SUNDAY
AUGUST	WARRIX	12/08	SATURDAY
SEPTEMBER	TRIPLE CROWN	9/10	BEDFORD-ENGLAND
SEPTEMBER	EAST FORTHAN	23/09	SATURDAY-REQUESTED NOT CONFIRMED

Falkirk Model Flying Club
Summer Fly-in
Sunday 16th July



2023 Waterplane Event Dates

Updated 08/01/23

Mill Dam

9th April
3rd September

Loch Leven

19th & 20th August

Kilbirnie

6th & 7th May
23rd & 24th September

Loch Insh

9th & 10th September

Loch Earn

29th & 30th April
24th & 25th June
26th & 27th August
21st & 22nd October

Monikie

November – Dates to be confirmed
December – Dates to be confirmed

Mass Launch Event and Open Day At KRMFC Sunday 14th May 2023

Come along and take part. Let's see if we can beat last years record of 10 models flying (4 helicopters, 4 fixed wing planes, 1 glider and a drone). The BMFA reported that there were 3109 models in the air at 263 flying sites last May.

- Mass participation event so that our 30k+ members can take part at their local clubs
- Allow all forms of modelling to take part
- The Record will be set using model aircraft of all types
- All ages and experience
- Mass launch event at your own field run at a set time and date.
- To be held on 12 noon on the 14th May 2023 across the UK at 12 noon



This year the club will be running an open day to encourage members from other clubs to participate at our flying field. Further details to follow.

Activity at the Field - February

Sunday 5th February

Tom Wilson, Anna and John Mitchell, Ian McLuckie, Tim Knowles, Neil Grayson and Mike Hill at the field today.

Tom carried out some overdue maintenance on the club hut and unstuck the window hinges with some WD40 as it was noticed that they were seized up at the last committee meeting. He also had a general tidy up of the club hut.

Tom and Mike have been working on getting the club helicopter and plane set up with a buddy system. The helicopter is already done. The farmer was paid the day before for the field rental.

Anna and John were keen to get some flying in after the poor weather recently. Anna was flying her Cub. The second flight had a rather hard landing and caused some minor damage to the tailplane. With a damaged tailplane and no spare batteries that was the flying over for the day.

Mike had a few issues with his new helicopter. He had a failed RPM sensor preventing the governor from working and he forgot to thread lock the bolts holding the undercarriage on which resulted in several bolts falling out. All are now repaired and ready to try again. The governor has been reconfigured to allow him to switch it off from the transmitter which will allow the helicopter to fly using a basic throttle curve matched to the pitch curve to maintain the head speed of the rotors.

Mike flew his old helicopter a SAB Black Nitro which flew great after a bit of help from Tom to re-tension the tail rotor belt drive. Only the cold stopped the flight due to “numb thumb”

Ian attempted a flight of his Bixler. Both Neil and Ian checked the direction of travel of the controls but when Neil launched it, it dived towards the ground. It was then noticed that the elevator travel was reversed. The wing was slightly damaged but a couple of centimetres of sticky tape ensured that more flights could take place. It flew great once the elevator was moving in the right direction.



Tim Knowles appeared later in the day and flew his Nan Xperience Pro very well. He attempted a flight with his electric plane but the undercarriage kept falling off on take-off and landing. It was held in with plastic

bolts so he will have a rethink and perhaps use metal bolts or screws. Neil flew his repaired Maricardo after the elevator had parted company with the tailplane. The hinges are now pinned in with cocktail sticks and glued with Super Phatic glue. 3 excellent flights with outside loops, stall turns etc.... 3 good landings. Neil also had a couple of flights with his DJI Mini Pro drone but it was too cold to fly for long without gloves on.

Tuesday 7th February

Neil Grayson was at the field on his own today. No flying done as it was windy, wet and foggy. He fixed and painted the stile into the west field. It should last a few years!



Sunday 12th February

Tom Wilson, Neil Gourlay, Tom Roberts, Douglas Fulton and Bill McDiarmid at the field today. Tom has been setting up the club trainers, both the plane and the helicopter, through the week. Tom and Neil test flew them both on a buddy system. Tom reports that all went well and the trainers are now ready for some 'victims'. A bonfire was lit to burn all the wood from old benches and flight boxes. Tom also took up his generator and tried to get the lights in the cabin working. There was no joy with the lights so he will check the wiring pictures.



Club Helicopter Trainer



Club IC Trainer

Monday 13th February

Neil Grayson arrived at the field about 13:00, just as Charles Malcolm was leaving, he having been there from about 10:00. Bill McDiarmid was also at the field and he was starting the engine of his sea plane. He had been having trouble starting the engine but he got it going and running smoothly and so decided to fly. He performed an excellent take off, then flew a few circuits but then the engine cut. A superb dead stick landing was made with no damage. Neil and Bill re-fitted the mesh to the top of the stile and added a few more screws. Apparently Douglas Fulton was at the field earlier.

Activity at the Field – March

Sunday 5th March

Anna's cub crashed after attempting to go inverted. Control was lost and it came down. Tom Wilson reports that Anna had a go on the buddy box with him using the club helicopter and she did well.



Anna & John with the cub



The Cub returning to earth!

Mike also had a bit of trouble keeping his new SAB Goblin 700 Raw Nitro helicopter in the air! There was problem with the engine governor so a new sensor was fitted and he tried again. The head speed was a bit high, then at about 3-4 feet the tail swung around and the helicopter went in. The damage was limited to the rotor blades, skids and blade grip. On stripping the helicopter it was obvious that there was an engine issue. It looks like the governor failed during the flight causing the engine to over rev shearing the con rod. If anyone has a con rod and piston for an OS91HZ Mike would be very interested. 😊

The helicopter governor issue has now been fixed and the SAB Goblin 700 has been test flown with an OS91SX engine fitted.



Bill also had a mishap but perhaps not on the same day. (thought I would keep all the accidents together!).



Monday 6th March

Ian McLuckie was at the field on his own today. He had a number of good flights with his glider.



Friday 10th March

Neil Grayson, Ian McLuckie and Douglas Gilmour at the field. It was a cold day but not as cold as we expected as bright sunshine raised the temperature. The wind increased as the day went.

Neil flew his Stearman biplane which wasn't successful at all. See the full story earlier in the newsletter.

Ian flew his electric glider. It took off successfully and climbed quickly but then it just started to circle and wouldn't respond to the controls. It flew towards the chicken farm beyond the row of trees and then came down. Neil and Ian made the long trek to retrieve it and were concerned about the state of it after its uncontrolled landing. However, they found the glider sitting relatively unscathed in a flat field. There was only a little damage to the elevator and tailplane, and the rudder had become detached from the control linkages (perhaps that is why it circled!). Ian flew his Kingfisher twice and landed safely both times even though there was a bit of a breeze.

The field had also been attracting geese, presumably feeding or resting there. This was surmised from the vast quantities of guano (poo) covering the runway and was confirmed later by an internet search.

Apparently, this makes for a very good fertiliser, which will make the grass grow lush and quickly (oh no!). Beware though, as goose poo can contain dangerous bacteria. Hopefully it will all wash into the ground soon.

Douglas Gilmour flew his high wing trainer twice with two successful landings but it was a bit windy for it. He also flew his Seagull 40.

Monday 13th March

A couple of pictures from Bill McDiarmid showing the overflowing burn which runs behind the containers and flowing across the road in front of the gate. Luckily the water drained away quickly.



Sunday 19th March

Ian McLuckie reports that he attended the field today but it was mostly helicopter flyers keeping him company. He had a good day flying but had a servo failure on his Kingfisher and it landed badly in the south field. The servo seemed to be was running continuously and it is the second FMS servo failure he has had.

Anna was back in the air with her cub after it was repaired. All it needed after taking to the air again was just some trim adjustments.

Sunday 26th March

A few people down the field today but it was really cold. Tom Wilson, Bill McDiarmid, Neil Gourlay, Tom Roberts, Pat Baxter. Tom Bennet came down to re-join the club but everyone had just left as he had forgotten to put his clocks forward!



Tom Wilson's helicopter. He has owned it a long time but rarely flies it.

Monday 27th March

It was forecast to be good weather today but cold before wind and rain again for Tuesday. The sky was cloudless with a very light wind from the east. During the day the wind shifted to a westerly but it remained light.

Today the local school had the field for a couple of hours to test out their rockets for the UKROC (UK Youth Rocketry Challenge). There was one very successful flight where the rocket streaked into the air, gained a good height and released its payload on a parachute. The payload, a raw egg, survived its landing but unfortunately the altimeter failed to work so the height the rocket attained wasn't recorded. The second launch wasn't so successful and the rocket failed to lift off and it just fizzed on the ground. UKROC will be back for further tests (TTBC), before the Scottish Regional Heat on Thursday 20th April.

Neil Grayson, Ian McLuckie, Bill McDiarmid and briefly Mike Hill were all at the field today.

Ian McLuckie was flying his repaired (again!) 2 channel glider. He had strengthened the tailplane with a metal brace and reinforced the pushrods and clevises with solder and wire. Initially after taking off he had a bit of a control issue until he remembered that he had moved the rudder to the left stick with the elevator on the right stick. Once he had sorted out how to steer he had a great flight and landed safely. Ian also flew his Kingfisher a couple of times and he was very pleased that everything went home undamaged!



Bill had a couple of flights with his Wots Wot powered by a Laser 70 Four Stroke engine. He bought the engine with his redundancy money when he retired from Rolls Royce.



Bill posing with his Wots Wot



Bill with his Wots Wot in flight

Neil had brought along his new Pro Built balsa Ruckus for its first flight. It was bought in December 2021 but has stayed in its box in his garage for a year. It is fitted with an Overlander 800kv 980W 4250/06 Tornado Thumper V3 and a 60A ESC with a 4S battery. Bill's watt meter measured very nearly a kilowatt with a 15 x 7 propeller. One flight was made to check the trim but it then had to be retired as Neil only has one battery at the moment.

Neil also flew his Maricardo which lost control over the south field briefly but landed safely. It seems as though the throttle servo was causing interference on the receiver as once the aerial was moved away from the servo it flew fine with no loss of signal. A lesson learnt that a range check before each flight is vital.

Next up was Neil's Boomerang 2 which has now been fitted with a OS Max 46AX II rather than a Enya 40. It flew much better with more power on take-off and a good turn of speed. It was noted that the OS46 weighed the same as the Enya 40 but obviously produced more power.



A successful day of flying with all planes home in one piece. Happy days!

Newsletter Feedback and Contributions

Please let Neil know of anything you would like to see included in the Newsletter. Also, any feedback is much appreciated. If anything interesting happens whilst you are visiting the flying field then send me an email (with pictures) for the Activities at the Field section. Articles are always needed and are a very popular read. Members are interested in how you got into the hobby, what planes you have owned, technical expertise etc...

Normally, the aim is to publish the Newsletter around the 1st of each month. The Email address for articles is: neilgrayson@sky.com

Web Links and Shops

(Any suggestions of other shops you have used let me know)

Model Shop Leeds - www.modelshopleeds.co.uk/

Wheelspin Models - wheelspinmodels.co.uk. Free postage for orders over £100

Sussex Model Centre - www.sussex-model-centre.co.uk

The Vintage Model Company - www.vintagemodelcompany.com

Kings Lynn Model Shop - www.kingslynnmodelshop.co.uk

Scoonies - www.scoonie-hobbies.co.uk. Don't bother with the website. Visit the shop in Kirkcaldy. 87 St Clair St, Kirkcaldy KY1 2NW. Tel No: 01592 651792

Dens Model Supplies - www.densmodelsupplies.co.uk. Excellent for spares for vintage Cox engines.

Hobby King - hobbyking.com/

WestonUK – www.westonuk.co.uk Good value fuel in large quantities. Over 20 Litres (4 Gallons) gives you free postage.

ACCU – www.accu.co.uk. Excellent for bolts, screws and washers. Will take requests for bespoke items.

RCM&E - [RCM&E Home Page](#). The website of the best aeromodelling magazine. If you have a question the forum is bound to have an answer.

RC Thoughts - <https://www.rc-thoughts.com/> Finnish website of Tero Salminen. Phoenix Simulator Downloads and updates.

RC World - www.rcworld.co.uk. Located in South Wales between Cardiff and Newport. Stock values on each product are displayed which reflect what are physically in stock, not held at a suppliers warehouse. Derek Grater has used and recommends.

Carbon Copy - [Carbon Copy \(carboncopyuk.com\)](http://Carbon Copy (carboncopyuk.com)). Located in Stevenage. A wide selection of Carbon and Fibreglass parts. Ideal for undercarriages, cowlings and canopies.

Just Engines - <https://www.justengines.co.uk/>. Located in Shaftesbury, Dorset. A wide range of engines and spares. If you can't find what you want on the website send them an email or call.

SLEC Manufacturing (Sun Lane Engineer Company) - [SLEC UK Ltd](#). A good range of accessories but also a large range of balsa and hardwoods. Also available is a laser cutting and CNC milling service.

Component Shop - [Home page \(componentshop.co.uk\)](#). Based in North Wales. A great range of batteries, leads and electronics.

Here's a link to the glider field weather station data at Portmoak gliding club which is just a few miles east of our field. It gives a lot of information including wind, temperature and air pressure. [Portmoak Weather Station](#)

The Committee