



Newsletter

No.29: Mid December 2022

Welcome to the final newsletter of the year.

In this edition, news of the forthcoming AGM, entertaining and informative articles from members and the briefest of updates from the flying field.

KRMFC 2023 AGM



Kinross Radio Model Flying Club Annual General Meeting

To be held at Orwell Bowling Club, Milnathort

Wester Loan, Kinross KY13 9YH

Wednesday 1st February 2023

Doors Open at 19:00

AGM Starts 19:15

Please email any items to be considered for the
agenda to the secretary at neilgrayson@sky.com

KRMFC current committee members are:

Tom Wilson – Chairman

Neil Grayson – Secretary

Mike Hill – Treasurer

Bill McDiarmid – Committee Member

Jim Walsh – Committee Member

Neil Gourlay – Co-opted 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 is given below but if you have any questions ask the Membership Secretary Mike Hill. KRMFC membership fees will be due on or before 31st March 2023, fees will be set at the AGM 1st February 2023.

CAA Registration

£10 a year.

[Registering a drone or model aircraft | UK Civil Aviation Authority \(caa.co.uk\)](https://www.caa.co.uk)

[The Drone and Model Aircraft Code | UK Civil Aviation Authority \(caa.co.uk\)](https://www.caa.co.uk)

If you have an SAA Bronze, Silver or Gold award or a BMFA A, B or C award then you don't need to take the test.

The Operator of the model aircraft must label their drones and model aircraft with their Operator ID.

BMFA Membership

£42 Senior, £20 Junior (1st Dec 2022 to 31st Dec 2023)

<https://bmfa.org/Join-Renew/Join-the-BMFA>

Membership can be arranged online or by telephone 0116 2440028, alternatively an application form can be downloaded [HERE](#) and posted.

CAA registration can also be done via the BMFA Website when renewing your BMFA membership.

SAA Membership

£32 Senior, £15 Junior if paid before December 31st 2022.

£35 Senior, £18 Junior if paid after 1st January 2023

[Membership \(saaweb.uk\)](http://saaweb.uk)

Application for Membership (New Member) [Application Form](#)

Application to Renew Membership [Renewal Form](#)

Fire on Board! *by Ian McLuckie*

It was a lovely day, there was little wind and I was practicing landings, reasonably successfully with my FMS Kingfisher. From time to time, I had to visit the wheat field and the potato field but generally I got onto our 'green bit', not necessarily the well-cut part but in the general surroundings within the fence.

Since joining the Club, my interest in agriculture has grown immensely. Not by choice. Did you notice that the farmer has removed the potato shaws in the north field to stop the crop growing? How did he do that?

Anyway, several times, the Club gentlemen seated in the 'cafeteria lounge area' passed judgement on my landings, the common theme being - **"That's a fail"**. When I managed a perfect landing, somebody clapped, obviously recognising the rarity of the moment.

A final 'touch and go' then a landing before the battery started to get too low. The landing was fine except that the Kingfisher ran into the rough grass on the south side, it stayed upright and came to a halt, resting in peace.

"That's OK", came the shout from the cafeteria area; the gentlemen were content.

As I wandered over to pick the up aeroplane, I saw smoke coming from the cockpit, some overheating I thought. As I walked towards it, the smoke seemed to get worse. My first thought was to 'call out the fire crew' but I didn't know the procedure, so my next thought was - 'there's a fire extinguisher somewhere in the car'.

But it was time to stop thinking and start running. By the time I got there, there was a plume of smoke in the same *shape* as an atomic bomb plume but light blue in colour. There was a pungent acrid plastic smell. I thought the Lipo had ignited. But no, when I got the canopy off, the ESC was on fire! I disconnected the Lipo and the smoke quickly abated. The cafeteria gentlemen didn't seem to be aware of this dire emergency, they've probably seen it all before.

With some difficulty I hauled out the ESC which was now in three burnt charred parts and the outer heat-shrink cover no longer existed.

It was a near run thing but the Kingfisher was not burnt or damaged. I retired for some coffee.

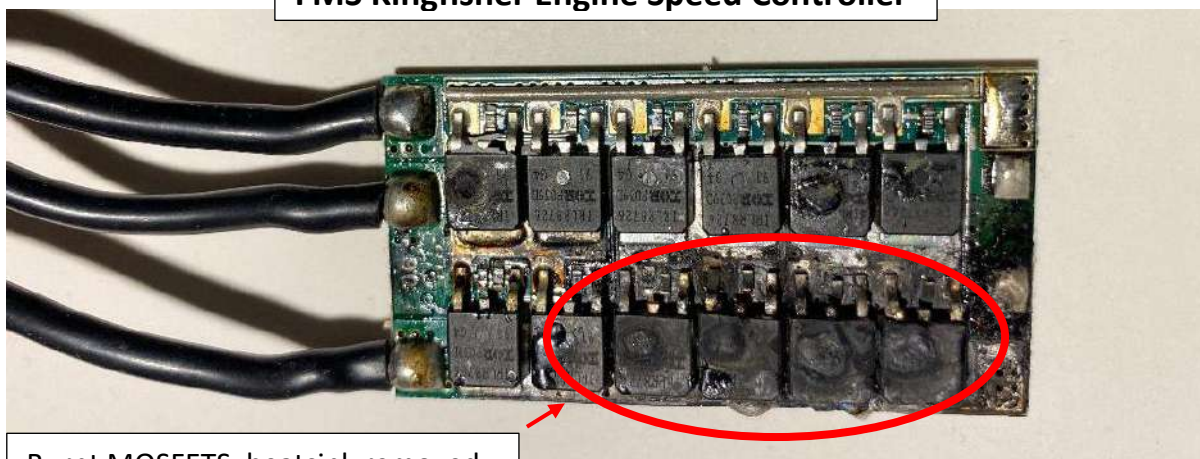
So, what was the problem? I spoke to Wheelspin Ltd, the supplier of the Kingfisher who, in turn, spoke to FMS. No particular reason for the fire was suggested by either party. To me it looked like a short circuit on the ESC printed circuit board of reasonably high ohmage (and moderate current) being constantly fed from the Lipo. I asked for a replacement ESC under guarantee. None were in stock, however FMS to their credit said they would post a 40 amp Hobbyzone ESC, claiming it was a better unit. And that did happen. Excellent service with a two-day delivery at no charge.

It is not often we get to look inside a brushless ESC package covered in sealed heat-shrink. There are multiple YouTube videos on how they work but they are mostly limited to generalities. There are none explaining the microcontroller function per se and how its software (firmware) is set up and loaded, plus its myriad of supporting chips and transistors. The best I could find was a YouTuber who *made* an ESC using an Arduino microprocessor, writing his own software. The microprocessor is 8 bit running at 16MHz. That's a job for the dedicated, because ESCs are 'in relative terms' quite cheap, so the DIY effort is hardly warranted. The completed unit is too big and heavy for 'RC aero' use, in any case.

This is what I found when I got home. The ESC is in two parts with **no** large electrolytic capacitors sticking out (unusual!). A large aluminium plate heat-sink and a double-sided printed circuit board (PCB) about 50 x 25mm (2"x1"). One side of the PCB had 12 MOSFETs (high-power transistors) providing the switched three-phase output. The other side had the microprocessor or microcontroller with supporting invertors and local in/output chips plus local power stabilising components. A good piece of micro-engineering for the money.

The photos below show the irreparable damage. Either a MOSFET failed and over-heated spreading the damage to the other MOSFETs, and then, through to the other side of the PCB, or vice versa. We will never know. Either way, any current limiting function by the microcontroller failed as the microcontroller itself lost its power supply. This is, from an electrical engineering point of view, a poor design. There is no fuse or miniature circuit breaker to protect the PCB (or the cabling) to stop or limit a potential fire or cable overload; then again who would want a fuse to blow or breaker to trip whilst in the circuit at 200 feet? Just another interesting engineering challenge, we have plenty of those.

FMS Kingfisher Engine Speed Controller



Burnt MOSFETs, heatsink removed



Micro-controller

Burnt power conditioning components serving this side of the PCB

The Piper Pawnee *by Mike Hill*

The Piper Pawnee is one of the few planes I have with flaps. I was practicing landing approaches with the flaps in different positions reducing the amount on each approach. The wind was low but gusting down the runway. On the last attempt the model didn't want to come down, so I aborted the landing, reduced the flaps and made a turn to go around again. Flying downwind the model dropped the left wing, a touch of right stick and the wing levelled only to then drop the right wing, then the left dropped and it hit the fence. I think it was just flying too slow and the gusting tail wind caused the wing to stall.



Slightly battered front end!



Wing and Cowling

The model has now been rebuilt and is awaiting a test flight and a bit faster flying.



Ready to go again

Helicopter Conversion *by Mike Hill*

For the helicopter guys I have converted one of the Flybar Synergy N9s to Flybarless. It has an Align BeastX unit and a Futaba GV-1 governor. It has been test flown OK but the governor was playing up. I will be fitting an Align BeastX Plus with built in governor and removing the GV-1 governor.



Flybar Head



Flybarless Converted Head

Glow Fuel for Sale

The club still has a stock of fuel for sale. 20% nitro is £32 a gallon and 5% is £25 a gallon. Please note that the containers are full gallons and not 4.5 litre cans. See/contact Tom Wilson or Mike Hill if you want to make a purchase.

New Bench

The club now has a new bench. Many thanks to Neil Gourley who acquired some free wood and had an enjoyable day in his garage putting it together. If anyone can source any more wood either free or going cheap please let the committee know as the pilot boxes need to be renovated.

Activity at the Field - December (another brief report..)

Sunday 11th December

A very cold day at the field today with patches of snow and ice on the ground. Tom Wilson and Neil Gourley were there when Neil Grayson arrived. Tom hadn't brought anything to fly but claimed that he was trying to escape from his wife for a few hours as she had been forcing him to be more sociable than he is used to. Neil Gourley was flying a helicopter and had a couple of successful flights. Neil Grayson put



together his Maricardo, took off and flew a few circuits, but then a disaster happened when to the west of the airfield over the farmers track it plummeted to the ground, bounced up then hit the ground again. Neil, Neil and Tom rushed over to the site of the crash and found the wings and fuselage together but the rudder and elevator some distance away. It appears that the elevator became detached at the hinges and this forced off the rudder as well. Repairs are ongoing and it just needs some glue and new hinges before it flies again.

Mike Hill appeared about mid-day and hovered his helicopter a few times to test his Synergy N9 helicopter which he had converted to flybarless and flew his old low winger but was having trouble with cold fingers.



Douglas Fulton made it down the field soon after Mike had left at around 14:15. He left about an hour later as the sun dropped. He realised that somebody had been down before him as he could see wheel tracks on the runway (Neil's ill-fated Maricardo!). On landing his Riot the landing struts bent due to the hard ground as the Riot undercarriage is made out of very soft metal. He has fitted a tie bar for next time.

And that's it on the Activity at the Field column unfortunately! I suspect the shorter days and inclement weather have deterred many of us from flying this month and this is the reason for no-one reporting any activities at the field or sending in photographs. Hopefully once the weather warms up there will be more to report on, and I look forward to receiving your updates. Without your input I can't produce this popular column.

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, I aim 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 Balsa Cabin - www.balsacabin.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.

See you all at the AGM.

Merry Christmas to everyone and a happy New Year. Stay well and safe. Good flying!

