Impington Village College Model Aeroplane Club

Based near Cambridge we fly Free Flight, Radio Control and Control Line aircraft

Newsletter November 2025

Website ivcmac.bmfa.uk

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Royalty in our midst

Gary Church competed at the CL Nationals at Buckminster at the end of August and is now the National F2b CL aerobatics champion. He writes –

This is my F2b aerobatic gold trophy winning Gee Bee, as seen at Girton comp earlier in the year. It's a Yatsenko ready to fly model with 4s electric set up. This is my first Nats aerobatics win in any class, after over 25 years of trying and being on the podium a few times in the last 10 or so years. Very happy to finally complete this goal and get my name on the biggest trophy in UK aerobatics. The gold trophy has been running since 1948.

Not content with the big one Gary also entered the carrier deck landing competition and won that!! The silver and orange model is a Fairey Gannet and the other is a Vought Kingfisher.

The Gannet is powered by an Irvine 39 and came 2nd with a silver medal for basic carrier.

The Kingfisher is an American design from the 1970s built originally by Nigel Crabtree and modified and painted by myself. It has a super tiger 40 q500. This won a gold medal for coming 1st in the Carrier class 1 competition with my best ever score.

2 golds and a silver made for a very good weekend. Clubman aerobatics or basic carrier are great ways to have a go and enjoy the fun.

AGM

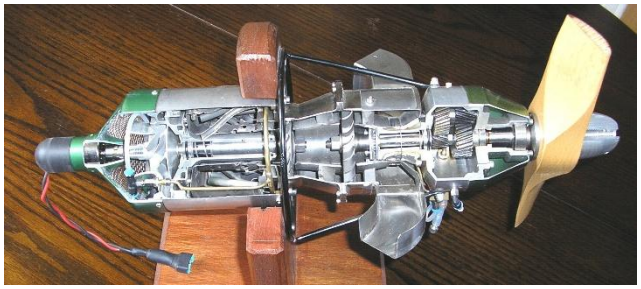
This will be held on Saturday 22nd November at 2.30 pm in the sports hall. This is a mixed flying day so the RC flying will stop at 2.30 and the FF will start as soon as the AGM is over – surely an incentive for brevity LOL.

Mini Mozzie

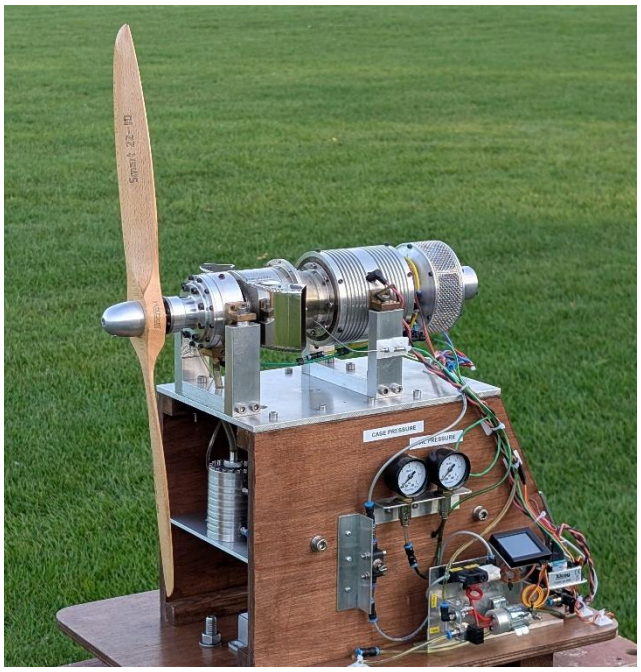
Jon Sole pictured with his miniscule Mosquito that he and Jacob were flying very successfully despite only having got it at lunchtime that day.

Tims Turboprop

Tim Coles brought this along to our last outdoor meeting and ran it on his test stand.



A sectioned view of the turboprop layout. Of interest is that the front of the turbine i.e. the compressor and air intake is actually at the back!!



This is a turboprop engine based on the MW54 turbojet engine produced originally by Wren Turbines, UK. It was designed by Mike Murphy and John Wright, with a two-shaft, free power turbine arrangement to produce shaft power.

The engine can develop up to 7.5 BHP, turning a 22" propellor at 8,000 rpm.

In common with virtually all miniature gas turbines, the gas generator has a single stage centrifugal compressor, an annular combustion chamber, and a single stage turbine. The rotor spins at up to 160,000 rpm and idles at 40,000 rpm. Burning kerosene, the combustion chamber is rated at 18Kw.

The rotor bearings are cageless ceramic ball bearings. The compressor wheel is CNC machined from aluminium alloy, while the turbine is a lost wax casting in "Inconel" nickel alloy.

The gas generator delivers fast moving hot gasses to a single stage free turbine which drives a reduction gearbox. The free turbine spins at up to 45,000 rpm, the gearbox reducing the speed of the propellor shaft to 8,000 rpm. The gearbox uses a layshaft and simple helical gears to give 5.5 to 1 reduction.

This engine uses propane – butane gas for starting, ignited by a glo-plug. Once the combustion chamber is hot enough, the engine switches over to burn kerosene. More recent engines have "kero start" which is simpler.

The FADEC (Full Authority Digital Engine Control) unit monitors rotor rpm and inter-turbine temperature, using the information to modulate the fuel pump according to power demand from the pilot. It also controls the start-up and shut-down sequences automatically.

Fuel is delivered to the combustion chamber by a small gear pump, and oil is delivered to the gearbox by a similar pump. A small proportion of the fuel is sent to the bearings, 5% of turbine oil being added to the fuel in the style of a two-stroke petrol engine.

The compressor wheel, combustion chamber, NGV (Nozzle Guide Vane), turbine wheel, gas duct, free turbine wheel and "spider" are commercial items from Wren Turbines.

The remaining engine parts were machined and assembled by Jerry Burchell and James Hill. The support stand, plumbing and wiring were set up by Tim Coles. The FADEC is from Xicoy Turbines, Spain, and the hand control box is by The Jet Workshop, UK.

Whilst the engine could be used to power a large model aircraft, we are confining its use to ground-based demonstration operation. Commercial miniature turboprop engines are available, but are quite expensive at around £5,000.

A video of it running at IVC is here

Reminder – Christmas party

This is at the Cambridge Motor Boat Club on Thursday 4th Dec 7pm for 7.30pm. It's an informal cold buffet with a cheap bar - £15 per head. Please let Alan know if you are coming and pay in advance. 22 are coming so far!!

Fireworks on planes?

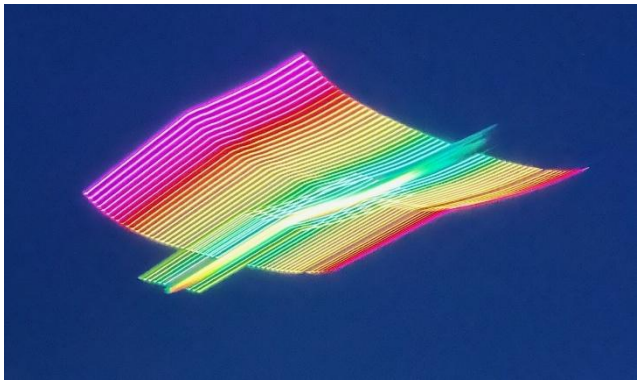
Well, why not if you have a versatile, and in some ways expendable model.

After a test with sparklers, a larger firework was attached……..

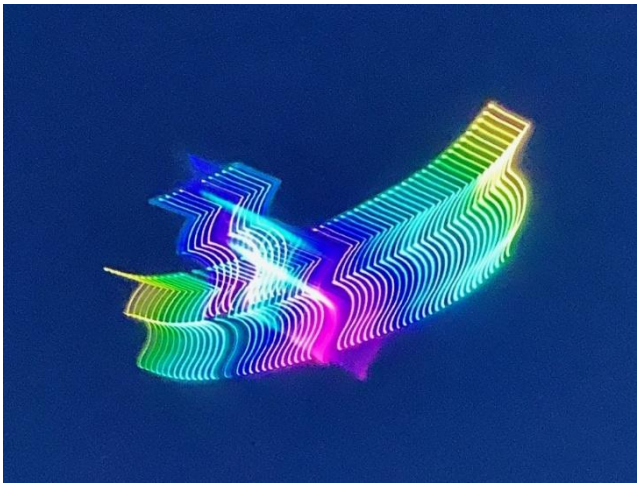
Finally after cries of "you're gonna need a bigger firework", Trevor produced a whopper.

See the first part of this video to see what happened.

Not a UFO surely?



This picture and the 2 opposite were taken by Rodrigo on a long smartphone exposure.



UFOs circle the moon – well, Night Radians at Impington actually.

On the final page is another long exposure photo taken with a proper camera!!

General Belgrano

Those with a long memory will remember this was the Argentinian cruiser sunk by a Royal Navy submarine HMS Conqueror.

These matches were retrieved from a discarded Argentinian ration pack after the Falklands war in 1982

Do you have an unusual item to feature in the newsletter? These matches feature in a history video by Dr Mark Felton here

Designed and printed plane

This is Yash and his own designed and manufactured 3D printed plane which he brought along to the club for advice.

We helped him get it set up for taxy trials which went well. This is an add on project for one of his A levels which he is doing at Hills Road and used lightweight PLA for the printed parts.

3D printed planes tend to be a bit heavy, so we have given Yash some guidance on weight reduction and getting the CG in the right place as it's currently too far back. Hopefully we will see it in the air sometime.

Little and Large F22 Raptors

How many F22s does a man need? These are Malcolm Bates 70mm and 64mm EDF ones. Both fly very well with no vices whatsoever. The large one has flaps and retracts. The small one is aileron and elevator only.

Roys Cassutt Special Racer

Roy Sellwood pictured with his Cassutt Special with a wing based on a traditional Pennyplane. It flew slowly and gracefully unlike its full size counterpart! With a large prop turning slowly it was using 1/8" rubber as the motor.

This Roys 7th iteration of this model which weighs 6.5g and flew beautifully.

The Cassutt was a 1950s American air racer.

Winter Control Line at Girton

John Copsey is organising regular get togethers at Girton for CL flying – if you aren't already on his list, give him a call. RC flying can coexist with the CL, so keep up the RC flying over winter as well.

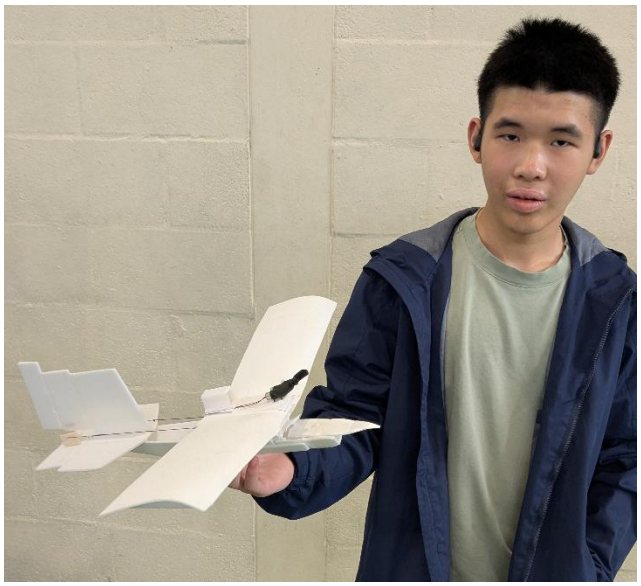
Tim Coles took this photo at a recent get together, so dust off your summer models and join in!!

CAA rules – Don’t panic

You may have seen that the CAA are making some changes from 2026 and then some more from 2028.

There is no need to worry about this as in reality nothing much will change, and when it does in 2028 it won’t really affect us much. Continue as you are!! The BMFA are working hard on our behalf.

Flying boat v2



George has been designing his own indoor RC planes for a while and this is his latest creation which flew really well. This model incorporates a high lift wing which really seems to get it flying slowly. And amazingly he built it and flew it on the same day.

Large high lift wings and a low wing loading are the secrets to successful indoor RC models. Well done George!!

80th Anniversary ideas

The committee want to celebrate the 80th anniversary next year and will circulate some initial ideas in the next few weeks. We would welcome your ideas once you have had a chance to review the first draft.

Tims indoor slow flyer

Tim Coles prays before flying his own design indoor slow flyer. It flew really well and basic designs like this with balsa and 3mm B&Q foam do seem to perform every time.

Next few weeks Calendar

NOV 1 Sat	**1:00 pm** Indoor mixed flying – RC (1pm to... @ IVC Main Sports Hall
NOV 8 Sat	**1:00 pm** Indoor Free Flight flying @ IVC Main Sports Hall
NOV 15 Sat	**1:00 pm** Indoor Radio Control flying @ IVC Main Sports Hall
NOV 22 Sat	**1:00 pm** Indoor mixed flying – RC (1pm to... @ IVC Main Sports Hall **2:30 pm** Annual General Meeting @ IVC Sports Hall

Time lapse of Night Radians

This amazing photo was taken by Neil Parris using a digital SLR on a long exposure showing Daniel and Alan concentrating on circling their Night Radians. It features on the BMFA Facebook page.