Airtime

Winter 2020

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www.saaweb.uk

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Front Cover Picture: A British Airways 747 before its final flight.

Chairtime

Hello to all my fellow SAA members,

My name is Steve McDonald and I am both honoured and delighted to be your new chairman following the AGM on the 6th December 2020, giving me the opportunity to give something back to an organisation that has given me so much over the years.

Originally from Glasgow, I moved to Inverness in 1977 and then to Dingwall in Ross-shire in 1989. I have two children and 3 grandchildren who keep me busy and I work as a lecturer in Electrical Engineering and Electrical Installation at UHI Inverness college.

In comparison to many members around my age, I am a relative newcomer and have only been involved in R/C flying for about 25 years as member of Ross-shire Model Flying Club. In that time, I have enjoyed Fixed Wing Power, Thermal Soaring, Slope Soaring and the now ubiquitous Drones.

This wonderful hobby of ours offers so much, catering for such a wide variety of interests within the banner of Model Flying and my aim as your chairman is to support every member, build on the hard work of my predecessors and their respective councils, to increase membership and finally, to bring in some young blood with a push on our youth development.

This year for many has been a bit of a write off in terms of flying, competitions and shows so fingers crossed that 2021 will bring us back to something close to what we would regard as normal.

On behalf of every member, I would like to thank our outgoing chairman Jim McGlynn for all his hard work over the 8 years he has been on the council and in particular, his herculean efforts in gaining our Article 16 authorisation, a very well done on that front.

I would like to thank the council members who have remained in post while we await replacements, hopefully in the very near future! We desperately need a treasurer as the current incumbent only agreed to step in after we sadly lost Geoff Stevens to Covid-19. We also need an Airtime editor as Tom Laird has stepped down, a big thank you to Tom for keeping it going in the meantime. The SAA is nothing without its members, equally though, we need members to help in the smooth running of our organisation and if we can't get volunteers to

help then the SAA cannot function. Can I issue this plea then, for a couple of volunteers to fill the vacant posts?

Finally, can I wish all members and their families a very Merry Christmas and all the very best for 2021,

Slàinte, Steve

Editorial

This was the 1st Zoom AGM and had a very good turnout with approximately 5% of the membership logging in. It all went well with no technical hitches, but (and there is always a "but") the AGM is not only about business; it is a major social event and gives the chance to meet up with people you may not have seen since the last one. Personally I hope we get back to a normal event for next year though running the physical meeting and a live-stream zoom or Skype meeting in parallel might reach out to more of the membership.

After 8 years on the Council, Jim has a replacement in the form of Steve McDonald from the Ross-shire club, Dougie Sheppard has taken on the Vice Chair / Safety Officer role with Colin Nicol taking on the Youth Development and Public Relations role which includes recruitment. Gordon, Wullie and Bill are remaining on the Council but would dearly love a replacement. We also need a new editor (I'll do the proof reading and grammar correction for the 1st 2 issues to get you started). **WE NEED NEW BLOOD**. It is no good having half the Council not wanting to be there as you will not get the service that you need. Please see if you can spare an hour a week to assist with any of the jobs. There are plenty of bite-sized tasks that need help if you don't fancy a full blown Council position.

It is difficult. Out of our 900 or so members, 200 are already running the clubs; another 50 or so are helping with maintenance; 50 to 100 are Instructors, 30 are examiners, 10 are Contest Directors and there will be a lot of people who simple are not in a position to offer assistance. To everyone else I'd say look deep into your soul and see where you can help. My phone number is 07761-645644 if you want unbiased information on any of the roles.

Wanted: Heli & MR Fliers

I am currently looking for a helicopter flier who can help with creating some training / example flight videos for Hovering Competency, Bronze, Silver, Gold. These can either be done on a simulator or live if you have a video person at your site, or I can come along later in the year once Covid goes away.

I am also looking for similar videos for Multi-rotor please.

YouTube Channel: https://www.youtube.com/channel/UCRzImxh-3XKgpCYmBAAWMIg/videos

Vacancy: Editor

This is my 14th and last edition of “Airtime” and while I have enjoyed it very much, I think it is time to hand the baton over to the next editor so that the magazine can stay fresh. If you would like to take over the running of the magazine and want to know more then please text before you call on 07761-645644.

The requirement for the role includes a basic grasp of English grammar. Do you know when to use an "**s**" an "**s**", a "**,s**" and an "**'s**"? Do you know when to use "**a lot**", "**alot**", or "**allot**"? Do you know **your right** from **you're right**?

If so then please get in touch.

Tom Laird 07761-645644

Vacancy: Safety Committee

A Safety Committee has been convened to look at the latest CAA requirements and to bring the Safety Manual up to date and they are looking for a Shadow Member to take part. The intention is to give you insight into how this committee works without the decision-making pressure that goes with it.

Covid Guidance

At the time of writing the media is in a frenzy regarding news about the Covid vaccine situation which has just been released. It is of course too early to say what the impact will be on aeromodelling in 2021 but we will be keeping all the clubs and Country Members up to date. During the year we have worked closely with SportScotland who are managing the return to sport on behalf of the government, and as we are a sports organisation we have some concessions that the general public do not have. All the documentation that has been released is on our web site as follows:

Doc 01 is the covering letter explaining how to get up to 30 people onto the flying site or at a competition or training event.

Doc 02 is the latest government guidance template.

Doc 03 is the Covid Officer job role description.

Doc 04 is a risk assessment example.

Doc 05 is the risk assessment in doc format.

Doc 06 is the same but in spreadsheet format.

Doc 07 is the SAA's version of 02 which has been approved by SportScotland on behalf of the government.

Doc 08 is an example risk assessment as modified for aeromodelling. This is not exhaustive and needs to be tailored to individual clubs or activities.

File: 01CovidGuidancePackageReleaseLetter-adb7b.pdf

Phase 3 return to sport and physical activity guidance

File: 02Phase3Returntosportandphysicalactivityguidance100920FINAL-2294a.docx

Sportscotland Covid Officer

File: 03sportscotland-covid-officer-365e1.pdf

Risk Assessment Example

File: 04risk-assessment-example-0897d.pdf

Risk Assessment Template Blank

File: 05risk-assessment-template-blank-7cf37.docx

Risk Assessment Template Blank

File: 06risk-assessment-template-blank-ea98c.xlsx

Covid Sports Specific Guidance for the Scottish Aeromodellers Association

File: 07CovidSportsSpecificGuidancefortheScottishAeromodellersAssociation-eca04.pdf

Risk Assessment Example for Aeromodelling

File: 08RiskAssessmentExampleforAeromodelling-f65fc.docx

Covid Guidance Template 8th Oct 2020

URL: https://drive.google.com/file/d/1dQvyiBA9SgkFrqCTpsWqUELHCzbwyWtq/view?usp=sharing

Release Package 2 Letter

CovidGuidancePackageRelease2Letter

Release Package 3 Letter

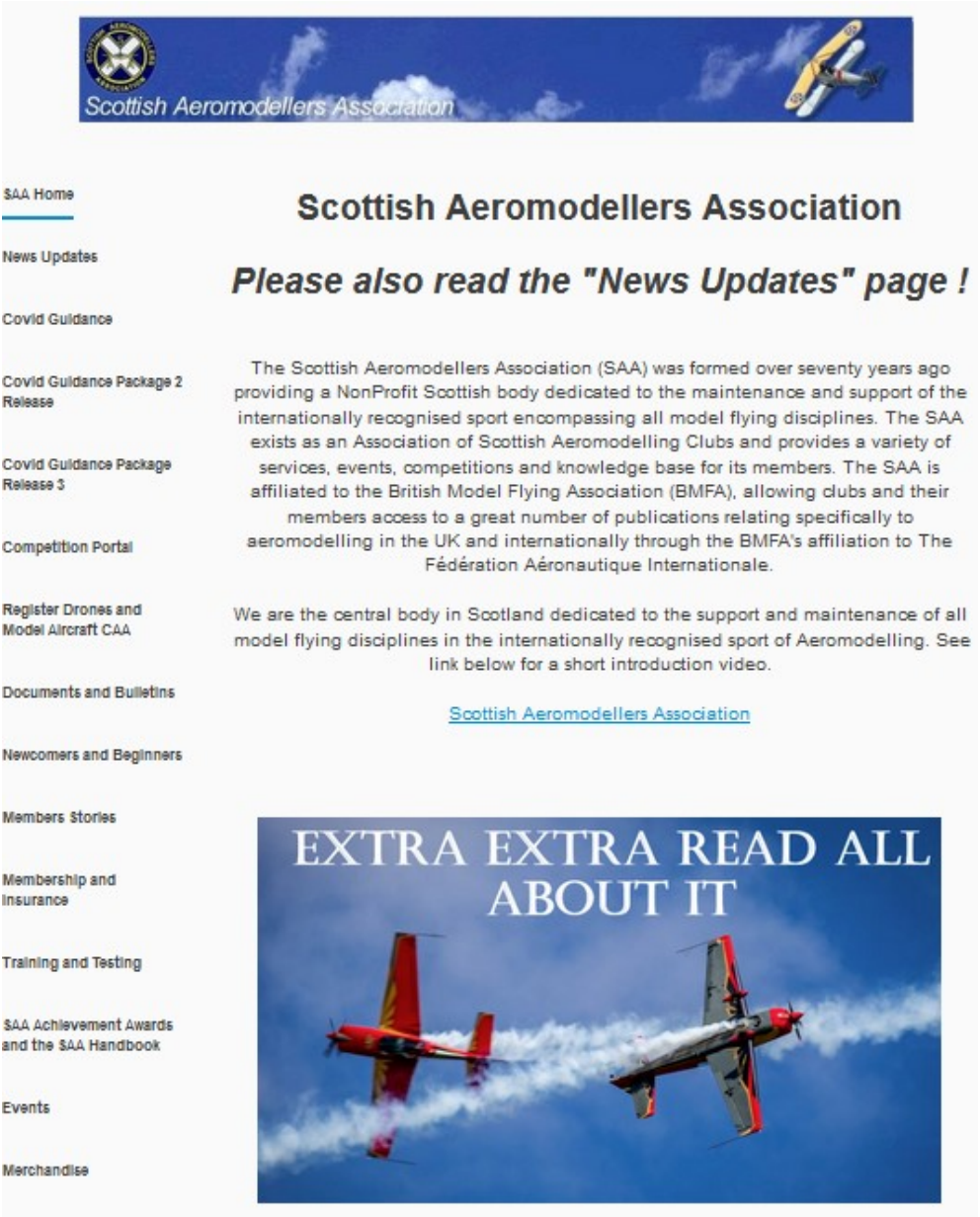
CovidGuidancePackageRelease3Letter-3bc3d.pdf

Please send any questions to:

covid@saaweb.uk

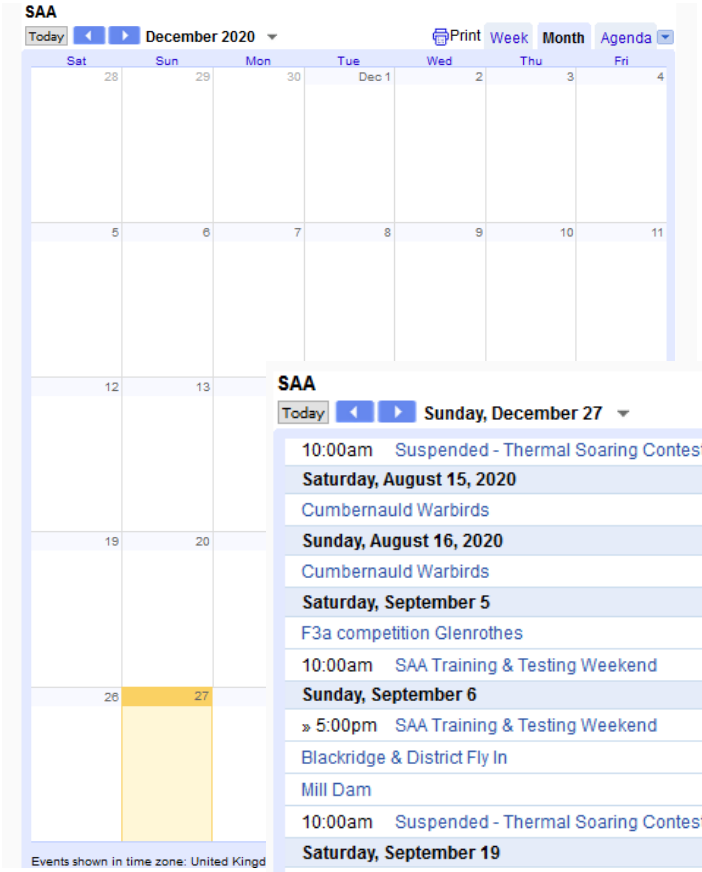
www.saaweb.uk

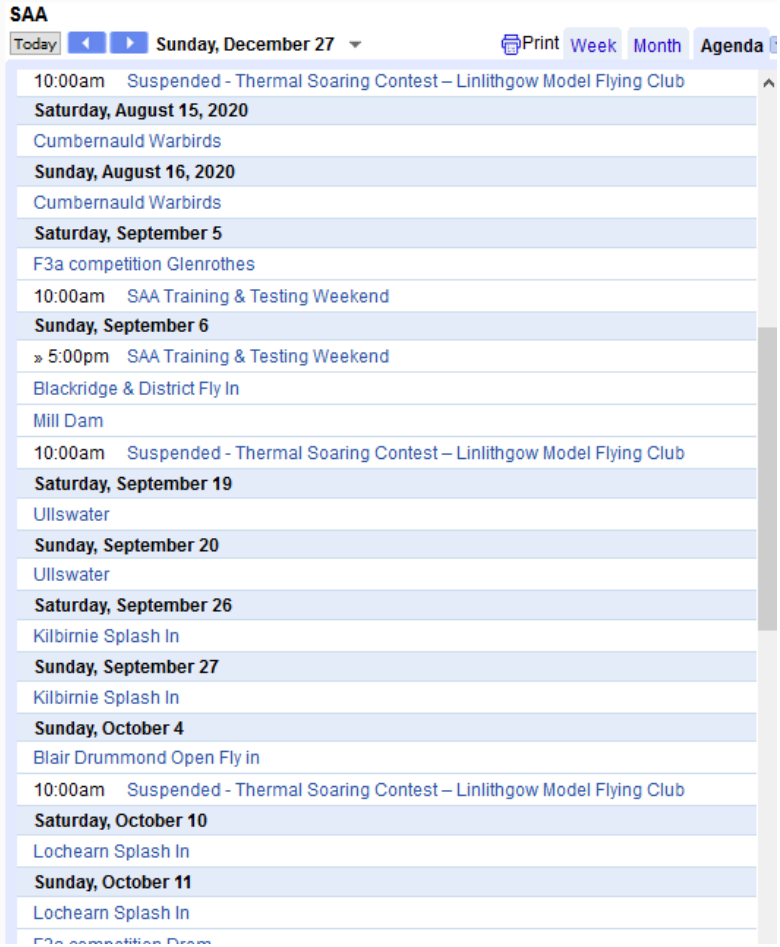
I'd like to draw your attention to the SAA's Web Site page and invite you visit it. It has undergone a huge piece of development thanks to Arty Fisher and now contains a host of information. The "Events" calendar is operational again following a initial Covid restrictions and we look forward to a full calendar of events for 2021.



The Events Page

The calendar can be displayed in the default grid format or in list format by selecting the Agenda view. Please send details of your event to asec@saaweb.uk including the name of club, start time, location, web site etc.





The SAA Facebook Page

I'd also like to draw your attention to the SAA's Facebook page and invite you to join us. This page operates as a "Broadcast" page for the latest SAA information releases and has a "Comment" feature for any questions you may have on the topic. https://www.facebook.com/groups/431687700690461

Scottish Aeromodellers Association

Public group · 114 members

+ Invite

The SAA Competition Portal

https://www.saaweb.uk/competition_portal.html

Asking people to take part in one of the competition scenes normally has them running for the hills. The usual excuses are, in no particular order—I fly for fun, I'm not that good, too far to travel for 3 or 4 flights.

I fly for fun—certainly I do and so do all the competitors I know. We are not doing it as a punishment :)

I'm not that good— at the beginning, nobody is expected to be "that good" which is why most disciplines will have a progressive learning curve.

Too far to travel for 3 or 4 flights: it is not just the flights. Most comps are very sociable events with a lot of general chat coupled with a lot of advice, help and guidance.

Why not give it a try? There is nothing to lose and you will probably enjoy it.

The SAA YouTube Channel

https://www.youtube.com/channel/UCRzlmxh-3XKgpCYmBAAWMlg/videos

HOME VIDEOS PLAYLISTS CHANNELS DISCUSSION

Scottish Aeromodellers fly-in, August 2016, Strathaven...

1 view • 13 hours ago

Strathaven 2015

7 views • 17 hours ago

IMAC Sportsman 2016

10 views • 1 week ago

DADMAC 2020

17 views • 1 week ago

East Kilbride 2017

8 views • 1 week ago

East Kilbride 2016

4 views • 1 week ago

F3a clubman 2016

7 views • 1 week ago

F3a Intermediate competition schedule example

5 views • 1 week ago

SAA Silver Schedule

8 views • 1 week ago

SAA Bronze Plus

4 views • 1 week ago

SAA Bronze with Tutor 40

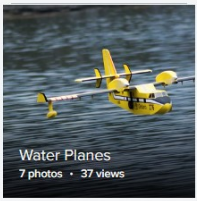
9 views • 1 week ago

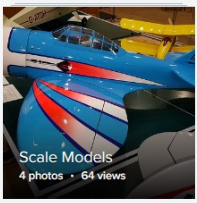
What is Radio Controlled Model Aircraft Flying?

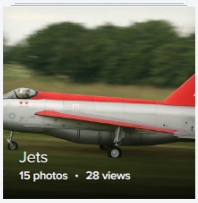
778 views • 11 months ago

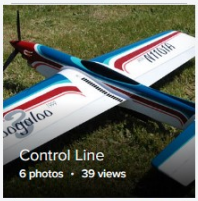
The SAA Picture Gallery Albums

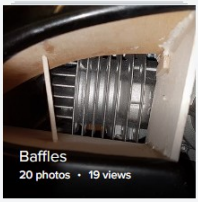
https://www.flickr.com/photos/138883192@N02/albums

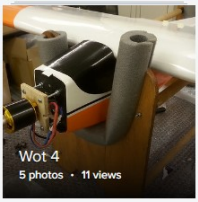


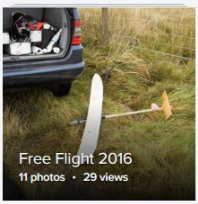


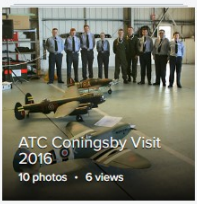












The Scottish Competition Scene

Aerobatics (F3a)

Aerobatics is the precise and controlled flying of sequences to a high standard, either at your local club, in competitions, or at club open days. The competition levels for F3a and IMAC are Clubman / Sportsman for newcomers, then Intermediate through to Advanced all increasing in the level of challenge. Competitions are either league or team based. Standard models are encouraged for beginners, though generally increasing in quality as the pilot progresses. Engines are electric, glow or petrol, 10cc to 200cc. Competitions are held at various sites courtesy of the host club and members.

Contact: Tom Laird on 07761-645644

The competition circuit dates can be found here: https://www.saaweb.uk/events.html

More information at:

http://aerobatics.modelclub.org/

https://www.facebook.com/groups/733780607406350

Schedules and general forum here: www.gbrcaa.org

At the entry level for people starting, an Acro-Wot or similar low wing model (SpeedAir, Angel / Wind / Mythos 50 etc) will be perfectly useable.

As you progress, the next level most people will go to is the 120 class so something like the Mythos 125 or Ascent would be acceptable choices.

The next level up can start to get a bit expensive but no more than any other top level hobby or sports equipment.

Entry Level Clubman schedule video (Click to play):

Trophies:

The Perth Cup,

Clubman Aerobatics League (Entry Group)

The Campbell Cup,

Intermediate Aerobatics League

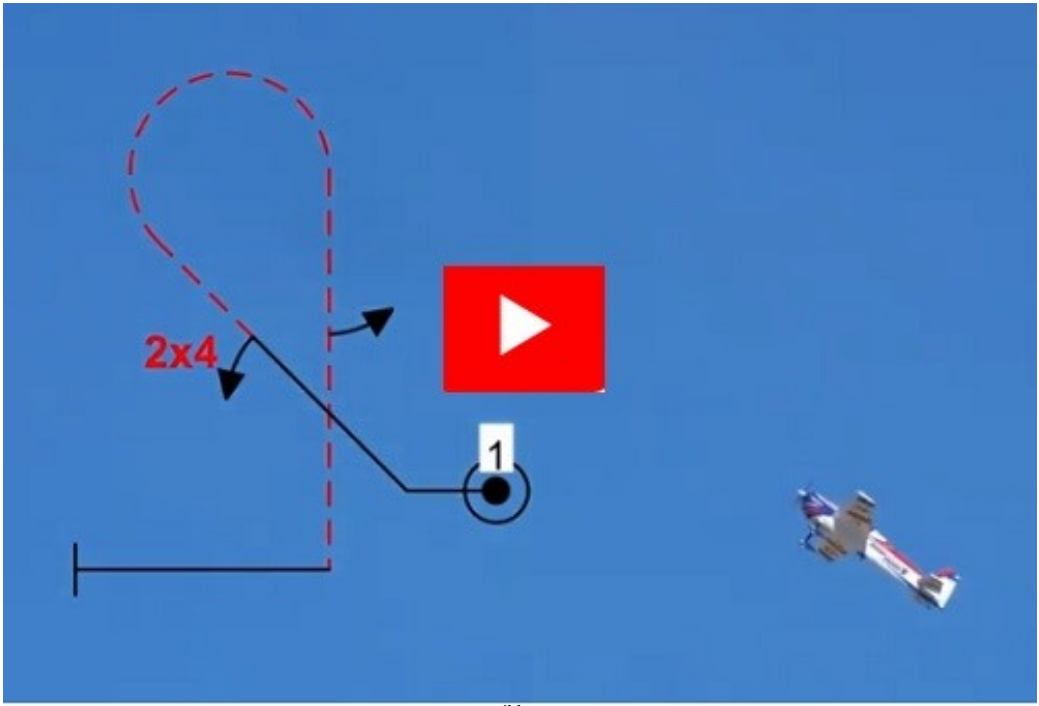
The Edinburgh Cup, FAI Aerobatics League

Aerobatics (IMAC)

Scale aerobatics is aerobatic operation of a radio controlled scale model of full-sized aerobatic competition plane. While other disciplines within the radio control community fly aerobatics, the requirement for scale aerobatic is that the model be replicas of types known to have competed in International Aerobatic Club (IAC) competition. A wide choice of competitive planes are available to today's model in both kit and ready-to-fly versions.
There are 4 classes flown: Sportsman, Intermediate, Advanced, and Unlimited. As with F3a the size, complexity and performance of the model can go up as you progrerss but at the Sports-man level again an Acro-Wot, 20cc / 120 CAP232 / Extra / Edge will all be perfect.
More information at:
http://aerobatics.modelclub.org/

https://www.facebook.com/groups/733780607406350

www.imacuk.org



The Scottish IMAC Trophy, awarded to the highest possible score from any level at the Scottish IMAC competition.

The Scottish IMAC Freestyle Trophy, awarded to the highest score in the Freestyle round at the Scottish IMAC competition.

Free Flight:

Snapshot:

FREE FLIGHT model planes which fly entirely on their own, with no external control, were the first type of model aircraft. They are designed to stabilise themselves when disturbed in the air by gusts and turbulence. A simple glider or rubber powered model can be the first step into aeromodelling, before building more refined models to fly in duration contests.
They bring the joy of building something from basic raw materials and the enormous satisfaction of seeing your creation flying.
Contact: Jim Arnott: arnott.downside@btinternet.com

Overview of Free Flight Duration Models
Model planes which fly entirely on their own, with no form of external control, were the first type of model aircraft. They are designed to stabilise themselves when disturbed in the air by gusts and turbulence. Despite the enormous advances in technology, this type of model still has many attractions and it has an enthusiastic following of modellers who enjoy flying free flight models in duration contests. F/F duration models are designed purely for performance and there no attempt to even resemble full size aircraft

There are four main types of free flight duration models.
The Towline Glider. The flyer kites his model to the top of a 50 metre line, searches for lift by feeling the tension in the line, then releases the model to fly free. The flight time starts from the point of release from the line. Athletic and skilled fliers can tow models for many minutes in search of a thermal in good conditions. Windy conditions can cause a 50 metre sprint toward the model to reduce the strain on the model while getting it the top of the line.

The Rubber Model . A hank of strong rubber is tight wound into the fuselage of the model and drives a large hand carved propeller, typically 24" diameter and 30" pitch. In an Open Rubber model where there are no restrictions, the rubber can make up 50% of the flying weight. The flight is timed from launch. The power run is generally over a minute, after which the large propeller blades are arranged to fold flat along the side the fuselage for the gliding portion of the flight.

The Power Model . Here a glow, diesel, or electric motor gives a rapid climb with a very short motor run - 7, 10 or 12 secs depending on the contest type. Clockwork timers are used to cut off fuel to the engine. The model is gliding for the remainder of the flight. A good power model will perform a steep spiral climb to over 400 ft in 10 secs. When the motor stops the model needs to transfer smoothly into a slow circling glide. It is a challenging design and trimming prospect when you have no control of the model after launch.

The Indoor Duration Model : These models are flown in a sports hall. The lighter they are the better they fly. The beginners class is the Pennyplane model, 18” span and the weight of a US Penny (3.1gm) they can fly for six or seven minutes with a thin rubber motor. The other lighter class we fly, the F1L with a weight of 1.2 gms can do flights over 10 minutes. It is enthralling to watch these models defying gravity while flying at less than walking pace.

The History of Free Flight Modelling

Free flight model planes have been around for a very very long time as the first successful model glider was flown some 200 years ago.

In 1804, Sir George Cayley, an enthusiast for the then popular kite flying thought he could make a kite that flew untethered. He wrote a series of scientific papers describing how the model was able to maintain a stable flight pattern. He used a long rod fuselage, with the main kite wing near the front and arrow style four small wings at the back set at an angle to give longitudinal stability, he used dihedral for lateral stability, he used a movable weight at the front to experiment with CG positions. His gliders provided a solid foundation for aerodynamics 100 years before the Wright Brothers flew. Certainly a man well ahead of his time.
In 1857, Frenchman Felix du Temple built a steam powered model that took off flew and landed under its own power. This was generally accepted to be the first successful powered model flight.

In 1871, another Frenchman Alphonse Penaud demonstrated a small 18 inch

span rubber powered model to a scientific society. It featured starched feathers for prop blades and flew a distance of 131 ft in 11 seconds.

Since then model builders have tried to make models that fly higher and for longer. From the earliest days most free flight models have been built to gain a competitive edge. Once someone had flown for 15 secs, someone else tried for 20 secs.

The first formal model aircraft contest in Britain was held in 1907 at the Alexandra Palace, organised by the Daily Mail. There were 130 entries. The winning model, a rubber powered model by a young man called Alliott Verdon Roe flew the length of the hall. He used his cash prize to build a man carrying Triplane and then founded an Aircraft Company called Avro – which went on to make the legendary " Dambuster" Lancaster bomber.

Now in the 21 st century, what attracts people to build and fly Free Flight models? There are many aspects to the sport. There is the joy of building something from basic raw materials and the enormous satisfaction of seeing your creation flying. There are the skills of understanding aerodynamics and adjusting your model to fly well. There are the challenges of matching yourself and your model against others in competitions. It is not expensive - one can put together a Glider or Rubber Model for say £40 that could win contests. There is the purity of being judged by a stopwatch and the not the opinion of a judge. There is the attraction of actively using the countryside and developing an understanding of the weather conditions and how they will influence your models flight.

These are all part of the package, but they just scrape the surface of a myriad of little complexities that make Free Flight Contest flying an intriguing sport.
Free Flight Contest Flying

You can build Free Flight models purely for the joy of seeing them fly but, entering into Free Flight duration contests does add a competitive edge which encourages you to design, build, test fly and adjust each model to be a little better than its predecessor, and hopefully better than the other models in the contest.

The objective of all Free Flight duration events is to achieve a series of flights, where the duration of each flight exceeds the target time set. This target time is set by the Contest Director and varies according to the class of model and the weather conditions.

Free Flight models are normally trimmed for a circling glide pattern to stay in thermals but, in a breeze, they will drift at wind speed over the moor for considerable distance. For example, in a 10 mph wind, a 3 minute flight will travel a half mile downwind. The flight is observed by an official timekeeper, using binoculars if necessary to see the model in the distance.

Most contests are either 3 round or 5 round events. On a breezy day, Free Flight competitors can cover many miles in a day. At our regular flying site this means high stepping through rough moorland, one reason why we consider this aeromodelling discipline to be a sporting challenge as much as a model making hobby.

In the 1940's early free flight events were flown to unlimited times but it was quickly realised that one "lucky" thermal assisted flight could win the contest. Setting a target time as the MAX time allowed per flight rewarded consistently good performance. Ideally the MAX is set at a flight time that a very good model can just achieve in neutral air.

In order to achieve the time, FF fliers become very skilled at detecting thermals by noting changes in wind speed, changes in air temperature, bird and insect activity in the air. (thermal detection equipment is banned at Scottish events). The models are hopefully launched into rising air and achieve a max flight. Having achieved their MAX flight, they need a device to destroy their flight pattern and bring them down out of the thermal before they travel too far away. The common way to do this is to spring the tailplane to a 45 degree angle and the fully stalled model descends smoothly down.

On a breezy day, when your model has landed a mile away across the moor, retrieving your model ready for the next flight is a challenge in itself. Not being controlled, the models can land anywhere – up a tree, in the bull field, or hidden down a hollow. Retrieving is an enjoyable mixture of a nature ramble, an assault course and orienteering.

Although keen to win their contests, Free Flight competitors are universally helpful and encouraging to other contestants. Newcomers to the sport will find plenty of help and encouragement to ensure they can get their models to fly well.

If you would like to see our models flying and learning more about how you could get started in the sport, then please visit us at the Newbigging flying site. Check out our calendar of contest dates. Choose a calm day to see most activ-

ity. If you get in touch by email, then we can advise when meetings are definitely on.

Thermal Soaring

In Scotland we fly F5j to Open Height Limited Rules and 2 Meter HLR competitions. All aircraft have to comply with the FAI regulations regarding weight, wing loading and wing span. Basic spans are F5j & Open are a maximum of 4 Meters and 2 Meter is fairly self-explanatory. There is only one class of pilot.

Explanation Video: https://youtu.be/-AfezktmGjs

The Scottish comps are generally held at the Linlithgow club site. Click image.

F3F Slope Racing

F3F is a timed speed event for model gliders. Each pilot has to fly 10 laps of a 100 Metre course and the fastest time wins the round. The average is time to cover the distance is 30 to 40 seconds. Depending on the wind and location these times can vary a great deal. More information is available here: https://www.barcs.co.uk/f3f-slope/about-f3f/

The Scottish league dates can be found here: http://www.gbsra.co.uk/f3f-calendar (Location: Lomond Hills, Fife)

The Great British Slope Racing Association: http://www.gbsra.co.uk/

Contact Peter Gunning, Tel: 01382 541935

Click picture for video:

Thermal Postal Comp:

This event is open to anyone using a height limiter equipped model with a timekeeper in attendance (anybody capable of operating a stopwatch) to time each flight. This can be done at your own site so no travelling is involved. The basic format is a 30-second motor run with the landing being as close to 10 minutes (8 minutes for the 2 metre class) as possible. Closest to 10 wins. All the details are here: http://www.esoaring.net/forum/viewtopic.php?f=6&t=3577

Helicopters:
The biggest event in Scottish helicopter competitions is the Heli Nats hosted by the Aberdeen club. Although Freestyle is probably the most videoed for YouTube it is only one part of the overall competition scene. More information here: http://www.helinats.co.uk/
FAI F3C – 'P' (Schedule aerobatics)
FAI F3N (Freestyle aerobatics)
Sportsman
Scale

Scale:
Scale flying models is the reproduction of real aircraft into various scale: ½, 1/3, ¼, 1/5, 1/6, down to 300 mm or less. Models are mostly constructed of balsa wood with plywood reinforcement and covered in heat shrink film.

JET SCALE MODELS
These are powered by miniature turbine engines range from early fifties fighters and airliners, to modern. These models can range from around 1m to 12m wingspan

IC SCALE MODELS
These range of models include pre-world war 1 bi-plane and tri-planes, private passenger and fighter aircraft from between WW1 to WW2, and WW2 fighters

and bombers (5cc to 500cc single and multi-cylinder glow plug, petrol, diesel engine using an ether/paraffin/oil mix)

ELECTRIC SCALE
With the vast development of lithium polymer batteries (lipo's) and high performance electric motors aircraft range from single to multi motors to electric ducted fan driven jets.

ARTF (Almost Ready To Fly)

These models can be constructed from foam, ply and balsa. They range in price from around £50 to £1000 and can be powered by JETS, ELECTRIC or IC.

SCALE Competitions

F4C There are various competitions with F4C being the top of scale modelling. Models are judged on a reproduction of the real aircraft with documentation of flight as of the real aircraft, with points awarded for take-off, landing and manoeuvres such as rolls, loops, stalls and so on...

Class II The same points are awarded as above but with a less strict judgement, from a further distance though the flying is the same as for F4C

Class III Class III is flown to rules drawn up by the late Ron Fraser and consists of a flight (normally around 10 mins – decided by CD depending on number of entries) the model to be flown in the manner of the full size prototype – no static judging – other than photographic proof if it is an obscure subject

Flying Scale Flying Scale (or Flying Only Scale) is as it suggests a flying only schedule with no static judging taking place.

Popular Scale This is for models up to 020 glow size at the Scottish Nationals. Flying only, no static judging.

Concurs de' elegance This is an annual static, indoor competition which is looking for the best built model from any discipline.

Trophies:

The Mick Charles Trophy, awarded to the best Scottish pilot at the Scottish Nationals

The Class III Trophy, awarded to the Class III winner at the Scottish Nationals

The David Guild Memorial Trophy, awarded to the winner at the Concurs de' elegance

The Lew Weaver Shield. This is given to the best model at the Alloa Scale Comp and is open to all types of model, electric, glow, petrol etc

Control Line:

A beginner's guide to Control Line (from 2014) https://www.amaflightschool.org/getstarted/beginners-guide-control-line

At the time of writing (Oct 2020) all events have been cancelled due to Covid, but this is the usual location in Strathclyde Park:

Control Line (Combat): Contact: Gordon Price: Gordon.price1@ntlworld.com

Control Line (Stunt): Contact: Peter Miller: petermillar05@aol.com

Control Line (Team Race): Contact: Jimmy Pinkerton: james.pinkerton@mypostoffice.co.uk

Jets and EDF's

There are no dedicated jet / EDF competitions in Scotland but their attendance at the Scale events is warmly welcomed. There are a number of competitions world-wide for example the World Jet Masters: http://www.ijmc.net/jwm/jwm.htm

Transitioning into an Aerobatic Pilot

Intro

This is intended to help pilots transition to an aerobatic pilot and to help new competitors hit the ground running so they get more enjoyment out of the competitions be they F3a or IMAC. It will hopefully mean you are not spending the first 3 or 4 competitions just getting up to speed on the basics.

The main issues I see with new starts is that they:

1. Fly too close.
2. Fly too fast.
3. Their manoeuvres are too small
4. They don't leave any space between the manoeuvres.

What is the Difference?

A fellow club flier commented recently that everything I do seems to be pre-planned and intended. He said I line the model up then make the move. I think that is it in a nutshell – it is planned. Everything happens either in the centre of the flying area or at either end. It does not happen at some random spot when the model just happens to be in the correct place and orientation. It happens because I put it there.

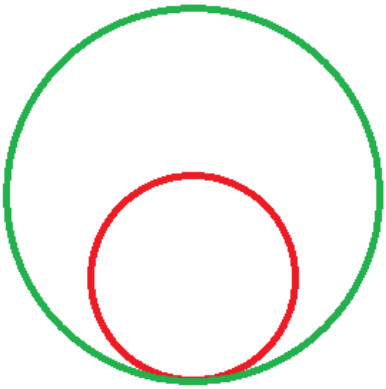
If you are attracted to this type of flying because of the gracefulness then I would say there are 4 things that will make a huge difference to your flying without even improving a single manoeuvre.

Speed

Fly slower. You get more time to think, more time to plan and more time to react if things don't go according to plan. You want at least 2 seconds of straight and level flight between moves.

Size

The next time you do a loop, count the seconds to the top. I'll take a guess and say it is 3. Now do it again until you get to 3 seconds at 90 degrees and 6 seconds at the top. That's better. If you can already do a Stall Turn, go twice as high and it will look 4 times as impressive.



Fly Further Out
At the moment you will generally be flying oval or rectangular circuits or more likely, some random circuit as it comes to you, but as an aerobatic pilot you will generally be flying both directions at the same distance out. This can be exciting if the other club pilots are flying random circuits at the same time so it is best to do this when you have the sky to yourself. You want to be about 150 metres out if your flying a 2 metre plane but maybe 100 metres if it is a 50-size so you can still see it. The further out you fly the longer your flight line due to the 60 degree box lines in F3a.

Plant Your Feet
On the pilot's stance decide where your centre line is and plant your feet. Do not move them. Do not swivel your body from the waist. Swivel your head instead and that way you always know where your centre line is, otherwise you are just throwing away valuable points needlessly. If you are practising on your own you might be able to stick a flag at the fence in line with the centre of the flight line, or paint a fence post if the committee allow you, or even just tie a ribbon to the post. Anything will do so long as you know where the centre is.

Simulators
I am very much in favour of simulators as it sure beats standing out in the cold. However, 1 size does not fit all, and every model you use in the simulator must have its own corresponding model in your transmitter. You cannot fly an F3a model, a trainer and a big IMAC model on the one transmitter model setup. Something to watch out for is that the internal settings on a simulator will override your transmitter. For example in Phoenix one model had the elevator restricted to 15 degrees up & down so I could never get it to snap properly until I edited the model and changed the deflection to 45 degrees.

Flight Modes versus individual rates switches
As soon as I mention Fight Modes, people either switch off or run for the hills. To me, a single 3-way switch beats 3 individual rates switches each with 3 positions. With Flight Modes you set your deflections for normal flying, stall turns, spins, landing mode maybe, all depending on the capabilities of your transmitter.

Your First Comp
My advice is to come along and meet everyone THEN decide if you want to fly. If you want to take part in the comp then you will be very welcome and if you just want a quick flight at the lunch break then again, you will be very welcome to do so. Someone will look after you, explain what is going on, introduce you to everyone, explain the schedules etc. The first comp you fly in is free of

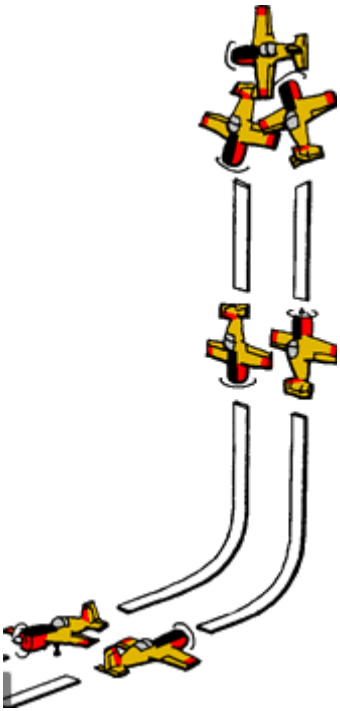
course.

Loops
Loops are easy :) “Just fly along and pull back on the elevator”. That's all there is too it, but you’re a budding aerobatic pilot. You can’t just pull any old size of loop at some random point in the sky. You need to pull a decent size loop, bang in the centre of the flying area, and you are aiming to exit at the same height and place as you entered.

Referring to the “Size” paragraph above, you will be aiming to have a 3-second count per 90 degrees. This is not cast in stone so it might be 4 seconds, but it is unlikely to be 2 seconds.

Before you fly, analyse the wind direction and decide which rudder direction you are going to apply through the loop. Now assuming you have applied the correct rudder direction you DO NOT CHANGE IT half way through.

Cuban Eights,
There is not much I can say about this. The 2 loops need to be the same size and the crossover needs to be in the centre. To make it easier, there are no half-rolls in it for the entry level F3a class. Refer to the “Loops” paragraph regarding the rudder. Count the seconds from passing centre to pulling up and increase or decrease the number of seconds depending on your 45 degree down-line.



Stall Turns
For this you will generally need another bit of black magic known as a rudder mix which will give you more rudder throw at zero throttle. How you do this will depend on your transmitter’s capabilities but you want to be climbing into the stall turn with your normal rudder throw otherwise you will tend to fish-tail. At the point where you have reduced the throttle you want the mix to give you more rudder to kick the model round.

In your practice sessions you should be using the rudder to go straight up in a cross-wind with no sliding to the side, and again on the way down again, no sliding to the side. If the wind is straight down the

strip then fly away from you perpendicular to the wind so you get the cross wind effect. Try it without the rudder to see how much the model displaces between entering and exiting a stall turn if you don't use the rudder.

An alternative it to always fly with full rudder and a lot of expo.

Rolls and What goes Wrong
"You just fly along, pull the nose up and whack the aileron stick to the side and you'll do a roll"!! And what happened? Apart from needing your underwear washed that is?

As soon as your wings were vertical the model veered towards you. At this point your brain started to lose its grip but you managed to get the model on its back. Then the blighter started heading to mother earth and your brain really started to frazzle. You persevered 'cos it was all happening so quickly and when the wings were vertical the model veered further towards you. Finally it was all over and the model was upright again and a quick yank on the elevator

prevented a hole in the ground. Big Sigh of Relief. Sound familiar?

If we roll back a bit and take it in stages you will be a bit better off. The first thing to get comfortable with is:

Inverted Flying

You need to know what the model is going to do when it is inverted and be ready to smoothly apply the correct amount of down-elevator to hold the nose up.

Get used to just flipping it over and doing some circles and procedure turns and figure-eights. Get to a stage where it is not a surprise and you are confident about what you are doing. If you pull the nose up before rolling you will lose points, and it will take about 2 years to get out of the habit.

Knife-Edges

The 2nd stage in a good roll is to know what it will do when the wings are vertical, in other words, when it is in a knife-edge situation. 9 times out of 10 it will either veer towards you or it will veer away from you, and the wings will either try to return to upright or try to carry on to inverted. This is when your brain really starts to melt and panic sets in. You can either use the sticks to deal with it, or you can mix it out. Most people will mix it out to allow them to concentrate on other things but it really is your choice. The mix you want is the Rudder to Aileron / Elevator if you have one, or you may need to put in a custom one depending on your transmitter. I'll say at this point you can also move the centre of gravity to sort out the pull but that is maybe for more advanced pilots.

The process is to fly along, get into a knife edge with the canopy towards you then remember if the model came towards you or went away from you. An assistant is really useful for this. Land and add in 2% elevator mix to compensate for which ever way the model went. Try it again and keep adding more mix until it flies straight. The do the other type of knife edge with the belly towards you and go through the same process. Then do it all again but adding aileron deflection to hold the wings vertical. Remember you do not need to use a full battery or tank of fuel for each adjustment – just fly long enough to see if the pull has gone away, land, make the adjustment and fly again.

4-Point Roll

Now that you can fly both knife edges and fly inverted you are ready for a 4-point roll. Take your time, there is no hurry. If you are taking 4 seconds per point and running out of sky then apply down-elevator to push the model vertical after the inverted bit and redo it until you are at 2 seconds per point. Don't rush it. Keeping the model straight and level is the target.

Slow Roll

Once you are at 2 seconds per point go 1 second, then no seconds and you should be close to a pretty good Slow Roll. The simulator is your best friend here. A Slow Roll should be a continuous piece of ballet with smooth transitions all the way through. Hint – you might need to INCREASE your speed to compensate for the loss of lift as your wings move from horizontal to vertical.

Slow Roll Lesson: https://youtu.be/O--oJUShpUQ

Spins.
This is generally where another flight mode is used with the elevator, ailerons and rudder being set to maximum to give you a crisp entry. Make sure you know which way the model will fall (left or right) and apply rudder in that direction as changing the direction after it has started will get points deducted.

Snaps
There are no snaps in the F3a Clubman schedule but the IMAC Sportsman schedule generally does have them. At this level most people are just going to use the spring-loaded switch on the tranny so I would just go with that. It is only at the next level where you need to do upright and inverted snaps in the same schedule that you need to go for a more advanced setup.

The Boring Bit
I've left this till last. I mentioned straight and level flight earlier. Unfortunately as an aerobatic pilot you care about straight flight and that requires the use of the rudder. Pick a day where the wind is at 45 degrees and fly using the rudder to keep the model flying straight. Pull up into a half loop and stay inverted again using the rudder to keep the model flying straight. At the end of the strip pull down and hopefully you'll be at the same distance out as you were in the previous pass.

Once you've nailed that, do a half roll on the top line and use the opposite rudder to keep straight.

Videos:

Here is my version of the Clubman schedule. Remember I've been doing this for 15 years so don't worry; you do not need to be anywhere near this level to get started.
https://youtu.be/s-olBxfGFe8

Next up is my entry level IMAC schedule from 2016. This changes every year but you'll get a feel for the standard:
https://youtu.be/-cOzjo2gD6Q

F3a Schedules, Information and Forum
http://www.gbrcaa.org/

IMAC Uk Web site:
https://imacuk.org/

Scottish Aerobatics Facebook Page
https://www.facebook.com/groups/733780607406350

Scottish Aerobatics Web Page
http://aerobatics.modelclub.org/

IMAC Facebook Page
https://www.facebook.com/groups/1410610332555404

BRITISH AIRWAYS 747 RETIREMENTS

In July British Airways announced that all 31 of its remaining 747s had sadly flown their last commercial services as a result of the devastating impact the Covid-19 pandemic has had on the airline and the aviation sector. Full details of each retired aircraft are here. This log will be updated as each retirement date is confirmed – please keep checking back for further details. More information from the 747 retirement announcement is available here.

Press Release:

Today (Friday July 17, 2020) British Airways announces, with great sadness, that its fleet of Boeing 747 aircraft, fondly known as 'The Queen of the Skies', are likely to have flown their last scheduled commercial service.

After nearly five decades of service and millions of miles flown around the globe, it is proposed that the airline's remaining fleet of 31 747-400 aircraft will be retired with immediate effect as a result of the devasting impact the Covid-19 pandemic has had on the airline and the aviation sector, which is not predicted to recover to 2019 levels until 2023/24.

Just a year ago, British Airways lovingly re-painted three of its jumbo jets in heritage colours to mark the company's centenary. The BOAC jet put in a guest appearance with the Red Arrows much to the delight of spectators at the Royal International Air Tattoo, and sadly the aircraft will shortly be heading towards its final resting place alongside 30 others.

The fuel-hungry aircraft were slowly being phased out by British Airways as they reached the end of their working life in order to help meet the company's commitment to net zero by 2050. The airline has invested heavily in new, modern long-haul aircraft including six A350s and 32 787s which are around 25 per cent more fuel-efficient than the 747. As part of the airline's £6.5 billion injection into customer experience in recent years, existing aircraft have been refurbished and the brand new arrivals have come into the British Airways' fleet complete with a luxurious business class Club Suite product.

Alex Cruz, British Airways' Chairman and CEO, said: "This is not how we wanted or expected to have to say goodbye to our incredible fleet of 747 aircraft. It is a heart-breaking decision to have to make. So many people, including many thousands of our colleagues past and present, have spent countless hours on and with these wonderful planes – they have been at the centre of so many memories, including my very first long-haul flight. They will always hold a special place in our hearts at British Airways.

We have committed to making our fleet more environmentally friendly as we look to reduce the size of our business to reflect the impact of the Covid-19 pandemic on aviation. As painful as it is, this is the most logical thing for us to propose. The retirement of the jumbo jet will be felt by many people across Britain, as well as by all of us at British Airways. It is sadly another difficult but necessary step as we prepare for a very different future."

BOAC operated its first 747 London to New York service on 14th April 1971 and in July 1989 the first British Airways 747-400, the aircraft type the airline still flies today, took to the skies.

Plane spotters who lined Heathrow's perimeter fences would watch as the magnificent 747-400 would typically take off at 180mph and reach cruising speeds in the sky of up to 565mph.

For the next decade the airline took delivery of 56 more of the aircraft, with its final plane delivered in April 1999. At the time, it was the largest commercial aircraft in the world, and it remained so until the Airbus A380 first took to the skies in 2007.

At one point British Airways operated 57 747-400 aircraft. The original aircraft featured 27 First Class seats and 292 Economy seats. Initially, the upper deck, widely described as the bubble, contained a lounge, with lounge chair seating. It was known as the 'club in the sky' and the aircraft also played host to the world's very first flat bed seat which British Airways pioneered in 1999.

Today's aircraft can seat up to 345 customers in four classes – First, Club World (Business), World Traveller Plus (Premium Economy) and World Traveller (Economy). British Airways recently refreshed the interiors of a number of its 747 aircraft which were expected to remain in service for several years to come.

The airline's jumbo jets are currently grounded at various locations in the UK and are now only expected to reach heights of 35,000 feet as they make their final journeys.

EVENTS

The organisers want to advise that the indoor model show at the Viewpark Parish Church, normally held in February has been cancelled for 2021 but hopefully will take place in 2022. If you have not attended one of these shows then here is what you have missed:

2020: **https://www.flickr.com/.../13888.../albums/72157713302372247**

2017 video: **https://youtu.be/LiMMOqJP3qE**

2016: **https://www.flickr.com/.../13888.../albums/72157665070603201**

All the SAA albums are here: **https://www.flickr.com/photos/138883192@N02/albums**

IMAC-UK League Scottish Round

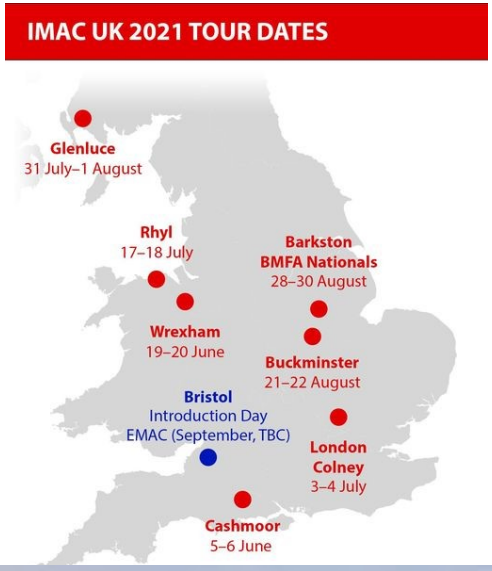
Hosted by: Glenluce and Galloway Fliers

Web site: https://www.glenluceandgallowayflyers.co.uk/

Date: July 31st / 1st August (Friday is “Meet & Greet” / practice day)

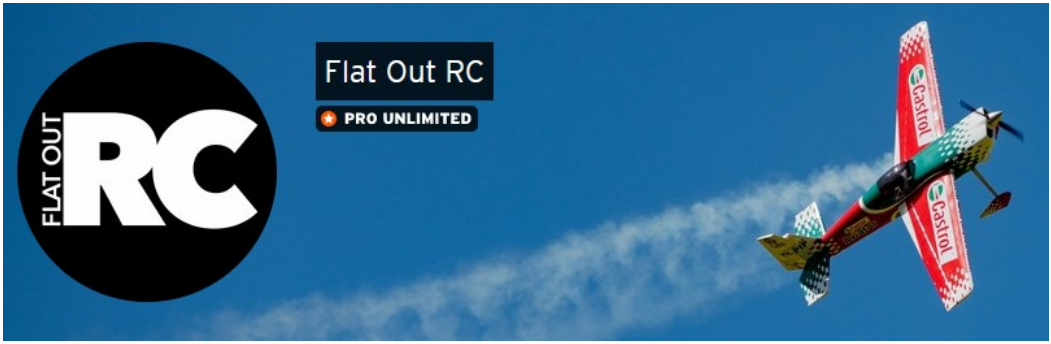
Location: https://goo.gl/maps/maZZ2wdTf6BJP6rr8

Start Time: depends on Covid but normally 09:00 / 10:00



Flat Out RC

Here is a good page for you. There are some good discussions with some of the top pilots and generally worth having it playing away in the background when you are in the workshop if you don't have the patience to sit and listen to it. If you are techy enough you'll know how to save it as an mp3 to give yourself more listening options. The interview discussion is normally preceded by a review of the latest model or equipment so well worth listening to:

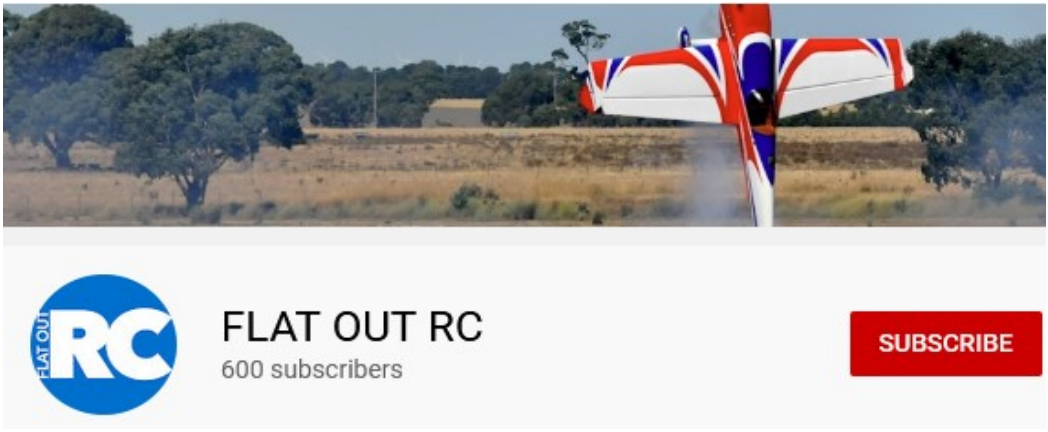


https://soundcloud.com/user-614220427

Starting life as one of Australia's premier aeromodelling magazines, a new chapter in the evolution of Flat Out RC begun with a focus on sharing the joy of model flight via their social media channel content and videos on YouTube:

https://www.youtube.com/channel/UCPBmW89AVY_aDZNqdOW7TQA/featured

https://www.youtube.com/channel/UCPBmW89AVY_aDZNqdOW7TQA/videos



Also on Facebook https://www.facebook.com/flatoutrc/

And a traditional web site: https://www.flatoutrc.com.au/

And another one I came across:

Martin Pickering

https://www.youtube.com/user/flyin4funflyin

https://martin-pickering.com/

As we have now moved to a Company / Charity structure, I have included the Company Articles for your information:

THE COMPANIES ACT 2006

COMPANY LIMITED BY GUARANTEE AND NOT HAVING A SHARE CAPITAL

MEMORANDUM of ASSOCIATION of

The Aeromodellers Association (Scotland) Ltd.

Trading as the SAA

Each subscriber to this memorandum of association wishes to form a company under the Companies Act 2006 and agrees to become a member of the company.

Name of each subscriber	**Signature of each subscriber**
James McGlynn	
William Jack	
Geoffrey Stevens	

Dated January 13th 2020

Constitution of the Company

The model articles of association as prescribed in Schedule 2 to The Companies (Model Articles) Regulations 2008 are excluded in respect of this company.

Defined terms

In these articles of association, unless the context requires otherwise :-

“Act” means the Companies Act 2006;

“charity” means a body which is either a “Scottish Charity” within the meaning of section 13 of the Charities and Trustee Investment (Scotland) Act 2005 or a “charity” within the meaning of section 1 of the Charities Act 2011, providing (in either case) that its objects are limited to charitable purposes;

“charitable purpose” means a charitable purpose under section 7 of the Charities and Trustee Investment (Scotland) Act 2005 which is also regarded as a charitable purpose in relation to the application of the Taxes Acts;

“electronic form” has the meaning given in section 1168 of the Act;

“OSCR” means the Office of the Scottish Charity Regulator;

“property” means any property, heritable or moveable, real or personal, wherever situated; and

“subsidiary” has the meaning given in section 1159 of the Act.

Any reference to a provision of any legislation (including any statutory instrument) shall include any statutory modification or re-enactment of that provision in force from time to time.

4. Objects

The company's objects are to organise recreational activities with the

object of improving the conditions of life for the persons for whom the

facilities or activities are primarily intended by:

4.1 Promoting interest and participation in aeromodelling in Scotland in a safe responsible and environmentally sensitive manner.

4.2 Benefit members of the company and member clubs by coordinating work of clubs and/or sports organisations.

4.3 Promoting or supporting competitions, championships, or other similar events.

4.4 Being the official united liaison body in Scotland with other National Organisations in matters relating to the regulation, and development of the sport of aeromodelling.

4.5 Further the foregoing objectives by organising such activities and taking such other action as may be deemed appropriate.

4.6 Maintaining a register of club members as required by the Department of Transport under regulations being and still to be introduced.

4.7 The Company shall be non-profit making, non-political, non-sectarian, non-denominational and open to all genders. The company will be non-discriminatory and adhere to the Disclosure Act.

5 The company's objects are restricted to those set out in article 4 (but subject to article 6)

6 The company may (subject to first obtaining the consent of OSCR) add to, remove or alter the statement of the company's objects in article 4; on any occasion when it does so, it must give notice to the registrar of companies and the amendment will not be effective until that notice is registered on the register of companies.

7 Powers

In pursuance of the objects listed in article 4 (but not otherwise), the company shall have the following powers:-

Promote interest and participation in the sport of aeromodelling in Scotland in a safe, responsible and environmentally sensitive manner.

To carry on any other activities which further any of the above objectives.

To promote companies whose activities may further one or more of the above objectives, or may generate income to support the activities of the company, acquire and hold shares in such companies and carry out, in relation to any such company which is a subsidiary of the company, all such functions as may be associated with a holding company.

To acquire and take over the whole or any part of the undertaking and liabilities of any entity holding property or rights which are suitable for the company's activities.

To purchase, take on lease, hire, or otherwise acquire, any property or rights which are suitable for the company's activities.

To improve, manage, develop, or otherwise deal with, all or any part of the property and rights of the company.

To sell, let, hire out, license, or otherwise dispose of, all or any part of the property and rights of the company.

To lend money and give credit (with or without security) and to grant guarantees and issue indemnities.

To borrow money, and to give security in support of any such borrowings by the company, in support of any obligations undertaken by the company or in support of any guarantee issued by the company.

To employ such staff as are considered appropriate for the proper conduct of the company's activities, and to make reasonable provision for the payment of pension and/or other benefits for members of staff, ex-members of staff and their dependants.

To engage such consultants and advisers as are considered appropriate from time to time.

To effect insurance of all kinds (which may include officers' liability insurance).

To invest any funds which are not immediately required for the company's activities in such investments as may be considered appropriate (and to dispose of, and vary, such investments).

To liaise with other voluntary sector bodies, local authorities, UK or Scottish government departments and agencies, and other bodies, all with a view to furthering the company's objects.

To establish and/or support any other charity, and to make donations for any charitable purpose falling within the company's objects.

To take such steps as may be deemed appropriate for the purpose of raising funds for the company's activities.

To accept grants, donations and legacies of all kinds (and to accept any reasonable conditions attaching to them).

To oppose, or object to, any application or proceedings which may prejudice the company's interests.

To enter into any arrangement, with any organisation, government or authority' which may be advantageous for the purposes of the activities of the company, and to enter into any arrangement for co-operation or mutual assistance with any charity.

(t) To do anything incidental to, or conducive to, the furtherance of any of the company's objects.

8 Restrictions on use of the company's assets

(a) The income and property of the company shall be applied solely towards promoting the Company's objects.

(b) No part of the income or property of the company shall be paid or transferred (directly or indirectly) to the members of the company, whether by way of dividend, bonus or otherwise.

(c) No director of the company shall be appointed as a paid employee of the compa-

ny; no director shall hold any office under the company for which a salary or fee is payable.

(d) No benefit (whether in money or in kind) shall be given by the company to any director except (i) repayment of out-of-pocket expenses or (ii) reasonable payment in return for particular services (not being of a management nature) actually rendered to the company.

9 Liability of members

Each member undertakes that if the company is wound up while they are a member (or within one year after they cease to be a member), they will contribute - up to a maximum of £1 - to the assets of the company, to be applied towards:

payment of the company's debts and liabilities contracted before they cease to be a member;

payment of the costs, charges and expenses of winding up,

(c) adjustment of the rights of the contributories among themselves.

10 General structure

The structure of the company consists of: -

The MEMBERS - who have the right to attend the annual general meeting (and any other general meeting) and have important powers under the articles of association and the Act; in particular, the members appoint people to serve as directors and take decisions in relation to changes to the articles themselves

The DIRECTORS - who hold regular meetings during the period between annual general meetings, and generally control and supervise the activities of the company; in particular, the directors are responsible for monitoring the financial position of the company.

The GUARDIANS – who are elected by club and country members and have the right to attend board meetings and may require the Directors to call a general meeting, where they believe that the board are not meeting the ethical standards required.

The CLUB and COUNTRY MEMBERS – who have the right to attend and vote at properly constituted meetings on proposals put forward by the board and also to elect and remove Directors.

Qualifications for membership

The members of the company shall consist of the subscribers to the memorandum of association and such other persons as are admitted to membership under articles 14 to 16.

Membership shall be open to club and country club members elected as Directors at the annual general meeting.

Employees of the company shall not be eligible for membership; a person who becomes an employee of the company after admission to membership shall automatically cease to be a member.

Application for membership

Any duly elected person who wishes to become a member must sign, and lodge with the company, a written application for membership.

The directors may, at their discretion, refuse to admit any person to membership.

The directors shall consider each application for membership at the first directors' meeting which is held after receipt of the application; the directors shall, within a reasonable time after the meeting, notify the applicant of their decision on the application.

Membership subscription

No membership subscription shall be payable.

18. Register of members

The directors shall maintain a register of members, setting out the full name and address of each member, the date on which they were admitted to membership, and the date on which any person ceased to be a member.

Withdrawal from membership

Any person who wishes to withdraw from membership shall sign, and lodge with the company, a written notice to that effect; on receipt of the notice by the company, they shall cease to be a member.

Expulsion from membership

Any person may be expelled from membership by special resolution (see article 33), providing the following procedures have been observed:

at least 21 days' notice of the intention to propose the resolution must be given to the member concerned, specifying the grounds for the proposed expulsion

the member concerned shall be entitled to be heard on the resolution at the general meeting at which the resolution is proposed.

Termination/transfer

Membership shall cease on death.

A member may not transfer their membership to any other person.

General meetings (meetings of members)

The directors shall convene an annual general meeting in each year (but excluding the year in which the company is formed); the first annual general meeting shall be held not later than 18 months after the date of incorporation of the company.

Not more than 15 months shall elapse between one annual general meeting and the next.

The business of each annual general meeting shall include: -

a report by the chair on the activities of the company

consideration of the annual accounts of the company

the election/re-election of directors, as referred to in articles 51 to 53.

Subject to articles 23, 24 and 27, the directors may convene a general meeting at any time.

The directors must convene a general meeting if there is a valid requisition by members (under section 303 of the Act) or a requisition by a resigning auditor (under section 518 of the Act) or a

request by the board of Guardians.

Notice of general meetings

At least 14 clear days' notice must be given of a general meeting.

29. The reference to "clear days" in article 28 shall be taken to mean that, in calculating the period of notice, the day after the notice is posted, (or, in the case of a notice sent by electronic means, the day after it was sent) and also the day of the meeting, should be excluded.

A notice calling a meeting shall specify the time and place of the meeting; it shall (a) indicate the general nature of the business to be dealt with at the meeting and (b) if a special resolution (see article 33) (or a resolution requiring special notice under the Act) is to be proposed, shall also state that fact, giving the exact terms of the resolution.

A notice convening an annual general meeting shall specify that the meeting is to be an annual general meeting.

Notice of every general meeting shall be given to members, guardians, and club and country members.

in hard copy form.

in writing or (where the member has requested and notified the company of an address to be used for the purpose of electronic communication) in electronic form; or

(subject to the company notifying members of the presence of the notice on the website, and complying with the other requirements of section 309 of the Act) by means of a website.

Special resolutions and ordinary resolutions

For the purposes of these articles, a "special resolution" means a resolution passed by 75% or more of the votes cast on the resolution at a general meeting, providing proper notice of the meeting and of the intention to propose the resolution has been given in accordance with articles 28 to 32; for the avoidance of doubt, the reference to a 75% majority relates only to the number of votes cast in favour of the resolution as compared with the total number of votes cast in relation to the resolution, and accordingly no account shall be taken of abstentions or members absent from the meeting.

In addition to the matters expressly referred to elsewhere in these articles, the provisions of the Act allow the company, by special resolution,

to alter its name to alter any provision of these articles or adopt new articles of association.

For the purposes of these articles, an "ordinary resolution" means a resolution passed by majority vote (taking account only of those votes cast in favour as compared with those votes against), at a general meeting, providing proper notice of the meeting has been given in accordance with articles 28 to 32.

Procedure at general meetings

No business shall be dealt with at any general meeting unless a quorum is present; the quorum for a general meeting shall be 20% representation of affiliated clubs.

If a quorum is not present within 15 minutes after the time at which a general meeting was due to commence - or if, during a meeting, a quorum ceases to be present - the meeting shall stand

adjourned to such time and place as may be fixed by the chairperson of the meeting.

The chair of the company shall (if present and willing to act as chairperson) preside as chairperson of each general meeting; if the chair is not present and willing to act as chairperson within 15 minutes after the time at which the meeting was due to commence, the directors present at the meeting shall elect from among themselves the person who will act as chairperson of that meeting.

The chairperson of a general meeting may, with the consent of the meeting, adjourn the meeting to such time and place as the chairperson may determine.

Every member or club or country member attending shall have one vote, which (whether on a show of hands or on a secret ballot) may be given either personally or by proxy but restricted to no more than one vote per ten SAA members per club.

Any member who wishes to appoint a proxy to vote on their behalf at any meeting (or adjourned meeting):

shall lodge with the company, at the company's registered office, a written instrument of proxy (in such form as the directors require), signed by them; or

shall send by electronic means to the company, at such electronic address as may have been notified to the members by the company for that purpose, an instrument of proxy (in such form as the directors require)

not less than 48 hours before the time for holding the meeting (or, as the case may be, adjourned meeting).

An instrument of proxy which does not conform with the provisions of article 41, or which is not lodged or sent in accordance with such provisions, shall be invalid.

A member shall not be entitled to appoint more than one proxy to attend on the same occasion.

A proxy appointed to attend and vote at any meeting instead of a member shall have the same right as the member who appointed them to speak at the meeting and need not be a member of the company or club member.

A vote given, or ballot demanded, by proxy shall be valid notwithstanding that the authority of the person voting or demanding a ballot had terminated prior to the giving of such vote or demanding of such ballot, unless notice of such termination was received by the company at the company's registered office (or, where sent by electronic means, was received by the company at the address notified by the company to the members for the purpose of electronic communications) before the commencement of the meeting or adjourned meeting at which the vote was given or the ballot demanded.

If there are an equal number of votes for and against any resolution, the chairperson of the meeting shall be entitled to a casting vote.

A resolution put to the vote at a general meeting shall be decided on a show of hands unless a secret ballot is demanded by the chairperson (or by at least two persons present in person at the meeting and entitled to vote (whether as members or proxies for members)); a secret ballot may be demanded either before the show of hands takes place, or immediately after the result of the show of hands is declared.

If a secret ballot is demanded, it shall be taken at the meeting and shall be conducted in such a manner as the chairperson may direct; the result of the ballot shall be declared at the meeting at which the ballot was demanded.

Maximum number of directors :

The maximum number of directors shall be 7.

Eligibility:

A person shall not be eligible for election/appointment as a director unless they are a member of the company or agree to become a member.

Election, retiral, re-election

At each annual general meeting, the members may (subject to article 49) elect any member (providing they are willing to act) to be a director.

The directors may at any time appoint any club member or country club member (providing they are willing to act) to be a director (subject to article 49).

At each annual general meeting, retiring directors (who have served for a two-year period except for the chairperson will be eligible for re-election.

Termination of office

A director shall automatically vacate office if: -

they cease to be a director through the operation of any provision of the Act or become prohibited by law from being a director

they become debarred under any statutory provision from being a charity trustee

they become incapable for medical reasons of fulfilling the duties of their office and such incapacity is expected to continue for a period of more than six months

they cease to be a member of the company

they become an employee of the company

they resign office by notice to the company

they absent (without permission of the directors) from more than three consecutive meetings of the directors, and the directors resolve to remove them from office

they are removed from office by resolution of the directors on the grounds that they are considered to have committed a material breach of the code of conduct for directors in force from time to time (as referred to in article 81);

they are removed from office by resolution of the directors on the grounds that they are considered to have been in serious or persistent breach of their duties under sub-sections 66(1) or (2) of the Charities and Trustee Investment (Scotland) Act 2005; or

they are removed from office by ordinary resolution (special notice having been given) in pursuance of section 168 of the Act.

A resolution under paragraph (h) or (i) of article 54 shall be valid only if: -

the director who is the subject of the resolution is given reasonable prior written notice by the directors of the grounds upon which the resolution for their removal is to be proposed;

the director concerned is given the opportunity to address the meeting of directors at which the resolution is proposed, prior to the resolution being put to the vote; and

at least two thirds (to the nearest round number) of the directors then in office vote in favour of the resolution.

Register of directors

The directors shall maintain a register of directors, setting out full details of each director, including the date on which they became a director, and also specifying the date on which any person ceased to hold office as a director.

Office Bearers

The directors shall elect any other office bearers (if any) as they consider appropriate following a resolution at a general meeting.

All of the office bearers who have served for two years shall cease to hold office at the annual general meeting, but shall then be eligible for re-election.

A person elected to any office shall cease to hold that office if they cease to be a director, or if they resign from that office by written notice to that effect.

Powers of directors

Subject to the provisions of the Act, and these articles, and subject to any directions given by special resolution, the company and its assets and undertaking shall be managed by the directors, who may exercise all the powers of the company.

A meeting of the directors at which a quorum is present may exercise all powers exercisable by the directors.

Personal interests

A director who has a personal interest in any transaction or other arrangement which the company is proposing to enter into, must declare that interest at a meeting of the directors; they will be debarred (in terms of article 76) from voting on the question of whether or not the company should enter into that arrangement.

For the purposes of the preceding article, a director shall be deemed to have a personal interest in an arrangement if any partner or other close relative of theirs or any firm of which they are a partner or any limited company of which they are a substantial shareholder or director or any limited liability partnership of which they are a member or any Scottish charitable incorporated organisation of which they are a charity trustee or any registered society or unincorporated association of which they are a management committee member (or any other party who/which is deemed to be connected with them for the purposes of the Act) , has a personal interest in that arrangement.

Provided :

(a) they have declared their interest

(b) they have not voted on the question of whether or not the company should enter into the rele-

vant arrangement and

(c) the requirements of article 68 are complied with,

a director will not be debarred from entering into an arrangement with the company in which they have a personal interest (or is deemed to have a personal interest under article 63) and may retain any personal benefit which they gain from their participation in that arrangement.

The directors shall be entitled, for the purposes of section 175 of the Act, to authorise (by way of resolution to that effect) any conflict situation (as defined for the purposes of that section of the Act) that may arise (such that the duty of the director concerned, under that section, to avoid conflicts of interest is not infringed) and to amend or vary any such authorisation; the directors may give such authorisation subject to such terms and conditions as they may consider appropriate and reasonable in the circumstances.

For the avoidance of doubt, the provisions of section 175 of the Act and article 65 do not apply to a conflict of interest relating to a transaction or arrangement with the company; conflicts of that kind are regulated by the provisions of articles 62 to 64 and articles 76 to 79.

No director may serve as an employee (full time or part time) of the company, and no director may be given any remuneration by the company for carrying out their duties as a director.

Where a director provides services to the company or might benefit from any remuneration paid to a connected party for such services, then

the maximum amount of the remuneration must be specified in a written agreement and must be reasonable

the directors must be satisfied that it would be in the interests of the company to enter into the arrangement (taking account of that maximum amount); and

less than half of the directors must be receiving remuneration from the company (or benefit from remuneration of that nature).

The directors may be paid all travelling and other expenses reasonably incurred by them in connection with their attendance at meetings of the directors, general meetings, or meetings of committees, or otherwise in connection with the carrying-out of their duties.

Procedure at directors' meetings

Any director may call a meeting of the directors or request the secretary to call a meeting of the directors.

Questions arising at a meeting of the directors shall be decided by a majority of votes; if an equality of votes arises, the chairperson of the meeting shall have a casting vote.

No business shall be dealt with at a meeting of the directors unless a quorum is present; the quorum for meetings of the directors shall be
50% of those entitled to attend.

If at any time the number of directors in office falls below the number fixed as the quorum, the remaining director(s) may act only for the purpose of filling vacancies or of calling a general meeting.

Unless they are unwilling to do so, the chair of the company shall preside as chairperson at eve-

ry directors' meeting at which they are present; if the chair is unwilling to act as chairperson or is not present within 15 minutes after the time when the meeting was due to commence, the directors present shall elect from among themselves the person who will act as chairperson of the meeting.

The directors may, at their discretion, allow any person who they reasonably consider appropriate, to attend and speak at any meeting of the directors; for the avoidance of doubt, any such person who is invited to attend a directors' meeting shall not be entitled to vote.

A director shall not vote at a directors' meeting (or at a meeting of a committee) on any resolution concerning a matter in which they have a personal interest which conflicts (or may conflict) with the interests of the company; they must withdraw from the meeting while an item of that nature is being dealt with.

For the purposes of article 76, a person shall be deemed to have a personal interest in a particular matter if any partner or other close relative of theirs or any firm of which they are a partner or any limited company of which they are a substantial shareholder or director or any limited liability partnership of which they are a member or any Scottish charitable incorporated organisation of which they are a charity trustee or any registered society or unincorporated association of which they are a management committee member has a personal interest in that matter.

A director shall not be counted in the quorum present at a meeting in relation to a resolution on which they are not entitled to vote.

The company may, by ordinary resolution, suspend or relax to any extent – either generally or in relation to any particular matter – the provisions of articles 76 to 78.

Conduct of directors

Each of the directors shall, in exercising their functions as a director of the company, act in the interests of the company; and, in particular, must

seek, in good faith, to ensure that the company acts in a manner which is in accordance with its objects.

act with the care and diligence which it is reasonable to expect of a person who is managing the affairs of another person

in circumstances giving rise to the possibility of a conflict of interest of interest between the company and any other party

(i) put the interests of the company before that of the other party, in taking decisions as a director; or

(ii) where any other duty prevents them from doing so, disclose the conflicting interest to the company and refrain from participating in any discussions or decisions involving the other directors with regard to the matter in question

ensure that the company complies with any direction, requirement, notice or duty imposed on it by the Charities and Trustee Investment (Scotland) Act 2005.

The Directors will maintain a handbook of rules relating to affiliated clubs and their club members including rules applying to country club members.

Each of the directors shall comply with the code of conduct (incorporating detailed rules on con-

flict of interest) prescribed by the board of directors from time to time.

For the avoidance of doubt, the code of conduct shall be supplemental to the provisions relating to the conduct of directors contained in these articles of association; and the relevant provisions of these articles shall be interpreted and applied in accordance with the provisions of the code of conduct in force from time to time.

Delegation to sub-committees

The directors may delegate any of their powers to any sub-committee consisting of one or more directors and such other persons (if any) as the directors may determine; they may also delegate to the chair of the company (or the holder of any other post) such of their powers as they may consider appropriate.

Any delegation of powers under article 83 may be made subject to such conditions as the directors may impose and may be revoked or altered.

The rules of procedure for any sub-committee shall be as prescribed by the directors.

Operation of bank accounts

The signatures of two out of the signatories appointed by the directors shall be required in relation to all operations (other than lodgement of funds) on the bank and building society accounts held by the company; at least one out of the two signatures must be the signature of a director. The signatories must be varied by the board if it is felt that a conflict of interest has arisen or if there is too close a relationship between signatories.

Secretary

The company shall (notwithstanding the provisions of the Act) appoint a company secretary who will also be an elected director. The position will be honorary. The secretary will serve for two years and be available for re-election.

Minutes

The directors shall ensure that minutes are made of all proceedings at general meetings, directors' meetings and meetings of committees; a minute of any meeting shall include the names of those present, and (as far as possible) shall be signed by the chairperson of the meeting.

Accounting records and annual accounts and Membership Records

The directors shall ensure that proper accounting records are maintained in accordance with all applicable statutory requirements.

The directors shall prepare annual accounts, complying with all relevant statutory requirements; if an audit is required under any statutory provisions or if they otherwise think fit, they shall ensure that an audit of such accounts is carried out by a qualified auditor.

No member shall (unless they are a director) have any right of inspecting any accounting or other records, or any document of the company, except as conferred by statute or as authorised by the directors or as authorised by ordinary resolution of the company.

92 The company will maintain a list of paid up and past club members as required by the Department for Transport, this may be searchable by the police and other government officials as required.

Notices

Any notice which requires to be given to a member under these articles shall be given either in writing or by electronic means; such a notice may be given personally to the member or be sent by post in a pre-paid envelope addressed to the member at the address last intimated by them to the company or (in the case of a member who has notified the company of an address to be used for the purpose of electronic communications) may be given to the member by electronic means.

Any notice, if sent by post, shall be deemed to have been given at the expiry of 24 hours after posting; for the purpose of proving that any notice was given, it shall be sufficient to prove that the envelope containing the notice was properly addressed and posted.

Any notice sent by electronic means shall be deemed to have been given at the expiry of 24 hours after it is sent; for the purpose of proving that any notice sent by electronic means was indeed sent, it shall be sufficient to provide any of the evidence referred to in the relevant guidance issued from time to time by the Chartered Institute of Secretaries and Administrators.

Winding-up

If on the winding-up of the company any property remains after satisfaction of all the company's debts and liabilities, such property shall be transferred to such body or bodies (whether incorporated or unincorporated) as may be determined by a general meeting called for that purpose at or before the time of dissolution (or, failing such determination, by such court as may have or acquire jurisdiction), to be used solely for a charitable purpose or charitable purposes in line with the objectives set out in article 4.

For the avoidance of doubt, a body to which property is transferred under article 96 may be a member of the company or an affiliated club or clubs.

To the extent that effect cannot be given to article 97 (as read with article 7), the relevant property shall be applied to some charitable purpose or purposes.

Indemnity

Every director or other officer or auditor of the company shall be indemnified (to the extent permitted by sections 232, 234, 235, 532 and 533 of the Act) out of the assets of the company against any loss or liability which they may sustain or incur in connection with the execution of the duties of their office; that may include, without prejudice to that generality (but only to the extent permitted by those sections of the Act), any liability incurred by them in defending any proceedings (whether civil or criminal) in which judgement is given in their favour or in which they are acquitted or any liability in connection with an application in which relief is granted to them by the court from liability for negligence, default or breach of trust in relation to the affairs of the company.

The company shall be entitled (subject to the provisions of section 68A of the Charities and Trustee Investment (Scotland) Act 2005) to purchase and maintain for any director insurance against any loss or liability which any director or other officer of the company may sustain or incur in connection with the execution of the duties of their office; and such insurance may (subject to the provisions of section 68A of the Charities and Trustee Investment (Scotland) Act 2005) extend to liabilities of the nature referred to in section 232(2) of the Act (negligence etc. of a director).

Article 16

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The UK adopted the EU regulations for unmanned aircraft (which included model flying) in 2019 and these will come into effect on December 31st, 2020. This is the same day that we exit from the EU, but regulations in place at the point of departure will be transferred directly into UK law.

Some requirements of the EU regulations were already in place (such as a height limits, Operator Registration and Competency requirements) following changes to the Air Navigation Order set out in 2018, but the EU regulations introduce further changes. Full details of the regulations for the operation of unmanned aircraft (which includes model aircraft) can be found in CAP 722 (http://publicapps.caa.co.uk/docs/33/CAP722%20Edition8(p).pdf).

However, given the excellent safety record established by model flyers throughout Europe, the EU agreed that model flying conducted within the framework of Associations like the BMFA should be subject to more flexible regulation to allow us to continue largely 'as we do today'. The mechanism to facilitate this is referred to as an 'Article 16 Authorisation' (within the 'Specific Category') and we are now in possession of our Authorisation from the CAA, which sets out the regulations which will apply to our members with effect from December 31st, 2020. Our Authorisation essentially permits us to continue operating largely as we do today.

The new EU regulations allow for alternative sets of rules to be applied to unmanned aircraft. The 'Open Category' rules set out in CAP722 can be used by anyone in the UK, regardless of whether they are members of any club or association and, amongst other things, include a ban on flying above 400ft. The Open Category requirements will not apply to BMFA members flying in accordance with the terms and conditions of our Article 16 Authorisation.

There is a lot of information to digest, but to assist with this we have produced a new 'Quick Start Guide' which can be viewed at https://rcc.bmfa.uk/wp-content/uploads/2020/12/BMFA-QSG-V16.pdf. We have also produced a more detailed guide which can be viewed at https://rcc.bmfa.uk/article-16, where you can also access the Article 16 Authorisation document.

We will be holding a Zoom Webinar at 7.30pm on Monday 21st December, to explain the Authorisation further for which you can register at https://zoom.us/webinar/register/7616081155190/WN_Fs1b3JWTS-6co_Rx_fxUmA. Places are limited, but a recording will be made available to view afterwards.

It has been a long process to arrive at this point, starting with negotiations with EASA and the European Commission back in 2015 which laid the foundation for special recognition for model flying within the EU unmanned aircraft regulations. Once the EU regulations were finalised, we then entered into prolonged negotiations with the DfT & CAA to try and arrive at a sensible outcome for members.

I would like to record my thanks to our special advisers (Cliff Whittaker and Roger Hopkinson MBE) and also to Rob Buckley (Secretary of the LMA) for the many hours they have put in to help us achieve this outcome for the UK Associations.

Dave Phipps - CEO

CAA Article 16 Authorisation
A guide to model flying after December 31st, 2020
Why are the regulations changing?

The UK adopted the EU regulations for model flying in 2019 and these will come into effect on December 31st, 2020. This is the same day that we exit from the EU, but regulations in place at the point of departure will be transferred directly into UK law.

Some requirements of the EU regulations were already in place (such as a height limits, Operator Registration and Competency requirements) following changes to the Air Navigation Order set out in 2018, but the EU regulations introduce further changes. Full details of the regulations for the operation of unmanned aircraft (which includes model aircraft) can be found in CAP 722.

Given the excellent safety record established by model flyers throughout Europe, the EU agreed that model flying conducted within the framework of Associations like the BMFA should be subject to more flexible regulation to allow us to continue largely 'as we do today'. The mechanism to facilitate this is referred to as an 'Article 16 Authorisation' (within the 'Specific Category') and this document provides a guide to how the Authorisation we have negotiated with the CAA applies to our members with effect from December 31st, 2020.

The new regulations allow for alternative sets of rules to be applied to unmanned aircraft. The 'Open Category' rules set out in CAP722 can be used by anyone in the UK, regardless of whether they are members of any club or association and, amongst other things, include a ban on flying above 400ft. The Open Category requirements will not apply to BMFA members flying in accordance with the terms and conditions of our Article 16 Authorisation.

Model aircraft below 250g which are operated in accordance with our Authorisation are subject to the terms and conditions of the Authorisation. However, in most circumstances they may also be operated within the Open Category instead and so be flown in accordance with the basic requirements outlined in CAP 722 for an aircraft of less than 250g without a camera (i.e. no registration, competency or age requirements but operation limited to less than 400ft).

This guide explains the meaning of the Article 16 authorisation that the CAA has granted to the BMFA.

Section A - General Conditions of our Article 16 Authorisation
1. What type of unmanned aircraft operations does our Authorisation apply to:
Our Authorisation covers all existing activities including radio-controlled aircraft of all types (including helicopters and multirotor drones), free flight aircraft and physically constrained aircraft (control line and round the pole) up to a Maximum Take Off Mass (MTOM)** of 25Kg.
Aircraft with an MTOM of more than 25Kg will be subject to a separate Authorisation to be held by the Large Model Association (which will replace their over 20Kg scheme).
Aircraft with an MTOM of less than 250g operated in a manner that uses the privileges within this authorisation (for example, flown above 400ft), are subject to the limitations and conditions described throughout this authorisation. However, in many circum-

stances they may be easily operated within the Open Category requirements (for an unmanned aircraft with a MTOM less than 250g) as the requirements are not particularly restrictive for these very light aircraft.

The Authorisation does not apply to rockets (which were not included within the EU regulations) and it does not apply to any indoor operations either, as none of the rules apply to unmanned aircraft flown inside buildings.

*** Note: For all practical purposes the Maximum Take Off Mass or MTOM is the weight of your aircraft when it first becomes airborne on each flight. The MTOM now includes everything, including fuel, which is why the 7kg has gone up to 7.5kg and 20kg to 25kg.*

1.1. You must operate your aircraft within visual line of sight.
The Authorisation retains the long standing requirement for the remote pilot to maintain direct, unaided visual contact with their aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions, unless the aircraft is being flown in accordance with the specific conditions detailed in the 'First Person View' section.

1.2. The purpose of the flight must be Sport, Recreation, Education or Demonstration.
The terms of our Authorisation do not cover any type of commercial operation.

2. Minimum Age

The introduction of Operator Registration imposed a minimum age of 18 on Operators and this does not change. Lower age limits apply to 'Remote Pilots' to allow flying by pilots under 18. When models are flown by adults the Operator and Remote Pilot are usually the same person, and this is recognised in the Authorisation.
The minimum age for a remote pilot to fly unsupervised **within the full terms of our Authorisation** is 10. There is no minimum age for a remote pilot operating under the direct supervision of another remote pilot (age 14 or over) provided both have the required evidence of competency. In addition, there must be an adult Operator (when an Operator is mandatory) who complies with the requirements described in section 4.2 below.
There is no minimum age for flying control line or round the pole aircraft.

3. Safety Accountability
It remains the case that the remote pilot is directly responsible for the safe operation of their aircraft and should only fly if reasonably satisfied that the flight can be safely made

4. Operator Requirements
4.1 Operator Registration
The existing requirements for Operator registration remain in place (although now extend to capture operators of control line/round-the-pole aircraft weighing more than 1Kg). It is a legal requirement that anyone operating an unmanned aircraft outdoors be registered as an Operator with the CAA unless:

- the aircraft weighs 250g or less and is not fitted with a camera; or
- the aircraft is a control line or round-the-pole (tethered) aircraft that weighs 1Kg or

less; or
the aircraft is a 'toy' as defined in the EU Regulations (i.e. a product intended to be played with by children under 14, excluding any product with a combustion engine).
There is no requirement to register as an Operator if you only operate model aircraft indoors.
The BMFA has retained the facility for members to obtain their CAA Operator registration via the BMFA GoMembership system.
The Operator I.D. number must be clearly displayed on the aircraft or within a compartment that can be easily accessed without the use of a tool.

4.2 Operator Responsibilities
Our Authorisation includes a requirement for Operators to comply with the following requirements (largely common sense):

- Ensure the remote pilot is in possession of the relevant remote pilot competence requirements
- Ensure that the model aircraft is sufficiently maintained, and that any repairs carried out to it are satisfactorily made, such that it is in a safe condition to be flown;
- Ensure that the remote pilot is aware of the limitations and conditions of this authorisation;
- Ensure that the remote pilot is aware of the rules and procedures of their relevant association;
- Ensure that any necessary additional permissions or authorisations are obtained for any specific flight;

Ensure the remote pilot is aware of any relevant airspace limitations;
The CAA acknowledges that in many instances, the operator and the remote pilot will be the same person. In such cases, this person must discharge the responsibilities of both the remote pilot (see Section 6), and the UAS Operator.

5. Remote Pilot Requirements
5.1 Remote Pilot Competence
The existing requirements for Remote Pilot Competence remain in place. It is a legal requirement to have evidence that you are competent to operate your aircraft for anyone who is operating in accordance with our Authorisation except for those who:

- only operate aircraft (without a camera) with an MTOM of less than 250g,

only operate indoors or only operate a control line or round the pole aircraft; (but operators of control line and round the pole aircraft with an MTOM exceeding 1Kg must now register as Operators).
Acceptable evidence of competency can be achieved by passing one of the CAA recognised online tests (such as the CAA DMARES test or the BMFA Registration Competency Certificate)**.
Members with an existing BMFA Achievement obtained prior to 31/12/2020 (including the BMFA Registration Competency Certificate) will be considered to have acceptable evidence of competency.
From 1st January 2021, it will be a requirement for anyone taking a new BMFA Achievement to hold a BMFA Registration Competency Certificate.
An additional requirement is that members will have to confirm that they have read and understood the terms of our Authorisation if they wish to operate within it and this will be built into the GoMembership system.

5.2 Remote Pilot Responsibilities
It is a condition of our Authorisation that Remote Pilots comply with the following requirements (largely common sense):

- Be fit to fly. Don't fly under the influence of psychoactive substances or alcohol or when unfit to fly (e.g. due to injury, fatigue, medication, sickness or other causes)
- Have the appropriate competency (and evidence of it such as your membership card/document).

Be familiar with manufacturer's instructions for your aircraft, if applicable.
Before flying, it is a requirement to:

- Make sure there are no relevant airspace restrictions in place where you intend to fly.
- Ensure that the operating environment is compatible with the limitations and conditions set out within this Authorisation.
- Ensure that your aircraft is in a safe condition to complete the flight safely.

Ensure that any relevant information about the operation has been made available to the relevant air traffic service (ATS) unit, other airspace users and relevant stakeholders, when required.
During the flight, it is a requirement that you:

- Comply with the limitations and conditions set out within this authorisation;
- Avoid any risk of collision with any manned aircraft and discontinue a flight when it may endanger other aircraft, people, animals, environment or property;
- Comply with any applicable airspace restrictions;
- Comply with the rules and procedures of your Association and/or Club;
- Do not fly close to or inside areas where an emergency response effort is ongoing unless you have permission to do so from the responsible emergency response services.

*** Note. The BMFA Registration Competency Certificate test will ask you questions relevant to the terms and conditions of the BMFA model flying Authorisation. In contrast the CAA DMARES test will ask you questions about the general rules in CAP 722 that do not apply when flying in accordance with the Authorisation. Whilst passing either test is legally acceptable, it is recommended that members intending to use the Authorisation take the BMFA test, which is directly relevant to their flying activities.*

6. Where can I fly?
Essentially, wherever you fly now.
The Authorisation is valid throughout the UK at:

- Any established model flying club site. Clubs operating in a 'built up area' *(This means an area substantially used for industrial, recreational, commercial or residential purposes)* must conduct a risk assessment and have suitable mitigations in place within their 'Field Safety Rules'. The BMFA can assist with this.
- Any other suitable site which is not a 'built-up area'.

Within a 'built up area' if the flying site is within an area which is <u>only</u> used substantially for recreational purposes (for example playing fields or sports pitches) and a risk assessment has been carried out. Again, the BMFA can assist with this.

7. How high can I fly?
The new regulations limit the operation of all unmanned aircraft to 400ft above the surface. However, our Authorisation permits members to fly above 400ft, subject to:

- The model aircraft is not a multi-rotor.
- The model aircraft is not automated. *(This means a model aircraft with autonomous or automatic flight capability. This does not include systems which are fitted for flight stabilisation purposes or flight termination purposes, such as free-flight termination devices)*.
- The model aircraft in not operating with the Flight Restriction Zone of an aerodrome, other than with the written permission/agreement with the aerodrome.
- The model aircraft remains within visual line of sight of the remote pilot.
- The model aircraft has a MTOM below 7.5Kg.

Model gliders with a MTOM below 14Kg may be flown at a height of 400ft above the remote pilot (which if flying from a slope permits operation at heights exceeding 400ft from the surface beneath the glider).
When operating at heights which may exceed 400ft, it is essential that members maintain a good look out for manned aircraft. If a manned aircraft appears in the vicinity, their model aircraft should be brought down to under 400ft as quickly as is safely practicable.

8. Separation Distances from uninvolved persons
The stipulation of separation distances from uninvolved persons is a new requirement (the default distance within the EU regulations for most of our operations being 50m), but we have reached a compromise agreement with the CAA to ensure that the terms of our Authorisation are appropriate for our established operations.
There are no minimum separation distance for model aircraft with an MTOM under 250g.

8.1 Model Aircraft with an MTOM between 250g and 7.5Kg
Our Authorisation stipulates that model aircraft (other than free flight aircraft) between 250g and 7.5Kg cannot be operated:

- Within a horizontal distance of 30m of assemblies of people. *(Assemblies of people are gatherings where persons are unable to move away due to the density of the people present)*.

Within 30m of any uninvolved person. *(Uninvolved Persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator)*. This distance may be reduced to 15m for take-off and landing subject to adequate local mitigations to protect uninvolved persons and the completion of a risk assessment.

8.2 Model Aircraft with an MTOM between 7.5Kg and 25Kg
Our Authorisation stipulates that model aircraft with an MTOM between 7.5Kg and 25Kg cannot be operated:

- Within a horizontal distance of 50m of assemblies of people. *(Assemblies of people are gatherings where persons are unable to move away due to the density of the people present)*. This distance may be reduced to 30m for take-off and landing subject to adequate local mitigations to protect uninvolved persons and completion of a risk

assessment.
Within 30m of any uninvolved person. *(Uninvolved Persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator)*.

9. Dropping of Articles
The new regulations prohibit the dropping of any materials from a model aircraft, but our Authorisation exempts us from this requirement subject to the following condition - *The remote pilot must not cause or permit any article or animal to be dropped from an unmanned aircraft so as to endanger persons or property.*

10. Provisions for 'trial flights'
Our Authorisation permits the continuance of 'trial flights' for non-members.
The non-member may operate the controls of the model aircraft and does not need to comply with the competency requirements whilst under the direct supervision of a member.
The member supervising the flight must be registered as an Operator and display their Operator I.D. on the aircraft.

11. Provisions for Overseas Visitors/Competitors
Overseas visitors/competitors are permitted to operate within the terms of our Authorisation provided that they hold a temporary membership of the BMFA and agree to comply with the terms of the Authorisation (including the remote pilot competency requirements).
Overseas visitors/competitors must also carry the Operator I.D. number of a UK 'Host' on their aircraft.

12. Provisions for Model Flying Displays
Our Authorisation permits any operator/remote pilot to operate a model aircraft as part of a flying display within the terms set out in the Authorisation plus CAP 403 and CAP 658.
If the flying display height will exceed 400ft, it must be notified to other airspace users through the use of a NOTAM.
If the flying display requires operations which fall outside of our Authorisation (such as a requirement to operate aircraft with a MTOM exceeding 7.5Kg above 400ft), then a separate Authorisation and a specific Model Aircraft Display Authorisation must be obtained directly from the CAA.

13. Reporting Requirements
Our Authorisation includes the requirement to report certain accidents, serious incidents and other occurrences. This is an existing requirement and is referred to in the current BMFA Members Handbook (Section 21) and CAP 658 (Chapter 13). However, the CAA are wanting to reinforce the requirements (full details can be found in CAP 722).
Therefore, it is a condition of our Authorisation that correct reporting to the AAIB *and* the CAA **must** be carried out. For further details see https://rcc.bmfa.uk/reporting

13.1 AAIB Reporting Requirements
The following **must** be reported to the AAIB if they involve a model aircraft and result in a fatality or serious injury:

- **Accidents**

Serious Incidents
This requirement differs from the requirements outlined in CAP 722 but reflect the current agreement in place between the model flying community and the AAIB.

13.2 CAA Reporting Requirements
The following **must** be reported to the CAA:

- **Occurrences** which involve any of the following:
  - Fatality
  - Serious Injury

Manned aircraft
The following **must** be reported to the CAA, as a specific condition of this authorisation:

- **Serious Incidents or Other Occurrences** which involve any of the following:
  - Manned aircraft
  - Operating above 400ft
  - Operating less than 50m from uninvolved people

Instances where aircraft have flown beyond visual line of site.

Section B - Aircraft Specific Conditions of our Article 16 Authorisation
Our Article 16 Authorisation includes some provisions for specific types of model flying operations. Some of these directly replace existing permissions/exemptions, such as the operation of control line aircraft within a Flight Restriction Zone and the operation of First Person View aircraft.

1. Physically Constrained unmanned aircraft
Our Authorisation defines a physically constrained aircraft as a model aircraft that:

- *is flying within a closed building or other physical construction forming a safely enclosed area; or*
- *is a control-line model aircraft; or*

is a round-the-pole aircraft.

1.1. Operation with an aerodrome Flight Restriction Zone (FRZ)
Permission is not required to operate a control line/round the pole model aircraft within an FRZ, provided that:

- The length of the tether line is less than 25m
- The flight does not take place within the Runway Protection Zone
- The MTOM is less than 7.5Kg

The flight does not take place over or within the boundary of the protected aerodrome, unless permission has been obtained (in accordance with Article 94A of the ANO).

1.2. Exemption of some control line and round-the-pole model aircraft from the EU regulations.
Control line/round the pole model aircraft are exempted from all of the requirements of the EU regulations including Operator Registration and Remote Pilot Competency, provided that:

- The length of the tether line(s) does not exceed 25m
- The MTOM is less than 1Kg

The aircraft is not capable of vertical take-off/landing or hovering (such as helicopters or multi rotors).
In addition, our Authorisation exempts Remote Pilots of control line/round the pole aircraft from the competency requirements altogether (even if the MTOM exceeds 1Kg) though they will be still be required to register as an Operator.

2. Free Flight Model Aircraft

Our Authorisation defines a free flight model aircraft as follows:
A free flight model aircraft cannot be remotely piloted and does not have software or systems for autonomous control of the flight path. A flight termination device may be fitted. The aircraft trim is adjusted prior to flight. The aircraft is trimmed (and fuelled if applicable) with the intent that it will follow a substantially circular path relative to the air and ultimately glide to a low velocity landing. A free-flight unmanned aircraft will drift relative to the user depending upon the speed and direction of the wind. The person in charge of the free-flight unmanned aircraft is deemed to be the remote pilot for the purposes of this authorisation.
Some specific requirements for free flight have been included within our Authorisation. Most of these requirements are not new and generally reflect the requirements of the existing law (and how it should have been being applied already):

- Prior to launching their aircraft, the remote pilot should take into account the expected performance of the aircraft, the weather conditions and the availability of any flight termination device and must be reasonably satisfied that the expected flight path will not infringe an FRZ (unless prior permission has been obtained) or other airspace restriction.
- The operation of a free flight model aircraft must only be carried out within the limits of our Authorisation (or alternatively within the requirements of the Open Category, especially for those aircraft with an MTOM of less than 250g).

A free flight model should not be deliberately flown beyond visual line of sight.
A free flight model aircraft must only be launched:

- From an area free from uninvolved persons *(Uninvolved persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator).*
- When the remote pilot has identified an area (the 'flight volume') within which they believe the aircraft will remain.
- When the remote pilot is reasonably satisfied that the aircraft will remain within the flight volume.

When the remote pilot is reasonably satisfied at the point of launch that no uninvolved persons will enter the flight volume and be endangered.
Within the terms of out Authorisation, the Operator/Remote Pilot of any free flight aircraft with an MTOM of less than 250g which is likely to operate at a height above 400ft, must be registered as an Operator and have evidence of Competency (such as passing the BMFA online test).

3. First Person View (FPV) Model Aircraft

Our Authorisation defines first person view aircraft as follows: *In First Person View operations the remote pilot flies the aircraft using images provided by cameras aboard the aircraft. When flying FPV the remote pilot cannot monitor the flight path in relation*

to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions to the same extent as a remote pilot maintaining external direct, unaided visual contact with the aircraft.
Our Authorisation incorporates the terms of our existing FPV exemption, but also includes specific provision for FPV 'drone racing' which the BMFA had been discussing with the CAA for some time.

3.1 FPV Drone Racing
A model aircraft may be flown by a remote pilot using first person view subject to the terms of our Authorisation and provided that the aircraft is operated:

- Within a sterile area – meaning a cordoned off, closed area that uninvolved persons are excluded from. *(Uninvolved persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator).*
- The aircraft is not flown in excess of 160ft (50m) above the surface.
- In accordance with procedures set out for the purpose of the event and in accordance with the instructions of the race director or other nominated person, including provision of a 'terminate race and land immediately instruction.

Any observers are suitably briefed and aware of their responsibilities, including the monitoring of people or aircraft entering the sterile area.
Individual remote pilots do not require their own 'competent' observer when operating under this provision.

3.2 General FPV Flying
A model aircraft may be flown by a remote pilot using first person view subject to the terms of our Authorisation and provided that:

- The remote pilot is accompanied by a competent observer who maintains direct unaided visual contact with the unmanned aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions and advises the remote pilot accordingly.
- The MTOM of the aircraft does not exceed 3.5Kg.
- The aircraft is only operated in the areas defined in the 'Where can I fly' section (6) above.

The aircraft is only operated in accordance with the 'Separation Distances from Uninvolved Persons' section (8) above. *(Uninvolved persons are those who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator).*

And the aircraft is not flown:

- Within an aerodrome FRZ, unless appropriate permission has been obtained.
- At a height of more than 1000ft above the surface, unless it is a rotorcraft with more than 1 lift generating rotor or propeller in which case the height shall not exceed 400ft above the surface.
- Over or within 150m of any assemblies of people *(Assemblies of people are gatherings where persons are unable to move away due to the density of the people present).*

Within 50m of any vessel, vehicle or structure which is not under the control of the remote pilot.

Quick Start Guide

to the new regulations for model flying

bmfa.org

THE LAW HAS CHANGED

- The regulations for operating unmanned aircraft (including models) have changed. The full requirements of the new regulations (as they apply to everyone in the UK) can be found in CAP 722.
- The BMFA has obtained an 'Authorisation' from the CAA which defines different and more flexible operating requirements for members operating aircraft up to 25Kg. To benefit from the Authorisation, you must familiarise yourself with the requirements.
- For full details, please see https://rcc.bmfa.uk/article-16.

LINE OF SIGHT

- You must operate your aircraft within visual line of sight (VLOS).
- If flying using first person view, you must have a competent observer next to you who maintains VLOS with your aircraft. Special rules apply to FPV drone racing within a 'sterile area'.
- Free flight aircraft must not be deliberately flown beyond VLOS.

HOW HIGH CAN I FLY?

- The height limit for all unmanned aircraft in CAP 722 is 400ft (120m) above the terrain.
- BMFA members are authorised to operate above 400ft with aircraft (excluding multi-rotors) which weigh less than 7.5 Kg.
- BMFA members are permitted to operate sailplanes over 7.5 Kg, (but not exceeding 14kg), up to 400ft above the pilot.
- Model aircraft weighing more than 7.5 Kg must not be flown higher than 400ft without permission from the CAA.

FLY SAFELY

You must not endanger the safety of any uninvolved person or any vessel, vehicle or structure not under your control when you fly your unmanned aircraft.

For aircraft under 7.5kg, do not fly within

- 30m of uninvolved people
- 30m horizontal distance from an assembly of people

The distance can be reduced to 15m for take-off and landing in some circumstances.

For aircraft over 7.5kg, do not fly within

- 30m of uninvolved people
- 50m horizontal distance from an assembly of people

Flying within 'built up areas' is only permitted subject to the conditions outlined in our guidance.

MANNED AIRCRAFT

- You must do everything possible to avoid conflict with any manned aircraft.
- It is illegal to fly any unmanned aircraft (other than a control line aircraft) within in a Flight Restriction Zone (FRZ) around an airport/airfield without permission (see our guidance for details).
- To ensure that you are not operating in an FRZ, please see https://dronesafe.uk/restrictions/.
- Endangering the safety of a manned aircraft could result in a five-year prison sentence.

REGISTERED & COMPETENT

- It is a legal requirement for most model flyers to register as an Operator with the CAA (if 18 or over) and have evidence of their competency (regardless of age).
- **You can register as an Operator through the BMFA and existing BMFA Achievements are accepted as evidence of competency.**
- Those without a recognised BMFA Achievement must pass the BMFA or CAA online test before they fly.
- A CAA Operator I.D. number must be displayed on (or be easily accessible within) the aircraft.

For details of the full requirements, please visit https://rcc.bmfa.uk/article-16

YOU ARE RESPONSIBLE

- You are legally responsible for ensuring that your flights are conducted safely. It is essential that you are aware of the laws which apply.
- Our Authorisation covers flying for sport, recreation, education and demonstration. It excludes any flying for commercial purposes.
- For further details of Operator and Remote Pilot responsibilities, please refer to our full guidance.
- Failure to operate lawfully could result in criminal prosecution.

MINIMUM AGE

- The minimum age for a remote pilot operating unsupervised within our Authorisation is 10.
- There is no minimum age for a remote pilot under the direct supervision of another remote pilot (who is age 14 or over) but both must have evidence of competency.
- Under 18's will need someone to act as their Operator and be registered with the CAA.

AIRCRAFT LESS THAN 250G

250g or less

- Model aircraft below 250g which are operated within our Authorisation are subject to its terms and conditions.
- Alternatively, they may be operated within the requirements of the Open Category - defined in CAP 722 - for aircraft less than 250g.
- For further details, see https://publicapps.caa.co.uk/cap722.

IF THINGS GO WRONG

Our Authorisation includes the requirement to report:

- Serious accidents and incidents to the AAIB
- Serious incidents and a range of other occurrences (including breaches of the terms of our Authorisation) to the CAA.
- For further details, see https://rcc.bmfa.uk/reporting.

ADDITIONAL BENEFITS

Our Authorisation also includes special arrangements for:

- Trial flights for non-members
- Visiting flyers/competitors from overseas
- Display flying

For further details, please see the full guidance.

THE BMFA

The BMFA has been working hard for UK model aircraft and drone flyers since 1922. Our unbeatable membership benefits include:

- Insurance – a class leading package including £25 million liability cover and £35K personal accident cover.
- CAA Operator Registration - made easy as part of our membership process.
- The BMFA NEWS – 60+ glossy pages of everything happening in our sport, delivered to your door 6 times per year.
- Achievement Scheme – dedicated to raising flying standards and safety whilst making learning fun.
- Access to competition – membership provides access to local, national, and international model flying contests.
- Guidance – we publish an extensive range of guidance material to help members have fun, fly safely, and remain within the law.
- Assistance – our experienced staff are there to help, advise and support whenever required.
- Representation - we represent the model/drone flying community at the highest levels nationally and internationally.

All this and much more for less than 11p a day!

www.bmfa.org

For details of the full requirements, please visit https://rcc.bmfa.uk/article-16

UNMANNED AIRCRAFT - OPERATIONAL AUTHORISATION

Civil Aviation Authority

Model Aircraft Article 16 Authorisation

BMFA SAA LMA FPV-UK

1.	AUTHORITY RELEASING THE AUTHORISATION
1.1 State	United Kingdom
1.2 Issuing Authority	United Kingdom Civil Aviation Authority
1.3 Authorising Signatory Point of Contact	Sophie O'Sullivan Kevin Woolsey
2.	**ASSOCIATION INFORMATION**
2.1 Association Name(s)	The Society of Model Aeronautical Engineers Ltd. trading as the British Model Flying Association (BMFA). The Aeromodellers Association (Scotland) Ltd. trading as the Scottish Aeromodellers Association (SAA). The Large Model Aircraft Association Ltd. Trading as the Large Model Association (LMA). FPV UK ltd. (FPV UK).
2.2 Point of Contact	BMFA: David Phipps SAA: Steve McDonald LMA: Rob Buckley FPV UK: Simon Dale
2.3 Authorisation Number	UAS 7068
2.4 Application Reference	UKMFA-Art16-Application V6
2.5 Relevant/Other Comments	First Issue (January 2021)
3.	**GENERAL LIMITATIONS AND CONDITIONS FOR ALL OPERATIONS**

3.1 **Applicability**	This authorisation shall only apply to a member of one of the UK Model Aircraft Associations described in section 2.1.
3.2 **Type of Unmanned Aircraft**	(1) This authorisation shall only apply to UAS operators and remote pilots of model aircraft, as defined in section 7.1. This includes: - Any model aircraft - Any control line model aircraft - Any round-the-pole model aircraft Subject to the mass limitations described in section 3.6 Note 1 *Control Line and Round-the-pole model aircraft with a mass of not more than 1Kg are outside the scope of the UAS IR (as defined in section 7) as set out in the Basic Regulation (Regulation (EU) 2018/1139) and are instead regulated within the Air Navigation Order, article 265E.*
3.3 **Minimum Age**	(1) The minimum age for a UAS Operator is 18 years. (2) In accordance with UAS IR article 9(5), the minimum age for a remote pilot, operating within the limits of this authorisation, is 10 years. (3) No minimum age for a remote pilot operating within the limits of this authorisation applies to: 1) Any remote pilot of a physically constrained model aircraft as defined in 7.1. 2) Any remote pilot who is under the direct supervision of another remote pilot who has reached the age of 14 years, and both are compliant with the applicable competence requirements, set out in 3.12.
3.4 **Safety Accountability**	(1) The remote pilot is responsible for the safety of the operation and may only fly the model aircraft if reasonably satisfied that the flight can be safely made.
3.5 **Registration of the Operator**	(1) Any UAS Operator making use of this authorisation must ensure they are registered with the CAA in accordance with Article 14 of the UAS IR, as defined in section 7.1. (2) The registration number (OP-ID) must be clearly displayed on the aircraft, or within a compartment that can easily be accessed without the use of a tool. (3) Control line and round-the-pole model aircraft (as defined in section 7.1) are exempt from some requirements set out in section 4.1 of this authorisation. Note 1: *The requirement to register does not apply to the operator of UAS operated only indoors. Additionally, an exemption has been included in section 8, from the requirement to register as an operator of control line or round-the-pole model aircraft of not more than 1Kg, subject to the conditions within.* Note 2: *The requirement to register only applies to:*

	- *the operator of a UAS with a mass greater than 250g; or* - *the operator of a UAS below 250g which is equipped with a sensor able to capture personal data and which is not a toy as defined in The Toys (Safety) Regulations 2011.* Note 3: *The definition of a 'toy' includes: 'products designed or intended, whether or not exclusively, for use in play by children under 14 years in age'.* *Products equipped with combustion engines are specifically excluded from this definition of a toy.*
3.6 **Maximum Take-Off Mass (MTOM)**	(1) This authorisation applies only to model aircraft with a MTOM (as defined in section 7.1) less than 25Kg. (2) The operation of model aircraft with a MTOM of 25Kg or greater requires a separate authorisation. Note 1: *Model aircraft below 250g, which are operated in accordance with this authorisation, are subject to the limitations and conditions described throughout this authorisation. In most circumstances, however, they may be operated within the Open Category, and subject to the basic requirements for a UAS with a mass less than 250g.*
3.7 **Location(s) of operation**	This authorisation may be used throughout the United Kingdom, at: 1. Any established model flying club site; a) Any established model flying club located in a 'built-up area' as defined in section 7.1, must conduct a risk assessment, with suitable mitigations. This must be made available to members flying at that site, who must be familiar with it; or 2. Any other suitable area, which is not a built-up area, as defined in section 7.1, other than in the circumstances defined in 2(a) below; a) A built-up area which is *only* used substantially for recreational purposes may be considered a 'suitable area'. Operation within such an area must be supported by a risk assessment.
3.8 **Type of Operation**	(1) The remote pilot of a model aircraft must maintain direct, unaided visual contact with the aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions, unless the aircraft is being flown in accordance with the 'First Person View' conditions of section 4.3. (2) The operation of model aircraft for purposes other than sport, recreation, education or demonstration, places the operation outside the definition of a model aircraft, and therefore this authorisation may not be used for such operations.
3.9	(1) The operation of model aircraft within this authorisation is limited to a height of 120m (400ft), unless the conditions below are met.

Operating heights/altitudes/levels	(2) A model aircraft is permitted to fly at a height in excess of 120m (400ft) above the surface, in accordance with the limitations of this authorisation, if all the conditions in sub paragraphs a) to e) below are met. a) The model aircraft is not a rotorcraft with more than one lift generating rotor or propeller; b) The model aircraft is not an automated model aircraft as defined in section 7.1; c) The model aircraft is not being flown within the Flight Restriction Zone of an aerodrome, unless operating with the appropriate permission from the aerodrome as set out in ANO article 94. d) The model aircraft remains within the visual line of sight of the remote pilot; e) The mass of the model aircraft (MTOM- see section 3.6) shall not exceed 7.5Kg, with the exception of the circumstances in (e(i)) below; i. The model aircraft is a glider, the mass (MTOM) of which does not exceed 14Kg. In this case, it may not be flown at a height greater than 120m above the remote pilot but may be flown at a height exceeding 120m above the surface directly beneath the glider.
3.10 Remote Pilot Responsibilities	(1) The remote pilot shall: (a) Not perform duties under the influence of psychoactive substances or alcohol or when they are unfit to perform their tasks due to injury, fatigue, medication, sickness or other causes; (b) Have the appropriate remote pilot competency as defined in section 3.12 and carry a proof of competency while operating the model aircraft. (c) Be familiar with manufacturer's instructions provided by the manufacturer of the UAS, if applicable. (2) Before starting a UAS operation, the remote pilot shall comply with all of the following: (a) Obtain updated information relevant to the intended operation about any relevant airspace restrictions; (b) Ensure that the operating environment is compatible with the limitations and conditions set out within this authorisation; (c) Ensure that the model aircraft is in a safe condition to complete the intended flight safely; (d) Ensure that any relevant information about the operation has been made available to the relevant air traffic service (ATS) unit, other airspace users and relevant stakeholders, when required. (3) During the flight, the remote pilot shall: (a) Comply with the limitations and conditions set out within this authorisation; (b) Avoid any risk of collision with any manned aircraft and discontinue a flight when continuing it may pose a risk to other aircraft, people, animals, environment or property;

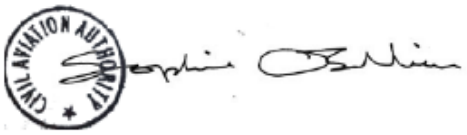
	(c) Comply with any applicable airspace restrictions; (d) Comply with the rules and procedures of their respective association; (e) not fly close to or inside areas where an emergency response effort is ongoing unless they have permission to do so from the responsible emergency response services. **Note 1:** *It is acknowledged that in many instances, the UAS Operator and the remote pilot is the same person. In such cases, this person must discharge the responsibilities of both the remote pilot and the UAS Operator (Section 3.16).*
3.11 **Separation Distances for model aircraft**	1. A model aircraft that is not a free flight model aircraft, and with a MTOM above 250g and not more than 7.5Kg shall not be flown: a) Within a horizontal distance of 30m of assemblies of people, as defined in section 7.1; b) Within 30m of any uninvolved person, as defined in section 7.1. This distance may be reduced to 15m for take-off and landing if required for practical operations and there are locally applied mitigations to protect uninvolved persons, following a local risk assessment. 2. A model aircraft with a MTOM greater than 7.5Kg, and less than 25kg shall not be flown: a) Within a horizontal distance of 50m of assemblies of people, as defined in section 7.1. This distance may be reduced to 30m for take-off and landing if required for practical operations and there are locally applied mitigations to protect uninvolved persons, following a local risk assessment. b) Within 30m of any uninvolved person, as defined in section 7.1. **Note 1:** *Specific limitations for the operation of free flight model aircraft are set out in section 4.2.*
3.12 **Remote Pilot Competence**	(1) Any remote pilot operating in accordance with this authorisation must demonstrate a suitable level of pilot competence, by either (a) or (b) below: a) Passing one of the following online tests: i. CAA online DMARES test; ii. BMFA online test; iii. LMA Theoretical Proficiency online test iv. FPV UK certificate of competency: Drone Law ('A' Certificate) online test; b) Having passed the test (prior to 31/12/2020) for: i. BMFA Achievement Certificate; ii. SAA Bronze Certificate; iii. LMA Basic Proficiency or Full Proficiency test; iv. FPV UK Certificate of Competency: Drone Law Test; (2) Remote pilots demonstrating competence through methods 1b(i), (ii), iii) or (iv) must also confirm to their respective association(s) that they have read and understood the conditions and restrictions that apply to them when flying unmanned aircraft in accordance with this authorisation. (3) The associations must keep a record of such confirmations that can be made available for audit on request.

3.13 **Reporting Requirement**	(1) Correct reporting to the AAIB *and* the CAA must be carried out. (2) The following must be reported to the AAIB in accordance with Regulation (EU)996/2010 (as retained in UK domestic law) and the AAIB website: ▪ Accidents ▪ Serious Incidents (3) The following must be reported to the CAA, in accordance with Regulation (EU) 376/2014 (The reporting regulation) (as retained in UK domestic law): ▪ Occurrences which involve any of the following: ○ Fatality ○ Serious Injury ○ Manned aircraft The following must be reported to the CAA, as a condition of this authorisation: ▪ Serious Incidents or Other Occurrences which involve any of the following: ○ Manned aircraft ○ Operating above 400ft ○ Operating less than 50m from uninvolved people ▪ Any instances of flight beyond the visual line of sight of the remote pilot Note 1: *Further guidance on reporting requirements and relevant definitions can be found in CAP 722.*
3.14 **Dropping of Articles**	(1) Only insofar as it relates to the dropping of material, model aircraft operations are exempt from the requirements in UAS IR Article 4(1)(f), subject to the condition that: a) The remote pilot must not cause or permit any article or animal to be dropped from an unmanned aircraft so as to endanger persons or property.
3.15 **Member Compliance**	(1) Any member of an association listed in section 2.1, making use of this authorisation shall comply with the procedures and rules set out by that association. (2) The rules and procedures of the associations listed in section 2.1, shall reflect the conditions and limitations of this authorisation.
3.16 **Operator Responsibilities**	1) The registered operator (The *'UAS operator'*) for the model aircraft must comply with the following requirements: a) Ensure the remote pilot is in possession of the relevant remote pilot competence requirements, as set out in section 3.12; b) Ensure that the model aircraft is sufficiently maintained, and that any repairs carried out to it are satisfactorily made, such that it is in a safe condition to be flown; c) Ensure that the remote pilot is aware of the limitations and conditions of this authorisation; d) Ensure that the remote pilot is aware of the rules and procedures of their relevant association;

	e) Ensure that any necessary additional permissions or authorisations are obtained for any specific flight; f) Ensure the remote pilot is aware of any relevant airspace limitations; **Note 1:** *It is acknowledged that in many instances, the UAS operator and the remote pilot is the same person. In such cases, this person must discharge the responsibilities of both the remote pilot (Section 3.10), and the UAS Operator.*
4	**SPECIFIC CONDITIONS**
4.1 **Physically Constrained unmanned aircraft**	(1) Permission is not required to operate a control line or round-the-pole model aircraft (as defined in section 7.1) within an Aerodrome Flight Restriction Zone, providing all the following conditions are met: a) The tether line does not exceed 25m; b) The flight does not take place within the Runway Protection Zone (RPZ) part of the FRZ; c) The MTOM, as defined in section 7.1, does not exceed 7.5Kg; d) The flight does not take place over, or within the boundary of the protected aerodrome unless permission for the flight has been obtained, as described in ANO article 94A. Note 1: *This exemption is set out in in section 8.1.* Note 2: *Model aircraft, that are operating indoors, are not subject to the FRZ requirement set out in ANO article 94A.* (2) Control line and round-the-pole model aircraft (as defined in section 7.1) operated within the limits of this authorisation, are exempt from the competency requirements set out in section 3.12. (3) Control line and round-the-pole model aircraft (as defined in section 7.1) are exempt from all the requirements set out in ANO article 265E, providing all the following conditions are met: a) The tether line does not exceed 25m; b) The MTOM, as defined in section 7.1, does not exceed 1Kg. Note 3: *The Basic Regulation excludes powered tethered unmanned aircraft with a mass of not more than 1kg from the requirements of the UAS IR. ANO Article 265E re-applies certain requirements of the UAS IR to tethered unmanned aircraft with a mass of not more than 1Kg. Section 8.2 contains an exemption that sets out that control line model aircraft and round the pole model aircraft (as defined in section 7.1) are exempt from the requirements of article 265E.*
4.2 **Free Flight Model Aircraft**	(1) Before launching a free flight model aircraft, as defined in section 7.1, the remote pilot, taking into account the expected performance of the aircraft, the weather conditions, and any flight termination device fitted to the aircraft, shall be reasonably satisfied that the expected flight path will not

	infringe a Flight Restriction Zone, or any other airspace restriction (unless prior permission for flight within the airspace has been obtained). (2) The operation of free flight model aircraft must only be carried out within the limits and conditions of this authorisation, or within the Open category of operations. (3) A free flight model aircraft, as defined in section 7.1, shall not be: a. Launched, unless from an area which the remote pilot is able to satisfy themselves is free from uninvolved people. b. Launched, until the remote pilot has identified the area within which he or she believes the aircraft will remain (the 'flight volume') based on the considerations in (1). c. Flown, unless the remote pilot is satisfied that the aircraft will remain within the flight volume. d. Flown, unless the remote pilot is satisfied at the point of launch, that no uninvolved persons will enter flight volume and may be endangered by the flight of the free flight model aircraft. (4) A free flight model aircraft, as defined in section 7.1, shall not be deliberately flown beyond the visual line of sight of the remote pilot, unless otherwise in accordance with a suitable authorisation.
4.3 **First Person View model aircraft**	(1) A model aircraft may be flown by a remote pilot using first person view (FPV) equipment subject to the limitations of this authorisation, and following conditions (a) or (b), either: a) The aircraft is flown in accordance with all of the following conditions: i. Within a sterile area- meaning a cordoned off, closed area that uninvolved persons are excluded from; and ii. The aircraft is not flown at a height in excess of 160 feet (50 metres) from the surface; and iii. In accordance with procedures specifically set out for the purpose of the event, and in accordance with instruction from the race director or other nominated person, including any 'terminate race and land immediately' instruction; and iv. Any observers are suitably briefed and aware of their responsibilities, including the monitoring of people or aircraft entering the cordoned off area; or b) The aircraft is flown in accordance with all of the following conditions: i. The remote pilot is accompanied by a competent observer who maintains direct unaided visual contact with the unmanned aircraft sufficient to monitor its flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions and advises the remote pilot accordingly; ii. The MTOM of the aircraft does not exceed 3.5Kg; iii. The aircraft is not flown: A. Within an aerodrome FRZ, unless appropriate permission has been obtained; B. At a height of more than 1000ft above the surface, unless it is a rotorcraft with more than 1 lift generating rotor or propeller in which case the height shall not exceed 400ft above the surface; C. Unless within an area as set out in section 3.7.;

	D. Over or within 150m of any assemblies of people, as defined in section 7.1; E. Within 50m of any vessel, vehicle or structure which is not under the control of the remote pilot. F. Within the minimum distances set out in section 3.11.
4.4 **Model Aircraft Display Events**	(1) Any operator and remote pilot who wishes to operate a model aircraft as part of a flying display event may do so within the limits of this authorisation, in accordance with CAP 403 and CAP 658 – or any subsequently updated or replacement document. (2) Any such display which takes place above 400ft, must be notified to other airspace users through the use of a NOTAM. (3) Should the operator wish to operate as part of a flying display outside any of the conditions within this authorisation, they must obtain a separate authorisation for the operation, and an additional model aircraft display authorisation using form SRG 1308 and in accordance with the CAA Scheme of Charges.
4.5 **Operation of Model Aircraft by non-UK persons**	(1) Non-UK residents may operate model aircraft in accordance with all operating conditions of this authorisation, provided that they meet all the following conditions: a) Hold temporary or full membership of a UK model flying association named in this authorisation; b) Comply with the rules and practices of that association; Note 1: *Any non-UK remote pilot must meet the requirements of section 3.12 in respect to pilot competence.* Note 2: *Any non-UK UAS operator must comply with the registration requirements set out in 3.5. This may be achieved by displaying the operator ID of a UK 'host' operator, with their agreement and understanding of their legal obligations as a UAS operator of the aircraft.*
4.6 **Operations of Model Aircraft by non-members under instruction**	(1) For the purposes of conducting 'trial flights' by non-members, the non-member may operate the controls of the model aircraft whilst under the direct instruction and supervision of a member. In such an instance, the remote pilot receiving instruction does not need to comply with the competence requirements of set out in section 3.12. (2) The registration requirements and registration display requirements (as set out in section 3.5) still apply.
5	**VALIDITY**
5.1 **Duration of the Authorisation**	This authorisation is valid: From: 31/12/2020 To: 31/12/2021

	Unless otherwise suspended.
5.2 **Regulation references**	**This authorisation is issued under:** UAS IR Article 16 **The operation described in section 4.1 is authorised under:** ANO 2016, as amended, article 266. These exemptions are set out in section 8.
5.3 **Combination of Authorisations**	This authorisation may not be used in conjunction with any other operational authorisation, other than any General Exemption or General permission issued by the CAA.
6	**AUTHORISATION SIGNATURE**
Signature / Stamp	 **The associations detailed in section 2.1 are authorised to conduct UAS Operations within the limitations and conditions set out within this authorisation, providing they comply with this authorisation, Annex IX to Regulation (EU) 2018/1139 and its implementing rules.**
Date ***DAY/MONTH/YEAR***	
7	**APPENDIX**
7.1 **Definitions** These definitions are included for the purpose of this specific authorisation only.	1) **Assemblies of People:** *Gatherings where persons are unable to move away due to the density of the people present.* 2) **Automated model aircraft**: *A model aircraft with autonomous or automatic flight capability. This does not include systems which are fitted for flight stabilisation purposes or flight termination purposes, such as free-flight termination devices.* 3) **Built-Up Area:** *An area substantially used for industrial, recreational, commercial or residential purposes.* 4) **Control Line model aircraft**: *A model aircraft that is controlled in flight by one or more lines, attached to a handle, that work the required flight functions. The aircraft is connected to the remote pilot by these lines and so its flight is constrained to the surface of a hemisphere around the remote pilot with a radius equal to the length of the lines.* 5) **First Person View (FPV)**: *In First Person View operations the remote pilot flies the aircraft using images provided by cameras aboard the aircraft. When flying FPV the remote pilot cannot monitor the flight path in relation to other aircraft, persons, vehicles, vessels and structures for the purpose of avoiding collisions to the same extent as*

	a remote pilot maintaining external direct, unaided visual contact with the aircraft. 6) **Free flight model aircraft**: *A free-flight model aircraft cannot be remotely piloted and does not have software or systems for autonomous control of the flight path. A flight termination device may be fitted. The aircraft trim is adjusted prior to flight. The aircraft is trimmed (and fuelled if applicable) with the intent that it will follow a substantially circular path relative to the air and ultimately glide to a low velocity landing. A free-flight unmanned aircraft will drift relative to the user depending upon the speed and direction of the wind. The person in charge of the free-flight unmanned aircraft is deemed to be the remote pilot for the purposes of this authorisation.* 7) **Maximum Take Off Mass (MTOM):** *MTOM or 'take-off mass' means the mass of the unmanned aircraft when it is ready for flight with all required equipment and batteries installed and all installed fuel tanks full.* 8) **Model aircraft**: *Any unmanned aircraft being flown purely for the recreational sport of model aircraft flying. This includes shop bought or home built aircraft, which are flown 'manually' using traditional control inputs rather than with any automation other than for flight stabilisation purposes. A model aircraft may be flown under the auspices of an association, or individually.* ***Note 1:*** *This includes multi rotor aircraft which are being flown with 'direct' control inputs, and without any automation, other than for flight stabilisation purposes.* 9) **Physically constrained model aircraft**: *A model aircraft that:* *a. is flying within a closed building or other physical construction forming a safely enclosed area; or* *b. is a control-line model aircraft; or* *c. is a round-the-pole aircraft.* 10) **Round-the-pole model aircraft**: *A model aircraft that is tethered to a fixed point by one or more lines so that its flight is constrained to the surface of a hemisphere around the tether point with a radius equal to the length of the lines.* 11) **UAS IR:** *Commission Implementing regulation (EU) 2019/947 on the rules and procedures for the operation of unmanned aircraft, as 'retained' in UK Domestic Law'.* 12) **Uninvolved Persons:** *Persons who are not participating in the UAS operation or who are not aware of the instructions and safety precautions given by the UAS operator.*
8	**Air Navigation Order Exemptions**

8.1 **Control line and Round-the-pole Model Aircraft: Flight Restriction Zone Exemption**	Note 1: *This exemption facilitates section 4.1(1) of this authorisation.* 1) The Civil Aviation Authority (CAA), in exercise of its powers under article 266 of the Air Navigation Order 2016 ('the Order') as amended, exempts the remote pilot and UAS operator of a Control Line model aircraft or a round-the-pole model aircraft, as defined in section 7.1 of this authorisation, from the requirement at article 94A to obtain permission to fly within the flight restricted zone of a protected aerodrome subject to the conditions in paragraphs 2 to 4 below. 2) General requirements: a) The remote pilot (within the meaning given in article 94G of the Order), is: • In the case of a control line model aircraft: the person that is holding the control lines while the Control Line model aircraft is in flight. Or; • In the case of a round-the-pole model aircraft: the remote pilot of the model aircraft. b) The maximum length of the tether line of the control line or round-the-pole model aircraft shall not exceed 25 metres. c) The flight does not take place within the Runway Protection Zone (RPZ) part of the FRZ. d) The maximum take-off mass of the model aircraft shall not exceed 7.5kg, including any batteries, fuel or payloads. 3) The remote pilot shall not fly the aircraft over, or within the boundary of the protected aerodrome unless permission for the flight has been obtained from: a) any air traffic control unit at the protected aerodrome, if the flight, or the part of the flight, takes place during the operational hours of the air traffic control unit; b) any flight information service unit at the protected aerodrome, if the flight, or the part of the flight, takes place during the operational hours of the flight information service unit and either: (i) there is no air traffic control unit at the protected aerodrome, or (ii) the flight, or the part of the flight, takes place outside the

	operational hours of the air traffic control unit at the protected aerodrome; c) from the operator of the protected aerodrome, if: (i) there is neither an air traffic control unit nor a flight information service unit at the protected aerodrome; or (ii) the flight, or the part of the flight, takes place outside the operational hours of any such unit or units at the protected aerodrome. 4) This exemption only applies to control line model aircraft or round-the-pole model aircraft that are flown for the purposes of sport or recreation. It does not apply to 'tethered' flights of small unmanned aircraft that are capable of vertical take-off/landing or hovering, such as helicopters or multi copters. Note 2: *This exemption supersedes General Exemption ORS4 1296, which is now revoked. This is now contained within this Article 16 authorisation, and is no longer a general exemption. Compliance with the entire authorisation is necessary to make use of this exemption.*
8.2 **Control line and Round-the-pole Model Aircraft: Registration and Pilot Competence Exemption**	Note 1: *This exemption facilitates section 4.1(3) of this authorisation.* 1) The Civil Aviation Authority ('the CAA'), in exercise of its powers under article 266 of the Air Navigation Order 2016 ('the ANO'), exempts any person involved in the flight of a control line model aircraft, or round-the-pole model aircraft (as defined in section 7.1 of this authorisation) from the requirements of article 265E in relation to the flight of such an aircraft. 2) This exemption only applies to the flight of control line model aircraft or round-the-pole model aircraft (as defined in section 7.1 of this authorisation) that are conducted for the purposes of sport or recreation. It does not apply to 'tethered' flights of small unmanned aircraft that are capable of vertical take-off/landing or hovering, such as helicopters or multicopters. 3) This exemption only applies to the flight of control line model aircraft or round-the-pole model aircraft (as defined in section 7.1 of this authorisation) which have a MTOM (as defined in section 7.1 of this authorisation) of not more than 1Kg, and which are flown with a restraining device of not more than 25m. Note 2: *This exemption supersedes Official Record Series 4 No.1396, which is revoked. This is now contained within this Article 16 authorisation, and is no longer a*

	general exemption. Compliance with the entire authorisation is necessary to make use of this exemption. **Note 3:** *The Basic Regulation excludes powered tethered unmanned aircraft with a mass of not more than 1kg from the requirements of the UAS IR. ANO Article 265E re-applies certain requirements of the UAS IR to tethered unmanned aircraft with a mass of not more than 1Kg. This exemption sets out that control line model aircraft and round the pole model aircraft (as defined in section 7.1) are exempt from the requirements of article 265E.*

Editor's Note:

It is quite possible that a further communication will be issued by the SAA regarding the responsibilities and any impact on the members.

Fleece: £15, (L/XL/XXL)

Sweat Shirt: £13:50 (L/XL/XXL)

Polo shirt: £13 (XL)

Umbrella: £15

Woolly Hat: £3.50

Baseball Cap: £5

Tie (Brown): £5

Badges: £1.50 / £2

Decal Sheets: £3

Car Sticker £1

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