



Airtime

Spring 2016



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Front Cover Picture: Captain Eric Melrose 'Winkle' Brown from Leith in Scotland, a Royal Navy officer and test pilot who flew 487 different types of aircraft, more than anyone else in history.

Photograph from <http://www.royalnavy.mod.uk>

Chairtime

Here we are again at the start of a New Year and may the Council and I wish all the Members a very Happy New Year and fair flying weather for the coming Season.

The year has certainly started with some very high winds, lots of rain, frost and some snow, all of which hasn't been very conducive to getting any flying done.

Still, there are models to be built and serviced in the hope that the weather will get better soon.

Once again we had very successful AGM in November which was held earlier this year due to the non availability of the hotel. The meeting was well attended by the Membership and although it turned out to be the shortest AGM that I can remember, it went very smoothly.

The meeting had the pleasure of the Chairman of the LMA and the LMA Journal Editor in attendance.

Again it was particularly gratifying to see that the Association is in a very healthy financial state and my thanks go to Tom Love for the sterling work he does in keeping the books. My thanks goes also to all the Council Members, all of whom have done a great job of work over the year, in particular the Membership Secretary who keeps me in line and in biscuits.

Three members of the Council were standing down this year; they were Club Liaison, CD's Representative and Treasurer. Fortunately Tom Love was coaxed into staying on for another term and Graeme McKee of the Glenrothes Club has taken up the post of Club Liaison Officer.

However the position of CD's Representative is still vacant and needs to be filled. At present I will take on the job in the interim until we find or press gang a volunteer to do the job which, by the way, is not very onerous and is a voting position on the Council.

The Vice Chairman and I travelled to the CAA offices in London for the annual meeting with the CAA, LMA, BMFA and BFPVRA.

Unfortunately the overnight journey to London was horrendous as we could not get a sleeper berth and had to do with a reclining seat.

The meeting was short as there are no major changes in the regulations and

that any proposed changes should have been in by the end of January. One possible proposal may be the change to 25kgs wet for models. This year the CAA proposes to visit at least three model shows as part of their annual check.

Jim and I had much pleasure in reporting that there were no accidents to report of any kind in the SAA, which, touch wood, will continue to be the situation.

With regards to specialist groups, we have added multicopters (or drones as the media call them) to our list of disciplines.

Prior to the AGM the council decided to add Multicopters to our list of specialist groups and after some discussion with the then Secretary and the Chairman of the British FPV Racing Association we accepted the BFPVRA as an affiliated group to the SAA.

The Secretary of the BFPVRA, Graham Strachan, has agreed to be the CD for FPV racing in Scotland and has also joined the SAA.

Since then he has formed the Scottish FPV Racing Association and information can be found at their web site sfpvra.org. The SFPVRA are also affiliated to the SAA. The rules of the FPV Racing (F3U Section 4 provisional class) are published on the website, FAI Sporting Code.

Have a look at <https://youtu.be/0mCQdmoh6YQ> to see where they are flying in the Glasgow area and what it looks like through the head set.

This is the fastest growing sport in the country and we are very glad that the SAA have become a part of it, so much so that the Council have agreed to sponsor an SAA Trophy for the Scottish Champion.

To improve the publics' knowledge about drones, we have joined with the BMFA and the LMA in getting involved with the Drone Awareness programme that has being organised by the BMFA, mainly with a view to informing the public as to what the legal situation is when flying drones. <http://droneaware.org>

In the middle of February, Les Madden and I attended a further meeting in Westminster, this time with the Department for Transport, CAA, LMA, BMFA and First Person View UK.

There has been a debate in the House of Lords recently regarding what was called the Drone Menace. They have put pressure on the Government to address the problem of the increasing reports of near misses with aircraft and various other complaints from the public.

The Secretary of the LMA had been in contact with us regarding the situation with drones in the UK and we agreed to be represented at the meeting with the Department of Transport.

This was a very important meeting with the DFT as the possible legislation/control of drones would in probably affect aeromodelling as all unmanned aircraft are drones not just multicopters and the likes.

A great deal of detailed discussion took place during which the associations outlined how our organisations are set up, listing registration, insurance, safety achievement scheme, testing and training and the network of clubs.

As the DFT is just getting the process underway they felt that the way we are organised would be the basis to start from in as effort to get a balanced view regarding drones and to develop government strategy on the matter.

There will be public consultation around May on the use of drones, one of which will be in Stirling and we have been asked to give some idea on what questions will be asked.

At the end of the meeting the DFT understood the difference between drones and aeromodelling and assured us that they would try to avoid any legislation that may affect aeromodelling.

We will keep you informed in how matters develop in the coming months.

The next Jet World Masters 2017 was to be held in Italy and there was to be a presentation at the January AGM in Muhlital, Germany. However since the IJMC Board Meeting in November the Italian Organisers have pulled out due to the lack of financial support and the lack of a suitable venue.

This situation was raised at the IJMC AGM in mid January, which I attended, where seven countries had put forward a bid to hold the Jet Masters in 2017. Only four of the bids could be accepted for voting, Austria, Czech Republic, China and Finland.

After these countries gave their presentation voting was held resulting in no votes for Czech Republic, 1 vote for China, 3 votes for Austria and 10 votes for Finland.

Therefore the 2017 World Jet Masters will be held in Jamijarvi near Tempere in early August.

There are a number of countries putting forward bids to host the Jet World Masters for 2019, so the future of the Jet Masters is looking promising.

Cadets on building and flying models.

This year Tom and Alistair have organised another camp in May which will be open to Cadets from other Squadrons as well as 2180.

Throughout last year Tom gave so much support to the SAA assisting in organising training camps for the cadets to the degree that we felt the need to recognise his efforts. To this end Tom was awarded an Associate Membership of the SAA.

Toward the end of last year the Stonehouse Scout Troop contacted us with a view to getting involved in aeromodelling. They had been at the LMA/SAA Show at Strathaven and were interested in helping out at the Show, which is very welcome, and in aeromodelling.

We have therefore organised a presentation with them in March to show them various models and talk to them about aeromodelling.

Having been in Boys Brigade, what I was ignorant of was that the Scout Movement is very air minded and that they have Air Scouts who are recognised by the RAF. Not only that, I am told that they own full size aircraft.

Since then we have been in contact with other Scout Troops in the Dunfermline area and we intend to expand this as much as we can.

If any of the members are interested in assisting in this venture please contact me.

I received an invitation from the Falkirk Club to give a slide show and talk on air museums at home and abroad. This I did along Stephen Semple, a member of my own Club, on the 20th January. The evening went very well and we have been asked to do a return visit at a later date as I have another 15 Museums to show them.

If any of the clubs would like me to visit I would be very pleased to do so. Again please contact me; all it will cost the club is a coffee and a bun.

Once again Douglas Dickie of the East Kilbride Club organised the annual Silent Auction and Concours d'Elegance. This is the first event of the year when we all come out of hibernation and is always a successful evening. The numbers were a bit down from the event last year so if we want it to continue we

need to support it. This goes for all events, competitions, fly-ins etc. throughout the year.

Unfortunately I didn't get to the Kinross Bring and Buy as I had to take Cadets full size flying, which didn't happen as it snowed!! Still I was told by many who did attend that the event was very successful and lots of bargains were to be had.

The SAA/LMA Large Model Show will again be held on the 25th and 26th of June and hopefully the weather will favour us on the two days for a change.

If you want to fly at the show please contact the LMA on their web site and apply with your name and what models you intend to fly.

As usual we will need help from the members to set up the site, remember, those that help out get the weekend free.

I can't finish off Chairtime without making mention of the sad passing of a great Scottish gentleman and aviator, Captain Eric "Winkle " Brown who passed away at the grand old age of 97. There isn't enough space to mention all of his achievements in his lifetime as his exploits are well documented. It's well worth the effort to read about his life in the books that he wrote and all that's on the internet. It's one big adventure story from beginning to end.

A legend has passed on.

So there you have it for the present. It has been a very busy period for me and the Council and continues to be so. I just hope that the weather improves and allows us all to get flying.

From the Editor

To anyone getting a paper copy could I ask that rather than throw it in the bin when you have finished with it, could you leave one in your club hut/ house/ container to encourage others to read it.

The article backlog cupboard is bare again, so for the next magazine I could really do with some articles please. Some coverage of Machrihanish and the Dumbarton B&B would be really great

One of my concerns is that not all members are getting notified about Airtime releases. www.watchthatpage.com and <https://followthatpage.com> are web page trackers and will notify you if a page changes (front page, events, etc). "Airtime" appears in the "Documents" page so track that one to be notified.

From the Editor

LIPO FIRE DESTOYS GARAGE!!!

I heard about an unfortunate incident where a Lipo exploded during charging and caused a couple of thousand pounds worth of damage.

I'm sure most people have incident-free experiences with Lipos, but personally I treat them as if they have leprosy, black plague and some unknown alien infection all rolled into one.

They all live in their bubble wrap packs or individual foam-lined cardboard boxes, all inside a case so they don't get damaged. I (now) have 4 chargers each one dedicated to different battery sizes so I do not run the risk of charging with the wrong setting. They are always charged in the garage and NEVER in the house. The charging station is next to the door and when charging they sit on frying pans so they can be ejected out of the door quickly. Under the charging station is a box of sand in case I can't get them out the door, and I have a fire alarm on the ceiling directly above the charging station.

[Click image for video.](#)



I absolutely NEVER leave them alone except if I need to make a cup of coffee, and I'll check their temperature before I go, and drink the coffee in the garage. When charged they get red fuel tube on the connectors to indicate REaDy to go, and when used they get clear fuel tube to indicate they are empty. I never charge above 1C as I always have something to do for that hour it takes to charge a 5000 battery. I have numbered my batteries and parallel charge in the same pairs that they get used for flying. I charge 3 pairs at the same time which keeps the current draw below the 30A maximum.

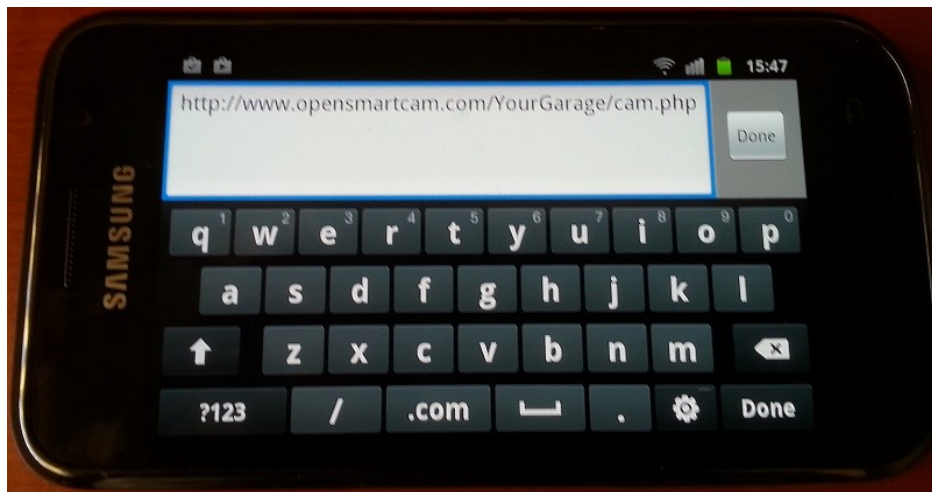
I put the batteries in the plane just before take-off and remove them as soon as I am clear of the runway.

At my club we are not allowed live electric models in the pits and have a separate table for putting the batteries into electric models. Also, we are not allowed to charge lipos in our car in case they go on fire thereafter setting the adjacent cars on fire, so we installed a charging table away from the cars.

Following this incident I reviewed my setup and purchased a pair of heavy duty welder's leather gloves in case I need to throw a burning battery out. At least my hands will get some protection I hope.

Garage Security

Another distressing email arrived advising of a garage break-in and caused me to re-assess my own security. I have an old Samsung Galaxy 1 lying around unused so I decided to put it into service as a WebCam. To make it all work you need the phone, a mains USB phone charger, an app called MobileWebCam and an account at Opensmartcam where your pictures will be uploaded to.



First of all, go to <http://www.opensmartcam.com> and create an account. In the "WebCam Directory" chose any name here for your WebCam. You will be told if it already exists.

1. Download and install MobileWebCam from Playstore onto your phone or tablet (I'm sure there are iPhone equivalents)
2. Run it.
3. Go to "Settings"
4. Select the "Configure HTTP" option
5. Update the "Server Address" field as shown in the picture above replacing the "YourGarage" text with your own one.
6. Hit return until you are at the main screen
7. Let it take a picture. You should see a message saying it is uploading to OpenSmartCam and then another saying "Upload ok, thumbnail ok"
8. Check that the picture is visible on the OpenSmartCam web page.
9. Change the other settings to your personal preference.

Once you are happy that it is taking pictures and uploading them, you can if you want go back in and enable the e-mail upload. Enter the address you want the pictures sent to (your own presumably) and your outgoing account and you will get sent a copy of the picture. With GMAIL you can get an audible alert if an e-mail with the title (e.g.) "webcam picture" comes in: <http://www.computerworld.com/article/2475971/android/how-to-create-custom-gmail-alerts-on-any-android-device.html>

MobilWebCam can also be set to trigger when motion is detected e.g. when Mr. B. Ugrlar forces his way in. It will use the camera's flash if it has one, and you can set the number of shots to be taken in burst mode.

Since you may not want all the pictures sent to you, you can tell it to skip intermediate ones. The idea behind the e-mail is to get instant notification of a break-in so there could be a time delay influenced by your e-mail refresh time. If

Right: Devolo WiFi expander which uses the household mains to transfer the signal



that is only once an hour then your burglar will be long gone by the time you get notified.

If you are a bit more paranoid you can install [Securet LiveStream](#) on your “Garage” phone and MobileWebCam on your main one and watch a live stream over your home network (also works as a baby monitor). Watching it over the Internet is also possible but you need to set your home PC up as a web server so we are starting to get a bit too technical here. Alternatively you can watch the garage phone still pictures or the ones on the OpenSmartCam web site via another browser or tablet.

Of course you need to make sure the camera can work in the expected level of light and will capture enough detail to identify the intruder. During the day that should not be an issue, but if the break-in happens at 03:00 AM then you will need a camera phone with at least a flash, or night vision capability (see YouTube link here though there are plenty of others: <https://www.youtube.com/watch?v=BUOiz-SXh7o>) or you need to activate the garage lights upon the door opening, a fairly simple project I would expect.

Getting an internet or WiFi connection into your garage or hut is easy enough if you already have a power supply in it. Devolo do a 2-part PowerLine modem that is very useful and uses the mains supply as the wiring. One part gets plugged into the mains near your router and the other gets plugged into a socket in your garage. Depending on which product you buy you either get a wired connection or a WiFi connection or both in the garage. There are also a number of WiFi expanders which pick up the weak signal and boost it.

This whole concept can also be transferred to your flying site and used to monitor your cabin for break-ins. In this case you would need to run the phone and lights off a car battery running through a 240v inverter with the battery topped up by a solar panel. You would not have WiFi to upload the pictures but a £10 a month SIM should give enough upload capability.

If you don't have a spare unused mobile phone, there are plenty of security cameras with night vision commercially available like this one from [Jablcom](#) which run off a phone sim card.



Garage Break-in

If anyone is offered, or knows the whereabouts of these models stolen near Edinburgh, could they please contact the SAA Secretary on sec@saaweb.co.uk



Webmaster Vacancy

Stewart has advised that he wishes to step down as Webmaster this year, and as a result we are looking for a new webmaster to take over the day to day running of saaweb.co.uk with a view to updating and / or replacing the existing website.

The initial requirements are to provide the current web browsing ability to mobile devices (phones and tablets) and to introduce online membership renewal, marketing and payments facilities. Additionally, on-line members data base management would be desirable.

Day-to-day activities are mainly updating the "Events" page with details as they are submitted, and adding photographs of the completed events when they arrive.

Although this is a non-voting role, the post holder is entitled and encouraged to both attend and take part in full discussion at Council meetings.

If you are interested and would like to know more, please contact Stewart Smith on web@saaweb.co.uk.

C.D.'s Representative Vacancy

Also available is the position of CD's Rep. From the Constitution:

5.3.9 The Contest Director's Representative is responsible for representing the various elected Contest Directors on Council. He is responsible for financial control of events, and assisting CD's when requested to do so, whether this is financial, or the use of SAA equipment for official events. He is responsible for the listing, the care and the maintenance of all SAA contest equipment and trophies. The Contest Director's Representative reports to Council.

This is a voting position.

Training and Testing 2016

Calling all Club Secretaries

Jim McGlynn is looking to arrange a training and testing schedule for 2016 just as soon as possible and would like all interested clubs to contact him here :-

safety@saaweb.co.uk

Steve Burgess, top pilot overall at the 2015 F3a Triple Crown, and Andrew Shields and Gordon Price, 1st & 2nd at the Barcelona World Cup



AGM 2015



Around the Clubs

The impromptu Xmas lunch at West Calder: a choice of 2 soups, Steak & Gravy pies with optional veg, Danish Pastries, Chocolate Santa cakes, Xmas cake, orange juice and coffee with enough cake left for the Sunday.



The Montrose club New-Year fly-in.



The club was formed in 1944 and flies at Montrose, Angus, Scotland. email: mmac1944mac@aol.com

Montrose Spring fly-in: Sunday, May 8th.

Montrose Summer fly-in: Saturday & Sunday, July 30 & 31.



Pictures courtesy of Montrose Model Flying Club

While you are in the area, why not visit the Montrose Air Station Heritage Centre? See here for opening times & prices: <http://www.rafmontrose.org.uk>



Here we have the Blackridge & [District Model Flying Club](#) site take by Alex Ellis' Spy Hawk, versus [The Sun Valley Fliers](#) from Phoenix, Arizona.



**WINTER
WARBIRDS**
January 15-17, 2016



Ayr and District Model Flyers Open Fly-in May 14th from 10:00

All model types welcome
BBQ and marquee

There is a Costa Coffee
Express in the village
SPAR for the coffee
lovers.

[See <http://www.ayranddistrictmodelflyers.info>](http://www.ayranddistrictmodelflyers.info)

11-year old Cesare passes his Bronze.



East Kilbride Concours d'Elegance by Douglas Dickie; pictures by Gordon Reaich.

Our Concours elegance & Silent Auction was once again held in the Ballerup Hall, Civic Centre , East Kilbride on Friday 12th February 2016. We started this event many years ago to encourage our fellow modellers to keep alive the traditional modelling skills of designing, building and finishing of model aircraft. The original idea was to give modellers a chance to display their latest winter project before the flying season took its toll on the their creation.

So we decided to hold our Concours Competition at the beginning of the year, with no requirement for documentation. Over the years we developed a scoring system for the three independent judges, to enable them to examine each entrant within the limited time available.

Again this year we are very much indebted to the Alloa Club for providing the judging panel of Ian Sutherland, Dick Marsden and Lawson Fergie – thank you very much gentlemen for carrying out a difficult task in a very limited time.

Once again we were treated to a great variety of interesting models, the standard of scratch and kit built was extremely high. The standard of all of the other models was also extremely high and the East Kilbride Model Flying Club members really do appreciate the effort our fellow modellers go to achieve exhibition standard models.

It is very encouraging to have modellers willing to travel considerable distances to enter our competition , entrants from Montrose , Ayr , Edinburgh and Coupar – thank you all very much indeed.

It is always a very pleasant evening wandering about looking at the Competition entrants, seeing what is on offer at the Silent Auction stalls although this year it was a bit down on last year – a sign of the difficult economic climate ?

Once again we were indebted to Mr. Willie Kidd for displaying his Stirling Engine powering a r/c controlled car! Superb piece of model engineering. Mr Bob Todd (age 93) brought along his recently completed Beam Engine – machined in his garage – and ran it on steam – delightful!

The prizes were presented by Mrs Alison Reaich and she also drew our raffle. Many thanks to the East Kilbride members for providing the raffle prizes.

As this is the first of the major indoor events of the year , it was very nice to

renew friendships and look forward to hopefully a good modelling year. Thank you all for your support. Douglas G.Dickie , FSAA, Chairman EKMFC

Results	Model	Builder	Club
Scale Competition			
1	Lincoln	A.Grant	Kinross
2	Blenheim	I. Thomas	
3	Rand KR2	J.Wilson	Falkirk
Open Competition			
1	Super Elf	B.Duval	
2	Jaguar Walefield.	W.Kidd	Ayr
3	Phantom	A.Duff	CVF
ARTF – Scale Competition			
Winner	Storch	D.Sheppard	Hamilton
ARTF – Open			
Winner	Curare	D.Kelly	East Fortune
ARTF – Helicopter			
Winner	Mostro	D.Cameron	









Ian Morrow's Sebart mini Avanti turbine powered model was a delight to see the neat installation.

Check out the Editor's Flickr page here: <https://www.flickr.com/photos/138883192@N02/albums> for more hi-res pictures.

And the video is here on YouTube: <https://www.youtube.com/channel/UCHqN961BxWZ0QpD0qawZ4DA>



Club Spotlight

Who: The Forth Valley Soarers <http://www.forthvalleysoarers.org.uk>

What: Slope Soaring, Thermal Soaring, Racing, PSS

Where: Near Edinburgh

When: Most Saturday & Sunday mornings

The **FORTH VALLEY SOARERS** model gliding club was formed in the 1970's to promote the sport of radio controlled slope soaring and thermal soaring. The club continues flying today at their home site in the Pentlands hills just south of Edinburgh, Scotland, and at sites across the whole of the United Kingdom. Its members also fly throughout Scotland competitively and for fun. We have amazing hillside views, fresh air and great exercise too! Spectators are



welcome. We fly gliders: aerobatic, combat, thermal, scale, and more.

The club have flown for more than 30 years and is a small group of friendly individuals with a wide area of interests. All ages are represented.

Normal club flying times are at Castlelow on Sunday mornings from 10am until mid afternoon.

We are normally located

near the summit of Castlelow or 400m East of the chairlift at the Hillend Dry ski slope. The wind determines which site will be used on the day.

Try it for yourself. Come along and watch or to have a try. You will be most welcome and we will provide equipment and an “unbreakable” glider and someone to help you.

Silent Flight Radio Controlled Soaring or Gliding is a very popular part of the aeromodelling hobby which has been boosted by the reducing costs of radio gear. And it does not require the additional costs of engines etc. This can be a less expensive path into radio control aeromodelling or the introduction to the hobby.

Radio-controlled glider classes in the UK are:

- **Mini-glider** - Wingspan of 60 inches maximum and all up weight of 22 ounces.
- **Two metre** - Wingspan of two metres max and a maximum towline length of 150 m.
- **100S or Standard Class** Wingspan of 100 inches maximum (thermal soaring) and a maximum towline length of 150 m.
- **BARCS Open Class** - The only limitation is a 150 m hand towline with no model limitations.
- **Sixty inch slope** - Maximum wingspan 60 inch Pylon racing.
- **Slope cross country** - Pilot walks a course while controlling his model. There are no model limitations.
- **PSS and Scale** - Must be a close scale representation of a full-size powered aircraft or glider with no model limitations
- **Slope aerobatics** - No model limitations.
- **HLR (Height Limited Rules)** - the aim is to achieve a 10 minute flight time from a maximum launch height of 200 metres with a 30 second motor run. See <http://www.esoaring.net> for full details of this exciting discipline.

A typical sunny day comp at the Linlithgow site after taking part in the International Postal Competition: <http://www.flyinlift.org/ipc-contest.html>





Diary Dates:

Flying In The Glen, Pitlochry: 8th to 10th July

Montrose Spring fly-in: Sunday, May 8th.

Montrose Summer fly-in: Saturday & Sunday, July 30 & 31.

More at <http://www.saaweb.co.uk/events.htm>



Scottish Model Airshow 2016
Strathaven Airfield, Strathaven, ML10 6RW
Saturday 25th & Sunday 26th June
(24th fly-in on the airfield, LMA & SAA Members only)

With the continuing support of Microflight Scotland, the LMA and SAA together are staging their fourth Scottish Show at this fantastic airfield, some of the best pilots from both Associations will be demonstrating and displaying the best large model aircraft from up and down the country, we hope you can be there.

Admission Prices

Adults	£7.00
Senior Citizen	£6.00
Children 5-16	£4.00
Family	£15.00
Under 5's	Free

Model Bring & Buy
Trade & food stalls
Full size aircraft participation
Great day out for all the family!

Find us on
 

On-Site Camping
Camping (for the weekend)
£40.00 in advance
£45.00 on the gate

Email: public-camping@largemodelassociation.com
Telephone 07827 675665

(Proceeds will support Kilbryde Hospice and St. Andrew's Hospice - Gates open 10am till 5pm)
For all other enquiries about this event please contact Dave Johnson 07860 345613 Email: chairman@largemodelassociation.com
All advertised attractions are subject to change. For full terms and conditions see <http://www.largemodelassociation.com/resources/terms-and-conditions>

The **LMA/SAA airshow** will be held again at Strathaven Airfield on the 25/26th June. The Scottish organisation team is only 2 x 70-year old guys and they would dearly like some help, so if you are free on Wednesday

22nd they would love to see you from 10:00 AM onwards to assist with some setting up work, mainly erecting a couple of temporary fences, and putting up the small Tx control tent.

If you can spare a couple of hours over the weekend they would also welcome your help on the entry gate and in the car parks.

If you have any up-to-date medical qualifications, then again, any help you can give on supporting the first aid operation would be very welcome.

If you would like to get more involved in the general organisation and running of the airshow then your help in expanding the 2-man team would be well received.

Lots of hands make very light work.

If you can help in any of the above, please contact Peter McKenna on 01698-422881 to let him know, or e-mail me at air@saaweb.co.uk

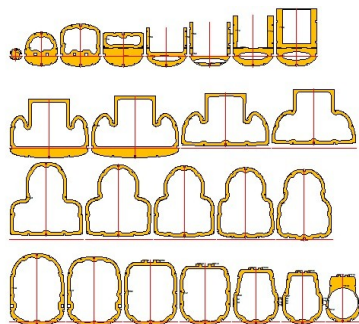
Build your Own by Tom Laird

From this



to

this:



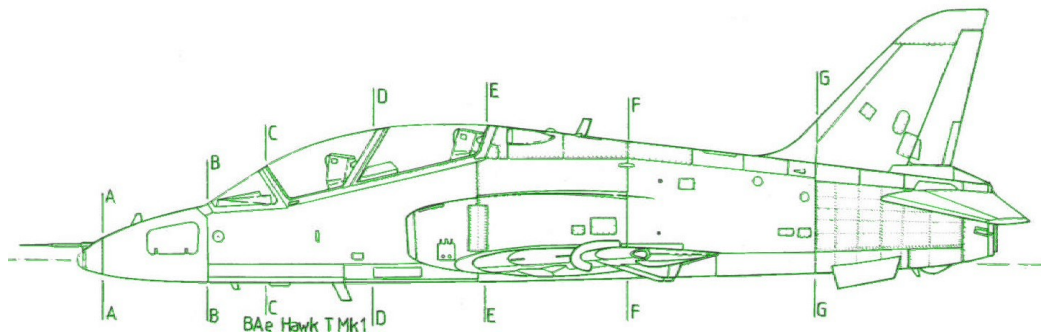
I had been pondering my next model for some time. Not what to build, but what to do with it afterwards. The time and money invested in a new build is too much to get to the end and then wonder if you will fly it enough.

The September RCME had a nice article and plan for the Tony Nijhaus Hawk, built around a 70mm EDF and flown on a 5S size battery; a very affordable combination for people wanting to move into EDF flying. At 40" wingspan however I felt it was a bit small for all the effort and money that would need to go into it, so the standard suggestion was made to scan the plan; put it into AutoCad and blow it up. Not too bad an idea, and Tony's web site says he is happy for this to happen on the proviso that the owner takes full responsibility for the structural integrity etc.

The wheels started turning and I came up with a couple of things to think about. The servos for instance will not scale; the retracts may get bigger but probably not 1.5x, and your 6x6mm stringers will not go to 9mm. So, what to do??

The first step was to take to the local copy shop and get the plan scanned so I could play around with it. Next was to see how to convert it into vectors (jpegs are raster images where the lines are just dots; vectors are real lines where they have attributes such as line width, colour, layer etc). I tried a few on-line converters and all were pretty poor, but I came across WinTopo which is a free installation for personal use. This is pretty impressive and has a single menu option to select and it will rasterise the whole image. There are lots of other menus to play with as well if you are not in too much of a hurry. The end result is a drawing you can read into an AutoCad clone and work with.

AutoCad is a computer drafting tool for mechanical design, but costs (lots of) money, the amount depending on what you want and how many seats you



WinTopo Vectors shown in green against downloaded 3-view.

want. Obviously this was not an option, but I found 2 free clones: NanoCad and Draftsight both free to the home user. To be honest, you only need to know about 10 things to use one of these package—how to draw a straight line, how to draw a circle, how to draw an arc, how to swap a layer, and how to copy & paste. The rest is icing on the cake. In the end I selected NanoCad only because it had more menu options that I'll probably never use. The drawings are interchangeable anyway.

So now we have a vector drawing in NanoCad. What next?

The objective of the exercise to increase the outline by 50% (40" to 60" wingspan) and capture all the fuselage formers and wing formers so they drawing can be sent to a laser cutter.

Around this stage I held a Design Review with a fellow club member and bounced some ideas around. During that meeting we happened upon a decent 3-view of the Hawk so it was downloaded for future use.

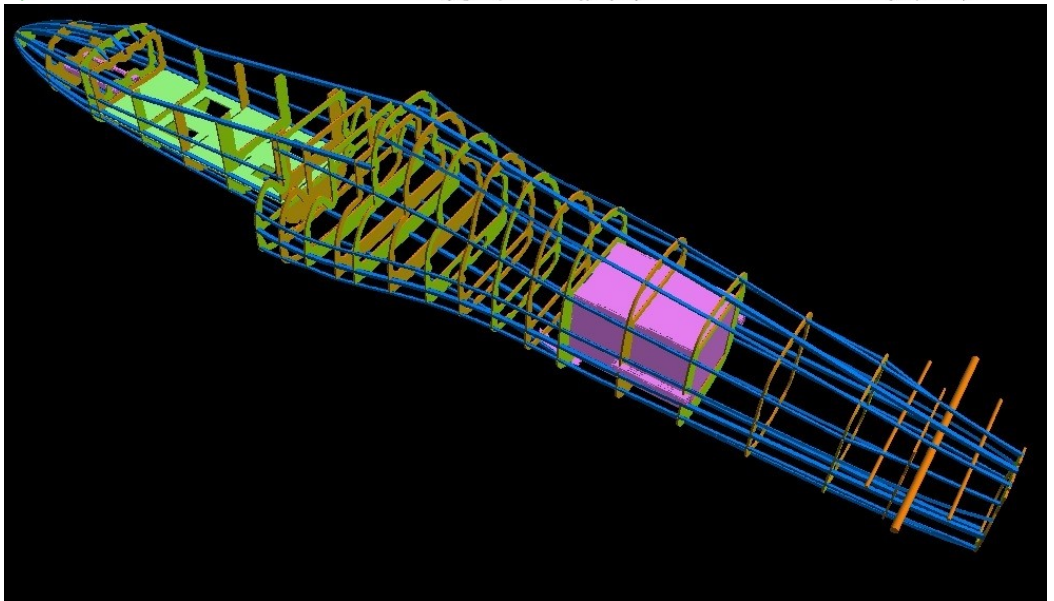
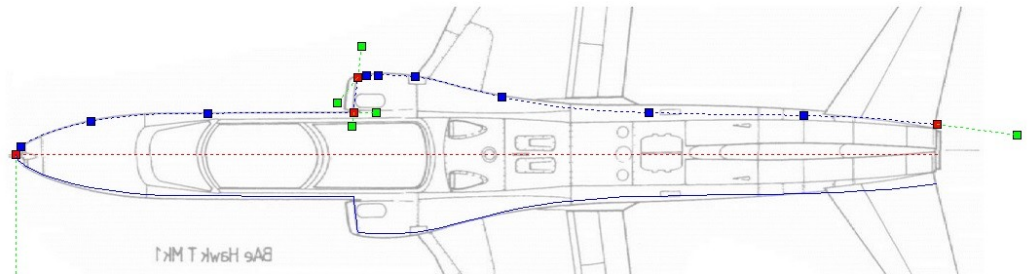
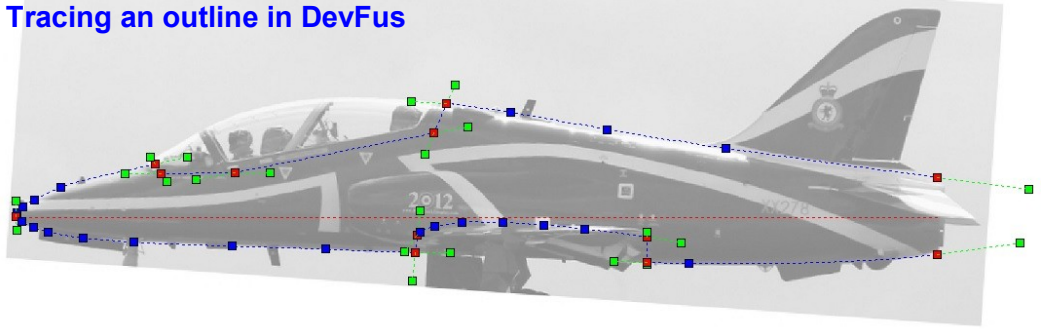
A couple of weeks elapsed while I played around with NanoCad just understanding how it worked, and gradually drawing up the formers, retracts, servos, and getting the EDF in place.

I then came across a build thread for the Glass Slipper, a beautifly curved modern looking slope soarer which used a program called DevFus, so that was promptly downloaded for evaluation. This program is fantastic: you can use the supplied models, or read in your own top view and side view, and after a few clicks of the button it will generate all your formers ready for cutting. It also generates all the bits required for an assembly jig. As you peel the onion, more and more functionality and power in unveiled and the more you get out of it.

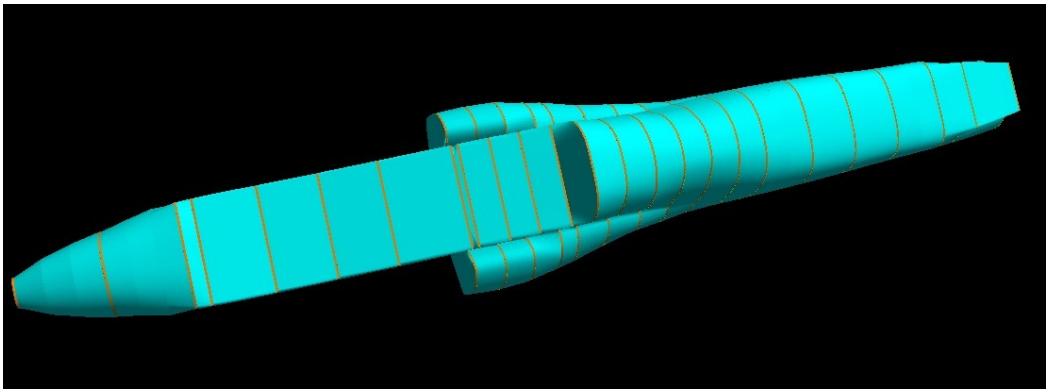
At this stage NanoCad was put on hold and focus moved to DevFus. Since the

output of DevFus is an AutoCad (or clone) drawing it seemed sensible to use the auto-generation features in DevFus and use NanoCad for the final tweaking and tidy-up. DevFus is a free download but you need a licence if you want to print or export to a drafting package.

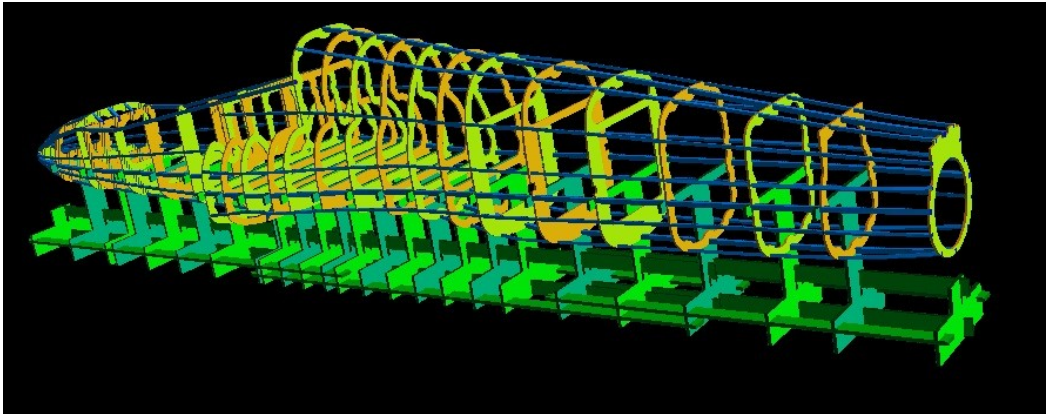
Tracing an outline in DevFus



After a few clicks and following the wizard, all the formers and spars are done for you.



3D outline view in DevFus

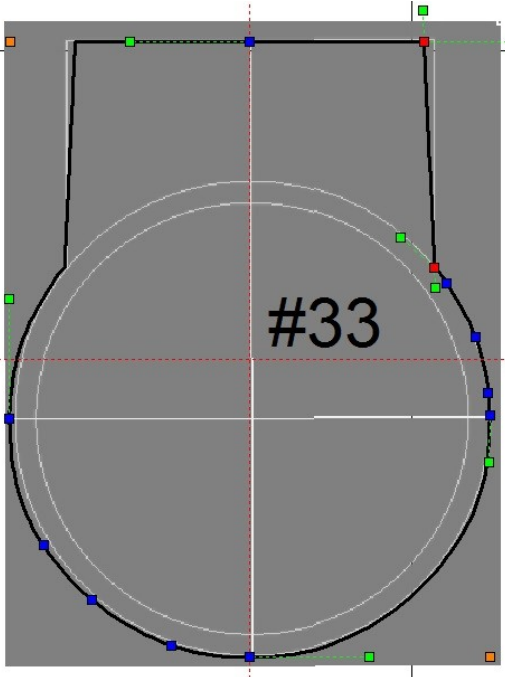


Wireframe and building jig

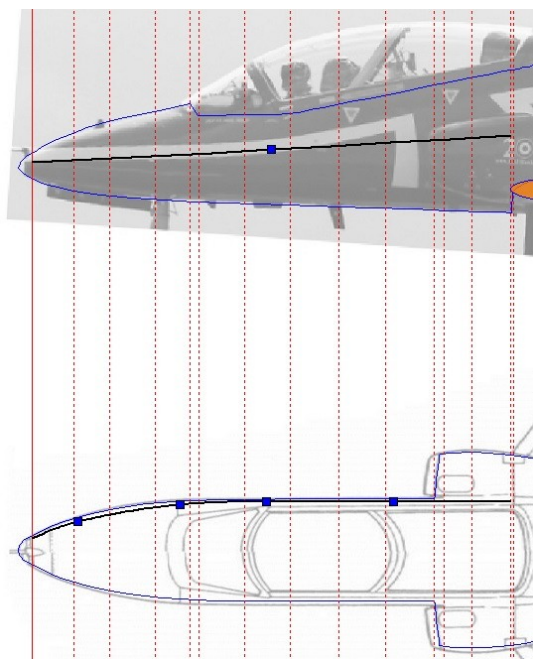
DevFus allows the addition of more formers, complete customisation of each former shape and lightening holes, horizontal and vertical decks can be added, engine and retract bearers can be added, and wing slots can be added. The spars are automatically positioned but all can be customised to how you want them. Finally, the ability to see the proposed end result in a rotateable and scaleable model is a real benefit.

The end result can be sent to a printer and onward to your laser / CNC cutter or can be exported to Autocad or any of the clones for further work before sending for cutting.

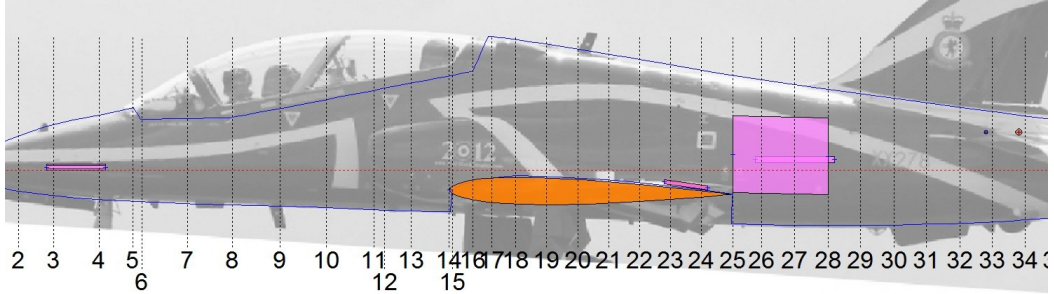
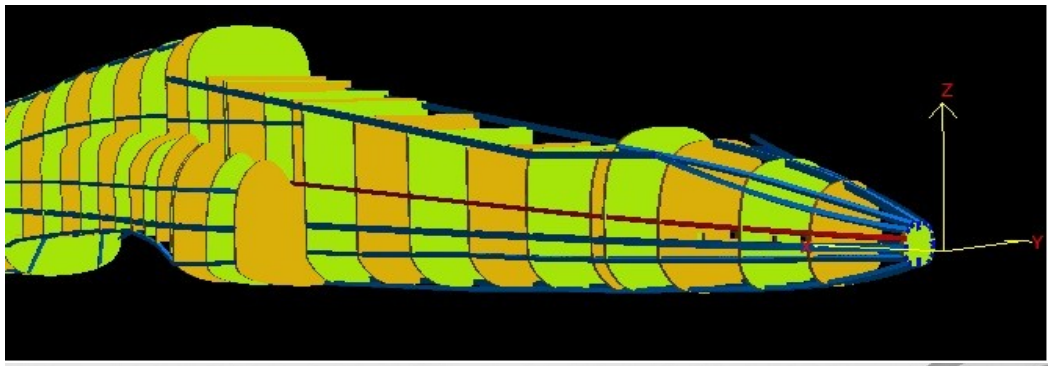
I use Paint, Gimp and Corel Paint, and Corel Paint has a great feature where you can overlay one picture over another, and change the translucency. This way you can compare your 3-view against a real version of the plane.



Using a background picture to get the rear former shape correct.

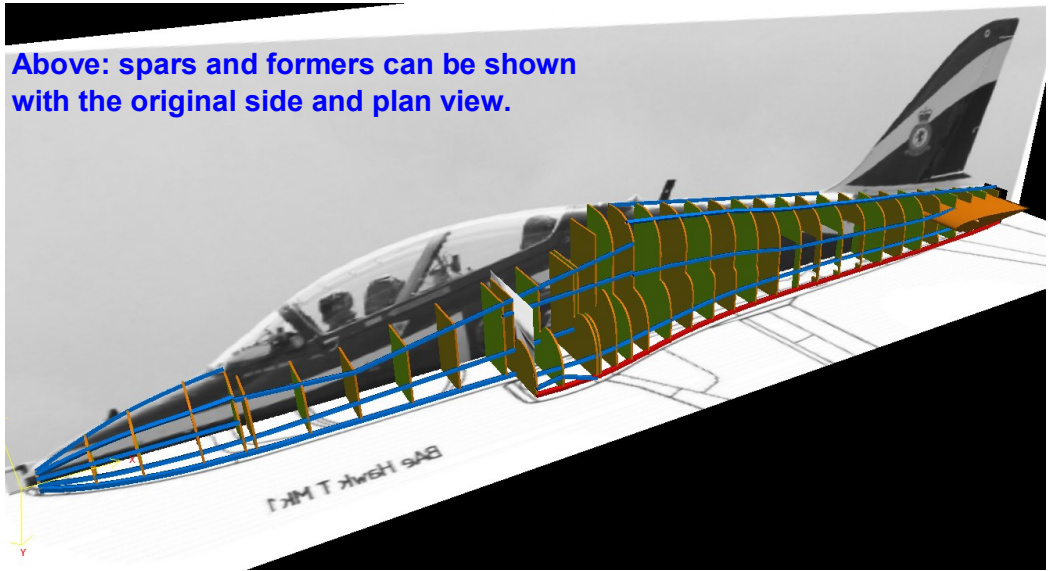


Spars are automatically positioned but you can customise each one.



The wing can either be your own cross section or read in from an airfoil .Dat file.

Above: spars and formers can be shown with the original side and plan view.



For more information on DevFus, DevWing, and all the other programs they do check out the DevCad web site (www.devcad.com) or use the hyperlinks in the table below:

	Wings	Fuselages	Other
Cad -Printing -Exporting	devWing LE devWing	devFus	devCad LE devCad Pro
Cad + Cam -Printing -Exporting -3 axis milling Cnc	devWing Cam	devFus Cam	devCad Cam Pro
Foam -Foam cutting by a 4 axis hot wire CNC	devWing Foam devCnc Foam	devFus Foam devCnc Foam	devFoam devFoam Pro devCnc Foam
Moulds -Creation of plugs and moulds as STL files	devWing Mold	devFus Mold	devStl Tools

Programmable Multi-rotor Flying by Tom Laird & Aldo Vargas

January 9th at West Calder saw Aldo Vargas from Mexico came along to do a competency test with Les Madden. Aldo Vargas is a Mechatronics engineer graduated from UNAM in Mexico City, currently finishing his PhD in Aerospace Engineering at the University of Glasgow, United Kingdom. He is developing



GNC (Guidance, navigation and control) algorithms for Unmanned Systems (Drones). He is giving drones the ability to “see” using very advanced and practical computer vision algorithms with python. He also has extended experience on control systems, embedded systems, artificial intelligence, machine learning, computer vision, robotics, and systems integration. He loves



to design, build and control drones, doing it for work and also in his free time. He also enjoys scuba diving, skydiving and driving motorcycles. If you're interested in knowing more about his work you can visit: <http://altax.net> and <http://aldovargas.com/>

About the competition (UAS Grand Challenge):

The iMechE set out the challenge to universities throughout the United Kingdom to design and build an Unmanned Aerial System (UAS) capable of delivering aid to remote locations autonomously. The simulated aid to be delivered is two bags of flour, each weighing 1kg.

The design solution followed has been to create a multi-rotor UAS capable of vertical take-off and landing. This negates the need for extensive landing strips, improves the accuracy of payload delivery and ease of autonomous control over a traditional fixed wing aircraft.

The structure of the UAS is primarily carbon fibre tubes with 3D printed PLA clamps. The UAS is an X configuration quad rotor with 740mm between rotors diagonally. The system makes use of electric three phase motors, 16 inch propellers and six cell batteries for its propulsion. All electronics and sensors are mounted in the centre of the aircraft, with exception to the electronic speed controller that are mounted under the rotors.

The UAS features two primary on-board computers, the Pixhawk flight control system and a Raspberry Pi single board computer. The flight control system handles stabilisation and navigation the single board computer for computer vision and high level navigation.

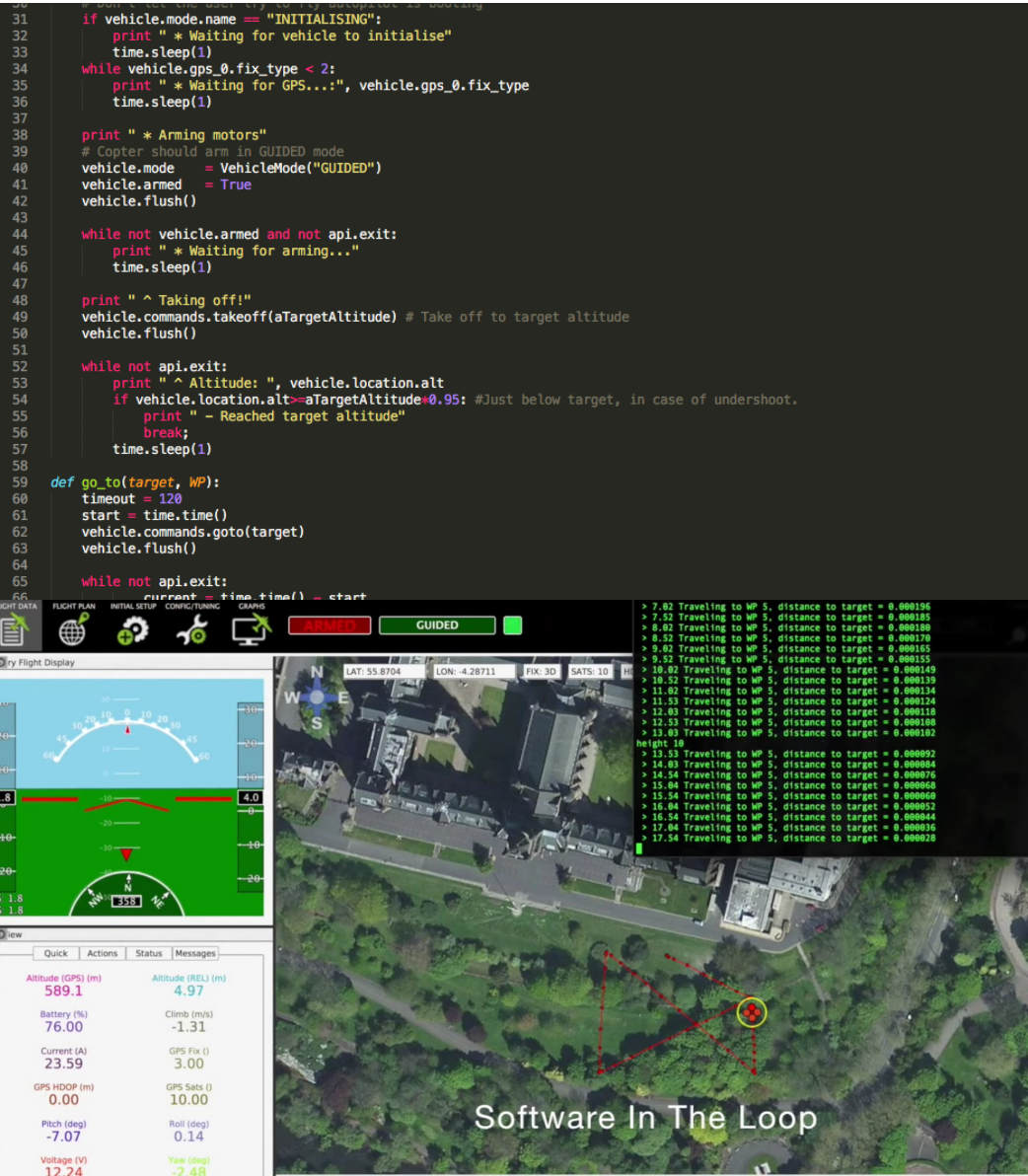
Video of last years competition:

<https://www.youtube.com/watch?v=ng31fPpnzqU>

MAST Lab website: <http://mastlab.co.uk/>

The team was organised in the University of Glasgow, with a suitable management structure put in place. A structured approach to the team design and build was then taken. The team members are organised into a series of sub teams. To ensure a unified approach to the design frequent meeting of all team members were held where collaboration was encouraged.

Below is part of the code that runs on the raspberry pi, onboard the vehicle.

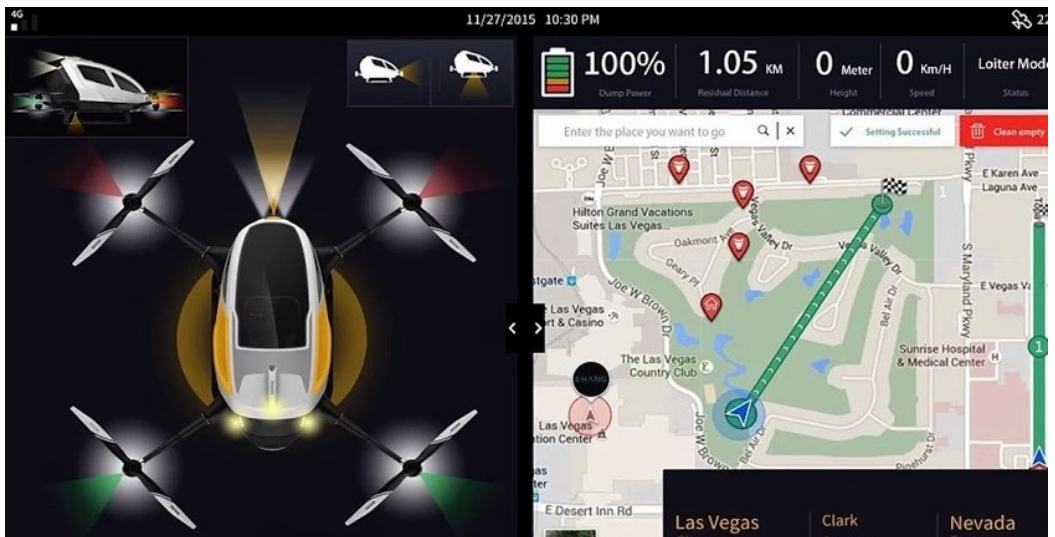


Above is part of the code that to simulate the vehicle, before attempting such a flight

The Ehang 184 <http://www.ehang.com/ehang184/>



EHang, a Chinese unmanned aerial vehicle (UAV) company, unveiled at CES 2016, the EHang 184, the world's first electric, personal Autonomous Aerial Vehicle (AAV) that will achieve humanity's long-standing dream of easy, everyday flight for short-to-medium distances. Developed independently by EHang, the fully ready-to-fly AAV is a manned drone capable of automatically carrying a passenger through the air, simply by entering a destination into its accompanying smartphone app. Due to the 184's fully automated navigation, made possible by EHang's 24/7, real-time flight command center, passengers have no need for a pilot's license – they simply sit back and let the drone take over from there. This first realization of automated flight signifies a major turning point not only for the transportation industry, but also for a huge swath of other fields such as shipping, medical care and retail. Full press release here: <http://www.prnewswire.com/news-releases/ehang-launches-first-ever-autonomous-aerial-vehicle-ehang-184-at-ces-300200418.html> and a video is worth a thousand words: <https://www.youtube.com/watch?v=vGd1Oy7Cw0>



HEROS to ZEROS. By Gordon Price

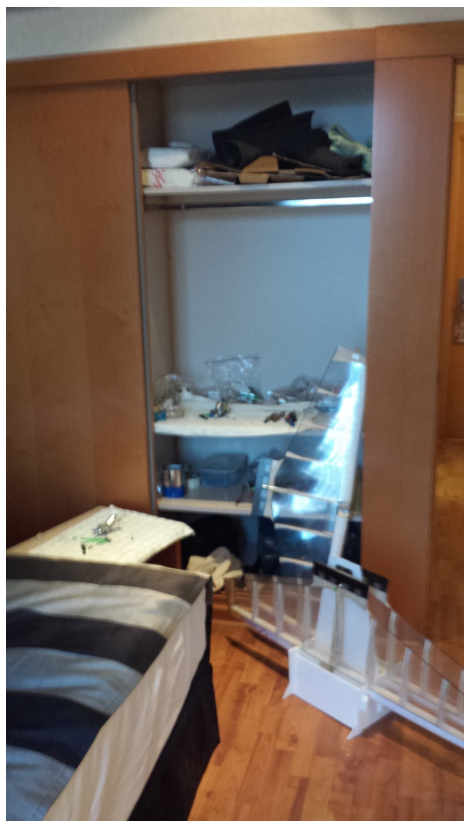
2015 started well for the Scottish F2D Combat team. Andrew Shields won the first competition (I was not so good being a little distracted with the issues of selection for the FAI World Air Games due to be held in Dubai in Dec 2015), and after a couple of delayed comps due to awful weather a group of UK pilots went to the Barcelona world cup competition. This is held at the RACABASCA control line club site which is just up from the Olympic stadium at Monjuic in Barcelona.

The competition went well for Andrew and myself, and on Sunday of the 2 day competition Andrew and I ended up in the top 3, both of us with two lives left after 6 straight wins each, and with Mario Riocha who had only one life. That meant that Andrew and I were in the top 3 – a strange but very enjoyable feeling. Andrew duly beat Mario leaving the two of us with two lives each to fight it out for the top spot. Andrew duly beat me twice and ended up first with me second.

After that high point we returned to the UK and promptly went from heros to zeros, both losing twice the next weekend at one of the team selection events. This continued with results not being too good, and my hopes of doing well in the European champs in Bulgaria were dashed with a single win being the result. I had started to get some bout wins but Andrew went on a horrible run. For me was really a little to late in our efforts to get on the British team for the 2016 world champs to be held in Perth Australia.

Eventually at the last competition I overtook Andrew to get to fourth (reserve) spot and eventually got on the team when one of the top 3 dropped out, the team now being

Hotel room converted to a workshop. Flying abroad to a competition is a major logistics challenge where all the stuff has to be stripped and packed to get safely on the plane and to the hotel. Then it is all built up again ready for testing and the competition.



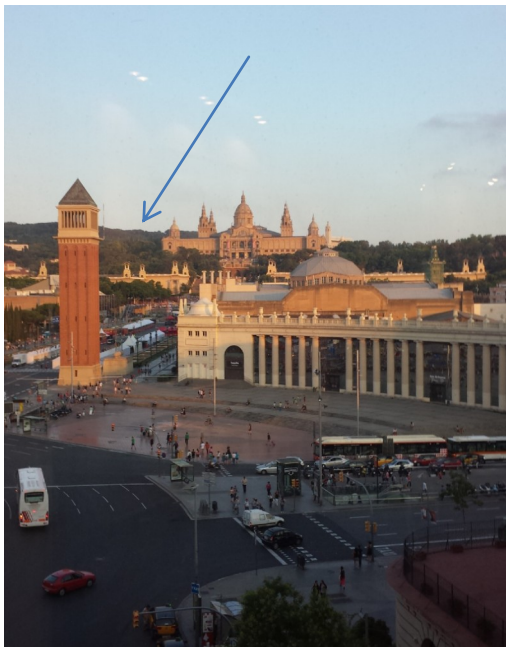


Close up of the workbench (hotel wardrobe shelf) showing the engines in bags about to be assembled into models. Typically 12 models are taken and 6 engines, meaning a bit of assembly / disassembly is needed. I take the financial controller, Mrs P, to help get the baggage allowance up. This makes it an expensive trip but Barcelona is apparently and acceptable place to go which is a good thing.

Dave Wiseman, Mike Whillance and myself. Getting on the team is a bit of a double edged sword as it's the most expensive trip yet, both in terms of flights and accommodation and the 2 weeks holiday needed to get there and get over the jet lag.

The final results board (the final win (w) for Andrew and loss (L) for me are not so visible). It was a very surreal feeling walking out to the final matches to fly Andrew having spent countless hours practicing against him in mud at Strathclyde park. In the end I was unlucky in one match and simply beaten in the other so Andrew went through the whole competition unbeaten with 9 straight wins.

The end result – a lot of damaged models and a large repair task on our return. There is a strange effect in combat where a good run results in more damage and hence more work to do. If you lose twice there is a lot less. The competition took its toll on the two of us and we were not very good for a some time afterwards.



The view from the Hotel window of the Place De Espagna, with Monjuic in the background. The Arrow shows the flying site within 20 min walking distance. You can see the models practicing from the Hotel swimming pool on the roof as they pop up over the trees and glint in the sun.

The final results board showing the final win (w) for Andrew and loss (L) for Gordon, and (bottom) the repair task upon returning home.

[27th/28th June 2015]

XXXIX COPA DE LA MERCÉ WORLD CUP F2D- 2015 DRAW AND RESULTS

DOR	COMPETITOR	COUNT	Heat 1	Heat 2	Heat 3	Heat 4	Heat 5	Heat 6	Heat 7	Heat 8	Heat 9	Heat 10
1.	① GORDON PRICE	GBR	W ₄₄	W ₁₉	W ₂₅	W	W	W		L	L	
2.	② ANDREW SHIELDS	GBR	W ₂₉	W ₄₄	W ₄₉	W	W	W	W	W	W	
3.	③ JAMES PINKERTON	GBR	L ₃₀	L ₃								
4.	④ GRAHAM IVES	GBR	L ₁₅	W ₅₄	L ₃₉							
5.	⑤ MIKE WILLANCE	GBR	W ₄₃	L ₂₆	W ₁₄	L						
6.	⑥ HARRY WALKER	GBR	L ₄₁	L ₁₅								
7.	⑦ ETTORE NANCINI	ITA	L ₃₅	L ₂₃								
8.	⑧ RAUL MATEO	ESP	W ₂₄	L ₁	W ₄₄	L						
9.	⑨ ANTONIO CAMATORE	ITA	L ₁	L ₃₉								



The 2015 World Air Games in Dubai. By Gordon Price

The World Air Games (WAG) is an FAI event held every 4-8 years equivalent to the Olympics of air sports. The last one was in December 2015 in Dubai, UAE, which I went to and this is a brief report as one of the Aero-modelling participants.

Air Sports Discipline



F3N – RC Helicopters Freestyle

Dec 09 – 12



F3T – Semi Scale Pylon Racing Model Aircraft With Controlled Technology

Dec 06 – 08



F2D – Control Line Combat Model Aircraft

Dec 06 – 08



F3P - Indoor R/C Aerobatic Power Model Aircraft flying to music

Nov 30 – Dec 01

Rumours of the Dubai WAG started in 2014 as one of the events selected was F2D combat. I was top in the BMFA team points that year and hoped to go as one of 16 pilots, however in the end 2014 national champions from the 16 countries with the best records in world and Euro champs were chosen. So Mike Whillance got the UK place but the Russians and Mike declined so the places went down the list. The other modelling events that would take part were F3P indoor aerobatics to music, F3T semi scale pylon racing and F3N RC helicopter freestyle, evidently chosen for their noise and excitement.

In early 2015 my two daughters Eilidh and Aislinn got invited to go as scorers for the F2d event, with flights, hotels and meals all included. This was reward for travelling around the world at their own (mine!) travel costs to various events to score, staying in dodgy accommodation. Now very unimpressed (Big Sulk – I wanted to go first!) I arranged to mechanic for Andre Berthelson, the Danish pilot. That got my accommodation and food paid as a competitor, with

only the flight to fund, and the same for my wife who was getting put up as a guest of the girls at a very reasonable fee.

Move on to a week before we were due to fly, and the hotel situation and flights for the girls were not resolved, and Mrs P said “ **This has got to be the maddest adventure ever – what was I thinking!!?**”. At the last minute emirates tickets arrived, and the accommodation was clarified and on Tuesday 1st December we got on the 20:45 Emirates 777 to Dubai.

After a couple of days of getting our bearings, registering and so on, I was in a hotel with the Danish team and the rest of the Prices were in a very posh hotel for officials. Mrs P paid a fee for her food, and was now quite pleased with herself in an adjoining room with the girls. The hotels and food were included for competitors and officials, and the site itself at Skydive Dubai had a huge marquee for a daily slap up buffet lunch with the parachutists, microlights and other competitors.

After a stunning opening ceremony, a gala dinner for 2000 people, the daily early morning balloon flights, the evening airshow with wing walkers and UAE jet display team it was time to get down to the competitions. I missed the indoor F3P aerobatics to music that was used as a warm up event in an Ice rink, and missed the F3N 3D helicopters, which was on (after we left) at the same Skydive Dubai dropzone as the combat and pylon.



The combat took place over 3 days in set time slots, interspaced with parachuting, helicopter slaloms and the F3T pylon racing. The pilots were briefed to be very careful, and a small safety net separated us from the crowds and the lunch marquee. The background of the Dubai skyscrapers made a surreal flying site. We managed to complete the competition without major upset, and Alex Prokofiev

What a backdrop!!

from Latvia won the gold medal. After the Swedish, Danish and Mexican pilots were out I was asked to help with commentary as the combat was a bit confusing.

This was very stressful being live on Dubai TV while trying to describe the action in simple terms, without offending my flying mates. I now have some respect for commentators who can talk coherently about something they don't understand, while sounding like they know what is going on. Apparently I made a reasonable job of it and could be heard on the live web feed back in the UK.

Interspersed with the combat was the pylon racing which was the semiscale F3T variety, very popular in the USA. This was great fun and very destructive, which appealed to the combat mechanics and scorers who were co-opted to be pylon judges. The models have a fixed spec Nelson40 or similar on a minipipe and do the 10 lap course in about 64 seconds. At 250+kmh they explode into little bits when they hit the ground or each other, and each 4 up heat is a true race with the placings not times counting. After the 16 pilots did 10 rounds (40 heats) there were semis and a final. Bruce De Chastel from Australia won, and I met his wife who had been sent out to wander the field looking for a lost servo after a midair - ouch. We got home fine, exhausted and rather fatter, after what was indeed the maddest adventure ever.

See www.wagdubai.ae/index.php for the official web site and check out the Editor's Flickr page here: <https://www.flickr.com/photos/138883192@N02/albums> for more hi-res pictures.

Eilidh and Aislinn in action.

Gordon commentating on live TV.



Triple Crown - Scotland

by Gerhard Fehringer, previously published on the [GBRCAA web site](http://www.gbrcaa.co.uk).



This is the annual F3a competition between Scotland, England, Ireland and an international team made up from pilots from each of the 3 countries. 2015 was Scotland's turn to host it, with the location being the Dumfries Model Flying Club, with competition support from the SAA.

Organisers: Malcolm Harris and Steve Burgess.

Hosts: Scottish Aeromodellers Association and Dumfries Model Flying Club.

Judges: Dave Foley (Ireland). Eugene Anker (England). Bill Allison (Scotland) Ross Donovan (Scotland).

Score recorder: Angela Harris

Social and Hospitality organisation by: Gillian and Steve Burgess

Pilots Scotland: Steve Burgess, Gary Eunson, Malcolm Harris, Bill White

Pilots Ireland: Niall O' Sullivan, Mikey Blake, Brian Carolan, James Murphy

Pilots England: Garry Peacock, Gerhard Fehringer, Arthur Silsby, Brian Hoare

Pilots International: Paul Houlihan, Colin Elgey, Wolfgang Schiebel, Colin Lee

The Saturday start was put back to 12.00 noon due to heavy rain forecast for the morning. Flying commenced at around 1.00pm with a strong near to 90 degrees crosswind blowing out. Over the course of the afternoon however, the

wind eased off somewhat, with one and a half rounds being flown on the Saturday.

Malcolm and Steve had organised a get-together for Saturday evening at the Amisfield Village Hall, with welcome drinks, hog roast and desserts. Ceilidh dancing with live music and entertainment were thoroughly enjoyed by

Photographs: Gerhard and Brian



TRIPLE CROWN 2015 DUMFRIES, SCOTLAND												
TEAM	COMPETITOR	ROUND 1 SCORE	ROUND 1 TEAM SCORE	ROUND 2 SCORE	ROUND 2 TEAM SCORE	ROUND 3 SCORE	ROUND 3 TEAM SCORE	ROUND 4 SCORE	ROUND 4 TEAM SCORE	ROUND 5 SCORE	ROUND 5 TEAM SCORE	FINAL STANDINGS SCORE PLACE
ENGLAND	GERHARD FERNINGER	382		403		352						1732.6 8
	BRIAN HOARE	378.5		350.5		384						1478.7 11
	GARRY PEACOCK	424.4		417		421.5						1867.9 4.5
	ARTHUR SILBY	329.5	246.3	336.5	2504.9	331	2596.5					1287.9 13 5747.9 3
INTERNATIONAL	COLIN ELGEY	286.5		273.5		2.62						1484.1 13
	PAUL HOULIHAN	365		396		402						1704.7 16
	WOLFGANG SCHEBEL	299.5		314		240.5						1703.9 7
	COLIN LEE	235.5	2097.9	260.5	2103.8	287	2077.4					1357.9 14
IRELAND	MIKEY BLAKE	411		401.5		450						1734.7 15
	BRIAN CAROLAN	391		363.5		376.5						1854.8 4
	JAMES MURPHY	447.5		450	4630.6	450.5						1686.5 10
	NEAL O'SULLIVAN	431.5	2836.2	418	2728.4	441.5	294.7					1444.1 2
SCOTLAND	STEVE BURGESS	455		461.5		453.5						1411.3 3
	GARY EUNION	419.5		431.5		400.5						2000 1
	MALCOLM HARRIS	383		352		392						1845 6
	BILL WHITE	280.5	2763.7	384	2476	408	2774.5					1607 9
												1644.3 12

Umbrellas donated by Bill @ Dumfries Model Flying



everyone.

Sunday brought lighter winds still blowing out close to 90 degrees, and the weather generally improved throughout the day so that three rounds could be completed in total.

Results: 1st Place Team Ireland, 2nd Place Team Scotland, 3rd Place Team England, 4th Place Team International.

More hi-res pictures on the Editor's Flickr page here: <https://www.flickr.com/photos/138883192@N02/albums> and on the GBRCAA's web site here: <http://www.gbrcaa.org/Photo/v/2015/13+08+2015/>

Around the Web

New SAA Editor's YouTube channel. You can either send me your video relating to an article and I'll upload it here, or I can link to your own channel.

<https://www.youtube.com/channel/UCHqN961BxWZ0QpD0qawZ4DA>

[Scottish Heli Nationals](#), 4/5th June [FAI F3C – 'P'](#), [FAI F3N](#), [Sportsman](#), [Scale](#)

The Scottish Fpv Racing Association www.sfpvra.org

FPV Scotland: <http://www.fpvscotland.co.uk>

Flightradar24 is a live map showing all the civil airline flights. Also useful for tracking your inbound flight as it arrives at the airport.

<http://www.airportwebcam.net/webcam-europe/united-kingdom/united-kingdom-ATC.html>

Sun Valley Fliers in Arizona. Here is a link to their monthly magazine:

<http://sunvalleyfliers.com/slow-roll/>

LMA: <https://www.largemodelassociation.com>



Monoblock Runway anyone? The beauty of this is that if you lose your site you can take the runway with you. (click-pic for video).

[Vintage Wings of Canada:](#) A great site full of historic articles on men and planes including Harry Hannah from 602 squadron, Glasgow who has a Stearman named after him.

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