

# AOPA UK

## V is for Versatile

**Adrian Daley** extols the virtues of the Bonanza and explains why its 'doctor killer' reputation is very unfair



### CAA EXCLUSIVE!

Sophie-Louise O'Sullivan, the head of the CAA GA & RPAS Unit answers your questions

### HOW IS YOUR AME?

Should your AME also be your personal doctor? Dr Ian Perry thinks so!

### WELSH WEEKEND

Charlotte Bailey takes a flying visit to Llanbedr via the 'Mach Loop'

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# REASONS TO BE CHEERFUL

**H**AVING BEEN temporarily homeless since Christmas, AOPA UK has now completed on its new headquarters and we will soon be moving into Lakeside Pavillion in Kensing, near Sevenoaks. Now the real work begins as we start the task of designing the interior to reflect AOPA's working requirements. The building has been through a number of occupiers since it was built and the internal layout has been modified to suit their needs over time. We need to make further alterations but AOPA is very fortunate to have Mick Elborn on its board, who in his past career was involved with building services and facilities management for Royal Mail. Suffice to say, he knows a lot about buildings and the legislation around workspaces, and he'll be leading the refurbishment project.

I had occasion to go to my local flying club recently to meet with AOPA colleagues and it was almost like the old days. Being a lovely day, there was a lot of flying happening including plenty of flight training. However, what was really special was seeing my flying friends again after so long. I now feel inspired to apply for the lapsed medical and get back to flying whilst the good weather lasts.

On Friday August 6, AOPA will be attending the first major UK GA event since 2019. The Private Flyer Aviation Show is taking place at Leeds East Airport (formerly RAF Church Fenton) so please save the date and book a slot. It's great to have AOPA back on the road and present to meet our members in person; furthermore, we will also be at the sister event at Wycombe Air Park on September 17–18. See this month's news pages for more information and details of how to book your discounted tickets to both events. I encourage you to come along to meet the team and find out what we're doing to support getting GA back to flying.

Finally, AOPA is also supporting the Young Aviators Day at Sywell Aerodrome in Northamptonshire on Saturday September 11: we are encouraging members to attend and, if possible, fly some of the young people in attendance, many of whom are members of the Scout movement. The event is dependent on the generosity and goodwill of the pilots who give their time, aircraft and fuel for free, so if you can help out please visit: [theplaneguy.com/ya2021](http://theplaneguy.com/ya2021)

Finally, I am happy to announce that the 55th Annual General Meeting of the British Light Aviation Centre Ltd, trading as the Aircraft Owners and Pilots Association of the UK, will be held on Thursday September 16, 2021 at 2.00 pm. The formal announcement and agenda of the AGM will be placed on [aopa.co.uk](http://aopa.co.uk) along with the full agenda.

Subject to any Covid-19 restrictions, the meeting will be held at West London Aero Club at White Waltham Airfield, Maidenhead, SL6 3NJ. Members are invited for a cold buffet lunch from 1.00pm and following the formal business of the meeting, there will be time for informal reports from the Chairman and CEO and for general discussion. It is expected that the meeting will finish by 3.30 pm. For planning purposes members who intend to participate are requested to please let the AOPA office know in advance, either by telephone (020 7834 5631), email ([info@aopa.co.uk](mailto:info@aopa.co.uk)), or by post to 1 Jason Close, Orsett, Grays, RM16 3DY.



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Material for consideration for the October issue should be received no later than September 2021.

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## EDITOR'S COMMENT

AS I SIT in my office baking in a 'heatwave' which the BBC keeps insisting is "hotter than Tenerife" (but will doubtless be over by the time you read these words), my thoughts can't help but turn to foreign climes.

At this time of the year I am normally preparing myself for my yearly 'pilgrimage' to the Aviation Mecca that is EAA AirVenture Oshkosh. Like so many aviators, the trip to Oshkosh is an annual highlight. It provides the opportunity to see the latest developments in the aviation world first-hand, to meet the people behind them and (often) to try them out for yourself.

The Covid-19 pandemic saw the event being cancelled in 2020 for the first time in its more than 50-year history. However, the team was adamant it would go ahead in 2021 to provide the GA industry with a shop window to promote and sell its latest wares to visitors from around the globe.

Jack Pelton and his team have made every effort to make the event "Covid Secure" and with an airline industry that is also trying to find its metaphorical feet again after the lockdown, I was determined to be there to show my support.

However, it appears that US immigration has other ideas. The British, it seems, are still considered an infection risk and a Presidential proclamation still bans visitors from the UK. As a card-carrying journalist I am required to hold a US visa when working in North America, and my American colleagues felt this would make my visit possible. However, the latest development has seen me having to apply for what the US embassy refers to as a 'National Interest Exception'.

However, as these words are written I am due to fly in less than 48 hours, but as yet have not received the go-ahead to travel. So you may or may not see a report from Oshkosh in the next edition of the magazine ...

However, it's not all doom and gloom as the UK looks set to return to showcasing our own GA industry at events at Leeds East and Wycombe Air Park in August and September respectively. You'll find more details in the news pages of this issue but I can't help but wonder how many visitors we will see from US-based exhibitors, considering that the UK 'only' requires ten days of quarantine on arrival and two negative tests.

I hope you enjoy this issue of AOPA UK magazine: it has been great fun to pull together, with trips to airfields in Staffordshire and North Wales. I am lucky to work with a phenomenally skilled team of editorial and design staff and hopefully that mix shows through in the following pages.

Finally, we say a sad goodbye to John Pett this month. After almost 20 years on the AOPA board he is stepping down and retiring at the AGM in September. John has been instrumental in administering the popular FI and CRI courses and I'm sure all those who have attended one will wish John a happy retirement.

Until next time, Blue Skies.

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# IT'S JUST LIKE GIVING (AND TAKING) LOLLIPOPS

**T**HERE'S AN old saying that when a politician isn't giving lollipops to children, they're taking them back. The recent publication of the DfT's GA Roadmap (GARM) sets out several goals and objectives, which we at AOPA support and intend to assist in the delivery of, keeping in mind the government's ambition to 'make the UK the best place in the world for GA'. Although there is no time frame in which this is to be achieved, it is however a peg on which to hang our coat.

Aligned to the GARM, the CAA has instigated various projects, including a review of the responses to the consultations it held earlier in the year and the long-awaited airspace modernisation strategy. There will be a consultation on airspace later this year, with publication set for early 2022.

NATS has restarted work on plans under its Future Airspace Strategy (FAS) and, at the same time, the remotely piloted air systems (RPAS) community is seeking access to lower airspace in support of its developing operations. Meanwhile, the UK continues to build its space programme and has established a few launch sites. All of these factors are likely to impact on airspace usage.

The government also has an agenda to make transport more environmentally sustainable and this will become an important part of the decision-making process, as will meeting demand for capacity. The challenge will therefore be to ensure that there is sufficient controlled airspace to facilitate safe and efficient commercial air transport operations, whilst organising lower airspace to meet the planned future growth of drone operations. Ultimately, the CAA must create a strategy that meets the needs of all airspace users, including working towards reducing the number of airspace classes (a CAA commitment to GA).

## AIRSPACE TECHNOLOGY

New technology and changes to air traffic management systems will be key features affecting how airspace is modernised and used in the future. The CAA is committed to removing temporary danger areas (TDAs), which are currently supporting R&D projects, as these are not seen as a long-term solution. However, the CAA agrees with me that, depending on government and/or industry pressure to accommodate early Beyond Visual Line of Sight (BVLOS) drone operations, then segregated airspace may be the only available solution.

Any strategy is likely to include several trade-offs and AOPA is seeking improved access for GA to all airspace, as well as improving safety. The number of airprox events is already increasing and the number of airspace infringements has remained largely unchanged, despite various efforts to reduce them.

## GALILEO

The decision to leave the European satellite navigation system (Galileo) and the European geostationary navigation overlay system (EGNOS) was, in my opinion, purely political.

While the EU requires European states to take part in both EGNOS and Galileo, it has made it clear that third-party countries can also participate in the European satellite system.

The British government has stated that it was not willing to sign up to this agreement as it did not support the EU's expansion of the system eastwards and felt that this programme did not offer value to the UK taxpayer.

However, when you look at the ambitions of the UK space agency to build its own satellite system, you begin to understand why the UK was not supportive of Galileo and EGNOS. I have heard that Inmarsat has been in discussion with the government about

launching a UK-based system by as early as 2025 to 2027.

What is surprising, is the apparent lack of discussion over the ditching of EGNOS and that no transition plan was considered. Furthermore, I can find no reference to any discussion regarding the importance of the satellite navigation infrastructure and its role in providing safety to UK aviation.

Back in the 1990s we were told that, without an assurance on the quality of the GPS signal, satellite navigation could not be used as a primary means of navigation. Now, the government and the CAA are seemingly saying "no problem, use it", even though neither NATS nor the CAA has any control over the quality of the signal. It is not surprising then, that the government is telling pilots that if they use the signal, they do so at their own risk. If it is the case that Signal in Space (SIS) technology is safe to use without being augmented, then why is the government talking with Inmarsat?

## LPV AND LNAV

AOPA has been pushing for the development of Global Navigation Satellite System (GNSS) approaches for GA since Sir Roy McNulty was chair at the CAA – and he left in 2009! The withdrawal from EGNOS means that no airport can put in place an LPV (Localiser Performance with Vertical Guidance) approach, as it falls within the definition of 'safety of life', for which an agreement must therefore be in place with the EGNOS service provider.

This leaves the possibility of implementing LNAV, LNAV+V or LNAV/VNAV lateral navigation procedures. The most likely of these to be used by aerodromes is LNAV as it is a non-precision approach with higher minima, but would work for the majority of GA. However, before any airport would decide to go down this road it would need to have a business case. The government has offered 50%

*“The decision to leave the European satellite navigation system (Galileo) and the European geostationary navigation overlay system (EGNOS) was, in my opinion, purely political”*



**eVTOL is coming. Joby Aviation has been developing its tilt-rotor air taxi for more than 10 years but has just acquired over half a billion dollars in investment from Toyota.**

funding in support of implementing such procedures, but it is quite evident from the lack of uptake that many aerodromes do not feel they can produce a business case, particularly post Covid-19.

#### **ELECTRONIC CONSPICUITY**

As the developers of unmanned aerial systems seek extended BVLOS operations, several TDAs are being processed to trial the technology and allow companies to demonstrate that their systems are safe. Ultimately, these TDAs will be removed but for now, the only sure way of remaining safe is by segregating the airspace; therefore, checking NOTAMs and AIS before you fly will take on even greater importance.

I understand that government funding supporting RPAS development is more than £1.5 billion. Needless to say, GA receives nothing close to that level of government funding.

While there have been around 3,800 uptakes for the CAA's electronic conspicuity (EC) device rebate (and I wish to make it clear that I support EC), I am unsure whether these units are the right thing when it comes to manned versus unmanned aviation conflicts. One application for temporary restricted airspace made the point about equipping the drone with ADS-B In and Out as well as EC; however, the RPAS company could not answer my question about how it would take avoiding action.

There is a much wider debate to be had here but it does not seem to fall

within the remit of the CAA, and with funding for EC amounting to around £2 million you can draw your own conclusions about the different funding for RPAS and GA.

#### **BILATERAL DISCUSSIONS**

Other news: the DfT seems quite happy about several ongoing bilateral discussions, particularly regarding progress being made with China and Taiwan. However, there does appear to be a bit of a roadblock with the USA – particularly around Supplementary Type Certificates – although we will learn more in due course.

I feel there is also an issue with the transition from the EASA/US bilateral agreement: the UK may want more from a bilateral aviation safety agreement (BASA) whereas the USA may want to treat the UK in the same way as EASA. None of this is likely to happen quickly because as with any BASA, each side must audit the other side's system before any agreement can be reached.

With respect to mutual recognition of licences between the EU and UK, there is no expectation that discussions will begin any time soon, if at all! ■



*M Robinson*

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# ELECTROMAGNETIC FIELDS: MORE OFCOM RED TAPE?

Ofcom has stepped back from what at first appeared to be quite onerous requirements, thanks to assistance from AOPA

**A FEW months ago, Ofcom sent out a letter advising licence owners of a new requirement to assess the risk that electromagnetic fields (EMF) from radio transmitters could do harm to people.**

After receiving feedback and assistance from AOPA, Ofcom is now better informed. As such, it has stepped back from what at first appeared to be onerous requirements for licence holders, aircraft and airfield operators.

The radio waves of concern are those normally used to cook food in a microwave, but of course in an aviation environment the frequencies and powers are much lower. The guidance material for aircraft users can be found on the Ofcom website (search 'Ofcom EMF licence - What you need to know as an aeronautical radio user') but here's a summary:

**Handheld Radios:** If you have any of the popular handheld aviation transceivers, even if fitted to your aircraft with an external antenna, then you have no need to comply or take any further action.

**Portable EC Devices:** Portable electronic conspicuity devices normally use a low-power unlicensed frequency at a power level that is of no concern. SkyEcho has guidance in the manual.

**Radio:** If you use fixed equipment with an external antenna this typically has a radiated power of 25 watts. Working with the CAA and Ofcom it has been estimated that these are used to transmit for less than 25% of any given six minute period of time. As

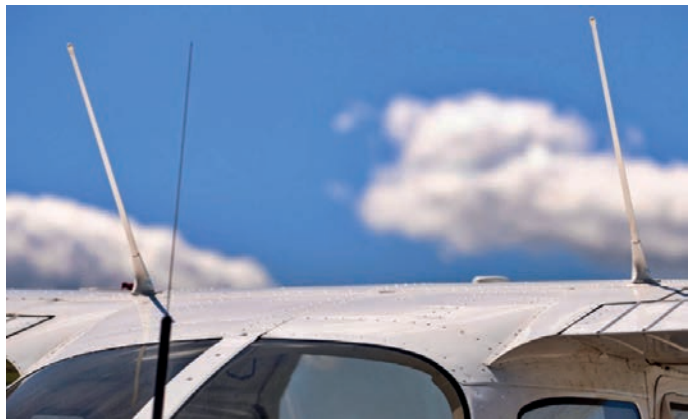
such aircraft operators and licence holders need take no further action to comply.

**Distance Measuring Equipment:** It has been determined that as a DME only transmit a short pulse burst it is also of no risk and therefore you do not need to comply or take further action.

**Transponders:** A secondary surveillance radar transponder in a GA aircraft typically has a nominal power of 260 watts whereas a Class 2 transponder will be much less. At first glance this could be an issue; however most antennae are mounted on the metal skin on the underside of the airframe, which acts as a ground plane. In the case of composite or wooden airframes the ground plane is usually a metal disk or copper strips with the transponder antenna mounted in the centre. In all of these cases you need take no further action. However, if your transponder antenna is not one of the standard items or is mounted inside the aircraft and within 26 cm of a passenger then you may need to do a compliance check.

A few GA aircraft are fitted with weather detection systems and these normally transmit forward of the passenger compartment. They also tend to have procedures in place for them to be selected as part of the pre-take-off check list and after-landing checks. If you have any of these systems please contact AOPA, as further research may be required.

Airfields with radio equipment that is nominally less than 26 watts can be treated in the



If you use fixed radio equipment with an external antenna this typically has a radiated power of 25 watts.

same manner as aircraft radio installation, especially if the antenna is mounted over four metres above the ground on a mast or building with no easy access for the public. At a very busy airfield, if you believe that the average transmission time is greater than two minutes in any six minute period (or the antenna is close to an area where members of the public have access) then the calculations show that you may need to look at your antenna position and/or public access.

Ofcom has decided to go ahead with the requirements but now understands that the vast majority of GA aircraft do not need to comply. It has also updated its online calculator to include factors such as operating cycle time, which were originally missing and yet are highly pertinent to GA aircraft because they do not transmit continuously for six minutes at a time!

This is a good win for GA and a good result for the efforts by the CAA and AOPA. ■

*“This is a good win for GA and a good result for the efforts by the CAA and AOPA.”*

WORDS Dr Ian Perry IMAGES Crown Copyright

# MEDICAL MATTERS: HOW IS YOUR AME?

The Aviation Medical Examiner's job is to make sure that all pilots they look after, examine and advise are always safe to fly. However, some seem to be going too far – as Dr Ian Perry, Consultant in Aviation Medicine discusses

AOPA has recently received several serious enquiries from members who have had problems with their Aviation Medical Examiner (AME). The problems seem to stem from a few AMEs who have become very officious and insist on carrying out tests which are not required for licensing purposes. We want to encourage people to fly, not be disproportionately put off by an AME.

The earliest British doctors dedicated to flying belonged to the Royal Flying Corps and first was Capt Ernest Lithgow.

*“The doctor even went as far as saying he would be reporting the pilot to the CAA, who would probably prosecute him”*

Capt Lithgow got his wings in 1912 at the Central Flying School at Upavon and then set up a dedicated aviation medical service. The doctors lived and flew with their pilots; a type of arrangement which continues in the military today.

The modern Army Air Corps Specialists in Aviation Medicine (SAMS) have to get their pilot's wings as well as the Diploma in Aviation Medicine. They also undertake sessions in the Family Clinic, enabling doctors to get to know the pilot and their family, and better judge if there is

anything that might impinge on the pilot's safety.

Had this type of system been in place in commercial aviation, it is felt that the Germanwings Flight 9525 accident in 2015 – where nobody knew about the pilot's actual health – may never have happened.

This family-oriented type of system was in place within the UK until the CAA was formed in 1972 and a new system of nationwide medical examiners had to be set up.

These AMEs were initially selected from doctors who were currently serving or



The origins of the aviation medical date back to the Great War. This RAF cadet is undergoing an examination in 1918 – one would like to think things have advanced significantly since then.

ex-military; if a civilian doctor was a pilot, or employed by the growing aviation industry, they could also become AMEs.

It was an interesting exercise at the time and I was one of the first to enter the new system, being allowed to certify the military pilots who wanted a civil licence as well as a military one. At that time, many of us looked after the pilots we licenced, and we cared for their families as well. This was a sensible arrangement inherited and proven by our predecessors.

The CAA has now adopted a different set of criteria, which many of us – on the grounds of safety – do not agree with. The CAA does not approve of the AME treating the pilot or their family; they want them to provide an apparently independent examination.

### KNOWING YOUR PATIENT

Many of us believe that not knowing anything personally about the pilot, their family or medical background raises safety concerns, leaving a great deal of room for error and non-disclosure.

An hour-long examination is not going to tell you that the pilot's child is unwell and keeps the family awake at night, or one of many other scenarios which can affect the pilot's performance.

We were always taught that when examining someone, we should make sure that they were going to be fit enough to fly for the period of the medical certificate to be issued. Your medical history is of course very important, but if you forgot to write down that you had your tonsils out aged 12 – and you are now 40 – it should not be regarded as a hanging offence. Common sense must not be thrown away for the sake of form filling.

Another recent enquiry concerned a 60-year-old who has been completely fit and well since experiencing an anxiety attack when taking college exams aged 20 (which

he passed). He has recently been told that he has to have a full psychiatric assessment before he can fly! Why?

This is almost as stupid as the very fit person who tripped over and bruised his chest. His GP surgery was closed for the weekend, so he sensibly took himself off to A&E to make sure he hadn't broken a rib. They were very reassuring and gave him a chest x-ray and an ECG to make doubly sure.

A week or so later he went to an AME to get his certificate renewed. When questioned about any recent medical history, he said he had tripped over and bruised his chest. The AME went ballistic because the pilot had not rung him up personally to report the incident!

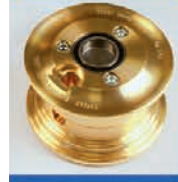
The pilot was told that he had to disclose anything, however trivial, and the AME would be the judge of what was and what was not important. The doctor even went as far as saying he would be reporting the pilot to the CAA, who would probably prosecute him, and told him to expect a visit from the police. Needless to say he is still waiting; but feeling very unsure about whether he even wants to continue learning to fly.

### DECISION-MAKING

It seems that very few AMEs are prepared to make decisions any more. Is this because they lack the knowledge or the experience? Or is it a CAA-imposed fear – that everything must be reported to the regulator? If the latter is the case, does the CAA actually trust its AMEs?

Our job in aviation medicine is to make sure that all the pilots we look after, examine and advise, are always safe to fly. We need to know all about these pilots, gain their respect and above all their trust.

That might require a change of direction and thinking from the top downwards. It might also possibly prevent another Germanwings disaster. ■



# TOST

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WORD &amp; IMAGES Martin Jones

# WINGS SCHEME - MY PERSONAL PERSPECTIVE

Martin Jones offers an insight into what the AOPA WINGS scheme has done for him

I FIRST learnt to fly as a 17-year-old courtesy of an RAF flying scholarship. As a poor student the next couple of years saw me flying half a dozen hours each summer just to achieve the minimum number of hours to obtain my Certificate of Experience.

I quickly realised that this 'circuit bashing' was resulting in skill fade, as I was never going anywhere near controlled airspace or even another airfield. The CAA's Pilot Recognition and Operational Up-Skilling and Development (PROUD) framework did not exist – neither did the AOPA WINGS scheme – but the Royal Aero Club (RAeC) had a similar initiative.

When I looked into it, I discovered that touring was a big part of this scheme so I blew my first student loan

on flying and planned a trip to the Channel Islands and France alongside another pilot. Gaining experience of flight plans, foreign airspace and the vagaries of the weather all played a vital part in my education. Having another pilot alongside gave me the critical support required to undertake such a trip, and discussing the whole venture with an instructor first also cemented the experience.

## SETTING TARGETS

In the years that followed money remained in short supply, but I continued to use the RAeC framework to set myself developmental targets. Ratings were next on the list but I couldn't afford what was then the IMC and I didn't fancy a night rating, so I decided to do five hours of instrument flying so I could supplement

*“I quickly realised that this circuit bashing was resulting in skill fade, as I was never going anywhere near controlled airspace”*

my navigation by using VORs and NDBs. This enabled me to gain skills, knowledge and experience to improve my flying, my confidence and hopefully the overall safety of what I was doing.

It took me around ten years to get 100 hours in my logbook but by then I'd logged 35 different airfields, 20 of which were outside the UK.

All of that brought valuable experience in all aspects of flying and most importantly flight management. The next ten years were similar, with some touring and some club flyouts. Whilst hours were not cranking up rapidly, my airfield list and cross-country journeys continued to progress. I also managed to blow my annual bonus on an IMC rating.

Personal circumstances did not allow me to fly significantly more hours over the next few years and indeed I didn't fly for a period, doing revalidation by test rather than experience a few times. Recognising that skill and knowledge fade had also set in again, I dug out the structure of the old RAeC awards and looked at what it said I needed to do for the next level up – setting myself a plan to recover at least some of the skills I felt I'd lost.

## MORE COURSES

I formed a plan to fly some different aircraft, did a forced-landing course at Kemble, experienced some formation flying and managed to log a few more foreign trips. I also participated in some ground based activities, including attending a CAA Safety evening and visiting a local ATC unit.



Like-minded aviators sharing a pre-Covid trip to build confidence (Martin in the right hand seat).



The touring bug bit hard – Martin took this photograph while visiting Glenforsa.

I didn't actually focus on the achievement of what had now become the AOPA Wings scheme but used it to structure some flying and some learning, believing that it was a good framework for my continued development – something I now understand to be essential for developing, as well as maintaining, skills.

I achieved the requirements for Silver in 2007 but didn't stop there. All the touring requirements for Gold and Platinum had been achieved but some of the other tasks and classroom-based learning required some work, as did building hours.

So over the subsequent years I got checked out on a couple of different types, did some differences training and attended a few classroom courses. I did a PPL masterclass which was full of information I'd forgotten and also full of useful tips on new things. I spent four half-days learning some

*“The ethos of continual development had taken hold”*

practical aspects of weather and forecasting it confidently. And whilst not required for the IRR rating, I did a one-day course on Performance Based Navigation (PBN) training (both in a classroom and in flight) so I could feel far more confident in really understanding the theory and practical aspects of the RNP approaches that my rating said I could do – but the law said I did not need training in!

Some of these were not on the list of things for the scheme but all of a sudden it didn't matter: the ethos of continual development had taken hold.

I'm now pleased to say I have achieved the Gold and very recently the Platinum awards and I'm also qualified as a Flying Instructor, albeit still looking for gainful employment!

#### WHAT NEXT?

I haven't stopped learning and exploring. My new two-year plan includes a taildragger rating, potentially an aerobatic rating as well as my twice delayed trip to Greenland. Plus I'm looking for a few Zoom courses to attend to keep the brain active.

So what's my story really about? It's about the fact that continual development is important and you learn by pushing your boundaries. Many of us will be acutely aware of the skill fade over lockdown and maybe have forgotten a lot of stuff we once knew. So use the WINGS framework to structure your flying and learning in the next few years and even if you can't quite reach the next level, you know you will be a better pilot at the end of it. ■

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*Have you applied for your WINGS Award yet? They are free to AOPA members – just review the criteria under the Training and Safety/WINGS Scheme section of [aopa.co.uk](http://aopa.co.uk) to apply.*

WORDS David Chambers, IMAGE Pauline Vahey

# MEMBERS WORKING GROUP MEETING

Members Working Group Chairman David Chambers elaborates on matters discussed at the most recent online meeting

WE HAD hoped that the June meeting of the Members Working Group (MemWG) would be held partly in person, with others able to participate remotely via Zoom.

However, this wasn't feasible and we reverted to the virtual format, which had the advantage of attracting attendees from a much wider geographical area. The summer flying weather proved strong competition for an online gathering and numbers were down from winter's peak attendance but a healthy number of members still dialled in remotely.

The main purpose of the MemWG is to establish two-way communication between AOPA UK's executive team and the wider membership. It allows any member to hear directly what actions have been taken, give their support and/or raise any concerns.

The three primary issues discussed were airspace modernisation, EGNOS for LPV approaches and the

*“The three primary issues discussed were airspace modernisation, EGNOS and the GA Roadmap”*

DfT GA Roadmap (GARM). The general consensus of members was that the GARM seemed to be more of an aspirational document rather than a roadmap, since it did not provide detail on the steps towards each goal. Some were sceptical about how many and how much of the promised outcomes would be delivered.

Several members raised concerns that AOPA UK itself does not appear to have a clear vision or roadmap of its own. The board was strongly encouraged to “up its game” and make pilots (including non-members) more aware of what it is trying to achieve and recent success it has had.

## WINGS SCHEME

As discussed in the last issue of the magazine, a sub-team was formed at the previous meeting to review the WINGS scheme. The group, comprising a current Flight Examiner, Instructor, CRI and recent PPLs, had since conducted a survey, completed a thorough review and published a detailed report which proposed a series of small changes to the scheme format. These had been considered by the Training and Education Committee (TEC), and although their decision had not been finalised before the meeting, it was clear that while some changes were accepted, many were thought unnecessary. Several delegates voiced their opinion agreeing with the sub-team that the number of hours required by the scheme should be adjusted, in particular reducing the

Silver-level criteria, in order to make that next step more achievable in the mind of the new PPL. This change had been rejected by the T&EC, resulting in increased difficulty to attain later levels without any mitigation.

The Maintenance Working Group highlighted growing difficulties for owners of G-Reg aircraft that require maintenance when abroad, especially when it is unplanned. Previously any EASA registered maintenance organisation could perform and sign-off work but very few of these have dual EASA/UK approval. The CAA has said it will be pragmatic in its approach, for example if a UK maintainer is able to remotely advise and monitor repair work handled locally.

AOPA has also been active in addressing a surprise announcement from Ofcom that required all aircraft owners to conduct an extensive radio emission impact assessment for their aircraft [Ed: see p8].

## YOU CAN JOIN US TOO

I continue to encourage those from near or far to join us to hear more and speak up about AOPA UK's work. Our next meeting is planned for Saturday October 23, 2021, and all members are welcome to attend, observe and/or participate. It's quite likely that this will again be held entirely on Zoom, but if a physical meeting occurs then remote attendance will also be possible. Just email me at david.chambers@aopa.co.uk to register your interest. ■



It is hoped that future MemWG meetings will be able to take place in the stylish new AOPA HQ building in Kent.

WORDS George Capon

# TRAINING & EDUCATION

T&EC member and AOPA Airprox board representative George Capon provides some timely reminders

## HOW FAR away is that tree? 100m? 200m maybe? You'd be surprised how wrong you might be!

As an exercise, take a look at something in the distance and estimate how far away it is. Then measure it using Google Maps and see how accurate you are. This is perhaps why we are starting to see a theme with vast differences between pilots' reported distance and radar calculated distances.

Why is this important? Well, even when a radar control service gives you a heading and altitude, as a VFR pilot in controlled airspace you are still responsible for separation from other aircraft. So if you feel you are getting close to another aircraft 'speak up' and take action: you can deviate your heading or altitude to avoid a collision or airprox.

On a similar subject, whilst 'listening squawks' can be useful, asking for a traffic service offers you much more protection. However, when that controller advises you of other traffic it is vital that you make sure you are specific about what aircraft you see – especially if two aircraft are pointed out in the same transmission. For example: you might receive a call from ATC saying "G-CD, traffic, two aircraft, one in your nine o'clock at 3 nm and another aircraft twelve o'clock 3 nm".

Simply responding with "Traffic in sight, G-CD" is very ambiguous and the controller might assume you've seen both aircraft even if you have only registered one of them. In

this case the correct response would be either "Both aircraft in sight G-CD" or "nine o'clock traffic in sight, twelve o'clock not in sight at this time."

Some air traffic units have a Short Term Conflict Alert (STCA) system. However, this isn't available to aircraft in Class G airspace and in some Class D areas the computer filters out VFR traffic – so don't assume you will be told about traffic just because you have asked for a radar service.

When using Safety Comm frequencies it is also important to make sure you use the correct terminology and be specific when joining or leaving airfields. This is important so that everyone listening has good situational awareness of who is where and what they are doing.

Furthermore, it is always useful to refresh your memory about how to accurately fly overhead joins. These are rapidly becoming airprox hotspots.

Finally for this issue, a reminder to keep your 'eyes out'. It might sound simple but it's easy to become engrossed in the cockpit, particularly when you're doing something like a FREDA check or map reading. Also, when flying straight and level, it is a good idea to lift a wing every now and again to see what's above or below you. Changing heading a few degrees every few minutes can also avoid a constant relative bearing situation occurring. These are all simple things, but they can help avoid airproxes and potential mid-air collisions. ■

## AOPA INSTRUCTOR REFRESHER COURSES

For revalidation of an FI certificate, the holder shall fulfil two of the following three requirements:

- 1 At least 50 hours of flight instruction during certificate validity as FI, TRI, CTI, IRI, MI or Examiner;**
- 2 Attend a Flight Instructor Refresher Seminar within the validity of the certificate; and**
- 3 Pass an Assessment of Competence within the 12 months preceding the expiry of the certificate.**

For at least each alternate subsequent revalidation, an assessment of competence must be undertaken. In the case of a renewal you should, within 12 months before renewal, attend a Flight Instructor Refresher Course and pass an assessment of competence.

### NEXT DATES

The next dates for the course are

**November 23 – 24, 2021**

Approval has now been obtained from the CAA to run these courses using Zoom during the current pandemic.

It is therefore imperative that any candidate is up to speed on using Zoom prior to commencing the course.

Further information can be obtained from the Course Administrator, Mandy Nelson, on 020 7834 5631. Please book the course online at [www.aopa.co.uk](http://www.aopa.co.uk)



**To register for a place on any of the seminars please call the AOPA office on 020 7834 5631 or join online at [WWW.AOPA.CO.UK](http://WWW.AOPA.CO.UK).**

**The courses start at 0930 and end at 1700 each day.**

# AOPA NEWS

RAF Hawk T.2s using the UK Low Flying System. Would you see them coming?



Crown Copyright

## LOW-LEVEL FREQUENCY: A JOINT RAF & CAA TRIAL

The trial of 130.490 MHz is to run for a year and the CAA wants your feedback

MORE DETAILS have now been made public about the VHF Low-Level Common Frequency (LLCF) trial that we revealed in the April edition of AOPA UK magazine.

The scheme is now being supported by the CAA as a result of what the regulator refers to as “an increasing trend of Airprox [incidents] between military and civilian users in the UK Low Flying System (UKLFS).”

The military-led trial of a common frequency to be used across the UK – so members of the GA community can be better integrated with other users of low-level airspace

– launched on June 1 and will run until June 1, 2022. The idea is to help build situational awareness for all users which should, in turn, reduce the risk of mid-air collision.

The LLCF will offer an information service on 130.490 MHz and is available for use by all aircrew (military and civilian), operating in Class G airspace at or below 2,000 ft AGL in the UKLFS.

According to the CAA, pilots should make use of the LLCF only when they are not in receipt of a Lower Airspace Radar Service (LARS) or other Air Traffic Service, or when operating outside an area

where a frequency monitoring code and the associated ATC frequency is used. Pilots should make “accurate, clear and concise” blind calls on the LLCF and to prevent clutter on the air, 130.490 must not be used as a chat frequency.

It is recommended that pilots make calls when entering/exiting the UKLFS, at turning points or significant heading changes, when approaching well-known and recognisable physical features or “any time it is considered beneficial to the safety of the aircraft”.

Calls should take the form of: aircraft call sign, aircraft type, position in relation to

reference points immediately identifiable to other pilots, altitude, heading and your next significant reference point.

It is also worth noting that whilst GA aircraft broadcast their altitude above sea level based on QNH, military aircraft in the UKLFS will be operating on Radar Altimeter heights and broadcasting their height above ground level. Pilots should therefore consider their actual height above ground when assessing any potential conflict with military traffic.

The CAA is asking for feedback on the trial via the [lowlevelfrequencytrial@caa.co.uk](mailto:lowlevelfrequencytrial@caa.co.uk) email address. ■



# AROUND THE WORLD AT 18!

Van Trabel Ludlow

BRITISH PILOT Travis Ludlow landed back at Teuge Airport in the Netherlands on July 12 having flown solo around the world in a specially prepared Cessna 172R diesel.

Travis, who was 18 years and 149 days old at the time, now becomes the youngest pilot to have solo circumnavigated the globe. He beat the previous record set by American Mason Andrews in 2018 by 14 days. The flight was originally due to take place last summer but the global pandemic put

paid to that.

Travis set off from Wycombe Air Park on June 27 just a week after completing his A-level exams; in fact his first waypoint was his school



**Record holder Travis Ludlow – the youngest pilot ever to fly solo around the world!**

where pupils and teachers were having a ‘post-exams’ breakfast. He then routed to Teuge where Hanger-One Technics & Avionics prepared the aeroplane for the official departure on June 29. From there he travelled east across Europe, Russia, Canada, USA, South America and back up the US east coast before making the transatlantic crossing via Greenland and Iceland. Look out for a special interview with Travis in the next issue of *AOPA UK* magazine. ■

## PILOT PROSECUTED BY CAA

THE CAA has successfully brought charges against a pilot for falsifying licence entries and acting as a pilot without an appropriate licence.

David Harbottle, of Lancing, West Sussex, was convicted of two charges of knowingly making false entries to his pilot’s licence, and one charge of acting as a pilot without an appropriate licence on

seven flights. Following a trial at Brighton Magistrates’ Court, Mr Harbottle was fined £50,000 for each of the false entries, and a further £75,000 for acting as a pilot without an appropriate licence. He was also ordered to pay costs to the CAA of £16,500 and an additional £120 victim charge. The fines and charges total £191,620.

According to the CAA: “Mr Harbottle previously had Certificates of Revalidation for MEP [Multi-Engine Piston] and IR [Instrument Rating] ratings for his pilot licence which expired in 2014. He later forged Certificates of Revalidation for an MEP and an IR rating he required for the seven flights he undertook and back-dated them to 2016.” ■

## INTER-CITY KLEIN AIRCAR

Klein Vision

SLOVAKIA-BASED Klein Vision successfully flew its AirCar ‘roadable aircraft’ prototype from Nitra to Bratislava in June. The 35-minute flight marks the first time the vehicle has travelled between two cities.

“This flight starts a new era of dual transportation vehicles,” said pilot and company co-founder Stefan Klein. “It opens a new category of transportation and returns the freedom originally attributed to cars

back to the individual.”

The AirCar is powered by a 160 hp BMW car engine and to date has flown for over 40 hours, reaching heights of up



**Part car, part aeroplane – the AirCar has wings that retract into the bodyshell**

to 8,200 ft and a top speed of 103 kts. Four versions of the AirCar are reportedly in the works including two-seat, four-seat, twin-engine and amphibious models.

A second prototype is currently under development and will be powered by a 300 hp engine giving a cruise speed of 162 kts and an airborne range in excess of 600 miles.

Klein Vision is pursuing EASA CS-23 aircraft certification for the vehicle. ■

## AOPA NEWS HIGHLIGHTS

### The Vintage Aircraft

Club’s Liz Inwood Taildragger Scholarship is awarding £750 to a lucky applicant who wants to fly taildraggers. Applicants must be 35 years old or younger and hold a current PPL, NPPL or LAPL, with 100 hours TT including 50 hours as PIC. The application form is available at [vintageaircraftclub.org.uk](http://vintageaircraftclub.org.uk) with a deadline of August 8.

### A planning application

to build a gigafactory on Coventry (Baginton) Airport was submitted by Coventry City Council and Coventry Airport Ltd on July 15. Businesses based on the airfield said they only heard of the plans through reports in the local media.

### The Molly Rose

Scholarship has been launched by Aetheris Publishing to promote the new book and film *Attagirls*. It is intended to encourage young women to consider a career in aviation and awards a full PPL in memory of former Air Transport Auxiliary (ATA) pilot Molly Rose (née Marshall). Details will be announced soon at: [aetheris.co.uk/mrps](http://aetheris.co.uk/mrps)

### The Yamaha Motor

Company and ShinMaywa Industries have signed an agreement for the joint research of a next-generation small aircraft. Yamaha will explore avenues for adapting its small-engine technologies to the aviation industry while ShinMaywa will develop the airframe.

# DETECT AND AVOID FOR DRONES – GOOD NEWS?

An application for a TDA to trial 'Detect And Avoid' technology for drones could bring great benefits - but its proximity to White Waltham is of potential concern

BERKSHIRE-BASED Altitude Angel has applied for a Temporary Danger Area (TDA) near Reading to test a new drone operation in September.

However, whereas we are becoming accustomed to TDAs allowing the unrestricted operation of UAV's this

particular trial is to test a ground-based Detect And Avoid (DAA) system that the company calls Arrow.

UAV's within the so-called 'Arrow Drone Zone' will be tracked via Altitude Angel's GuardianUTM unified traffic management platform, which

communicates with ground and aerial infrastructure.

According to Airspace Change Proposal (ACP) 2021-032 "the overall objective of Project Arrow is to enable safe, automated BVLOS [beyond visual line of sight] flights of multiple unmanned aircraft within the coverage area in Non-Segregated Airspace." It goes on to explain that the "GuardianUTM system has the capability to safely act as an offboard automated deconfliction service" and Altitude Angel is "working on the requirements to prove and certify a new type of DAA that will enable BVLOS operations in uncontrolled airspace without the requirement for closed airspace.

The company says that operations will be undertaken at 400 ft AGL for flights but

notes that "we anticipate that the policy team will request the airspace to be surface to 1,000 ft.

"We would be comfortable with 800 ft, thus reducing the impact on local GA."

The good news is that this technology could potentially lead to a situation where when an airspace conflict is predicted, drones involved will be automatically given appropriate avoidance instructions. The bad news is that this ACP does not appear to take into account the role of the M4 motorway near Reading as a busy visual navigation feature for VFR traffic. Neither does it reflect the proximity of the thriving White Waltham aerodrome, which is home to numerous flying training organisations and GA owner pilots. ■



The Drone Zone could lead to advances in technology but the TDA so close to White Waltham airfield is cause for concern.

## COULD COVID AFFECT YOUR MEDICAL?

IN THE USA, the FAA's Federal Air Surgeon has gone on record to say that pilots who are diagnosed with Covid-19 must notify their AME or risk losing their medicals.

Writing in an FAA Safety Bulletin, Dr Susan Northrup said: "Anyone with a medical should have the documentation from your illness available for your AME to review, regardless of the severity. The AME can guide you on what is necessary." Dr Northrup continued: "If you were hospitalised, we need the hospital records including

admission and discharge notes, testing, and a status report from the treating physician. We also need a status report for anyone with persistent symptoms. Unfortunately, while the vast majority of airmen can be issued a certificate by their AME right away, we have denied a medical certificate for a small number after a COVID infection." However, the doctor clarified that most of those were the result of pilots not providing documentation.

AMEs have been told to be on the lookout for those who develop symptoms that can

be disqualifying. According to Dr Northrup these include "manifestations including dysfunction of the cardiovascular, respiratory, renal, or neurological systems. You should [also] report mental health symptoms or other symptoms such as fatigue, shortness of breath, cough, chest pain, headache, fever, loss of smell or taste, dizziness when standing, joint or muscle pains, or chest pain, to your AME."

The CAA says UK licence holders who are admitted to hospital and/or have continuing symptoms from

Covid-19 should seek advice from their AME before they next fly. Medical reports relating to more serious periods of illness will need to be reviewed by an AME. It states that: "Pilots who make a full uncomplicated recovery should not fly for a minimum period of seven days from full symptom resolution."

If you have recovered from the illness and want to return to flying, you can view the 'Class 1/2/3/ LAPL Medical Certificates: COVID-19 Assessment Process flowchart' via the CAA's website. ■

# OUT AND ABOUT WITH AOPA

Steve Briggner

AS PART of our ongoing backing of GA within the UK, the team at AOPA is excited to sponsor what is set to be the first major UK event on the GA calendar since 2019!

The Private Flyer Show takes place at Leeds East Airport (Church Fenton) on Friday August 6, 2021 and London Wycombe Air Park (Booker) on September 17 and 18. AOPA members can get a 20% discount on tickets using the promotional code at the end of this article.

The event at Leeds East fills the gap for a much needed GA show in the north of England and this 'pop up' event will include all the aspects of a Private Flyer Show, while connecting the General Aviation industry.

The event will offer a dedicated exhibition hall showcasing the latest GA products, services and seminars, along with both new and pre-owned fixed-wing and rotary-wing aircraft on static display.

There are also prize



It's been a long time since the GA industry has been able to showcase its wares, so AOPA is excited to sponsor the Private Flyer events at Leeds East and Wycombe Air Park.

giveaways for visitors; simply book your fly-in slot online or purchase a ticket to be entered into the draw to win a Bose A20 headset, £250 Pooleys voucher or a Garmin D2 Delta PX watch.

Private Flyer Leeds in particular is a unique 'demo-friendly' venue so if you're thinking of buying your first aircraft or changing your existing one (or maybe adding another to the collection?), this is an ideal opportunity to take to the skies and sample the options first-hand. Plus, you

can gain expert insights at each event with a daily series of seminars covering all areas of private flying.

The Private Flyer Wycombe event will be co-located at Booker within The Elite Events London Lifestyle show and the British Golf Show.

For more information and to book discounted tickets visit [privatelyflyershow.com](http://privatelyflyershow.com) and use promo code PF911276. It is so refreshing to get back onto an airfield and AOPA looks forward to seeing you at these events. ■

## AOPA NEWS HIGHLIGHTS

**Holders of an FAA**  private pilot Airman's Certificate living permanently in the UK have until December 21, 2021 to convert to a UK Part-FCL licence. The original deadline of June 20 has been extended because of delays caused by the pandemic.

**AOPA is proud to** sponsor the 15th annual Young Aviators event at Sywell on Saturday September 11. AOPA members, in particular those with four seat (or larger) aircraft who would like to get involved and take some youngsters for a flight on the day, are urged to visit [theplaneguy.com/ya2021](http://theplaneguy.com/ya2021) for more info.

**AIRFIELD NEWS** John Walker reports that Chiltern Park is due to close on September 24, 2021 after the landowner had given notice to the lease holder and aerodrome operator to vacate the site. Elsewhere, Elvington is included in York City Council's Local Plan for a development of up to 3,330 homes on the middle section of the runway. Public consultation on major modifications to the plan ended on July 7, 2021.

**Garmin has won the** 2020 Collier Trophy for Autoland, the world's first autonomous system designed to activate during an emergency to safely fly and land an aircraft without human intervention. The trophy is awarded annually to recognise "the greatest achievement in aeronautics or astronautics in America".

## POSSIBLE CARDINAL SPAR AD

THE FAA wants to expand the Airworthiness Directive (AD) requiring inspection of the carry-through spars on Cessna 210 Stationairs to more models of that type and to some versions of the Cessna 177 Cardinal.

A Notice of Proposed Rulemaking (NPRM) has been issued requiring inspection of the spars on almost 2,000 additional aircraft that were not captured by an earlier AD that took effect a year ago.

The original AD applied to older 210s but since then,

problems have been found in newer models as well as some Cardinals. Operators must perform "visual and eddy current inspections of the [carry-through] spar



Cessna

The FAA is concerned that some Cessna 177 wing spar caps may need inspecting.

lower cap, corrective action if necessary, application of a protective coating and corrosion inhibiting compound (CIC), and reporting the inspection results to the FAA."

The NPRM now includes Cessna Stationair models 210N, 210R, P210N, P210R, T210N, T210R as well as 177, 177A, 177B, 177RG, and F177RG variants of the Cardinal with both fixed gear and retractable undercarriage. According to the FAA each inspection will cost around \$1,827.50 (£1,325.00). ■

# WATTS NEW

## The Latest in Electric and Hybrid Propulsion Developments

ON JUNE 18, Sacha Dench – climate campaigner, UN ambassador on migratory species and founder of Conservation Without Borders – departed the Glasgow Science Centre on a 3,000+ mile trip around the British Isles by electric paramotor.

Sacha’s trip – which she estimates will take around six weeks – aims to ‘inspire and excite the nation to get involved in tackling the climate crisis’ in the run-up to the COP26 climate change conference in Glasgow in November 2021.

Known as ‘The Human Swan’ because of her global expeditions with migratory species, Sacha turned her focus to climate change after losing her family home in the recent Australian bushfires. This is the first time that an electric paramotor will ever have been used for such a long journey – and if successful will earn Sacha a new Guinness World Record.

### ‘EYRE TO THERE’

On the subject of record

breaking endurance flights a team of Australian pilots has claimed a new world endurance record for electric-powered aircraft.

Flying a Pipistrel Alpha Electro, Eyre to There Aviation Managing Director Barrie Rogers and his team arrived in Port Augusta on June 25 after breaking the previous record of 466 miles on the leg between Shoalwater Point Station and Whyalla.

They continued to Adelaide achieving 840 miles by the end of the journey – mostly in 80 mile hops between charges. Along the way, the team also broke other world records for electric aircraft including the longest overwater flight (19 miles) and furthest distance in a 24-hour period (205 miles).

The flight team and support crew included three pilots, five ground support crew, a second (Avgas-powered) support aeroplane, and two vehicles carrying recharging and other equipment.

The aircraft has an endurance of around an hour and a cruise speed of around

*“Continuing to Adelaide they achieved 840 miles by the end of the journey – mostly in 80 mile hops between battery charges”*

85 kts so each leg had to be very carefully planned.

Closer to home, Hybrid Air Vehicles (HAV) has announced that the next iteration of its Airlander airship will have an electric power system, supplied by Collins Aerospace and the University of Nottingham.

Tests of the 500 kW electric motor for the Airlander 10 are expected to begin in 2023 and the airship’s four RED A03 diesel V12 engines will ultimately be replaced by electric motors, starting with the two forward engines in

2025 and the two rear engines in 2030.

### RAES GREEN MICROLIGHT

The Royal Aeronautical Society’s next competition calls for designers to create an electric 600 kg microlight. The aim is to design a piloted electric aircraft that can deliver a passenger or essential supplies to short soil airstrips in equatorial countries, providing the best possible combination of productivity and utility. Entries are invited from under- and post-graduate engineering students, amateur aircraft designers and professionals. You can enter as an individual or a team and the closing date is August 31, 2022.

However, British development is not restricted to the lighter end of aviation: government-backed ZeroAvia has recently acquired a pair of 19-seat Dornier 228 twin turboprops to use as testbeds for its Hyflyer II programme. The development phase will involve fitting 600 kW hydrogen-electric powerplants and hydrogen fuel tanks designed to contain the 220 lb of compressed gaseous hydrogen needed to give a 500 mile range. One of the aircraft will be based at Kemble, Gloucestershire and the other at ZeroAvia’s base at Hollister, California.

The company also recently announced it had secured a further US\$13 million of funding for the development of a hydrogen-electric powerplant for a 50+ seat airliner. Current funding for that project now totals \$37 million.

Among the airlines pledging their support for electric aircraft in recent months is Ravn Alaska, which sees the potential in using battery-powered short take-off and



Conservation Without Borders

Climate campaigner Sacha Dench AKA ‘The Human Swan’ is flying an electric paramotor around the UK mainland coast on a 3,000+ mile trip to highlight climate change.



Electra

The Electra Aero eSTOL promises landing speeds as low as 26 kts, meaning it can operate from sites as short as 100 ft.



Eye to Three Aviation

Pilots Barrie Rogers, Catherine Conway and David Bradshaw now hold the electric-powered distance record.



Virgin Atlantic

Virgin Atlantic has an option to purchase up to 150 VA-EX4s and is exploring a joint venture with Vertical Aerospace to deliver a Virgin branded short haul eVTOL network in the UK.



Airspeeder

Drone racing is coming! The Airspeeder Alauda EXA will be flown autonomously at this year's races but could be carrying a passenger as soon as 2022.

landing aircraft to serve its far-flung communities. The company, which is bouncing back from a 2020 bankruptcy, announced that it will buy 50 Airflow electric aircraft to fulfil its future needs.

#### EVTOL DEVELOPMENTS

Bristol-based Vertical Aerospace looks set to be one of the first companies to bring a certified electric Vertical Take Off and Landing (eVTOL) to market if it sticks to its 2024 schedule. The company's five-seat VA-X4 is in demand with air operators around the world, with pre-orders for 1,000 aircraft (valued at US\$4 billion) already in place. The VA-X4 will have a top speed in excess of 174 kts and a range greater than 100 miles.

Across the Atlantic, Archer Aviation launched its Maker eVTOL in June, with United Airlines immediately committing itself to a \$1 billion

order. Archer Aviation is also aiming for a 2024 Entry-Into-Service (EIS) but it is facing a legal suit from rival company Wisk, which alleges Archer stole its technology. The Maker is also smaller than the VA-X4 and will only carry two passengers over a range of 60 miles at around 130 kts.

Back in Europe, German-based Volocopter unveiled its newest Urban Air Mobility craft in May. The VoloConnect eVTOL will be a four-seat, retractable-gear craft capable of a 135 kt cruise over a range of 60 miles.

Volocopter is also developing the two-seat VoloCity eVTOL air taxi and VoloDrone heavy-lift drone.

Virginia-based Electra plans to launch a somewhat different aerial taxi in the form of its hybrid-electric Short Take Off and Landing (eSTOL) aircraft. By reducing the need for VTOL capabilities Electra plans to reduce the

power needed to take off, thus improving the range. The company claims that the craft will take off from short runways situated on rooftops and it will also have a turbogenerator to recharge the batteries en route. By doing this it is projected that the Electra Aero could fly a pilot and seven passengers as far as 500 miles at 175 kts.

The Aero will use 'blown lift' technology to give it STOL capabilities; using the electric-driven propellers to blow air over the entire span of the wing and flaps to give incredible take-off and landing speeds as low as 26 kts. According to Electra this means it will be able to land in areas shorter than a football pitch. Interestingly, Electra has signed a contract with the USAF to use the Aero programme to investigate 'ultra-short take-off' aircraft capable of operating from airstrips as short as 100 ft.

#### THE NEED FOR SPEED

While we await the much promised passenger certification of these eVTOLs, the public could get glimpses of similar aircraft by the end of the year thanks to a new series of 'Drone Races'.

The first crew-capable eVTOL racing aircraft is the Airspeeder Alauda EXA, which took off from an undisclosed location in the deserts of Southern Australia in June. The EXA was flown autonomously but there's room for a pilot/passenger and the ultimate plan is for crewed races. According to Airspeeder the unpowered EXA weighs 286 lb, can go from zero to 54 kts in 2.8 seconds and is equipped with lidar and radar to create a "virtual forcefield" to help prevent collisions.

Three races [Ed: dates and locations as yet not confirmed] are planned for later this year with a view to a manned race series being launched in 2022. ■

A GA pilot embarks on their next flight, but what does the future hold for British light aviation?



WORDS & IMAGES Steve Bridgewater unless stated

# MEET THE REGULATOR

## EXCLUSIVE CAA INTERVIEW

Sophie-Louise O'Sullivan, Head of the CAA's General Aviation & Remotely Piloted Aircraft Systems Unit speaks to the Editor in an exclusive interview and answers questions posed by AOPA members

**I**N APRIL 2021 the CAA announced the integration of its General Aviation Unit (GAU) and Remotely Piloted Aircraft System (RPAS) Unit. The same press release formally named Sophie-Louise O'Sullivan, the former Head of RPAS and Interim Head of the GAU, as the permanent Head of the newly combined General Aviation (GA) & Remotely Piloted Aircraft Systems (RPAS) Unit.

Alongside discussing Sophie's hopes, aspirations and goals for the future, she also agreed to answer questions posed by AOPA members. (You'll find these questions on the AOPA website - see link on p27).

Readers will have noticed by now that my editorial style very much focuses on the human side of aviation, so at the start of our meeting I was keen to find out more about Sophie's background and interests.

"In its purest form my background is technology," explains Sophie. "I worked at IBM for a year as part of my undergraduate degree and also spent nine years at Microsoft in a variety of different roles.

"However, I also did a Masters Degree in American History and Politics whilst I was working at Microsoft, and that's where my interest in aviation really began. I was studying the use of drones in warfare and how they were being used by different administrations and

it occurred to me UAVs were becoming a really interesting problem of our time. There are lots of parallels to things like autonomous cars and the legal structure behind things that are unmanned, autonomous or remotely piloted is fascinating."

When the Head of Strategy job became vacant at the CAA, Sophie left Microsoft and began her direct involvement in aviation policy making. "I worked in that role for a number of years, gaining valuable experience in how the legislator works with government before I was asked to establish the CAA's RPAS unit. Having run that for the last three years I was asked to begin looking after the GA unit seven months ago."

Sophie says she "jumped at the chance" to become involved in the GA world. "Firstly, and perhaps selfishly, I am a student of history so working with the historic aircraft communities was something I was passionate about doing."

At a more fundamental level she feels it is important to treat RPAS and manned GA as a single unit. "For some time I and others have been mulling over the question 'what is a drone and what is GA?'. A couple of years ago we actually moved model aircraft from the GAU remit to the RPAS unit and it was a really interesting exercise as it highlighted the synergy between GA and UAVs. Following that it ultimately seemed the logical thing to

*"There are lots of parallels between GA and RPAS, and many issues that effect both parties" - Sophie-Louise O'Sullivan, Head of the GA & RPAS Unit*

combine the two units."

"There are lots of parallels between GA and RPAS, and many of the issues affect both parties. GA has a very impressive safety record and there are some great lessons in airmanship and best practices that newer and more innovative communities like RPAS can learn from."

### COVID RECOVERY

Sophie joined the GAU at the height of the pandemic and says significant time has been spent on 'Covid recovery' strategies and trying to get the GA sector back to flying. This entailed five stakeholder workshops, five 'Virtual Voyage' GA summits and publishing a special edition of the CAA's *Clued Up* magazine, focusing on how to return to flying safely. "Our records show that we communicated with 33,000 end users during that period," explains Sophie, "which is far more than we would normally

be in contact with. This was a sector-wide stop of operations and subsequent restart, and that had to be one of the unit's first priorities."

This ran concurrently with the CAA's 'UK General Aviation opportunities after leaving EASA' consultation (CAP1985). "We received around 1,000 responses," revealed Sophie. "We looked at all of these in detail and they have helped guide and determine our priority projects for the 2021 GA Change Programme. These have been published in the CAP2146 *UK General Aviation opportunities after leaving EASA Consultations Response Document*."

The main trend that came out of the consultation was a desire for streamlining. "The GA community told us that it wanted simplification of the legislation surrounding the licencing model and wanted us to look at how we use PMDs [Pilot Medical Declarations] to make things clearer and more effective. Responders also wanted us to look at the maintenance side of airworthiness and, again, how we might simplify that."

### GA IS MANY THINGS TO MANY PEOPLE

Of course, with so many disparate groups making up the UK GA community - from balloonists and glider pilots to operators of microlights, historic aircraft, helicopters and all manner of light aircraft - the simplification of

licencing and maintenance can mean many different things to different people. This is why these remain long-term pieces of work that need to be refined in such a way that they best suit everybody. Sophie says these are “best described as long-term, multi-year strategic plans.”

In the meantime the combined GA & RPAS team has around 15 other ‘tactical projects’, which Sophie describes as “no less important but ones that we plan to accelerate to completion within 12 to 18 months.” These include looking at aerodromes, the basic instrument rating, how best to work with the historic aviation sector and looking at some of the environmental opportunities including Project TEL [Ed: which AOPA has been heavily involved in. See *AOPA UK* February 2021 p10].

In addition to this, Sophie has also been conducting an organisational redesign to bring the two units together. As part of that she has separated strategic and tactical work “because when you’re trying to action tactical programmes quickly it is often difficult to focus on the strategic elements.”

She has therefore split the department and appointed a ‘transformation lead’ to look after the combined GA and RPAS strategic plans; the latter including the certification of new RPAS platforms and enabling Beyond Visual Line of Sight (BVLOS) operations without any form of airspace segregation.

#### **BEST IN THE WORLD**

The opening paragraph of the Department for Transport’s (DfT) recently-issued General Aviation Roadmap (GARM) document [Ed: see *AOPA UK* June 2021 p28] begins with the following words in bold: “We want the UK to be seen as the best place in the world for aviation and this starts at the grassroots.” The paragraph

continues: “It [GA] provides the entry point for careers in aviation, as pilots, engineers, scientists and other highly skilled professions; includes a number of vital businesses and services that are vital to the aviation sector; and is an enabler of innovation. We want GA to be a flourishing, wealth generating and job producing sector of the economy”.

AOPA members were clearly keen to understand how the GA & RPAS Unit intends to implement this desire and what challenges the CAA feels need to be overcome in order to meet the DfT’s aims.

“I think there are four key priorities,” explains Sophie. “The first of these is a need to focus on the potential growth in the GA world. It’s huge with PwC [Pricewaterhouse Cooper] saying the sector has the potential to be worth £3 billion by 2030 and RPAS operations accounting for a further £42 billion. There are enormous potential benefits for UK PLC and this is why I feel we can no longer continue to segregate them. There is a finite amount of airspace and it’s a national resource that is supposed to be subject to fair access. Both the GA and RPAS communities are growing and we need to integrate them to make best use of our resources.”

“As an industry we need to recognise this potential growth and integrate. We need to move away from current segregation practices such as temporary danger areas and look at ways of better sharing the skies on a permanent basis. We [the CAA] might look at transponder mandated zones and, ultimately, look at ways to make everything electronically conspicuous. We are also looking at ways to give an unmanned aircraft a ‘detect and avoid’ standard that is the equivalent of ‘see and avoid’.

#### **SIMPLIFY AND MODERNISE**

Sophie’s second priority is “simplify, simplify, simplify, “I hear this from the

*“There are enormous potential benefits for UK PLC and this is why I feel we can no longer continue to segregate GA and RPAS”*

community all the time,” she confirms, “and I recognise it myself from my own experiences within GA. It’s vastly complex and often unnecessarily so.”

“In terms of pilot licencing, we have brought the EASA licencing regulations and guidance material over into UK law and guidance. In addition, we still have licences issued under pre-existing UK legislation. We appreciate that this can make navigating the licencing requirements complex and time consuming. We are working on a project to simplify the licencing of private pilots but still need to define the correct way to move that forward, unfortunately this will take time.”

Sophie also acknowledges that the CAA needs to simplify how it works with disparate stakeholders within UK GA, saying: “We need to be sure who our stakeholders represent, what their interests are and how we conduct large programmes such as licencing in as simple a way as possible to benefit as many users as possible. Part of this will come about from the remodelled General Aviation Partnership (GAP) meetings” [Ed: more of which anon].

The GA & RPAS Unit’s third priority relates to the way it communicates with the GA sector. “One of the best bits of positive feedback I get from the GA community

surrounds our *Skyway Code*.” Sophie continues. “The *Skyway Code* ethos is to write about airmanship in the clearest possible way and we want to emulate that within the airworthiness side of things and look at how we can integrate the concept across all of our communications channels. As a regulator, a lot of what we have to write is in legal language, but not everybody in society is comfortable reading that type of text. So how we simplify our communications is key to our future successes.”

The unit’s fourth priority is crucial to the longevity of all aviation sectors. Modernisation is key to the success of the industry and the GA & RPAS Unit is keen to embrace some of the innovation opportunities there are available to operators and aerodromes. These include biofuels, electrification and “how technology can be used to improve things like MOR reporting”.

“Likewise, we know that some airfields are struggling from a revenue perspective and we are cognitive of this,” Sophie continues. “Yet at the same time, we have drone operators looking for locations from where they can test and ultimately operate their aircraft, and we’ve got things like drone racing looking for venues – so we need to explore how we combine these things together and potentially modernise the UK’s airfield and airspace infrastructure.”

It is in areas like this that Sophie’s technological background could be invaluable. “It has been really interesting looking at the parallels of updating software and firmware on drones and comparing it with the traditional airworthiness structure within aviation,” she says. “The two actually come together; you have your initial airworthiness certificate and you need to continually manage that airworthiness. It’s the same when you release a





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piece of software and need to upload firmware updates.”

On the subject of RPAS innovations, AOPA members asked about the predicted large-scale development of eVTOL air taxis and delivery vehicles: is this seen as a challenge to or an opportunity for GA operations?

“We’re working in a variety of ways to explore and understand the potential impacts of a growth in new types of vehicle and service,” says the regulator. “A leading example of this is the Advanced Air Mobility Sandbox being hosted by our Innovation Hub.

“Here we are working as a consortium led by Eve (formerly part of Embraer) together with Heathrow and London City Airports, OEMs Volocopter and Vertical Aerospace as well as NATS to develop a concept of operations for the introduction of eVTOL air taxi services in the UK. This is giving us the chance to understand the complex issues around operational and airspace integration which we will need to resolve in order to ensure that these services are introduced in a sustainable, responsible and scalable manner. But this is the start of trying to understand what these very novel technologies could mean for us.”

“A future model of more distributed and diversified aviation, particularly involving smaller aircraft, should present opportunities for the GA sector – particularly airfields – to bring new services to larger communities. This could be in providing testbed facilities or as offering infrastructure for short-range passenger flights but perhaps most excitingly, this could make aviation cheaper and more ubiquitous than ever before in increasing the public’s awareness of flight.”

### **BREXIT**

A key theme to questions submitted by AOPA members was whether Brexit represents an opportunity or a hindrance to the development of GA.

“That’s the big question!” Sophie says with a smile. “I guess we will just have to wait and see. The government mitigated a no-deal situation, which was the number one concern. Now we are in a period where we look at things that we can do that might have a genuine benefit.

“In my experience GA is quite split on this. If you look at flight training organisations (FTOs) and the commercial side of GA there is a lot of benefit in reciprocity and having quite similar international frameworks, but when you look at the more agile end of new technologies and bringing them to market there is a benefit to creating a national approach. Of course, that’s very easy to say but in practice it’s very complex as you have two completely opposite and non-complimentary directions of travel there – which is why we have to take a bit of time and look at things like licencing simplification as longer term strategic projects as well as innovative approaches to get new products to market.”

An AOPA member specifically asked about whether the post-Brexit environment would allow the CAA to do things that weren’t possible within the European/EASA environment – for example, could we now see a UK Experimental category?

“In the pure sense we already have a UK Experimental category in the form of our National Permit to Fly system [Ed: full details of which can be found in CAP1220].

“Whilst there might be some subtle differences, the intent is the same in creating a sub-ICAO airworthiness system

*“As the regulator we often end up deep in the detail... but we also need to ensure that we are having those high level discussions”*

for the likes of amateur-built aircraft. CAP 2146 can provide a sense of what is possible post leaving the EU but this will not have captured every evolving idea, so we are always very welcome to receive new thoughts on how we can make the system more proportionate for UK GA!”

### **GAP MEETINGS**

In the UK we have a veritable smorgasbord of associations and governing bodies representing groups as diverse as glider, balloon, microlight, model aircraft and kitplane pilots. Few realise the problems, challenges, aims and aspirations of the other groups and how they can possibly work together to achieve a common goal.

The CAA hosts GAP meetings every six weeks and these include attendees from groups representing pilots and aircraft owners as well as those involved in airworthiness, training, aviation safety and running aerodromes.

“One thing that concerns me,” confides Sophie, “is that despite these six-weekly meetings as well as one-to-one sessions with various stakeholders, the feedback I receive is that GA as a whole does not feel engaged with. I want to try to unpick why that is and see what we can do differently or better to improve that situation”.

“My first step will be to slightly change how we conduct the GAP meetings. We will continue

with the regular updates that we normally provide but also have a ‘community in spotlight’ at every meeting. I think it’s really worth looking at the various sectors so that we can do a sector specific section and talk about their achievements over the last six months and what their strategic challenges are – so that each of the other groups around the table can learn about each other in turn. This will enable the groups to learn how each other works, what they can do to help each other and how they might have overcome the same challenges in different ways.

“Then we’ll have a specific discussion item – which I would love the community to ‘own’ and bring their key collective issues to the table. Ultimately, I’d like to get to the point where we can discuss progress by sector at each meeting and how that aligns with one of the strategic or tactical programmes. It should be very clear who we’re talking to, what type of engagement we have had with each sector, for how long and why.”

“As the regulator we often end up deep in the detail – and rightly so – looking at the specific nuances of regulation and how it might affect (for example) the sailplane community versus the ballooning fraternity, but we also need to ensure that we are having those high level discussions. What is really tough about being a balloon operator at the moment and what is going really well? That gives us the strategic understanding of the sectors. That will help us think about things at a macro level as well as micro level when we’re making legal changes.”

### **AIRFIELD SAFEGUARDING**

Writing within the GARM, the DfT described the UK’s network of airfields as “a national asset” and goes on to emphasise that: “Airfields provide crucial connectivity, both for business and emergency services, but

also for leisure and sporting flying. They offer potential for highly skilled, dynamic and innovative businesses to grow and flourish – be it for manufacturing and maintenance of aircraft, aviation services, flight training, and for research and innovation. Given their significant local and regional impacts, they are vital to levelling up”.

A number of AOPA members asked what support the CAA is providing to GA airfields to ensure that they are safeguarded from acquisition by speculative property developers looking for soft targets. “As part of the GA Change programme we introduced the Airfield Development Advisory Fund [ADAF],” explains Sophie.

“This offered five days of fully funded consultancy for aerodrome operators and looked at how we could give business and planning advice; the latter being the most common request we received. It also offered advice to associated stakeholders on a wide range of matters including operations, green initiatives, business planning and diversification and marketing to name just a few.”

“The ADAF was put in place in response to pressure on the airfield infrastructure and is something that the government and Secretary of State were keen to support. However, it has now finished and the DfT’s Future Flight Challenge plans to pivot towards focusing on the innovation opportunities that airfields can take advantage of.”

“Drone testing is forefront of this; in fact, you would

be amazed at the amount of drone companies that approach us looking for locations to test a new RPAS on A to B flights. Most flights at the moment are A to A but that is quickly changing”.

“Combined with opportunities to boost STEM participation, skills and access agendas as well as green technologies and other new innovations, these can surely only help aerodromes look to the future.”

Although ‘airfield safeguarding’ is primarily the responsibility of Government, the CAA has undertaken initiatives to help the situation; these included the formation of a new non-regulatory team created within the CAA in late 2020.

“The Airfield Advisory Team (AAT) was formed to support the GA sector specifically, on a wide range of matters and to ensure that government are kept informed of growing challenges to the sector.

Operational for eight months, the AAT has provided support to aerodromes and local authorities alike on matters including airspace, air traffic services, operations, stakeholder engagement and planning”.

“One example of the work of the AAT and a demonstration of the operational support they can provide is in relation to the proposed redevelopment of an operational aerodrome which was to include a new settlement, including thousands of homes as well as schools and other local amenities.

“The AAT was able to provide commentary on the suitability of the scheme and how it

*“One thing is for certain though; the CAA’s GA & RPAS Unit is keener than ever to engage with the community”*

would impact the long-standing operation based at the aerodrome. These plans have now been withdrawn”.

“The AAT plans to build upon that exciting start and ensure all aerodromes who are at risk are aware of the work of the AAT and how they may be able to support them both now and in the future.”

#### LOOKING TO THE PAST

AOPA members who operate vintage aircraft pointed out that the DfT GARM says there are plans to promote the operation of historic aircraft and were keen to hear more details and a potential timeline.

Sophie describes herself as “a student of history” and is passionate about our aviation heritage. At the time of our interview a number of initiatives were underway with the DfT to help promote and preserve our irreplaceable historic aviation sector.

Plans are still being finalised at DfT so there’s little I can reveal at this stage,” she admits. “But suffice to say it is an ambition of Minister Courts and we are finalising the details at the

moment.”

It is understood that these proposals include an extension to Safety Standards Acknowledgement and Consent (SSAC) rules to include a new class of aviation activity: ‘SSAC Class 5 – Experience flight in an ex-military jet aircraft’. Again, at this stage the GA & RPAS Unit was unable to give a timeline for this particular proposal.

#### LOOKING TO THE FUTURE

As the GA sector starts to emerge from the Covid restrictions and begins to tackle the challenges brought about by Brexit, we can only hope that Sophie’s plan to concentrate on ‘growth, simplification, communication and modernisation’ will deliver the future we need and deserve.

One thing is for certain though: the GA & RPAS Unit is keener than ever to engage with the community.

“We need input from organisations that can offer advice on all sectors of GA – which is why we value AOPA’s input to such a degree,” concludes Sophie.

“My conversations with AOPA and its members always focus on the broad picture and when it comes to things like airspace modernisation, innovative technology and the future of ATM we need to focus on those macro-trends.”

**The Editor would like to thank Sophie-Louise O’Sullivan and all at the CAA Press Office for their invaluable assistance with this article. ■**



## READ THE FULL INTERVIEW

Sophie-Louise O’Sullivan and her team answered several other questions posed by AOPA members. You can visit [aopa.co.uk/aopa-interview-with-caa](https://aopa.co.uk/aopa-interview-with-caa) to read the full version of this interview; including answers to your questions about RNAV Substitution, Part 21-Permit Aircraft, Easy Access Rules

for Aircrew, Conversion of National Licences, Previous Training, Mutual Recognition of Licences, Flight Crew Licensing Review, Bilateral Aviation Safety Agreement, Airspace Grabs, LPV Approaches, Licence Turnaround Times and the CAA Portal. **Be sure to visit [aopa.co.uk/aopa-interview-with-caa](https://aopa.co.uk/aopa-interview-with-caa) for the full story.**

The author in the back seat of the 'Chang, as viewed from Cad East.



WORDS Charlotte Bailey IMAGES Charlotte Bailey & Steve Bridgewater

# A VERY WELSH WEEKEND

Charlotte Bailey and friends spend a memorable weekend at Llanbedr, via the legendary Mach Loop

**T**HINK OF the 'Mach Loop' – a series of valleys in north-west Wales famous for their low flying opportunities – and your initial images are likely to be of fast jets tearing

through stunning scenery. Often used as a low-level military training course, many people assume the name to reference the speed with which the fast jets that regularly fly its route are capable of achieving.

However, the moniker actually derives from the village of Machynlleth, located south of the 'Loop' itself.

What sets the Mach Loop aside from other areas is undoubtedly the low level at

which aircraft may traverse its circular corridor. In 1979, a series of Low Flying Areas (UKLFAs) were established in the UK, extending from the surface to 2,000ft AGL. There are 18 in the UK (although bizarrely, no number 15



exists), and the Loop sits within LFA7.

Popular with pilots and enthusiasts alike, the Loop is one of the few places in the world where a photographer can capture an aircraft pass beneath their vantage point. Hawks, Typhoons, F-35 Lightning IIs, Eagles and Raptors – to name but a few – have all been snapped by an adoring audience keen for an unparalleled perspective of these machines in motion, many of whom often camp out at ‘Cad East’, ‘Cad West’ or ‘Corris Corner’ for an up-close experience of the action.

#### THE LOOP

Despite its relative proximity to RAF Valley – an hour or

so’s drive northwest, just past Anglesey – one might assume that the Loop exclusively entertains military airframes. This is not the case, and with airspace open to all (and the RAF having the weekend off), we decided to make the most of the opportunity.

My ride in is the Nanchang CJ-6, a Chinese military trainer and ground attack aircraft; designed in the 1960s and still in limited production today. We depart from White Waltham and after a pleasant commute we’re soon in the shadow of Snowdonia, the highest mountain in Wales (1,085 m above sea level). We couldn’t have asked for better weather and visibility is excellent as we reach the

### *“Navigating the twists and turns of a unique airborne experience”*

Loop itself. The inevitable paparazzi are waiting for us at the most famous vantage points – Cadair East and West – including our own party waving back from a bright orange blanket.

The Nanchang is somewhat of a rarity in the UK – being slightly too large to fit in a shipping container they are often overlooked by private owners in favour of the similar Yak-52 – and if our Sri Lankan Air Force’s colour

scheme doesn’t catch the photographer’s attention, our billowing smoke system does.

However, we can’t hang around, as a voice on the radio confirms the imminent appearance of two vintage jets. Although most of our group have travelled in by road and hiked up the hill, a few more friends have traded wheels for wings. We’re accompanied by two unique arrivals – a 1964 BAC Jet Provost T.52 and a 1953 de Havilland Vampire T.11 – both the last airworthy examples of their type.

Of the 732 Vampire T.11s built, just one remains in airworthy condition today: WZ507, joining us from Coventry. The unmistakable

roar of the de Havilland Goblin engine heralds the arrival of the sleek, silver silhouette; she hurtles through the valley with presence and precision to a chorus of clicking lenses. She's followed by the last JP T.52 still flying, resplendent in her original South Yemen Air Force colour scheme and met by equal applause. Despite an increasingly challenging climate – regarding maintenance, legislation and operating issues for vintage jets – it's always a treat to appreciate them airborne, especially amidst a backdrop such as this.

**LLANBEDR AIRFIELD**

The village of Llanbedr is located in an area owned by Snowdonia National Park and sits within in the county of Gwynedd. Despite the wonderful walks nearby – not to mention the beach – the views are best appreciated from the air. The airfield itself was first opened in 1941 as part of the RAF Fighter

Command's 12 Group, where it was home to 32 squadrons on rotation. Later it passed into Royal Aircraft establishment (RAE) hands in 1957 becoming a military weapons training site until it closed its doors in 2004. A decade later, Llanbedr re-opened to serve the GA community (as EGFDF), with the Snowdonia Flight School established in 2018.

Shortly after we've landed the 'Chang on one of the three runways available, the two jets join us. While the ground crew kick the chocks in, I jump out and am on hand to help the Vampire occupants out of the cockpit – including Mark's guest, who is "over the moon" at having experienced the Loop in such style: amazed not only by the speed or visibility, but as he explains, "almost as impressed it retained the G around the corners as [he] was at retaining breakfast".

With the help of the airfield's crew, we refuel – inevitably a lengthy process, considering

*“Almost as impressed that it retained the G around the corners as he was at retaining breakfast”*

the sheer volume of Jet A1 the JP and the Vampire are 'Goblin' – joined by another entourage of photographers, and our crew, who have hiked back down the hillside and driven to Llanbedr. Then it's time to refuel in the Pilots Hatch Café, run and operated by Max; who is a Cessna 150 pilot, purveyor of handmade pizza and endlessly patient with our motley crew of aviators and enthusiasts.

We sit on the decking, soaking up the warm Welsh sunshine (yes, you read that right), contemplating whether a jet

tailpipe could also function as a platform for cooking Margaritas – a hypothesis doubtless helped by the largest single takeaway alcohol order the local off-licence has ever had! I'm pleased to hear our aircraft have proved popular: the café has sold more bacon sandwiches in 24 hours than it would usually make in a month.

**STAY THE NIGHT**

I'll confess I'm not used to 'packing light' – certainly not being limited to what I can confine to one small bag in the back of the Nanchang – but with a toothbrush and a laptop, we pile into the two crew cars and head into the village of Penrhyn-daedreuth. It's my first time in north Wales, and the scenery is stunning.

Our accommodation is an old farmhouse and its converted barn, both dating from around the 1700s. Period features include the original Aga cooker, as well as a multitude of spiders, and a seam of quartz



Charlotte Bailey

Charlotte Bailey

Charlotte Bailey

- 1: Downwind to land on one of the three runways at Llanbedr. The former RAF airfield is located just off the beach.
- 2: At the time of our trip, Avgas was 169 pence per litre and Jet A1 was 81 pence per litre.
- 3: The Pilots Hatch is Llanbedr's social hub. Max also serves a mean bacon sandwich with a side-order of friendly banter!

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glinting from the wall outside. The property has recently been acquired by Editor Steve and his wife Nia, and the plan is to convert it into an AirBnB – possibly with an airstrip – but the pandemic lockdown (and Wales closing its border to the English) has delayed the renovation work. It's still fairly inaccessible without a 4x4 – a two-wheel drive could easily come a cropper here – so we park a mile up the road and walk the rest of the way.

A barbeque with Nia's family and the assorted dogs sees the juxtaposition of flying suit-clad aviators and Welsh-speaking farmers cheering on the Welsh football team, on a TV that has been dragged out into the farmyard in the evening sun. The lack of mobile phone reception is soon overlooked as the sun sets over the mountains.

As we retire after a bonkers day amongst friends old and new, a cloud of bats flies out from the barn to take their turn

in the sky.

**FLYING THE LOOP ITSELF**

The next morning, we head back out to the airfield, where I'm told there's another treat waiting in store for me: it's my turn to fly the Nanchang through the Loop. This 'Chang has been re-engined with a larger 400 hp radial engine and as I open the throttle I can certainly feel the power; keeping her straight with a fair amount of left rudder, we're soon airborne and climbing out at 2,000 ft/min.

Barmouth estuary slips below us and then we're in; navigating the twists and turns of a unique airborne experience. The sides of the valley seem a lot closer than they probably are, the landscape looming above and around the aircraft as I concentrate hard, anticipating my manoeuvres with just a hint of incredulity at what I'm doing.

**COME AND VISIT**

With camping and parking

*“The café has sold more bacon sandwiches in 24 hours than it would usually make in a month”*

available – for both cars and aeroplanes – Llanbedr airfield is definitely worth a visit.

The Pilots Hatch Café (search for them on Facebook) advertises regular fly-ins and events; it can also open to accommodate groups by prior arrangement and will cater for dietary requirements. The ground and maintenance crew are very helpful too. Assuming you're not bringing a vintage jet, landing fees are £8 for aircraft up to 750 kg, £12 for up to 1,500 kg, or £30 for up to 3,000 kg – with parking charges ranging from £16 to £24 (after an initial free period for the first three hours).

The resident Snowdonia Flight School – maintained by Snowdonia Aerospace – operates three aircraft; a Robin DR400/140 Major, a DR400/180 Regent, and a fully aerobatic Super Decathlon. Flight experiences, lessons and aircraft rental are available.

While some may say that civilian pilots shouldn't be 'playing around' in areas such as the Mach Loop, I beg to differ with them.

The airspace is everyone's and as long as due diligence is observed – recognising your own skill level and acting appropriately – it needn't be an area to avoid. In particular, the new low-level VHF 134.90 frequency – available to both military and civilian aircraft below 2,000 ft AGL – is of great importance to make blind calls on. [Ed: see p16]

There are definitely worse ways to spend a weekend and my sunburn was testimony to the fact that it doesn't always rain in Wales. ■



- 1: Charlotte takes in the Welsh scenery having just flown to Llanbedr via the Mach Loop in a Nanchang CJ-6.
- 2: Overnight accommodation was at Hendre Henydd ("The Old Farmstead" in English); rustic, remote but gorgeous.
- 3: Jet Provost T.52 G-PROV served with the South Yemen Air Force and still wears her patched up battle scars to this day.



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# V is for Versatile

Seventy-five years after the Beechcraft Bonanza first flew, the type remains in production and has a loyal following. AOPA member **Adrian Daley** explains why it is his ideal aircraft

**WORDS & IMAGES** Steve Bridgewater





**ARRIVING AT Tatenhill airfield on a blustery Monday morning, I couldn't help but notice Adrian Daley's Bonanza parked on the ramp.**

In a GA world dominated by high-winged Cessnas, low-winged Pipers and homogenised high-performance singles, the classic Bonanza just oozes charisma. It harks back to a day when aircraft were designed by slide rule, when draughtsmen were allowed to develop their own styles and when aircraft simply had character. Paradoxically though, this 75 year-old design looks as fresh and relevant today as it did when Walter Beech's team created it.

#### POST-WAR PROGRESS

Whereas most manufacturers were simply resurrecting their pre-war designs in an attempt to cash in on the post-war demand for light aircraft, Beech had other ideas. In 1945 he commissioned designer Ralph Harmon to create a new all-metal four-seat touring aircraft to

compete with Cessna's newly announced Model 195. Both were aimed at the premium end of the market but whereas the 195 had a radial engine and a fixed tailwheel landing gear the resulting Beechcraft Model 35 had a modern six-cylinder horizontally opposed engine, a retractable tricycle undercarriage, a low wing and stylish modern design. At a time when most light aircraft were built of wood and fabric, the resulting Model 35 was built of metal. However, the type's most recognisable feature was the highly unusual 'butterfly' tail; consisting of two combined elevator-rudders (dubbed 'ruddervators') in a V-tail configuration to provide both yaw and pitch control. They were also interlinked with the ailerons to help give coordinated roll and turn capabilities.

#### "DOCTOR KILLER"

Soon named the Bonanza, the first Model 35 took to the skies on December 22, 1945 and the type entered service in 1947. The first 40 or so had fabric-covered flaps, ailerons and ruddervators, after which the

wing surfaces were covered with aluminium and the V-tail was sheeted with much lighter magnesium alloy.

Although the ruddervator was (and still is) inherently safe and effective, it soon came under close scrutiny following a series of high profile in-flight break-ups and other fatal accidents. As early as October 1947 the governor, Secretary of State and state president of Oregon were all killed when the Bonanza they were flying in crashed in stormy weather. Tragedy continued into the 1950s and 60s when music stars including Jim Reeves, Buddy Holly, Ritchie Valens and The Big Bopper all lost their lives in Bonanza accidents – the latter three in a single incident on February 3, 1959 that later became known as 'The Day the Music Died'.

The type's relatively high purchase price meant that the majority of Bonanzas were owned by wealthy individuals including businessmen, doctors and dentists; the perceived level of accidents led to the media nicknaming the aircraft the 'Fork-tailed Doctor Killer'.

In reality, the reputation was unjustified and the accidents were more attributable to the overconfident owner/pilots' lack of experience in modern high-performance aircraft. However, Beechcraft expended large amounts of time and expense in proving the type was safe and recertifying it in the Utility category (with added tail reinforcements including a leading-edge cuff to strengthen the ruddervators). Since then, more than 18,000 Bonanzas have been built and the type remains in production today with Textron Aviation.

A new G36 Bonanza will set you back in the region of £800,000 but second-hand examples are obviously available at a fraction of that cost. However, be warned that once a pilot has acquired a Bonanza, it can often be very difficult to prise it out of their ownership!

#### DESIRABLE

One such individual is Adrian Daley, a solicitor from Derbyshire who has been involved with G-EHMJ since 1998. "I had co-owned a Mooney 231 for around six



Don't be put off by the 'Fork-Tailed Doctor Killer' reputation; the Bonanza really is a versatile, capable and safe flying machine.

years and toured Europe extensively,” explains Adrian as he shows me around what is clearly his pride and joy. “When we began looking for a replacement we went out to Hamburg and as soon as I saw this aircraft parked out in the pouring rain, I knew it was the ideal aeroplane – it really was just amazing.”

“We operated it as a syndicate until 2007 when I bought out the other share and became the sole owner.”

Mike Juliet is a Model S35 Bonanza, which was built in 1965 and spent the majority of its life in Switzerland and Germany. “It has a big 285 hp Continental IO-520 engine with a constant speed propeller and the S35 is claimed to be the fastest of all V-tailed Bonanzas,” continues Adrian. “The previous owner had completely stripped it, inside and out, and refurbished and improved it. In doing so he incorporated a large number of STCs including adding

aileron gap seals, tip-tanks and weather radar. He even replaced all of the glazing and windscreen, which is ¼ in thick in places.”

As it was operating on a German ‘D’ registration at the time, the last owner also fitted a Hartzell Q-Tip propeller to help meet the nation’s stringent noise requirements. “I don’t think it’s much quieter,” confesses Adrian, “but the performance is pretty much the same as a conventional propeller so it’s not worth changing.”

**GOING PLACES**

Having toured extensively in the Mooney, one thing that really appealed to Adrian about this Bonanza was the addition of tip-tanks. Each tip contains 15 US gal which combined with the internal tanks gives a theoretical range of around seven and a half hours.

“When our children were growing up my wife and I would routinely fly down to

*“It has more than seven hours range, loads of room in the cabin and it will carry as many pairs of shoes as my wife wants to take!”*

Spain or France on family holidays,” he recalls. “But like most pilots I was obsessed with the weather. I therefore decided to bite the bullet and get an instrument rating (IR). It was arguably the most difficult thing I’ve ever done, the exams to become a solicitor were a doddle compared to the IR.”

Getting his instrument rating was the start of what Adrian refers to as his “real long-distance touring adventures” and he’s taken the Bonanza on the Malta Air Rally as well as visiting North Africa, Greece, Italy, Germany, Spain and

France. “It’s perfect for touring and since I became sole owner I’ve tried to make as much use of it as possible, averaging about 100 hours a year.”

Adrian enjoys indulging his aviation passion with his family and a few days before our meeting he had flown his wife, son and eight-year-old twin grandchildren off for lunch. “You need to have confidence in your aeroplane to fly all three generations of the family,” he rightly points out.

There is a small fifth child’s seat in the back of the Bonanza but, as with aircraft you have to make weight and balance considerations: “You can’t fill the tip tanks plus the main tanks and fly four people,” he reveals, “and you can easily load it too far aft if you’re not careful. However, the tip tanks are on the central datum so burning off fuel doesn’t really affect the centre of gravity.”

“Flying with two POB, full tanks and full tip-tanks, the Bonanza is a perfect tourer. It has more



- 1: Adrian Daley has been flying for more than five decades and has owned G-EHMJ since 1998.
- 2: Seventy-five years after its first flew, the Bonanza remains a popular and capable aircraft with owners and pilots.
- 3: The cockpit of G-EHMJ is festooned with avionics and Adrian also flies with two iPads, one of which has SkyDemon.

The pod below the starboard wing houses the weather radar.



## 38 | **JUST MY TYPE** Beechcraft S35 Bonanza

With 40 degrees of flap it is possible to land on reasonably short runways. The Bonanza will also sideslip.



Neil Harris

With a 285 hp Continental IO-520 engine and a constant speed propeller, the S35 is claimed to be the fastest of all V-Tailed Bonanzas.



than seven hours range, loads of room in the cabin and it will carry as many pairs of shoes as my wife wants to take."

"You can get from Tatenhill to Shetland in three hours and the longest trip I've done recently is four hours to the small island of Silt on the German-Danish border. I've also taken it over the Alps five times at altitudes around FL140 with no problems."

#### UPGRADES

Although the previous owner had fitted an impressive set of avionics to the aircraft, Adrian took the opportunity to upgrade it further in 2007 when it was having a brand new engine fitted. "I fitted even more instrumentation about four years ago," he proudly tells me as we step up onto the wing. "It's probably the best-equipped Bonanza in Europe these days."

Sitting down on the plush front seats, I can instantly see what he means. The most recent upgrade included an Avidyne 550 with what Adrian refers to as "an all-singing and dancing transponder as well as TCAS with ADSB and weather."

The cockpit is dominated by the characteristically Beechcraft yokes; they are enormous and look like they should be on a battleship. Whereas some Bonanzas had a 'throwover' yoke that enabled both front seat occupants to fly, 'MJ' has proper dual controls, albeit with brakes on just the P1 side.

Behind the yoke, the instrument panel is festooned with instrumentation. There's Bendix King weather radar that is linked to the radar in a pod on the starboard wing and "provides reasonable weather mapping up to about 40 miles. It's really useful." There's also a stormscope, which combined with the weather radar gives a good appreciation of the conditions ahead.

Elsewhere there is a radar altimeter and an autopilot, both of which Adrian considers

## *"In a GA world dominated by high-winged Cessnas, low-winged Pipers and homogenised high-performance singles, the classic Bonanza just oozes charisma"*

vital for single-pilot IFR flying. "I'm sure there are some very capable pilots out there who do it really well, but for me the autopilot is my friend," he says with a wry smile. "I've been flying 52 years and I'm firmly of the opinion that I'll make use of all the help that I can get!"

On the left of the panel an Aspen Primary Flight Display (PFD) provides an electronic 'six pack' and much more. The PFD also replicates onto one of the two iPads that Adrian has in the cockpits, one of which has SkyDemon installed.

There's a "standard Garmin kit" for secondary navigation and on the right hand side of the panel is the touchscreen Avidyne 550 FMS/GPS/NAV/COM. "It's an amazing bit of kit," enthuses Adrian as it whirs into life. "It uses 3D synthetic vision with AHARS [attitude and heading reference system] so it provides a true representation of your attitude and can also display as an ILS. It's got a 5.7 in screen but it can use Bluetooth or WiFi to send a signal to my iPad and replicate the screen. I can do things like changing frequencies or programming routes on the iPad, it's simply incredible. Even the TCAS is available on the iPad as well as the PFD."

Looking around the cockpit there's also a King KAP-200 autopilot, a Shadin fuel flow meter and a graphic engine monitor that gives a simultaneous reading of both

cylinder head and exhaust gas temperatures (by each cylinder). You can download this data after a flight and it can be analysed by specialist companies to assess the health of your engine.

In fact, with the exception of the original airspeed indicator and an old fashioned ADF and DME, there is not much that Walter Beech would recognise in this 55-year-old tourer.

Adrian is clearly a pilot who likes to have a backup plan and in the event of an alternator failure he still has his King air-driven artificial horizon along with his various iPads and a Garmin Aera portable GPS – the latter having a four hour battery life.

#### V-TAIL VS STRAIGHT TAIL

In 1960, Beechcraft introduced a new lower-priced version of the aircraft which it initially dubbed the Debonair. It was a more basic airframe designed to compete with the Piper Comanche and in order to further reduce the cost, the complex V-tail mechanisms were dispensed with in favour of a traditional tailplane and single vertical fin.

Most of the Bonanza features were available as factory options on the Debonair and soon the majority of buyers were specifying most of them. Beechcraft realised this and rebranded the type as the Model 33 Bonanza in 1968.

Single-fin Bonanzas were built alongside their V-tail brethren until 1982 when the butterfly-tailed classic was eventually phased out in favour of the more conventional looking variant. The Model 36 Bonanza that remains in production today has a longer fuselage than its ancestor but retains the classic Beech look, feel and character.

Adrian has flown straight-tailed Bonanzas and says there is "virtually no difference in flying characteristics". Some pilots comment that the V-tail examples are prone to 'fishtailing' but as

G-EHMJ's previous owner fitted a yaw damper, this is not something that Adrian has ever experienced although "it does mean that it makes it very comfortable for rear seat passengers, particularly in turbulence."

"The Bonanza flies similarly to any other single-engined piston tourer," he continues: "It's very benign and the sort of aircraft that will complement your landings. You just have to be careful with speed management as the aircraft is very slippery and will accelerate at an alarming rate in the descent, helped in part by the lack of drag compared to an aircraft with a conventional tail."

The core reason that so many V-tailed Bonanzas crashed was through poor speed control, particularly when entering IMC. The owners didn't necessarily have the skills needed to fly a high-speed tourer with retractable gear and it is very easy to exceed Vne in a slight dive and potentially rip off the ruddervators.

"The Vne is 200 kts and the yellow arc extends from 170 kts," explains Adrian. "Unless the air is very calm I try to keep out of that arc but at 75% power 'MJ' will cruise just shy of 170 kts. I generally fly at around 160 kts, which results in a fuel burn of around 15 US gal per hour. The engine will comfortably run lean of peak with GAMI injectors burning 12 US gal per hour but there is a trade off in speed."

Unlike many high-performance aircraft the Bonanza is also adept at short strip flying, and when flying at light weights, Adrian flies G-EHMJ into the 600 m runway at Netherthorpe. With 40 degrees of flap he approaches the airfield at 80 kts and comes over the hedge at 70 kts. "It'll stop in no space at all and with 285 hp up front you don't need to worry about take-off performance."

Adrian recently took the aircraft to the Courchevel ski

resort in France to conduct an altiport and mountain flying rating. "It was an amazing experience!" he reveals with a wide grin. "You're landing on a 600 m concrete runway of which two thirds is on a 17 degree incline. So you have to apply almost full power as soon as the wheels touch the ground or you won't get up the hill!"

**WHAT YOU NEED TO KNOW**

What advice would Adrian offer somebody looking to buy a Bonanza? "If it's a V-tail example you really need to inspect the ruddervators," he immediately replies. "They're its most recognisable feature but it's also its Achilles heel. Whereas the entire airframe is made from aluminium, the moving section of the tail is made from magnesium for lightness. This means it is prone to damage and corrosion and as they are no longer in production, some owners have been known to buy up crashed aircraft just to acquire the ruddervators."

*"You need to have confidence in your aeroplane to fly all three generations of your family"*

The type has a fantastic following and the American Bonanza Society (ABS) is on hand to support owners. It's a very well-organised group, offering technical and safety backup to owners and pilots alongside ground school and online courses.

The ABS is also involved in attempts to preserve the fleet and has pledged money to the first person or company that obtains an STC for replacement ruddervators – be they magnesium, composite or even wood and fabric. The group also provides technical knowhow and Adrian used this to great effect when it came to overhauling the undercarriage

gearbox, gearbox motor and flap motor. "They need to be overhauled or replaced at 2,000 hour intervals and 'MJ reached the 4,000 hour mark last year," he explains. "There was nobody in Europe that I knew of that could do the work, so I asked the ABS via the Beech Talk online forum and received recommendations and advice."

Potential owners also need to be aware that the wing bolts need to be inspected and/or changed at ten year intervals and particular attention should be paid to the landing gear system. The undercarriage itself is very robust but there are no hydraulics on this aircraft – apart from the brakes – as the landing gear is raised and lowered electrically.

"My top tip for anybody looking at buying a Bonanza is to get it inspected by an engineer who knows the type well. It's not a complicated aeroplane, it just has some idiosyncrasies that you need

to be aware of. The ABS can provide all the information but ultimately I'd recommend that you have the aircraft maintained by somebody who is well versed on the type."

"Like classic cars, you get what you pay for. The maintenance costs are also commensurate with their original purchase price. They're built incredibly well and use big, chunky, solid components – there's nothing flimsy about it – but the parts are expensive. Luckily Textron continues to take an interest in its legacy aircraft and supports owners."

In summary, the Bonanza is perhaps best described as a 'useable classic.' It has character and performance but doesn't need to be mollycoddled.

The Bonanza can fly into mountain strips and short fields yet it will cruise on autopilot at 170 kts in airways for up to seven hours. In this particular case, V really does stand for versatile. ■



- 1: The Bonanza has both inner and outer gear doors and these activate via what Adrian describes as 'smoke and mirrors!' However, they need to be rigged properly to avoid potential problems.
- 2: When it was created in the immediate post-war years the V-tailed Bonanza was unlike any other aircraft in the skies.
- 3: The large pod on the starboard wing houses weather radar. This provides "reasonable mapping up to about 40 miles".



The ruddervators are interconnected with the ailerons via a system of arms, levers, pushers and pullers. This is even more amazing when you think it was designed on a slide rule without computers.





# Next Issue

Coming up in the **October** edition of **AOPA UK Magazine\***

## JUST MY TYPE - “NO ORDINARY 172”

Martin Leusby has been an AOPA member for many years and was awarded the AOPA Award for Individual Merit in 1987 and an early set of Platinum Wings in 2005. Despite volunteering with the Air Search organisation and writing two books during lockdown he still found time in this busy schedule to tell us about G-AXDI, his beloved 1969 Cessna F172H. The aircraft is based at Rochester but with the standard engine replaced with a 180 hp Lycoming O-360A4M and Sensenich propeller it “gets in and out of anywhere!”

## AROUND THE WORLD AT 18

Despite a Covid-induced delay of almost a year Travis Ludlow has recently become the youngest person to fly solo around the world. We meet the 18-year-old adventurer and find out what motivated him to use his flight to inspire an entire generation of prospective and upcoming young aviators.

## ‘LOCH DOWN’ HOLIDAY

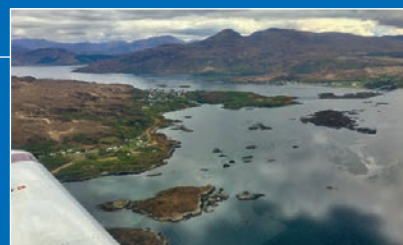
With foreign trips largely unavailable for private pilots due to the Covid lockdown, Scotland has been a popular choice for some during the summer of 2021. David Chambers reviews a recent trip to north west Scotland and also discusses some of the planning techniques and issues relating to longer distance touring flights.

## AOPA WINS

Just what does AOPA actually do? We look back at some of the ‘wins’ the organisation has clocked up over the last few years.

## CHASING RAINBOWS

Finally strapping into an Extra 300 marked an important and emotional personal milestone for Charlotte Bailey.



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