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Editorial

ED HICKS

Good times

A couple of weeks ago Ian Seager and I headed to Popham for the Microlight Trade Fair. Having not been to an aviation show since LAA Rally back in September 2019, it felt a just a little odd to be 'back to normal' again, but it was great to catch up face-to-face with the manufacturers and agents who were exhibiting at the show. There was a real feeling of optimism from everyone we spoke to, and a huge part of this was around the excitement of the transition to 600kg (see News, page 6), plus people's desire to get on and do things. There was also plenty of talk around new students wanting to learn to fly, and that a chunk of this was being driven by renewed enthusiasm from those people who'd perhaps had it in the back of their minds, but were now thinking, 'let's get on and do this!'.

It was also great to meet with lots of our readers and Livestream viewers. Seriously, a huge thanks to all who took the time to chat about everything that *FLYER* has been up to online. Of course we like to hear about what you've been enjoying – or not – and how we can make it even better for you. Anyway, if you missed the show, you can see some of the highlights and find a link to our video from Popham on page 65.

When you read this, we'll just be a few days away from the Light Aircraft Association Rally at Sywell. *FLYER* will have a stand at the show, which will also double for our video studio during the three days of the show. Thanks to the support of Bose and Garmin, we'll be Livestreaming every day, so be sure to drop by the stand for a chance to join in. We'll definitely be opening up Fantasy Hangar for you all to have your say. If you haven't seen the *FLYER* Livestream yet, and the debate that Fantasy Hangar creates sometimes, then check out past episodes here, among all our other video content.

But above all, the Rally is going to be a great chance to see lots of aeroplanes, and most of all, catch up with you all in person.

It's been too long, so we'll see you there!

Ed

ed.hicks@seager.aero

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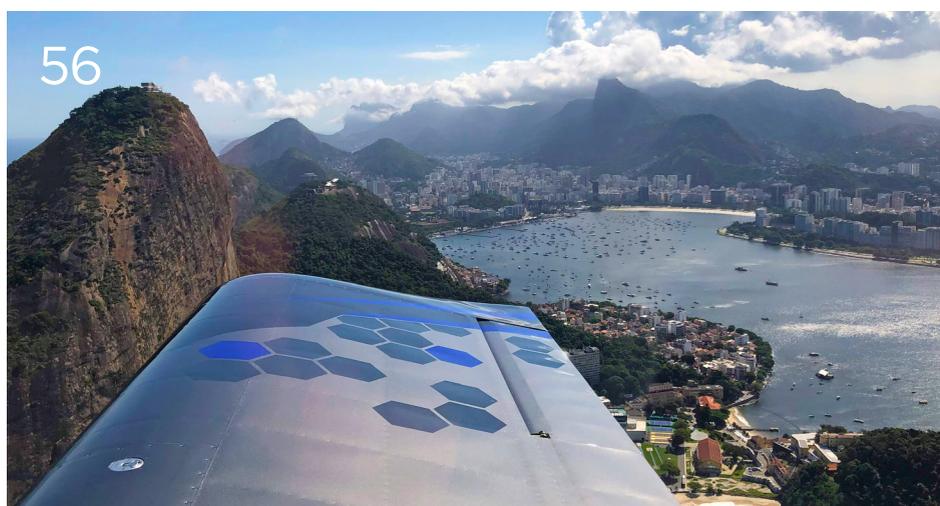
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Take-off

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New 600kg weight limit microlight class is now law



The new 600kg microlight weight limit is now law and the CAA has deliberately sought to align the new regs with what's already happened in nine European states to avoid 'gold-plating'.

The CAA has published a document, CAP 2163, called *'Reforming the microlight aeroplane category. Implementation and key decisions'* which details the new

600kg microlight class.

Among the key decisions:

- Increase the allowable limit for the Maximum Take-Off Mass (MTOM) to 600kg (650kg for amphibians or floatplanes)
- Increase the stalling or minimum steady flight speed in landing configuration (VS0) to 45kt
- Revision of BCAR Section S to improve compatibility with other

certification bases and maximise commonality with major manufacturing states such as Germany and the Czech Republic

- Commonality with the EASA Certification Standard for Light Sport Aeroplanes (CS-LSA), which itself draws heavily from the equivalent standard used for light sport aeroplanes in the United States market.

The new class applies equally

Click
for
video

Existing microlights to 600kg?



Can existing microlights have their max weight raised to 600kg? Yes, so long as they are proved to be technically capable of meeting the design requirements at the higher weight – which may mean modifications. The Skyranger Nynja, pictured, is one such aircraft.

The CAA says in CAP 2163, “Owners of factory-built individual airframes will need to check with the type approval holder (or its UK representative) whether such a modification has been undertaken. Owners of amateur-built aeroplanes (or other aeroplanes already administered by the LAA or BMAA) would have to contact the LAA or BMAA. The type or variant will need to demonstrate that it meets the revised version of BCAR Section S. In either case, a new Type Approval Data Sheet, Airworthiness Approval Note or Homebuilt Aircraft Data Sheet would be issued bearing the revised MTOM and VSO, as well as other relevant changes to technical specifications such as other operating weight limits.”

Left This is the latest Evektor SportStar SLM which is shortly to receive approval in the new 600kg class. It will be sold by Roger Cornwell's Ascent Industries which will become the sole UK source for all Evektor light sport and microlight aircraft from 1 January 2022. Ascent will also provide customer support and spare parts for both new aircraft and the existing UK fleet of Eurostar EV-97 and Eurostar SL aircraft, under the brand [SportStar Aviation](#)

to both single seat and two seat aircraft. However, some key differences will remain between BCAR Section S and the other European certification bases, admits the CAA.

Manufacturers looking to certify a new factory-built microlight aeroplane type or variant in the UK must apply to the CAA as they do currently for type approval against a certification basis, either BCAR Section S, CS-LSA, CS-VLA or a national ultralight code.

The CAA will review the design and agree with the manufacturer Special Conditions (additions) to create a bridging standard between the certification basis used and BCAR Section S.

For amateur-built microlights, applicants would follow a similar

process, and work with the LAA or BMAA towards Type Acceptance.

Anyone wanting to import a microlight into the UK will need to check that the type or variant has been approved or accepted in the UK and that it meets a recognised microlight aeroplane certification basis (either BCAR Section S or another code with Special Conditions). The aircraft would then need to be added to the UK register.

Note also that if the type or variant has been accepted as an amateur/kit-built aircraft, it cannot automatically be accepted also as a factory-built or vice versa. A similar process must be followed.

There are some changes in licensing and training but the

CAA says they are minimal “to allow as seamless as possible a transition for pilots/owners”.

The main change is that differences training is required for pilots who have no experience in the larger aircraft, or when moving between different control systems, i.e. three-axis to weight-shift and vice versa.

Differences training will also be required for tailwheel, Electronic Flight Information Systems (glass cockpits), autopilots, electric engines, variable pitch propeller or maximum continuous cruising speed in excess of 140kt.

Sailplanes and helicopters have been excluded from the changes for the time being.

[The full CAP 2163 can be downloaded here.](#)

Take-off

Hydrogen, eVTOLs, drones – all in government plan for 2030 UK air travel

The government has set out an ambitious vision for how the future of air travel in Britain could look in 2030 through the UK Research and Innovation (UKRI) agency.

The vision, called the *Future Flight Challenge*, includes flying taxis and short haul airliner journeys powered by hydrogen, and the increased use of drones by emergency services and for delivering goods. It's backed by a £300m investment.

UKRI's Future Flight Challenge Deputy Director Simon Masters said, "Achieving accessible, safe, sustainable transport will be a key element in the fight against climate change. That's why in the year of COP26, UKRI is setting out what it thinks air travel should look like in 2030.

"Some of the concepts in this roadmap might seem a little further away than 2030, but the future is closer than you think.

"We're already seeing some of these ideas put into practice, with the UK's first vertical take-off airport months from opening and a hybrid air travel trial taking place in Scotland."

A key element of the roadmap is the use of hydrogen or electrically powered aircraft to provide short journeys for up to 10 people. These vertical take-off air taxis (eVTOLs) would eliminate carbon emissions, ease congestion in British cities and reduce journey times, said UKRI.

Also in the roadmap are sustainably powered small aircraft to provide short regional flights, providing transportation between towns and cities and serving more remote communities.

"The Challenge aims to transform how we



Top Future Flight Challenge looks towards a fully integrated air travel network in the UK

Above Ampaire's Hybrid Electric demonstrator aircraft
Left Zero-Avia's latest electric propulsion system on test

connect people, deliver goods and provide services by speeding up the acceptance of these innovative ways and bringing them into use safely and practically," said UKRI.

"By combining control and regulation with infrastructure and aircraft systems to create new operating models, the Challenge is creating the aviation system of the future."

The hybrid-electric flights trials mentioned were by US company Ampaire as part of the UKRI-funded Sustainable Aviation Test Environment (SATE) project. Ampaire's hybrid electric Cessna 337 (nicknamed the 'EEL') completed a 30-minute journey from Kirkwall in the Orkney Isles to Wick Airport in the north of Scotland.

Ampaire is due to repeat the flight trials between Exeter Airport and Newquay Airport in late August.

Another startup, ZeroAvia, recently successfully ground-tested the electric propulsion system for its planned 19-seat airliner based on a Dornier Do228. [A video released by ZeroAvia](#) shows the motor pulling a 15-ton truck.

[UKRI Future Flight Challenge](#)





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Take-off

Diamond's new DA50 RG arrives in the UK

The first Diamond DA50 RG in the UK was shown at the Private Flyer event at Leeds East (Church Fenton) earlier this month (6 August). The aircraft will be the demonstrator for Gemstone Aviation, the UK's Diamond Aircraft distributor.

"This was the first public showing of the DA50 RG in the UK, and we are delighted to say that it attracted a large number of potential customers," said Henrik Burkal, director at Gemstone Aviation.

"The launch of a brand-new aircraft design is a very rare and exciting event, and together with Diamond we will continue with our promotion of this new exciting, unique and environmentally friendly aircraft.

"The five-seat DA50 RG fits well into the UK market, and with a maximum take-off weight under 2,000kg it weighs in just under the threshold for paying Eurocontrol charges. This will give the DA50 RG the lowest operating costs in its class."

Gemstone is waiting for the aircraft's Certificate of Airworthiness from the UK CAA before they can fly it. The next planned outing for the aircraft is the next Private Flyer event at Wycombe Air Park on 17-18 September.

Right and below
Gemstone Aviation's first DA50 RG for the UK



The DA50 RG is Diamond's rival to the Cirrus SR22, with a luxurious and spacious interior, full Garmin G1000 flight deck, and TKS known ice protection.

It's powered by a 300hp Continental CD-300 V6 turbodiesel equipped with FADEC controls, driving a three-blade MT prop. It burns jet fuel with fuel consumption said to be 34 litres/hour at cruise. Max speed is 181kt.

[Gemstone Aviation](#)

RED Aircraft shows V12 diesel-powered Yak-18T

Russia's Yak 18T went from being a basic trainer for the Soviet military in the 1960s to being a fun go-anywhere aerobatic five-seater for private pilots, and the thunderous radial engine upfront has been a big part of its appeal. But now RED Aircraft of Germany has successfully tested the 18T fitted with its 500hp V12 turbodiesel.

The idea and execution was all that of RED Aircraft (RED stands for Raikhlin Engine Developments, founded by Vladimir Raikhlin).

The 18T's airframe is heavier than other aircraft of equal size, said RED Aircraft, so gives the ideal opportunity to demonstrate the higher powered engine.

The newly upgraded YAK-18T will be shown, on invitation only, in Moscow at the Finam-Bolshoye Gryzlovo Airfield.

RED's Jurgen Schwarz said, "Compared to the traditional powerplant, the aircraft's cruise speed increased significantly, while having more power reserves available. The aircraft is now equipped with modern instrumentation allowing for a precise control and monitoring of its engine systems."

RED cites several benefits. The Yak 18T is known for its ability to take off and land in very

Right Red Aircraft's 500hp V12 turbodiesel adds a shapely nose to the Yak 18T



short distances so with 500hp at sea level that capability should be enhanced. The engine's Full Authority Digital Engine Control (FADEC) should give accuracy and precision in power delivery. The Vee layout of the engine gives redundancy, says RED, with each bank of cylinders able to operate independently. The FADEC also stores and monitors engine data, allowing early identification of potential problems to reduce maintenance downtime.

RED claims the 18T's climb rate is doubled and useful load increased by over 50%. Maximum speed is an astonishing 216kt and fuel burn 20-40% lower.

[RED Aircraft](#)



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*-Johnathan Tully, UK
Cessna 177B*

Take-off

Bodmin highlights airfields as environmental heroes

Bodmin Airfield in Cornwall has been recognised as having the largest natural traditional hay meadow in the whole of the south-west of the UK.

Jay Gates, manager of the airfield, explained that Ian Benallick, the Botanical Recorder for Cornwall, was walking past the airfield when he spotted an orchid in the airfield verge.

“He asked if he could come inside the airfield and conduct a quick survey, which turned up an astonishing list of over 150 species of wild flowers, grasses and ferns and which included an estimate of over 3,000 orchids of three distinct species in the outfield,” said Jay.

“This has made us realise that General Aviation, and airfields, may unwittingly be sitting on land that is more important to the nation than you would have previously thought.

So how has Bodmin managed this? “By accident,” said Jay.

“For the past few decades it has had no herbicides, pesticides or harmful fertilisers spread across it, and other than the runways and taxiways, the outfield is only cut once a year with the cuttings all baled and removed from the site by a local farmer for use as silage and fodder for his cattle.”

Darren Fern, chairman of Cornwall Flying Club, added, “We have an outstanding example of a native English hay meadow, and the seeds from the grasses are highly sought after by farmers wishing to return their fields to their natural state.



“I’m sure every other airfield in the country has similar ‘out-field’ areas that will have the same natural diversity and environmentally valuable resources.

“There is an opportunity for all airfields to be recognised as being environmental heroes and not the villains for a change.”

Above Bodmin Airfield
Inset Seeds collected from the hay meadow are sought after

Leics Aero Club plants trees to go carbon neutral

Leicestershire Aero Club has become a carbon-neutral flying school – believed to be the UK’s first.

The club is offsetting its carbon footprint through a partnership with General Aviation Carbon Offsetting which has certified the club carbon-neutral for its first month.

In June 2021, the club fleet flew a total of 445 hours, using 9,711 litres of avgas. This resulted in a calculated 22.2 tonnes of CO₂ emissions.

Leicestershire Aero Club has chosen to offset this with tree planting with a distribution of 25% in the UK, and the remaining 75% worldwide in deforested areas which need trees the most.

Steve Bonham, club secretary, said, “We are aware that we have an impact on the environment and want to make some effort to reduce our carbon footprint. It’s not that expensive. We equate it to about a 0.5% increase to the rental cost and even less to training rates.”

■ Air display teams are being offered a scheme to

Right Carbon calculation for one of the club’s Cessna 152s

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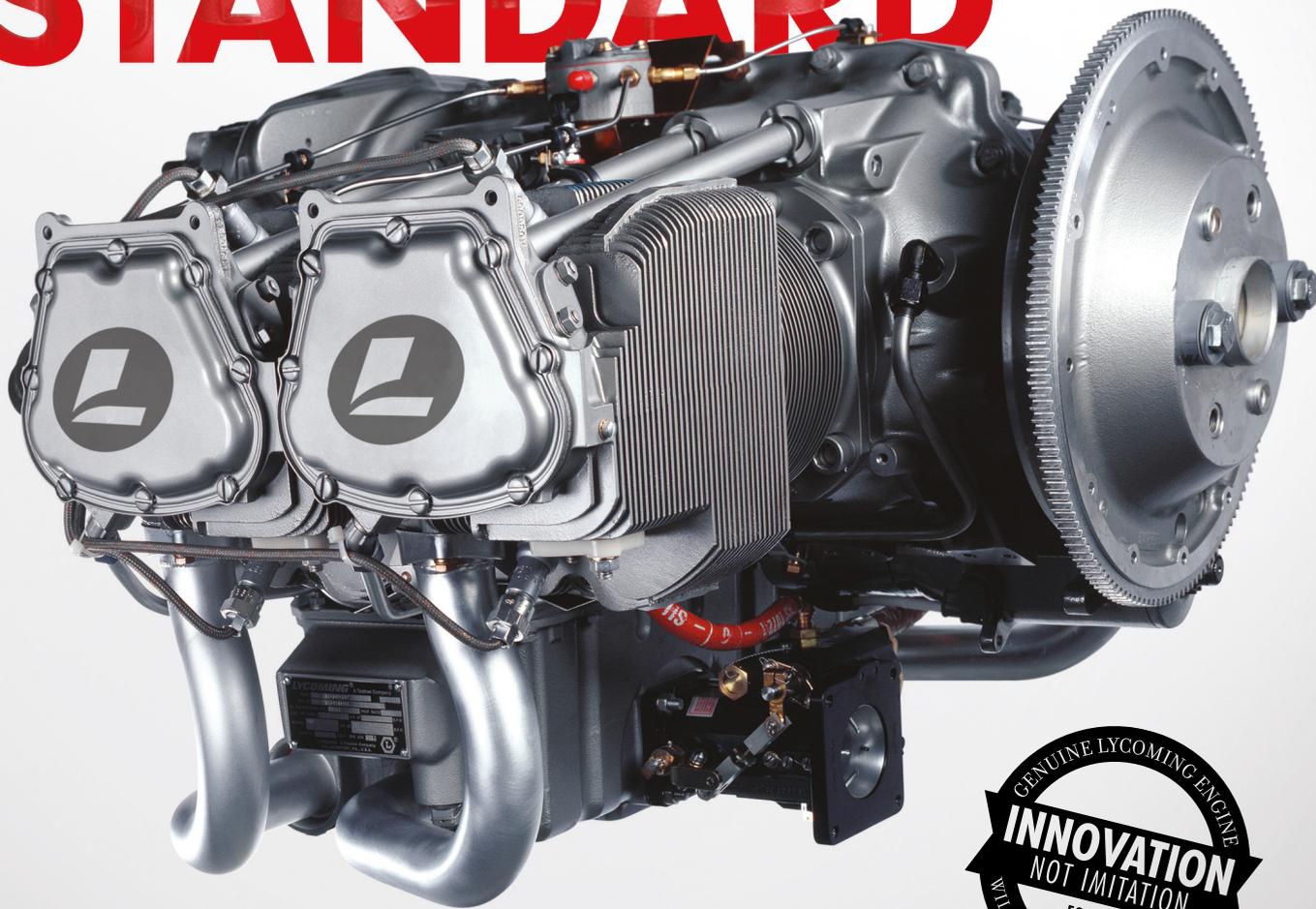
CO₂ Emissions (kg)
7040

How would you like to offset your CO₂ emissions?
 Planting Trees Worldwide
 Planting Trees in the UK

Total Cost to offset your CO₂ Emissions
£76.88

offset the carbon emissions of their aircraft, covering both the avgas burnt and smoke oil used during the display. It’s the brainchild of Jez Hopkinson whose company Airborne Services, based at Henstridge Airfield, also operates The Yakovlevs display team. [More here](#)

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Foreign air traffic procedures

Normally straightforward, a few differ from the UK, as **Ed Bellamy** explains

Although international GA flight is very rewarding, sometimes the combination of different requirements for customs, PPR etc and now of course Covid-19, can seem a hassle. From an airspace and air traffic control point of view though, flying in Europe is normally straightforward, in fact often more so than in the UK.

But there are still some differences in the application of the ICAO rules of the air and airspace procedures that are worth being aware of. So, in no particular order and by no means exhaustive, here are a selection you might come across in the major European states compared to the UK. Reading national AIPs or VFR flight guides will give country specific information.

Flight Information Service

The ICAO definition of a 'Flight Information Service' is a service provided for the purpose of giving advice and information useful for the safe and efficient conduct of flight. In most parts of the world, if you are talking to an air traffic unit but not within controlled airspace, a Flight Information Service (FIS) is what you ask for. There is a loosely defined list in ICAO Annex 11 (Air Traffic Services) of what a FIS should offer, which notably includes information on collision hazards and relevant weather information. In most places, FIS is provided by regional air traffic service units.

The separation of the FIS concept into three different levels – 'Basic', 'Traffic' and 'Deconfliction' is a UK procedure, and the terms are not normally recognised elsewhere. So, do not start asking Paris Information for 'Basic Service'.

VFR cruising levels

In many states, VFR en route flight must be conducted at the VFR cruising levels when over 3,000ft above ground level. Depending on the local transition altitude, this will either be as an altitude or flight level. On magnetic tracks 360° through 179° you must fly at an odd level + 500ft (i.e. levels 3500ft, 5500 ft etc) and between 180° and 359°, even + 500ft (4,500ft, 6,500ft etc). One reason for this is that IFR cruising levels are assigned at the whole levels, so the idea being that VFR and IFR are deconflicted by 500ft.

Class E airspace

This is not a procedure difference as such, but Class E airspace is more widespread outside of the UK. In some European states it can start at (for example) around 1500 ft above the surface and cover large areas. There is no requirement for VFR flights to be in receipt of a clearance to enter Class E, or indeed be in contact with ATC, but be aware you will likely be sharing Class E with IFR flights, so

it is prudent to be in contact with the relevant air traffic unit.

The main difference in Class E vs G is the visibility and cloud clearance requirements – in Class E you always need 5km inflight visibility (8km above 10,000ft) and to have 1,000ft vertical and 1,500 m horizontal clearance from cloud. In theory this is to avoid being on the edge of a cloud when an IFR aircraft might come out of it.

Class D airspace

The 'clear of cloud' rule when below 3,000ft in Class D is a UK thing – in most states to fly VFR in Class D you need 1,000ft vertical cloud clearance. If this is not possible, you can ask for Special VFR. It is unlikely to be denied except around busy airports when separation capacity might be limited.

Under a standard VFR clearance in Class D, remember there is no requirement for ATC to separate from other traffic. While traffic information should always be passed, you might find the lack of separation to be more literal in some states than perhaps is normal in the UK – so keep a good look out.

Uncontrolled aerodromes

'Air/Ground' radio is mostly a UK thing. Normally in Europe you will find either ATC, Aerodrome Flight Information Service (AFIS) or a common traffic frequency. AFIS giving instructions to aircraft on the ground is also a UK thing and not normally found elsewhere – just ask for aerodrome information and announce your intentions. ICAO conventions of turning left in the circuit (unless otherwise indicated by local procedures) and conforming to the established traffic pattern are universal. Check local language requirements, at some uncontrolled aerodromes radio must be in the national language rather than English.

Flight plans

Occasionally people are caught out by this one – you need to file a full flight plan to fly internationally, but if arriving in the UK at an unattended aerodrome, overdue action is not initiated if you fail to close the flight plan on arrival, unless you have nominated someone to do so for you.

In many states once a flight plan is activated, if the estimated arrival time passes without closure, overdue action may be initiated. Normally at an aerodrome with ATC or AFIS, they will close it for you once you land, however at an unattended aerodrome you will probably need to call a flight planning office to confirm you are safely on the ground. It is sensible to put a mobile number in the remarks section of the flight plan form, so that the authorities can call to check on you before sending out the search parties. 



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The 10-step plan for becoming a professional pilot



How do I become a professional pilot? That was the question from 15-year-old Summer Carmichael who's studying at Paisley Grammar School and, like many fifth-formers, is considering her career path.

So here's *Flyer's* 10-step plan plus student pilot Sophie Eastabrook tells us how she got started.

1. Study the right subjects at school. Becoming a pilot involves maths and science so make sure your mental arithmetic and understanding of physics are up to speed.

2. Engage in other activities. Flying as a professional pilot means working with a team so you'll need social skills. Airlines and other pilot employers are looking for well-rounded knowledgeable individuals with leadership potential.

3. Research the career. Long haul airline flying sounds wonderful but time away can be tough on family life. Understand what type of professional pilot you'd like to be – airline flying is not the only option.

4. Book a flight in a light aircraft.

All flying schools offer these – usually an hour spent with an instructor in a two- or four-seat aircraft. You need to be sure you'll like flying!

5. Pass the Class 1 Medical.

To become a professional pilot you'll need to pass a Class 1 Medical. Get this out of the way early because you need to know you can pass the medical before going any

Have I got what it takes to be a pilot?

You will face pilot assessment or aptitude tests when you apply to join a course with an Approved Training Organisation (ATO). That's to make sure you aren't wasting your money and they aren't taking on a lost cause.

But before you get to that stage, you can prepare and take practice tests which will help you understand areas where you need to develop.

One company offering such preparation and practice tests is Symbiotics.

Emma Akhurst is the Lead ADAPT Psychologist at Symbiotics and told us pilot aptitude tests are usually made up

of a combination of knowledge tests in areas such as maths, physics and cognitive reasoning, ability tests which look to measure your dexterity, multi-tasking and coordination and control, and behaviour and preference-based questionnaires, such as those measuring personality, to understand your suitability for a particular role or organisation.

"It is really important to be as prepared as possible" said Emma. "Practice tests can help you to familiarise yourself with the process and identify key development areas"

[Symbiotics preparation](#)



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further. Yes, you can pass if you wear glasses, but other health issues may take time to investigate and be resolved.

6. Prepare for assessment tests.

Pilot training companies – known as Approved Training Organisations (ATOs) – will want you to take some pilot assessment tests. These cover things like maths, physics, dexterity, spatial awareness, mental agility. You can prepare for the tests (see earlier sidebar on page 16).

7. Finance. How are you going to pay for the training? The whole training courses from start to finish will cost between £70,000 and £100,000, depending who you train with. There are

some scholarships and bursaries available from various organisations – [see here](#)

8. Research the right training route.

The big decision is whether you choose an Integrated course where you train full-time for 18 months or so, or Modular where you break the training down into segments and can take up to five years. An Integrated course requires you to have the finance to pay for it available at the beginning, whereas with the Modular route you can pay in stages and work in between.

9. Research the ATOs. You'll be spending a lot of time and money with your training organisation. You must be

happy with the people, premises and methods of teaching. Make sure you understand what's included in the price and what's extra.

10. Start your training. It's hard work, with lots of studying across 14 different subjects, followed by flight training. You'll need to really knuckle down and dedicate yourself to completing the course with the best scores you can get to be sure of getting a good job afterwards.

But, as all pilots will tell you, once qualified you'll have the best office in the world, working with a highly professional team, a good salary and prospects and plenty of responsibility.

Sophie's route to becoming a pilot

Sophie Eastabrook is a student with Skyborne Airline Academy at Gloucestershire Airport. Here's how Sophie got started:

My dad is in aviation so I've always had aeroplanes in my life. During my first or second year of secondary school I had a moment where I realised that I could make a career out of flying. When I was 14, my parents gave me a trial GA flight as a Christmas present. From that first lesson I knew for certain that was what I wanted to spend my life doing.

I carried on learning to fly in a Cessna 152 at a local flying school, going solo at 16 and earning my PPL at 18. Achieving my PPL will always be one of my proudest moments.

At school I studied what I enjoyed, so at AS level I took maths, further maths, physics, Latin, and history, and then focused on the subjects I needed for university for A2: maths, further maths and physics. I read physics with astrophysics at the University of Exeter.

While at university I was a student member of Bristol University Air Squadron. Generally, I've always been a keen reader and more recently I've developed a love for gardening.

After graduating from university, I would have applied to an ATPL training course straight away but that wasn't financially possible. I planned to work for a year to save money but Covid hit six months into that plan and I ended up delaying until March 2021. As well as my savings, I'm lucky to have an incredibly supportive family who helped me achieve my dream.

I did plenty of research over the options available and attended several flight school open days. I decided to go down the Integrated route mainly because I preferred to dedicate 18 months to an immersive training



environment and complete my training with one provider.

When I arrived at Skyborne's Open Day it felt instinctively the right place for me. I was impressed by the facilities and had a wonderful tour where all my questions were answered.

The course fees include accommodation at Skyborne's centre so you're living with fellow trainees – great for studying in the evening and being around people who understand what training to be a pilot is like.

I got my Class 1 Medical before I applied to my course. I thought it was important to get both my medical and funding in place before I applied.

I had to do pilot assessment tests although they were different because of Covid restrictions in place at the time. I filled in an online application form and having met the requirements, I was sent a

set of online aptitude tests – a combination of aptitude, maths, and behavioural/personality questionnaires.

I recapped some maths and physics knowledge appropriate to the course and practiced my mental maths skills – something I would definitely advise!

Having met the required standards, I was invited to interview, which was over a video call due to the pandemic. The next day I found out I had been accepted and I couldn't have been more thrilled!

I'm currently half-way through Module 2 of ground school at Skyborne. I've passed the first five theoretical knowledge exams and I am now studying for the next four exams. Then it's the last four theoretical knowledge exams in Module 3 before beginning the Core Flying (single engine) phase out in Vero Beach, Florida which is very exciting!

I would love to go on to long haul flying and I'm hopeful that when I finish my training there will be opportunities across the industry.

The most important piece of advice I would give is to have a few lessons in a GA aircraft. You don't need to get a PPL to start an Integrated course but flying in a light aircraft is a totally different experience than an airliner.

After that, there is maths and physics involved in the theoretical subjects, so do try to give yourself a good grounding in those subjects.

Mostly I would say it involves a lot of hard work so be prepared for it, but if you have the passion and determination to become a pilot then it is also extremely enjoyable.

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I Get Paid for This...

Anja Eriksen

Providing offshore crew transport, Anja Eriksen flies the H175 from Aberdeen to oil rigs in the North Sea. Interview by **Yayeri van Baarsen**

How did you get into flying?

Without understanding why, as a child I always felt drawn towards aeroplanes in the sky and the sun's reflection on them. Then at about 14 I watched *Top Gun* and it just hit me. I sat in front of the screen, eyes and mouth wide open – from that moment I knew I wanted to fly.

Tell us about your job?

I'm an offshore pilot for NHV UK, flying the H175 from our main base in Aberdeen, Scotland. The H175 has room for 16 passengers and we usually fly twice a day, covering the UK North Sea sector.

Most flights are transporting personnel to and from the oil platforms. Occasionally, we fly out vital spare parts or, if the seas are too rough for supply ships, we may even bring toilet paper! The biggest challenge is that 99% of the time, we fly over water. North Sea weather can be unpredictable, with sudden fog or 'four seasons in one day'.

At the oil rigs, every approach and landing is different. Even if it's the same helideck, there can be a ship that you have to work around, exhaust fumes blowing towards you, or winds causing turbulence. Being able to adapt to every situation, by using your 'toolbox' of knowledge of the manuals, regulations, aircraft, weather, experience, common sense – and even your gut feeling, is essential. Understanding and utilising the different CRM aspects is a very big part of it.

It's also what makes my work exciting. I love the busy flights, where I have to dig deep in my toolbox to solve a certain issue, or when I get to do something extraordinary, like landing on a semi-sub which is being towed back to shore. Jobwise, I'm exactly where I want to be now and that's a great feeling.

What training did you have?

In 2006, I got my PPL-H in New Zealand. Afterwards, I went to the USA where I got my FAA licence and worked as an instructor. In 2008, I moved back to Europe, where I got my JAA Licence and worked as an instructor in Sweden, then got my IR in Norway. I flew the AS332L2 and the H225 for another operator before joining NHV in 2018. Since 2019, I've also been a CRM trainer. I've literally worked my way around the world!

What's been your favourite flight?

A ferry flight in the H225 from Istanbul to Aberdeen in 2015. It took us three days. Flying out of Istanbul Airport was an experience. It was so busy that by the time we got to 10,000ft it felt like we'd been speaking to 10 different controllers, who all thought their English would get better the faster they spoke... It



Flying CV

Offshore pilot Anja Eriksen is NHV's first female PIC in the UK. She's also a CRM trainer and part of the Offshore Peer Assistance Network.

Started current job July 2018

Now flying Airbus Helicopter H175

Favourite aircraft Airbus Helicopter H175.

"Airbus makes pilot's helicopters. Very agile and intuitive, the 175 really is a nice aircraft."

Hours at job start Approx. 3,500

Hours now Just over 5,000



"At the oil rigs, every approach and landing is different"

was great being outside my comfort zone though. I learned a lot from that trip.

And your favourite airfield?

Sumburgh Airport on the Shetland Islands. There's often a lot of wind, so landing there requires vigilance. As a smaller airport it allows for flexibility and once again you get to use that toolbox. On a clear day when flying across the island, it looks like the Mediterranean – although the water is freezing cold!

Do you get to fly much outside of work?

No, unfortunately not. My dream is to purchase a small fixed-wing aircraft to fly to work, as my partner and I have a house in Denmark and both work for the same company on a two weeks on / two weeks off roster. I have my eyes on the Diamond DA42. It looks really cool and is IFR certified so it'd allow us to fly in most weather.

What's your most valuable career advice?

If there's one thing you need in aviation, it's determination. So if you really want to do this, never give up. Also, a big shout out to women to become pilots. I can only speak for the North Sea, but here there are no barriers for women. Last, but certainly not least, take advantage of the European Pilot Peer Support Initiative if needed. Pilots have mental health issues just like anyone else and talking about it can make a huge difference! 

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Unusual Attitude

DAVE HIRSCHMAN



CFIs say one thing, do another

In the process of examining any pilot's wrong-headed aerial decisions, sometimes you don't have to dig too deep to learn the source was a CFI's poor example. Any pilot who descends below published minimums on an instrument approach, flies an aeroplane over its maximum gross weight, or scud runs in less than VMC can almost certainly cite examples of CFIs doing exactly the same things and getting away with them.

I remember taking a multi-day mountain flying course in which much of the curriculum was devoted to selecting routes that followed landable terrain, crossing ridges at 45° angles, and approaching mountains with sufficient altitude, caution, and lower terrain over which to turn away. Then, at the conclusion of the course, the instructor – a highly experienced mountain flier – went home GPS direct with barely enough altitude to clear the ridgelines.

I could scarcely imagine a more perfect illustration of 'do as I say, not as I do'.

CFIs do a credible job of teaching the skills necessary for their students to pass checkrides – but our real-world actions speak louder than our dry rule recitations.

I confess to having unclean hands here, too. We all know the book answers to VFR cloud separation requirements (500ft below, 1,000 above, 2,000 horizontal), yet I don't always observe them. And I know that aerobatics are prohibited within four miles of the centreline of federal airways, yet I've violated that rule too many times to count.

I once flew a friend's aircraft to retrieve him and his family from a distant location. When I got there, I filled the fuel tanks in preparation for our long flight home, and then my heart sank when he showed up with more people (and bags) than I had been told were coming. The trip home started out well over the aeroplane's published max gross weight, and I knew it, and flew the trip anyway. If the weight of my shame and regret had been figured into my calculations, the aircraft never would have got off the ground.

Pilots are expert rationalisers. Cloud separation requirements are less meaningful now that so many aeroplanes are equipped with ADS-B traffic systems. Federal airways cover the vast majority of the East and West coasts, so legal aerobic airspace is virtually impossible to find. Ferry pilots are typically permitted to fly 10% or more above max gross weight at the stroke of a pen, and GPS-based synthetic vision seems good enough to keep pilots clear of terrain and obstacles (and even make zero-zero landings) in a pinch.

So what's the right answer to the question of proper CFI behaviour? Do we strictly observe all regulations at all times? Do we only follow the regulations we agree with? Do we use

situational ethics that consider context and intention for all our aeronautical choices? Or do we hide our questionable conduct and, if caught, fall back on the old, 'Do as I say, not as I do?'

Personally, my north star is WWWD – What Would Wally Do? Wally Moran is a veteran aviator, instructor, glider pilot, and former airline chief pilot, and he's a regular participant in roundtable discussions at Pilot Workshops, an online pilot education firm. Moran is calm, thoughtful, and vastly experienced, and his well-reasoned method for solving pilot conundrums centres on overall risk mitigation.

Think things through, leave yourself an out, and reduce as much as possible the inherent risks that are part of flying.

That often means making hard or inconvenient choices such as going far out of the way to avoid adverse weather, or spending the night at a hotel rather than making it home. I don't always agree with Moran, and sometimes I find his choices overly conservative. I recently found myself on the

“The trip home started out over gross weight, and I knew it...”

opposite side of an argument about the wisdom of flying directly across Lake Michigan in a single-engine aeroplane. (I was for it, he was against it.)

But Moran's reasoning, that the consequences of a forced ditching so far outweigh the benefits of a direct route, was consistent with his overarching risk mitigation strategy.

Airline pilots like to darkly joke that, in evaluating aeronautical decisions, 'Start at the NTSB inquiry and work backwards'. That's not a perfect fit for general aviation where pilots have far more leeway to make choices and less resources to guide them.

But the idea of having your decisions questioned after the fact, and being judged on their merit, is solid.

When I'm confronted with an ambiguous choice in flight, I ask WWWD, and I can pretty much hear Wally's Southern gentleman voice in my head. We all have aviators we respect and admire, and we can call upon their thought patterns to guide us. I may not always like or even follow the WWWD answer – but I'd better have a good reason for disregarding it.

I know my aeronautical decisions aren't always going to be wise or correct. But at the very least, they should be consistent, explainable – and not in conflict with the things I teach as a flight instructor. ▼

RV-4 pilot, ATP/CFII, specialising in tailwheel and aerobatic instruction in the USA dave.hirschman@flyer.co.uk



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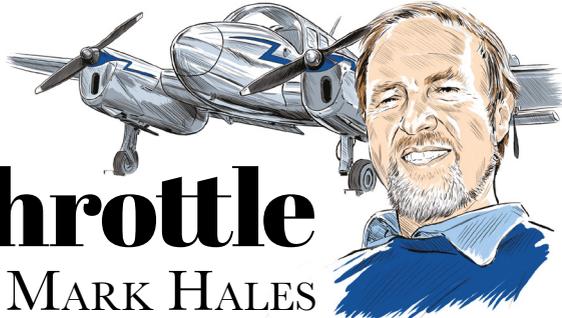
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MARK HALES

Milestones...

You know what it's like with milestones. They're like buses. You wait two years for one, then another comes along in no time... I talked last time about the joy of bolting my converted Citroën diesel to the front of my Jodel 1051, but that there was still a way to go. I thought about that afterwards, as in, had I been reinstalling a Continental 0-200 – or the Potez 4E20 with which the aeroplane left the Centre-Est Aéronautique factory in 1964 – I'd have been very disappointed if it wasn't running nicely that same afternoon. Well, I have now fired up my diesel, and even if it took weeks rather than hours, it still felt like a huge achievement.

Any builder or modifier will know very well that there's a big difference between reassembling something that has already been sorted, and creating a bespoke installation for the first time. For instance... the Jodel features differential braking which is added via a mixer as the rudder pedal nears the end of its travel, but there's a neat addition which features a small hook on each of the two central pedals, designed to snag a central rod with a spring package on the firewall. When you jab the rudder pedal in desperation to save a swing, the spring adds some resistance at the very end so you don't immediately lock the brake. Genius, but so simple when you survey it, like so much of Jean Delemontez's inspiration. However... the spring package sticks forwards from the firewall and on this installation, neatly interferes with the bottom pulley on the in-line Citroën engine. Not by much, but I will have to fix it if I want to keep the pedal spring which is currently sitting on the bench.

And before anyone asks, yes I did measure it, but not to within 5mm, obviously... There had already been a certain amount of head scratching about the return from the injectors which has to go back to the source. The injectors on a diesel engine are supplied with more fuel than they need at any given moment, so the excess is piped back to the fuel tank, in this case together with any surplus from the mechanical injection pump which replaces the electronic control unit originally fitted by Citroën. Mechanical pumps are still the norm on diggers, mowers and smaller agricultural machinery, and for the same reason that I added one – there's no ECU, nor electronics of any kind, and they are more tolerant of fuel quality.

I've already mentioned the location of the Jodel's front tank, sandwiched between the firewall and the panel and the fact you have to entirely dismantle the interior of the aeroplane to access it. As in, take out the seats, remove the instrument panel, radios and all the control cables, but since I'd already done all that, this might be a good time to grit my teeth, remove the tank, bore a hole and

weld a boss to take a banjo bolt. But then, Eureka... The new-found access to the back of the tank revealed a breather exiting via a banjo near the top of the tank, just where you'd expect it. So that's how the fuel pours out from somewhere halfway along the bottom of the fuselage when you overflow the tank. A double banjo bolt would allow me to keep the breather and feed the return fuel in via the same port. Phew...

The actual firing up almost turned out to be an anti-climax. A bit of cranking on the starter to see some oil pressure and to bleed air from the injectors. Then again, and it just cracked up, settling down to an immediate and thankfully relaxed dieselly idle. That was a relief in itself. Andy had said to be ready with something to stuff in the turbo inlet 'in case it goes mad...'. A fair point, because if it did, there was no other way of stopping the engine. You can't flip an ignition switch, and if I had to dive back into the cockpit and turn off the fuel it would be several minutes of madness while the engine drank the (large) fuel filter dry, or blew

“...be ready with something to stuff in the turbo inlet, in case it goes mad...”

up. It didn't, and in fact it could have been a little more on the mad side. Any attempt to rev it beyond about 2,000rpm was met by a lumpy misfire and huge clouds of white-ish smoke. The colour is apparently important because it says 'unburnt diesel' or maybe 'water from a blown head gasket...'. The misfire is either because of too much fuel squirting into the combustion chambers and which the engine doesn't have time to burn (so it burns in the exhaust and smokes white), or incorrect pump timing (which leads to much the same thing), or probably something else which I don't yet know about. Diesels are just different.

Most likely culprit is the injection pump which governs everything on a mechanically injected diesel. I'll have to take the engine out in order to remove it – everything is pretty tight up against the firewall because it was necessary to keep the weight as far back as possible – and then I'll send the pump (and the injectors) to the local shop which has a test rig. Yes, I know... wouldn't it have been easier to do that before I put it in the aeroplane? Probably, but it might have worked perfectly, and then I wouldn't have found out about the pulley/spring interface clash. Perhaps I should think of it as like sending a magneto away for regular service. On second thoughts, perhaps not. That's the kind of task I'm trying to stretch out to at least 5,000 hours... 

Working vintage aircraft and cars make Mark particularly happy
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Squawks

IAN SEAGER

It's a wonderful time...

Maybe I've been sniffing too much avgas, or had too much sun, but rather than using this column to prod those who are in need of a good prodding, I'm going to use it to celebrate what could well be an exciting new era for General Aviation. Don't worry, I've not gone too soft, the CAA still needs to sort out the absolute mess that is shared services (you wouldn't believe the number of licensing issues that remain unresolved and that are costing people money). It still needs to sort out its customer portal and Cellma (while writing a quick 'how not to get things this badly wrong in future' training course – one they might've shared with NATS before it delivered its new 'Internet Briefing System' (IBS) – and the DfT still needs to do the right thing by General Aviation and actually work towards improving our lot in the UK rather than just talking about it. We still need less controlled airspace (have you seen how long it took the CAA to come up with, erm, nothing useful on the Cotswold reclassification?), and more airfields (or at the very least to keep the ones we have safe from developers)... but no, this column is going to be upbeat and positive.

I'm talking about the new legislation that will enable 600kg

microlights. Oi, crusty dinosaur people, stop rolling your eyes just because you don't like the word 'microlight', put your prejudice to one side for a second and just look at what we've got.

Airworthiness requirements that are much more aligned with other national authorities, notably Germany and the Czech Republic (France has gone all Citroën suspension on us and is ploughing its own slightly different furrow). I'm told that while they are not perfect matches, they are close enough to significantly reduce the burden on manufacturers so that selling into different markets will be easier. Great news for UK manufacturers who should see a smoother export path, and great news for UK buyers who should have a wider choice of much more capable aircraft, and great news for people flying those existing microlights who will be able to make use of the higher weight limits (yes, I know this will not apply to everything, yes, I know it's not automatic and yes, I know the manufacturers will have to work to seek approvals, but it's a positive thing, no?).

Then, just at the right time the BMAA has appointed Rob Hughes as its new CEO. I've got a lot of time for the incumbent, Geoff Weighell, and I sincerely hope that he is able to fully enjoy his well-earned retirement, but I'm absolutely

convinced that Rob is the right person for the job at this critical and exciting time.

But it's not all super expensive sleek and fast machines (of the type that 19-year-old Zara Rutherford is currently using to fly around the world), there's lots of potential elsewhere. At the recent Microlight Trade Fair I spent a few minutes sitting in an Pee-Bee, a nano-light weightshift trike with an 80cc engine and a price around £10k. Clearly it's the wrong machine to be using if you want to fly yourself and your family to Le Touquet for lunch, but for low cost pure aviation fun in the silky smooth air of a summer's evening, or the crisp unlimited visibility you often get during the winter, it's got to be hard to beat (yes, after all these years of avoiding them, I think I really will have to give the whole weightshift thing a go).

But even if that's not your thing, there's something in the new regs that just might be... how about a single-seater? Yup, 600kg aeroplanes with a (flapped) stall speed of 45kt or less could well bring a new range of factory or kit-built microlights within range. It's tough to justify a single-seater as your only aircraft, but the costs really start to look interesting if you perhaps share between a group like-minded group of pilots or hangar friends

“...great news for UK buyers who should have a wider choice of much more capable aircraft”

(this has got to make the possibility of getting the SPA Panther approved in the UK a bit closer?).

Finally, there's the PMD, the Pilot Medical Declaration. At launch a few years ago it was a thing of simple beauty. It may have fallen victim to some unintended consequences (or perhaps legal concerns if you share my slightly cynical hat), but it remains a valid option for many, many pilots, removing the stress and expense of full medicals (it's not, however, an excuse to give up looking after your health). I know you have to have an account on the CAA's Customer Portal, I know you need to make the declaration online, I know doing so is pretty much guaranteed to raise stress levels and blood pressure to dangerous levels, but once done it's good until you're 70 (at which point you make another declaration), so very much worth taking the long view if it sorts your kind of flying.

Put the challenges to one side, embrace the joy, embrace the freedom and maybe indulge in a few minutes of reflection. Find the kind of flying that works for you (from both a fun and budget point of view) kick back, enjoy and be safe. 

Publisher, pre C-19 often found flying something new and interesting
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FLIGHT TEST | Grob G109 Able

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WORDS IAN SEAGER. PHOTOGRAPHY ED HICKS

Once upon a time there was an aircraft called the Vigilant T1. The highest specification of the Grob 109 motor glider, it was introduced into service with the RAF's Volunteer Gliding Squadrons in 1991. A fleet of some 60 Vigilants provided thousands of cadets with their first taste of flight, but rather than living happily ever after, there was trouble ahead for the Vigilant when airworthiness paperwork concerns were raised. A QinitiQ engineering report pointed out that due to multiple training flights being logged as one it was impossible to determine the fatigue life of each airframe, while other irregularities in maintenance records made it impossible to be completely certain of the status of any individual airframe. The Vigilants were never considered to be unsafe, but their fate provided evidence to support the theory that flight has nothing to do with Newton or Bernoulli, and everything to do with paperwork and money. The much-loved Vigilant fleet was grounded and withdrawn from service in May 2018. To many, it looked like the aircraft would never fly again.

The naysayers hadn't figured on Aerobility's CEO Mike Miller-Smith MBE, on his eternal optimism, nor on his boundless energy. In March 2020 Aerobility purchased 63 (count 'em!) Vigilant airframes, with a plan to put them back in the air after a full refurbishment and re-certification project. In addition to airframe work, the aircraft will be re-engined with the 100hp Rotax 912iS mated with an MT constant speed prop and fitted with Garmin's G3X as an option. Grob itself, a partner in Aerobility's bid to acquire the aircraft, will refurbish 10 airframes and after that, the work for the remaining fleet will transfer to Southern Sailplanes in the UK. The resulting model will be known as the Grob G109 Able, with Aerobility planning to fly and operate up to eight aeroplanes, some of which will be converted to hand-control by Tim Dews of Airborne Composites. Profit from further sales will help to support Aerobility and its work. With a bit of luck, a bit of a win, win, win situation.

Clearly Covid didn't do anything to make things quicker or smoother, but nonetheless (and



Above The new cowl is not only longer, but sports a number of scoops, grills and recesses to accommodate the 912iS

Left Aerobility had its proposals accepted by the RAF and MoD and were helped by seed money from the DfT

Below The tour de force that is Mike Miller-Smith MBE, brilliantly combining positivity with relentless energy and persistence

undoubtedly in no small part thanks to Mike's persistence), Aerobility persuaded Grob to let them borrow its development and certification aeroplane (see Brexit complexities). Not long after, Mike invited *FLYER* to the charity's HQ at Blackbushe to learn a bit more about the project, and to fly the aeroplane.

Yes, you'd expect a TMG to have a decent wingspan, but at over 57ft (17.4m) the 109 has that – and then some. They're bloody huge, and unlike the super slender wings of a top competition sailplane they have a decent chord (wing area is 19 square metres) – I'm told each wing weighs in the region of 100kg, something we'll come back to shortly.

The aeroplanes are normally powered by the Grob 2500 E1 engine which develops 95hp, although if you mention that number to most people who know Grobs, you either get a look of derision or hearty laughter. Let's just say that nobody has accused a Grob 109 of having too much power.

Where the Grob engine sat under a normal-sized cowl, the Able sports a front end that's considerably longer, presumably to keep the CofG in a sensible position given the lighter weight of the fuel injected Rotax. The long vertically split cowl is adorned with various growths to support air intake, exit cooling and lights. It's a fine piece of composite work, but perhaps not the most beautiful cowl to ever grace the skies.

The cockpit clearly has a developmental past, but sports Garmin's G3X along with a transponder, GTN650 plus the usual collection of steam gauges and a bunch of electrical switches to help with the running of the Rotax's engine management system (there's a back-up battery, that covers alternator failure, but no electrical power = no engine power).



“You’d expect a TMG to have a decent wingspan, but at over 57ft (17.4m) the 109 has that. And then some. They’re bloody huge...”



Unusually for a 109 there's a hydraulic prop control (traditionally the prop had three positions: feathered, fine and course, which were set via a mechanical handle coming out of the dash), and unusually for SEP pilots at least, there's a blue handle on the cabin side that operates the airbrakes which are recessed into the top surface of that big wing.

After walking around the aircraft with Guy Westgate, (Aerobility supporter and display pilot) I sat on the wing, swung my legs into the cockpit and half lifted, half lowered myself into the seat. I had spoken to Mike earlier about cockpit access for disabled pilots, and he'd explained that with the top-hinged doors and sturdy wing it was one of the easier aircraft to get in and out of, a big plus given one of the charities main aims of offering disable people, without exception, the opportunity to fly an aeroplane.

There's plenty of space inside, the seats have adjustable rake and the rudder pedals can be adjusted forward and aft, so after a little faffing,

something comfortable and functional can be found for pretty much anyone. Guy ran through the start sequence for the injected Rotax, this involved bringing alternators online and tying in various electrical supplies before checking the dual lane engine management system. I guess it's something you'd get used to quickly, but it's more complex than it surely needs to be?

If you take a look at the pictures you'll see that at the end of a fairly long moment arm there's a large tail and rudder. This will give plenty of control authority while also acting as a nice big sail should you be operating on the ground in any kind of crosswind. For people like me who have only really flown relatively short-wing aeroplanes, there's a bunch to learn. The tailwheel is steerable (but can, and will 'jump out' of its steering collar to become fully casting just when you don't need it), and remember my earlier mention of 100kg wings? Well there's some potential momentum just waiting to nip you should you taxi too fast or too enthusiastically. I managed to weave my way to the runway without hitting anything, but operating away from gliding sites and at airfields where you might have a bunch of parked aircraft you need to take even more care than usual.

There are no flaps to worry about (we'll get to the airbrake in a bit), so after the checks I line up, apply power, keep things straight, and when there's enough speed, raise the tail a bit. Just as I was thinking about rotating, the Grob levitated off the runway and we climbed away at over 600fpm at 60kt, reducing power a bit in the climb. Visibility is great (including through the quirky perspex windows by your feet), but once again those long, long swings make their presence felt and the Grob is ready to offer lessons in adverse yaw to anyone who forgets about using the rudder and balanced turns.

Cruising along...

According to Guy the power of the Rotax combined with the hydraulic MT prop transforms the aeroplane's performance when compared to Grob powered examples, in fact Guy mentioned that 'this is now the aeroplane it always should have been' more than once, and given that we had no trouble cruising along a little north of 100kt, I can see what he means.

Trying to get used to those wings I flew a few steep turns which are great (remember your feet) before climbing to the west for some stalls. With power off there was a break and slight wing drop somewhere around 46kt. A power on stall gave a bonkers pitch attitude, I would have needed a bit

So you want to fly a TMG?

If you want to fly a Touring Motor Glider (TMG) and you have a LAPL or PPL then you will need to add a TMG class rating. We spoke to Lee Ingram of [Motorglide](#) about the process. Lee told us that if you have a LAPL there's a prescribed course that involves a minimum of three hours of training which needs to include 10 dual take-offs and landings and 10 supervised solo take offs and landings before taking a flight test. If you hold a PPL (or higher) there's no prescribed minimums or

numbers of landings, but 'training as required' and the same flight test. Hours in a TMG or SEP count towards the requirements for licence revalidation of both class ratings, so you can revalidate both class ratings with the same 12 hours.

Lee told *FLYER* that pilots with previous gliding experience found the process relatively easy, while those who have never flown a sailplane had to get used to the energy management involved and the use of airbrakes or spoilers rather than flaps!

It's also possible to learn to fly from scratch in a TMG (hourly rates start at something like £125/hr including instructor), and once licensed you can add an SEP class rating to your licence.





Above The Rotax sits further forward than the original Grob engine and is enclosed under a new, vertically split, cowling

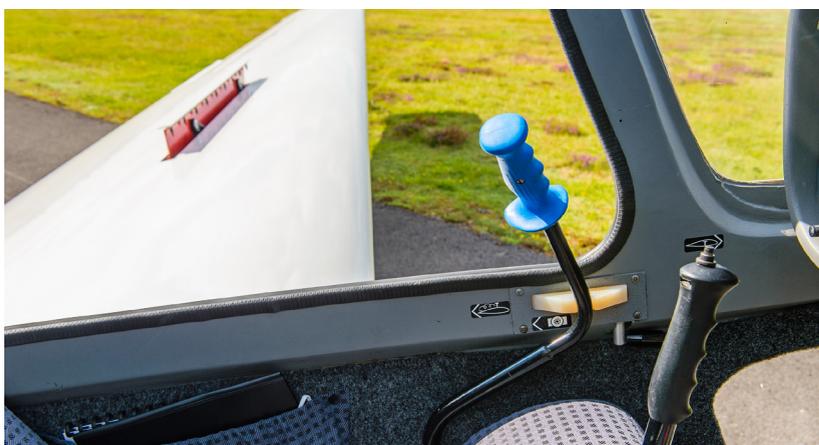
Right You can spec your Grob Able with the basics, or you can add Garmin's G3X and more

Below right You can store up to 20kg of luggage behind the seats (the carbon tray was for Grob's test instrumentation)

Below left Access to the spacious cabin is easy, but those seats could do with a little more padding

Left MT's hydraulically operated CS prop replaces the original 3 position Hoffman





Above See what I mean about those long wings and the big tail?

Left It is possible to take the wings off the Grob, but they're pretty much exclusively stored with the wings on. It is impossible to close the hatch if not correctly rigged

Below left For nosewheel power pilots, steering on the ground and minding those long and relatively heavy wings can be a bit of a learning curve

Below Airbrakes can be locked into the half-way position with the aid of that retractable nylon block. The airbrake lever can be forcibly pushed out if a go-around is needed

more time on type not to mention altitude to explore any more.

Being a TMG there may be times when you'd want to soar rather than power your way along. I'm told that for most people the heavy Grob with its 1:26.5 glide ratio needs the kind of thermals you find in Spain for this to generate significant height gain, but it's fun to try. So Guy shut down the engine and feathered the prop. There were a few bumps around, but the best we did was to reduce the sink rate to a couple of hundred feet a minute, but it reminded me of both the peaceful nature and frustrating challenge of soaring. Guy restarted the engine and we headed back to Blackbushe in order to explore another significant difference between a motor glider and SEP.

The combination of no flaps, low drag and a soaring wing means that trying to land the Grob without airbrakes is likely to end in a long float all the way to whatever obstruction action is waiting for you at the end of the runway. To avoid this embarrassing, expensive and painful experience you choose to fly the aeroplane as a glider or as an SEP, and first up we looked at the glider option...

A normal circuit is flown until you are well within gliding range and then some. The airbrakes are powerful, and Guy had me remain high enough that I was beginning to wonder if we'd get in. Throttle to idle (where it stays), right hand on the stick and left on the airbrake. Taking full airbrake dumps lift, adds drag and shows how easy it would be to undershoot, while putting all of the airbrake away shows how easy it would be to overshoot, all from the same approach. Going around from this involves closing (and locking) the airbrake with your left hand, swapping hands on the stick and then using your now liberated right hand to add full power and assume the attitude.

Now for the SEP landing option. Recessed into the side panel by the airbrake is a nylon block. A small lever moves that out into the path of the



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Brexit complexities



This particular Grob G109 Able is currently on the German Register which means that it couldn't be picked up and flown to the UK by someone with a UK licence, so Aerobility supporter and Grob display pilot Guy Westgate not only had to use his Austrian licence to fly the aeroplane, but had to be checked out and approved by Grob to be listed under its factory test pilot programme. The aeroplane could only spend a limited amount of time in the UK before it would have been considered a permanent import with tax due etc. Grob has certified the aircraft under EASA, and hopefully the UK CAA will validate that after it inspects the first delivered aircraft... Obviously UK versions on the G reg will be able to be flown by CAA licensed pilots.

airbrake, and you can set the airbrake in a machined panel so that it is basically half deployed. You then leave the airbrake alone, and manage the approach and landing with the (for SEP pilots) traditional pitch and power. Although going around in this configuration ideally involves putting the airbrakes back in, the aeroplane will climb with them half out.

The flare gave a higher nose attitude than I was expecting, but we were down and stopped in a little over 200m, at which point the whole focus once again became those long wings and accurate steering.

So how does it stack up? It's an interesting and entertaining set of compromises. If you want to enjoy some fun economical cruising, you can waft along at 90kt (you can go faster but I always think a Rotax is a bit more relaxed at lower rpm) and the 100 litres of fuel will get sipped at about 12 to 14lph (although if this is your thing, you will want to add some extra padding to the fairly firm seats). If you want to try your hand at a bit of soaring you can do that, although I'm told that gets easier the further south you go in Europe. If you are a flying club, then as a fully certified machine you could use this for training. A basic refurbished version would set you back £155,000, to which you can add lots and lots if a full suite of glass panel avionics is your thing.

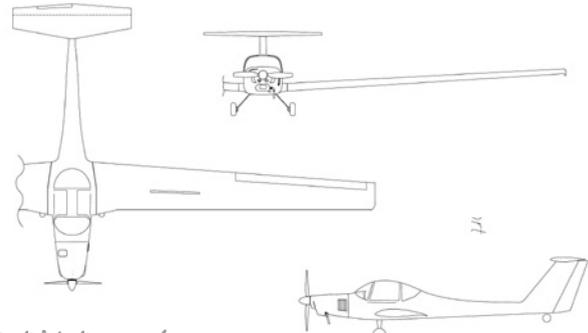
Mike Miller-Smith is one of the smartest aviation people I know, and if anyone can make this work he can, and on that basis, there's every chance that this particular story will have a fairy-tale ending. 



TECH SPECS

Grob G109 Able

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Performance

Max speed (Vne) 130kt
Cruise speed 105kt
Stall speed 46kt
Take-off distance 249m
Landing distance 205m
Rate of climb 670fpm
Range up to 771 nm
Glide Ratio 1:26.5

Weights & loading

Seats Two
Max take-off 875kg
Empty 664kg
Payload 211kg
Baggage 20kg
Fuel capacity 100litres

Dimensions

Wingspan 57.09ft (17.4m)
Wing area 204.5 sq ft (19sqm)
Length 27.4ft (8.35m)
Height 5.58ft (1.7m)

Spec

Airframe Composite
Engine Rotax 912 iSc3
Max power 100hp @5,800rpm
Propeller Two-blade MTV-21-A-C-F constant-speed
Avionics Basic analogue panel fit, with Garmin G5 and G3X touch EFIS available as options
Undercarriage Fixed with steerable tailwheel and differential braking

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My First Solo

Rob Mott

Just before going solo, Rob Mott experienced a bird strike... Interview by Yayeri van Baarsen



Solo stats

Light aircraft enthusiast Rob Mott is Chief Engineer and pilot for the British Microlight Aircraft Association (BMAA).

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How did you get into aviation?

It all started with my old man, he used to take me aeromodelling when I was still in a carry cot. A passion for remote control fixed and rotary aircraft led to a flight in a light aircraft, which was a moment of true inspiration. Straight from that very first take-off, I knew I simply had to achieve my licence.

How did your flight training go?

My initial training was quite drawn out, as it formed part of an engineering degree. Over the space of two years, I had eight different instructors (not by choice!) from two different airfields, Liverpool and Barton, flying PA-38 Tomahawks.

After soloing, I changed flight schools and aircraft, flying a C152 from Wolverhampton. Having obtained my PPL, I continued different flight training and eventually completed my Display Authorisation. I've had the opportunity to fly various aircraft, ranging from a two-stroke flexwing to high-performance aerobatic light aircraft. To me, every flight is an education – there's always something new to learn, consider or evaluate.

Did you expect your first solo?

Yes and no. The customary circuits were going well up until the final one. On climb out from Barton, approaching the wires, we had a bird strike on the canopy. Thankfully it had no physical effect on the aircraft, so I kept climbing. Once over said

wires, the CFI pulled the power back and said, 'engine failure'. My training kicked in and after I went through the drill, my instructor reported climbing away and I carried on with the circuit. To my surprise, after landing he told me not to stop the engine as he was getting out. In my post-first solo debrief, he said I handled both the bird strike and his cruelly timed EFATO well, so on that basis he decided to let me go solo.

What are you looking forward to under the move to the 600kg weight limit?

The increased scope of aircraft eligible to operate as a microlight on a BMAA Permit to Fly. The 600kg MAUW and 45kt stall speed (landing configuration) significantly increase the category while retaining the freedoms, privileges, and ethos we currently benefit from. I'm particularly excited to see what designs manufacturers will create in the new regulated single-seat category.

Does the new weight limit bring any particular challenges?

The main challenge that comes to mind is the expectation of current pilots. Although the 600kg microlight is now enshrined in UK law, the real work now begins: to certify eligible designs. Some feature new technology, such as electric powertrains, which require careful consideration for airworthiness and operation. Finally, with

the increased scope comes increased responsibility. The UK flying community must heed the valuable lessons due to the Light Sport Aircraft category in the US. Regardless of the legal obligations, it's always sensible to receive comprehensive tuition on new types. You don't know what you don't know, so seek help from a professional, it's always cheaper in the long run and you'll appreciate how good your flight training was if things go wrong.

Any thoughts about the future of microlighting beyond 600kg?

The BMAA has a multitude of ideas. Plans in motion include wider use of factory-built microlights for towing of gliders, achieving parity between factory-built and amateur-built microlights for ab initio flight instruction, and development of the first UK designed and manufactured electric microlight. There's also collaboration with UK MoD for faster and more cost-effective airborne developments – apparently drones can't do everything!

Other ambitions are more fundamental. With appropriate planning, research and execution, there's no reason why a microlight couldn't be capable of night, IMC, aerobatics and commercial flying. Oh, and let's not forget microlight helicopters!

What do you love about flying?

I enjoy so many aspects of flying, especially the pure sensation and feeling of freedom which it provides. My most surreal flying experience was flying upside down, in formation, across the English Channel to help a friend raise funds for Great Ormond Street Children's Hospital. During that flight, we learned that even routine tasks like changing transponder squawk tend to be tricky while inverted!

“Every flight is an education – there's always something new to learn, consider or evaluate”

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Technical

If you've ever thought about building your own aircraft, maybe now is the time to start! There's a huge range of aircraft to pick from and modern kits have never been better...

WORDS ED HICKS

Homebuilt wings



Pilots can all agree that flying is an amazing experience, but imagine what it's like to fly an aircraft that you've built, which you've personalised exactly how you want it? Thousands of pilots have done just this, and today's modern kits and equipment make it easier than ever to build your own aircraft.

In the UK, you can build your own aircraft in a number of different ways, but the most popular route is via the Light Aircraft Association (LAA), under the supervision of one of its UK-wide network of inspectors. There are around 200 approved designs you can choose from, though most new builders choose from around 30 of those, as they are the most current, supported types.

Permit Aircraft typically offer some of the best combinations of great handling and performance. There's even an option for some specific types to be approved for IFR flight too.

Homebuilding is an excellent way to get the aircraft you want, to your personal specification, and to spread the costs over time, if you're trying to keep to a budget.

Plans or kit?

Only a handful of people build from plans, but it's probably the cheapest route into homebuilding. There's machines to cater for all requirements too, but don't forget, if you plans-build, you'll be responsible for sourcing all the materials and parts for your project. It's a mighty task, but well within the realms of an organised builder.

For that reason, most builders opt for a kit aircraft, and today's modern kits have evolved to be quite advanced in their presentation, with many designs having structures that self-jig if you follow the instructions correctly. There's three types of kit, and you'll typically hear them referred to as a 'flat-pack', which is the whole airframe supplied in component form. Then there's the 'quick-build', which will see a partially constructed airframe, typically a fuselage tub and partially finished wings, delivered to the builder. Finally, there's 'fast-build', which sees individual sub-assemblies, delivered mostly complete, with the bare minimum to do before inspection and closure of the structure. Some options include pre-covering and pre-painting. Opt

Homebuilts to suit all kinds of dreams...

Top left Fancy a big muscle biplane? Then the plans-built radial-powered Pitts Model 12 might have your name on it

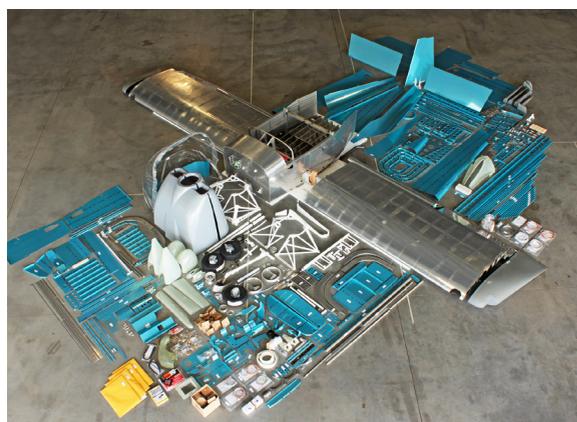
Top right Van's Aircraft RV-14/14A - conventional aluminium airframe powered by 180-210hp Lycomings

Middle left Small budget but warbird dreams? Then how about a Titan T-51B, powered by a 250hp Honda V6?

Middle right Need four seats with frugal fuel burn? Then the Sling Aircraft TSi with Rotax 915iS power could be for you

Bottom left All the vintage feel, but built from a modern kit - that's the Legend Cub

Bottom right Make yourself a wooden work of aviation art - the Chilton DW-1 is built from plans



Above Rivet together the parts shown here, add an engine, propeller and instruments, and you'll have a Van's Aircraft RV-14 like the one shown top right, on the opposite page

for this level of kit, and you'll 'just' find yourself having to complete the instrument panel, install the engine and associated firewall-forward components - and fit the interior trim.

While fast-build might sound too good to be true, it's not. Francis Donaldson, Chief Engineer of the LAA explains. "We appreciate that many people don't want to spend years in the workshop building their aircraft and want to see a quicker result. However, it's a fine line because we have to preserve the 51% rule element, to qualify as Annex 2 under the EASA basic regulation and in concept, to ensure that the builder can meaningfully take responsibility for the major portion of the build, and importantly, to allow an LAA inspector to have a fair chance of inspecting the whole aircraft rather than having to rely on any formal inspections / quality control on the part of the kit supplier. That said, assembling such a kit can be done in relatively short time and given a reasonable degree of care and the supervising influence of an LAA inspector, the risks of expensive mistakes are minimal and the whole thing is a very pleasant creative experience."

While many homebuilders tackle projects on their own, there's no reason that you can't team-up with friends to build. Think about how you'll divide up the work and the shares in the aircraft, and make sure everyone understands the commitment. A good building partner will make the building experience more fun.

Space to build

There's a clue in the word homebuilding... you'll want to see what space you have around your home for a workshop. If you want the best chance of making fast and continual progress on your project, then make sure it is just a few steps from your everyday life.

I've seen photos of builders working on major portions of aircraft in one-bed flats, and I've known husband and wife teams decide that for a few years, building their project in their living room would guarantee better progress than having to step outside to go to the garage. ▶



Above and left Any space you can free-up for building at home is good. Keep your motivation high by ensuring it's a comfortable place to work all year-round
Below Creating your instrument panel is the perfect place for you to add your own personal stamp to the project
Bottom An engine install can be complex, so you may want to pick a kit that includes a full array of parts to complete the work



“I don’t need any more space...” said no homebuilder ever! So it’s about trying to find the biggest space you can. For the typical UK homebuilder, the space of choice will probably be a garage. A two-car garage will provide enough space in which to house a typical two-seat kit aircraft during the course of construction.

If you’ve only got a single-car garage, don’t worry, these are usually pretty useful for most two-seat designs, and while you may not initially have all the space required for some of the bigger rigging jobs that will occur later on in the project’s life, you’ll be surprised just how much you can achieve in the early stages of airframe construction. An empennage kit, wings and fuselage are all possible to build in stages in a single-car garage.

By the time the fuselage needs the engine fitting, many builders get creative and add temporary structures to their garages to create additional space. Yes, there will be some occasions when you’ll need to rig the basic airframe – we’re talking fitting both wings and maybe the empennage – but it’s usually only a short time that the airframe needs to be assembled like this. You might find working just a ‘long day’ with it temporarily assembled will be enough, and for that, a cheap gazebo in the back garden or on the driveway is a good temporary solution.

If you’re not fortunate enough to have a spare garage, then a temporary wooden cabin in the garden can make an excellent workshop. No matter what space you end up with, make sure it’s clean, bright, has storage and workbench space. Crucially, it’s got to be a comfortable place to spend time in all year-round, otherwise it can be more tempting to stay indoors on those very cold days, rather than pop out to the workshop!

What to build?

When it comes to selecting what aircraft you want to build, first of all you’ll need to decide on what type of flying you want to use it for. One, two or four seats, side-by-side or tandem seating? Just a fun-flying aircraft, or a serious tourer? VFR or IFR? Want to stay straight and level, or fly aerobatics once in a while? Your answers will help you refine your kit choices. It might even be that airframe component size figures in your decision making. If the type you choose has a 30ft span one-piece wing, have you got space to accommodate that?

If you’re left with a few to choose from, then take time to research each one. Is the design a mature one with the inevitable bugs ironed out of it? Does it have a comprehensive build manual? Is the company or UK agent behind it one that will still be around ‘X’ number years in the future when you need remain kits or parts? An excellent UK agent, or very supportive company can be hugely helpful in the course of a build project, and you’ll get a good feel for this by talking to builders already building these aircraft in the UK.

Material types

Your choice of which aircraft type to build will almost certainly be the deciding factor for which material you’ll be working with. Looking at popular homebuilt kits of the last 10 years, aluminium appears to be the

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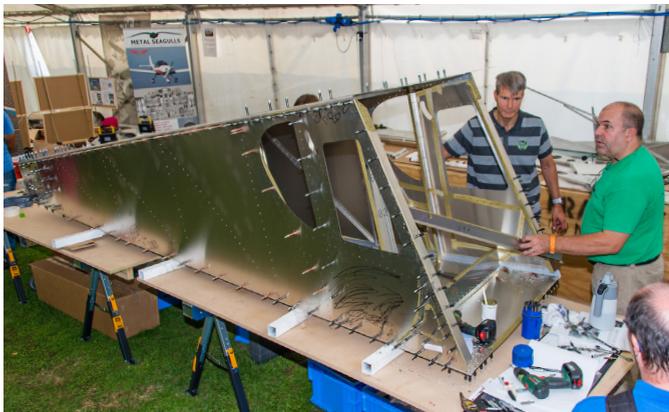
Above Building with wood means assembling parts, which then glue together to make an airframe

Left Tube and fabric is a time-honoured, but effective, way to build an airframe.

This is a KFA Safari

Below Composite kit aircraft are usually assembled from multiple premoulded parts

Bottom Aluminium skins and formers are assembled to create an airframe structure, in this case, a Zenair fuselage



choice of most builders. Aluminium has the advantage that once you've finished fitting the skins to the airframe structure, that's your final finished surface and it needs no further preparation to be ready for flight. Of course, that also means that your skills with the rivet gun will be forever on display. Learning to rivet with a rivet gun and bucking bar isn't hard, and you'll find your skills get better, the more you build. A popular alternative to conventional solid rivets is blind-riveting, where the builder uses a tool to mechanically pull specially made rivets from the outside of the structure. It's easier and has less chance of errors, however pulled-rivets are more expensive. Don't think that a metal aircraft will mean no you won't have to deal with fibreglass though, as the material is used for the curved shapes of non-structural parts like cowlings and fairings.

A number of kit aircraft have a steel-tube fuselage with wood or metal-structured wings that are then both covered in fabric. Complex operations like welding are completed at the factory, so you won't need to learn how to weld.

Wood airframes use techniques that are roughly similar to metal aircraft, just that the parts are cut from strips of spruce and Douglas fir and sheets of plywood. The parts are then assembled using modern aerospace glues. For many aircraft builders, wood is a friendly material and quite forgiving of mistakes. Once a wooden airframe structure is complete, it's either skinned in plywood, or covered in fabric, or a combination of the two.

There's a number of options for fabric covering a homebuilt, including Ceconite, Poly-Fiber, Super Flite and Oratex. All are glued on and shrunk using an iron, but they vary in the way they are finished and painted, except for Oratex, which is pre-coloured.

Composite aircraft kits on sale today usually require bonding components together in the same way you might with an Airfix fit. This allows for often rapid progress in assembling the basic airframe, and the surfaces of the moulded components typically need very little finishing by the builder.

Composite kits do tend to be more costly though, and require very accurate control of temperature and humidity in the workshop to make sure the materials cure correctly. A more old-school composite method requires the covering of foam cores with glass cloth, which while simple, is labour-intensive to fill and sand to a fine surface finish ready for paint.

Whatever material you'll be building with, it pays to be well trained in the basics. The LAA has a network of inspectors – you'll need to arrange for one to oversee your project, they will be able to help you get started.

If you want to get a real flying start, the LAA also run a range of educational courses at locations around the UK for all the different construction methods. And remember, most of the popular homebuilt types have very active internet forums and these are an invaluable way to help you meet other builders.

Your material choice will also influence one other homebuilding factor, selection of the right tools. In my experience, spending a little extra to get the best tools you can afford right at the start will enhance your

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Left Based on new projects started over the past two years, the UK's most popular kit type is the Van's Aircraft RV-8/8A

building experience, particularly as in some cases you'll be using them for thousands of repeated operations. As a smart tool buyer once wrote, "The most expensive tools you can buy are the ones you buy twice."

Getting some help

If you think you'd rather have a little more help, then some manufacturers offer builder assistance schemes. LAA's Francis Donaldson again. "The LAA is happy to see amateur builders having the opportunity to carry out some or all of their build under supervision and instruction. It saves a lot of 'thinking time', and usually results in a better quality job. The important thing is that the amateur builder still does the actual work, and gains a full understanding of the educational value of the project and an in-depth understanding of their aircraft, just as if they had built the whole thing at home."

Making changes

It no surprise that making changes to a build can sometimes be the path to difficulties and delay. On this LAA's Francis Donaldson has some wise words. "Beware of products on sale to amateur builders that may not be as

UK's most popular kit aircraft

We looked at new kit registrations made with the LAA between August 2019 to July 2021 to see what the UK's most popular kitplanes are...

- While it's not really a surprise that **Van's Aircraft**, the world's biggest kitplane company tops the list, what is interesting is that its two-seat tandem model, the **RV-8/8A**, which celebrated its 25th anniversary last year, seems to be enjoying a boost in popularity, with 15 new kit starts registered.
- Sharing second place with 12 starts each, is the **Sling Aircraft Sling 4/TSi** and the **Van's Aircraft RV-7/7A**. The Sling TSi seems to have caught many builders attention with its pairing of the Rotax 915iS with a four-seat cabin, giving a good mix of useful load along with an efficient turn of speed. The two-seat side-by-side RV-7/7A remains a very popular kit choice for the UK, following in the footsteps of the earlier RV-6, which still holds the record for world's most popular individual kitplane.
- Third spot with 10 starts belongs to the **Van's Aircraft RV-14/14A**, its newest and most advanced kit. This two-seat side-by-side design is most commonly powered by a Lycoming IO-390 engine.
- The **Eurofox** is fourth with nine new starts. This two-seat high-wing kit is fabric-covered and is available as nosewheel or tailwheel, with quick-fold wings.
- Eight kit starts nets the **Aeroprakt A32 Vixen** fifth place. This STOL high-wing two-seater is powered by a Rotax 912ULS and its large, highly glazed cabin offers great visibility.
- Sixth spot goes to the **Sling Aircraft Sling 2**, with seven kit starts. This low-wing, two-seat machine uses the Rotax 912 and 914:
- The **Van's Aircraft RV-10** and the **Zenair CH750** share seventh spot. The RV-10 is a four-seater with a huge useful load and good short field performance thanks in part to a Lycoming O-540 engine. The CH750, and its latest Cruiser derivative is a two-seat, high-wing design, with excellent STOL capability.
- Three designs share eighth spot with four kit starts each. The **Bristell NG-5 Speedwing** is a two-seat, side-by side low-wing machine with an aluminium airframe and uses a range of engines. The **KFA Safari** is a tube-and-fabric, high-wing two seater that's been designed with rough-field use in mind. The wings fold to help with hangarage. The **Van's Aircraft RV-12/RV-12iS** is a two-seat, low-wing aircraft that uses the Rotax 912, or the 912iS. Unlike the other RV models, it is assembled with pulled-rivets, and has removable wings. Power comes from an ultra-fuel-efficient Rotax 912iS:
- With three each, the **Kitfox Mk7 Supersport** and **Lambert Mission M108** share ninth spot and are remarkably similar. Both are tube and fabric high-wing aircraft with folding wings, and using Rotax engines. Build assistance is offered by Lambert Aircraft at its HQ in Belgium.
- And finally, sharing spot number 10, is the **TLAC Sherwood Ranger** biplane and the **TL Ultralight Sting Carbon S4**. The Sherwood Ranger is a two-seat biplane kit that is made in the UK. A range of engines are available to use, if you want that 'wind in your hair' feeling! The Sting Carbon S4 is the only composite kit that features here. Its carbon airframe comes pre-finished in white, the low-wing, side-by-side two-seater can be powered by the Rotax 912ULS or 912iS.

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Other ways to build...

A few other routes allow you to build an aircraft in the UK. The British Microlight Association oversee a number of sub-450kg 3-axis and flexwing types. Rob Mott, BMAA's Chief Inspector told *FLYER*, "Currently, the British Microlight Aircraft Association (BMAA) looks after approximately 75% of all homebuilt (amateur-built) and 99% of factory-built UK Microlights. At the request of importers and members, BMAA started looking seriously at homebuilt microlights around the turn of the century. The popularity of homebuilding microlights surged with the BMAA introduction of the original X'Air. Others soon followed suit; the SkyRanger (Classic, Swift 1, 2, 3 and Nynja variants), X'Air Falcon, Easy Raider (discontinued), Air Creation (KISS, iXess, Tanarg & Bionix), Savannah MXP-740 (later VG - Vortex Generator), Escapade (now Sherwood Scout), EuroFOX (nose & tailwheel) and the Eurostar SL.

"Many people don't realise that BMAA approves homebuilt VLA (Very Light Aircraft) - up to 750kg and 45kt stall speed. Numbers are increasing each year, the most common BMAA VLA is the SkyRanger Nynja, but Pipistrel is catching up with different versions of the impressive Virus SW.

"Overall, BMAA is approaching 800 projects, with around 80% completed and flying. As with factory-built microlights, our homebuilders can take full advantage of new engines, propellers and non-certified avionics. The fitment of touchscreen EFIS and autopilots becoming increasingly commonplace. BMAA has new 600kg and VLA designs currently undergoing certification."

If you opt for one of the single-seat de-regulated (SSDR) types, like the SD-1 Minisport or the TechPro Aviation Merlin, then you have total responsibility for the project. You can even build your own design. You'll just need to register the completed aircraft with the CAA.

Talking of the CAA, there has long been a path to build and operate aircraft on a CAA Permit. Occasionally used for types that fall outside of the LAA or BMAA's remit due to weight or horsepower, the scheme is not for the faint of heart, nor wallet...



Above How about building your own single-seat jet, powered by four mini-turbine engines? This amazing machine, the Conway Viper designed and built by Barry Conway shows just how much you can do within the allowances for the SSDR (Single-seat deregulated category).

“Stick to the instructions and resist the temptation to make modifications”

proven as their advertisers would have you believe. Of course, the ability to experiment is part of the ethos of flying non-certified aircraft, but sellers unsurprisingly don't stress that element when trying to persuade you to part with your hard-earned cash. Engines in particular are an area where it's easy to be taken in by sellers claiming to have a tried and tested alternative to a Lycoming, Continental or a Rotax, sometimes at a temptingly lower price. Sadly, there's a long history of underdeveloped or downright unsuitable engines being brought to market that just aren't up to the job. Every new design of engine needs years in service to get the bugs out of it. Don't become part of an extended research and development programme – an engine that goes silent all of a sudden might very well wreck your pride and joy.

"Finally, keep in mind that even if the powerplant, propeller or whatever modification works for you, a non-standard fit may have a marked negative effect on the resale value of your aeroplane. The kit supplier's ongoing support is crucial too. They put a lot of effort in finding the optimum spec for their design, so don't be surprised if they are less than sympathetic if you decide to go your own way and ignore their advice."

Get building!

It may sound obvious, but once your build is underway, try and do something towards it each day, no matter how small! Stick to the manufacturer's instructions and resist the temptation to make modifications, as the LAA will require you to submit each one for approval. Save your creativity for designing and building the instrument panel. It's by far the best place for any builder to easily put their individual 'stamp' on their personal machine.

Don't worry too if at some point you think you've bitten more off than you can chew! Any project of this size might be daunting if considered as a whole – the analogy of trying to eat an elephant is often used – you'll only manage it in little chunks!

Finishing will often creep up on you, and when it does, if you want to make the first flight yourself, you'll have to demonstrate that you have recent experience in a similar type of aircraft. LAA Engineering can suggest suitable test-pilots though, if you'd prefer not to. If you've built an approved design, the flight test programme is typically accomplished in just five hours flying.

Yes, building an aircraft is an all-engrossing project that will require considerable personal effort, but to look out of the cockpit of your new aeroplane as the world passes by beneath you is a reward that's hard to describe. If you want to do this, you can. Good luck! 



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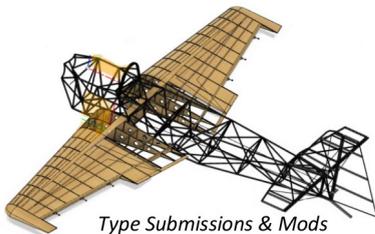
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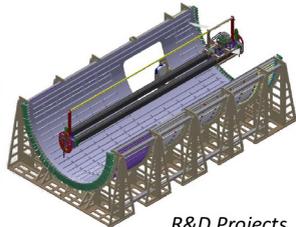
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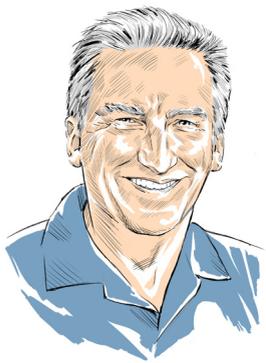


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Safety Accident Analysis

Unplanned flight into cloud

It's summer so why should we be thinking about unplanned transitions from Visual to Instrument Meteorological Conditions? Maybe because this summer has been more about dodging cloud than enjoying sunshine. These incidents show how it is vital to get that right, as **Steve Ayres** reports...

Unplanned flight into cloud rarely ends well. Setting aside the capabilities of your aeroplane and your own piloting skills, the shock is guaranteed to send stress levels through the roof. Combine it with nearby terrain that climbs faster than you can, plus a familiarity with your attitude indicator that dates back to your early PPL training, means your prospects of successfully recovering the situation are not high. That said, this mixed bag of incidents suggest all is not necessarily lost, while reinforcing the old adage that some forethought and little practice will go a long way to improving outcomes!

Accident 1

A Piper PA-28 departed Warrnambool Airport for a return to Moorabbin Airport, Victoria. The flight crew were conducting a training flight under visual flight rules (VFR). There was an instructor, student pilot and a passenger on board. During the cruise, the weather deteriorated and the aircraft returned to Warrnambool.

During the initial stages of the return the visibility was good but as they got closer to Warrnambool the visibility reduced and they had to descend as the cloud base again began to lower. While approaching Warrnambool township, at approx 450ft agl, the instructor slowed the aircraft and extended two stages of flap. The visibility reduced significantly and the instructor, not wanting to descend further, made the decision to climb into cloud.

Following initial radio

communication difficulties ATC responded to a call where the instructor advised they were in cloud and were requesting assistance. After clarifying the aircraft's location and the pilot's intentions, ATC assisted with information on the local weather, the lowest safe altitude and subsequently provided advice to keep the wings level, maintain a constant speed and to trust their instruments.

Initially the instructor maintained a shallow climb and a low angle of bank turn to remain within an area around Warrnambool known to be clear of obstacles. When they reached 3,000ft, they turned north to ensure they did not track over water. They advised that in an attempt to fix the apparent radio problems they also switched between the two radio units in the aircraft and exchanged headsets with the student pilot. They continued the climb to 4,500 ft.

ATC identified the aircraft on radar and issued the flight crew with a heading to Avalon Airport as the pilot of a helicopter in that area had reported operating clear of cloud. The flight then continued and landed normally at Moorabbin Airport

The instructor held a valid Commercial Pilot Licence (Aeroplane) and an instrument rating. He had completed an instrument proficiency check but had not conducted any instrument flying in the previous 11 months since the check. In addition, they had never conducted instrument flying from the right seat of the aircraft which required them to use the instruments on an angle across the cockpit.

The aircraft was certified for day and night VFR operations only. The main aircraft flight instruments are located on the left side of the cockpit.

Consequently, they ensured they minimised control movements to maintain control of the aircraft. They also contacted ATC at the earliest opportunity to advise of their situation and request assistance. This ensured the instructor could concentrate on flying the aircraft and also expedite the return to visual flight conditions.

The instructor advised they checked the weather for the return flight while they were on the ground at Warrnambool. However, they used the TAF for Warrnambool and the surrounding airports, rather than the area forecast and Moorabbin TAF, to provide an indication of the likely weather to be encountered on return to Moorabbin. In addition, as the instructor planned to return to Warrnambool Airport if conditions deteriorated, they should have considered the forecast in relation to its use as a destination. As the TAF forecast a TEMPO with conditions deteriorating below the alternate minima requirements, they were required to have an alternate airport or one hour's hold fuel.

Accident 2

The privately registered Mooney M20F aircraft was conducting an instrument flight rules (IFR) flight from Alberta, to British Columbia.

The pilot was alone on board. The aircraft departed in visual meteorological conditions (VMC) and initially climbed to 14,000ft above sea level (asl) before climbing to and maintaining 15,000ft. The pilot then requested a minor deviation from the route of flight to avoid entering clouds. However, during this deviation the clouds could not be avoided and the aircraft entered instrument meteorological conditions

“Rates of climb and descent varied from 8,500fpm up to 23,000fpm down”



(IMC). Shortly thereafter, the aircraft's attitude direction indicator displayed the 'AHRs ALIGN' (attitude and heading reference system alignment) message and indications of attitude (pitch and bank) were lost while indications of airspeed, altitude and vertical speed were retained.

At the same time the aircraft's horizontal situation indicator also indicated a failure, displaying a red X over the HDG (heading) annunciation. While the aircraft was still flying in IMC its altitude began to fluctuate. It then began an unintentional left turn, eventually turning approximately 90° to the left of the assigned track. The pilot requested a return to the Calgary, Alberta, area and declared an emergency, reporting the loss of attitude and heading information from the aircraft's instruments.

ATC provided the pilot with a heading that would turn the aircraft toward Calgary. During this turn the pilot experienced spatial disorientation, the aircraft's bank angle progressively increased and the aircraft began to descend. Over the next five minutes control of the aircraft was lost multiple times. The aircraft entered a series of spiral dives, abrupt climbs and at least two aerodynamic stalls.

Flight data recovered from the ADI and HSI indicate that during these manoeuvres the aircraft's climb rate increased to as much as 8,500fpm, and its descent rate increased to as much as 23,000fpm. In addition, the aircraft's indicated airspeed varied from a low of 43kt to a high of 242kt, exceeding the aircraft's never exceed speed by approximately 70kt. The aircraft descended to as low as 8,100ft asl (approximately 700ft agl) before abruptly climbing again.

The pilot could see the terrain below as the aircraft descended through approx 8,500ft asl and control of the aircraft was regained at approximately 8,100ft asl. At the time, the aircraft was in the Kananaskis Valley where nearby mountain peaks extended up to 10,364ft asl. The pilot maintained a height ranging from approximately 700 to 1,000ft agl and followed a road out of the Kananaskis Valley.

The occurrence pilot entered the avionics defect in the aircraft's journey log and one day after the

occurrence the aircraft owner (who was not the occurrence pilot) flew the aircraft to Alberta, to address the defect. Contrary to the regulations, no entry was made by the occurrence pilot in the aircraft's journey log or technical record about having exceeded the aircraft limits. The aircraft continued to be flown for an additional 12.3 hours after the occurrence flight until the flight data retrieved from the Garmin GI 275 multi-function instruments revealed the breach of aircraft limits. At that time, the aircraft owner also noted fuel weeping from around rivets in several locations and that the landing gear no longer fully retracted.

Accident 3

The pilot of a PA 24-180 was conducting a VFR cross-country flight. He filed a flight plan before departure but declined a formal weather briefing. Although the weather information he gathered about the flight could not be determined, he told his wife before departure that the weather at his intended fuel stop was 'not good', but that he had sufficient fuel onboard to continue to the

destination airport without refuelling.

GPS data showed that the aeroplane proceeded directly toward the airport where he intended to refuel, and while approaching the airport for landing the pilot reported via radio that he was 'hung up' and would manoeuvre for a left downwind. There were no further radio comms from the pilot. GPS data revealed that, about the time the pilot made the final radio call, the aeroplane was about 500ft agl. It then banked left and rapidly descended into rising terrain. The wreckage was located on a hillside about 4nm south-east of the airport.

Although the pilot held an instrument rating, his instrument currency could not be determined, and his wife, who flew with him often, stated that he rarely filed or flew IFR flights. Weather camera images revealed the low cloud layers and limited visibility in the area of the accident site around the time of the accident. Despite his apparent awareness of forecast marginal VFR conditions and temporary IFR conditions, the pilot chose to depart and continue into an area of low cloud ceilings and rising terrain.

Ayres' Analysis

These days, installing equipment which provides a reliable attitude reference can usually be done for modest outlay. That may not be enough if your chosen patch of cloud is in the freezing layer as that will likely require anti-icing equipment too. However, for the most part, it is being properly qualified and current to fly in cloud which is lacking. Despite most of us not holding a formal rating we shouldn't forget that the PPL course teaches basic instrument and minimum visibility flying.

Many of us probably don't remember that far back, but at some stage in our past we would all have possessed the most basic of instrument flying (IF) skills. I have a vague memory that at the Channel Islands Aero Club it was a prerequisite of leaving the circuit solo! So why do most of us not refresh those skills across much of our flying lives? We rely exclusively on avoidance without much thought of what to do if (or when) we get caught out? We leave the decision making until too late. When a climb is too dangerous because of rising terrain and obstacles, and when there is nothing else to do but manoeuvre aggressively in limited visibility with no, or even worse, misleadingly false horizons.

Before we all rush off and practise climbing out from low level on instruments, this is not what I'm suggesting. However, these incidents are timely reminders of those early PPL lessons, of how difficult even basic IF can be under the most benign conditions and how important it is to maintain the most elementary of IF skills.

Perhaps, with worsening weather in the coming months, grabbing an instructor or a properly qualified 'safety pilot' to get some simulated IF practice might at least allow recalibration of our risk appetite and help us make better judgements on when and where to fly in the future. And I don't just mean the straight and level stuff either. Why not refresh those 'upset recoveries', 'scan-exs' and partial panel manoeuvres? Nothing can ever simulate the 'pucker factor' of an unplanned transition to flight in cloud, though. That would be the best way of convincing us to get a proper weather brief, to read the TAFs thoroughly and to have some bad weather options up our sleeve before we head off into the blue! 



Safety Accident Reports

All crossed up and nowhere to go... but down!

Steve Ayres summarises and comments on accident reports from around the world and adds Bluetooth connectivity to his headset to make the most of in-cockpit connectivity

Bad? Could be worse!

Textron Aviation (Cessna) 206
VH-AEE
near Happy Valley, Fraser Island,
Queensland
Injuries: None

A Cessna U206G with two pilots on board was being used for landing emergency procedure training on a beach aircraft landing area on Fraser Island, Queensland. Just after touching down, the aircraft veered significantly to the left, toward the sea. The training pilot took control of the aircraft and conducted a go-around. Once airborne it was discovered that the rudder was jammed in the full-left position and the pilot had to apply full opposite aileron to maintain control. The engine subsequently stopped and the aircraft collided with water. The pilots escaped the aircraft and swam to shore. The aircraft was destroyed.

The investigation found that following touchdown a section of the nose landing gear attachment failed, resulting in the rudder becoming jammed in the full-left position. It was also identified that fuel starvation, due to either the uncoordinated flight or damage associated with the nose gear failure, led to the engine losing power at a height too low for recovery and the aircraft colliding with water.

This accident highlighted two further safety issues associated with the Cessna 206 that, while not contributory to this accident, can lead to fatal consequences in the event of a ditching.

First, the Cessna 206 procedure for ditching and forced landing stated that the flaps were to be

extended to 40°. While that permits the aircraft to land at a slower speed, it also significantly restricts emergency egress via the cargo door. However, there is no warning about that aspect in the ditching or forced landing pilot's operating handbook emergency procedures.

Second, the Cessna 206 with the cargo door does not meet the aircraft certification basis for the design of cabin exits due to the complexity associated with opening the cargo door if it is blocked by the flaps. This significantly hampers emergency egress and has resulted in fatalities.

Comment This was a pretty hairy chain of events and I think the crew did well to walk (or swim) away without injury. The cause was probably down to an overstress failure of the nose leg but the inquiry focused on concerns over egressing from the rear cabin in the event of ditching and rightly so.

Human condition?

Cessna F177RG
G-AYSY
Leicester Airport
Injuries: Two minor

Returning to Leicester Airport after a flight away from base, the pilot completed a normal join and circuit. The landing gear was lowered and a check of both the indicator lights and the external mirror showed it to be down and locked. Shortly after landing, as the aircraft slowed, the nose landing gear collapsed. The pilot and passenger vacated the aircraft with minor injuries.

The damage found to the centre torque link bolt and the torque link

was attributed to them being in contact with the runway and was considered unlikely to have been a causal factor in the accident. No other components of the nose gear were found to be faulty and a test of the retraction / extension system worked correctly.

Given the lack of further structural damage to the nose gear, it is likely that the nose gear mechanical over-centre lock was not fully extended, either due to a fault or because the gear was retracted inadvertently after landing.

Comment It is always disconcerting when the cause of a particular incident eludes us but inadvertent operation of a lever or switch is all too common. Manufacturers even make flap switches that look like flaps and undercarriage levers that look like undercarriage legs. Does it make any difference? I rather suspect not... we continue to err like humans!

North Sea confusion

Reims Cessna F406
G-RVLW
North Sea
Injuries: None

The pilot was operating a cargo flight from Göteborg to East Midlands Airport. The pilot had already flown the aircraft from East Midlands to Göteborg earlier in the day.

The flight time for both sectors was around three hours. With the aircraft in the cruise at FL180 over the North Sea, the pilot was alerted to a problem by a rapid onset headache, followed by being unable to find a regularly used function on the electronic flight bag.

Aware these could be symptoms of hypoxia, he checked his oxygen system. He also checked his oxygen levels on his pulse oximeter, which were much lower than normal, prompting him to increase the flow of oxygen through the regulator.

When this did not improve the situation, he changed the supply

“The pilot’s oxygen levels on his pulse oximeter were much lower than normal”



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Safety Accident Reports

bottle, and within a few minutes he was feeling better and the oxygen level had recovered.

The Cessna F406 Caravan II is an unpressurised twin turboprop aircraft with a service ceiling of 30,000ft. If the pilot is required for operational reasons to cruise above 10,000ft altitude, then the aircraft carries two 682 litre portable oxygen bottles which are fitted with regulators and a cannula to fit to the nose of the pilot.

The regulator allows the pilot to select a rate of oxygen delivery suitable for the cruise altitude. The aircraft operator limited the aircraft to a maximum altitude of 18,000ft.

At this altitude, the delivery rate of oxygen is recommended by the operator to be 0.6 litres per minute giving each bottle a capacity of over 18 hours for a single user. Although the pilot elected to select an oxygen flow of 1.0 litre per minute as he found this a more comfortable setting, this would still have meant a capacity of more than 11 hours. Both the oxygen bottle and regulator were tested at an approved maintenance facility. This showed all flows to be within parameters and no faults could be found with either.

Comment Ultimately there was ‘no fault found’ but this is an interesting reminder of the effects of hypoxia and the importance of taking timely and correct actions. Cannulas and pulse oximeters are not always reliable, though, and it’s wise to be wary.

Misbehaving rocker

Druine D.31 Turbulent
G-ARNZ

Damyns Hall Aerodrome, Upminster
Injuries: One minor

When approaching the airfield to rejoin the circuit, the aircraft’s engine began to run rough then lost power completely. During the subsequent forced landing the aircraft came to rest inverted and the pilot sustained minor injuries.

A post-accident inspection of the engine revealed a crack on the plastic rocker arm in the fuel pump. After the accident, the LAA issued an Airworthiness Information Leaflet, which requires plastic rocker arms to be replaced with metal rocker arms in aircraft affected.

The fuel pump fitted to G-ARNZ was a sealed unit and the aircraft had flown 30 hours since its installation. It had a plastic rocker arm, which



“One of the buzzards hit the propeller and the aeroplane started to shake violently”

according to the LAA is a recent introduction to after-market pumps for this type of engine. Formerly it was normal for these pumps to have a metal rocker arm. No other fuel pump was installed.

Comment Perhaps we believe too readily that today’s manufacturing is better than in the past and that if it’s good enough for the automotive industry it’s probably good enough for much of what we do. In this instance neither was true and it reminds us to be sure that what we are fitting meets or exceeds the original spec.

Buzzard strike

American Legend AL3

N30BX

Greenville, North Carolina

Injuries: None

The pilot and his flight instructor friend were performing touch-and-go landings at different airports. Climbing out after his last touch-and-

go he saw some turkey buzzards flying above the aeroplane. He turned to the right to avoid the birds but one of the buzzards hit the propeller and the aeroplane began to shake violently. The flight instructor, seated in the rear seat, shut off the engine and took over control of the aeroplane. The flight instructor then located a field to land in.

They landed with a tailwind and as trees at the end of the field approached, the pilot was not sure if he depressed the brakes or the flight instructor did, or they both did, but the aeroplane nosed over and came to rest inverted about 40ft away from the trees, resulting in substantial damage to the rudder and wings.

Comment Birds can cause significant damage to a light aircraft, so it’s reassuring such events are quite rare in the UK. The instructor may have had no option but to land downwind, however, the increased risk of injury in doing so should not be accepted lightly.

Safety kit

A20 cable with Bluetooth

£270 incl VAT [from Bose](#) and most other aviation suppliers

The modern GA cockpit often includes equipment that connects to mobile devices via Bluetooth. That is usually sufficient to see displayable information but it is the audio which is increasingly relevant. Having purposely opted for a Bluetooth option on my Bose headsets, it transpires the early version is only compatible when used in phone mode. As such, no audio warnings are available from the likes of SkyDemon, FLARM and my Aithre CO monitor.

Given that one of the major findings from the Canadian investigation into a recent midair was a lack of aural warnings in either aircraft, that needs fixing.

The most recent Bose headset controller upgrade provides a neat, integrated solution that won’t further clutter the cockpit. Other solutions are available but having something that’s reliable and easy to install is a ‘must’ if it’s going to work when needed most. ▶





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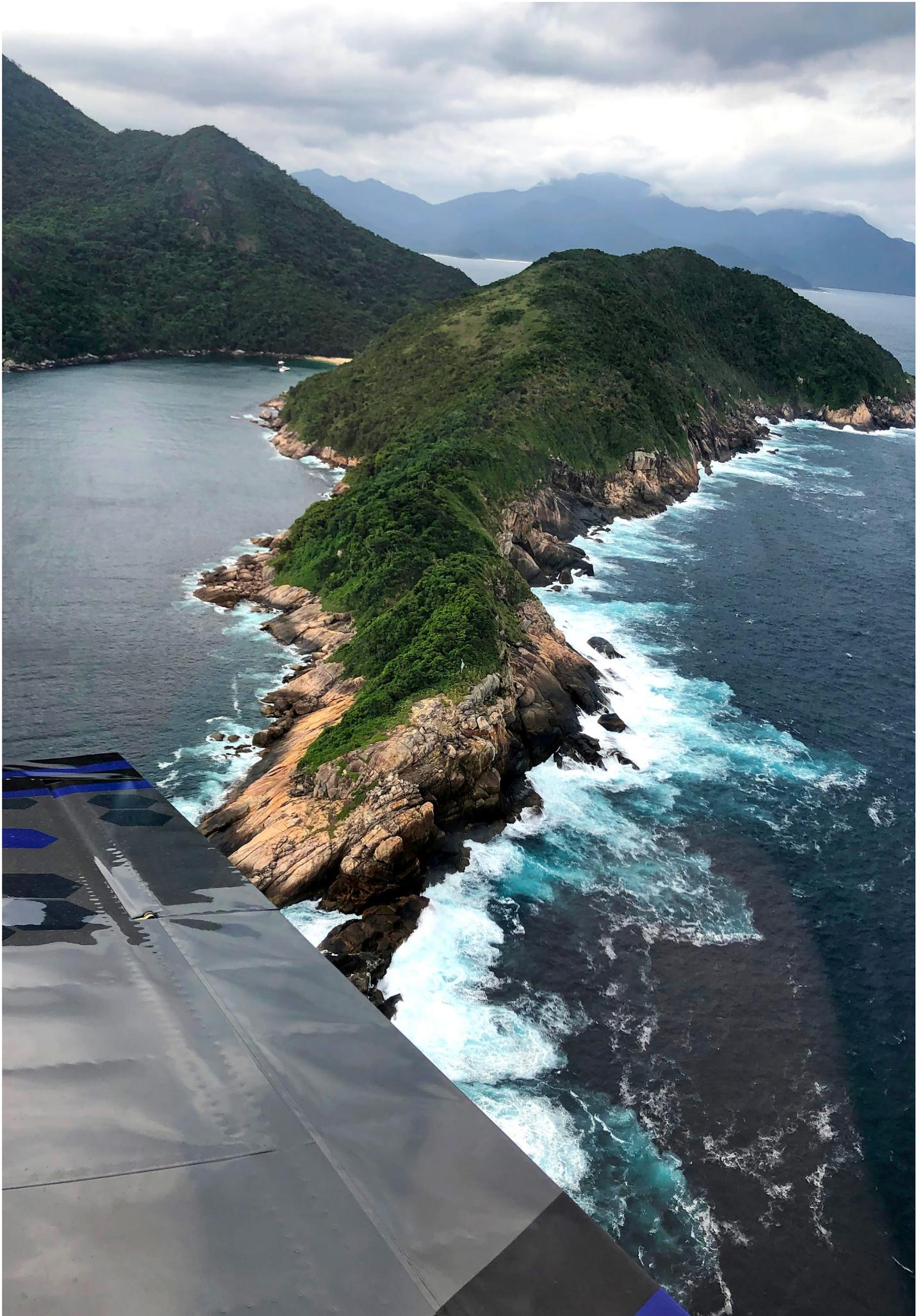


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FLYING ADVENTURE

Homebuilt delivers...

In spring 2020, **Guil** and **Mary Barros** spent 92 flight hours and 12,000 miles, over nearly four weeks, through the Caribbean and South America, from Florida to Brazil... in an RV-9A they built themselves...

Mary and I were sitting on the couch one night in March 2019, chatting about places to fly in our RV-9A, when for some reason I blurted out ‘we should fly to Rio’. What? This isn’t how *your* adventures usually begin?

We must do things differently... But as soon as I said it we started to give it some serious thought.

We had a huge shopping list. From snacks and swimsuits, to life rafts and flares. As it turns out, we got really lucky on the raft and flotation side of things and found a pilot retiring from flying the Hawaiian islands willing to part with his set-up for a very reasonable price, so we had him just ship it all to get overhauled and inspected. We prepared a ditch bag with three days of rations, water and survival gear. We also prepped a spare parts kit with things that were easy to carry but which would be hard to source in a remote location – and packed a tool kit with things we might need to get us out of a bind.

A key part of picking supplies and spares / tools was thinking about failure scenarios. In-air failures don’t immediately require spare parts, and our landings were all planned for places we could get something express-mailed to in a pinch. So we restricted spares and tools to things which were reasonably light and would be needed to get us to a convenient location for further repairs as needed.

In our minds the two riskiest parts of the trip were those with limited landing options – the over-water segments and the over-Amazon segments. So we visited the Federal pavilion at AirVenture and talked to the Search and Rescue people there. The basic feedback we got was, ‘wear your life jackets, have a PLB on each person (not near, ON), and trigger your ELT/PLB/inReach as soon as you know you’re going for a swim’.

I was wondering if we should trigger one at a time to conserve battery life but that got a resounding ‘No’. A single PLB/ELT trigger will get

S&R making phone calls to verify if it’s a false alarm. If they see three pop up together, with an account note saying we are doing this big trip over water, things will go into high gear almost immediately.

The Amazon segments had different concerns. We contacted AOPA Brazil and some other local pilots we knew. They were incredibly helpful and immediately created a WhatsApp chat group for us to ask questions, get ideas and suggestions, and be told what we should definitely not do. Mostly, fly only in the mornings, and call ahead to confirm fuel.

While figuring out the best practices, we started planning the route. It quickly became clear that flying through the Caribbean made more sense to us than through Central America. Partially because of the Venezuela airspace TFR, but also because the impression we got was that flying over the warm Caribbean waters is safer than over the Amazon Forest. Rescues tend to come much faster in the water than up in the 100ft-plus high trees of the Amazon, and the distances to civilisation are much shorter. Many people refuse to fly over water in a single-engine piston, and that is a very personal decision. For us, we felt the risks were worth the rewards, so around the Caribbean we routed.

Initially we started working with one of the Caribbean flight planning companies which is always at AirVenture, but we quickly discovered that it was pushing us towards local handling services at each of our stops. These handlers were asking around \$100 per landing to do paperwork, which made the trip financially untenable. We lucked into chatting with Jim of Caribbean Flying Adventures who suggested we take a look at his website. We paid the very reasonable subscription fee and it turned everything around for us. His site has detailed descriptions of how to self-handle at each airport, where to go, what you need, what the fees are, and the fuel costs.

This allowed us to avoid stops with overly complex processes (e.g. Trinidad and Tobago) or exorbitant fees (e.g. Providenciales).

Opposite Rugged coastline west of Rio de Janeiro





Above Passing Kennedy Space Center, Florida

Right Leaving the Florida coast towards the Bahamas

Below Airport buildings in Stella Maris, Bahamas

Bottom Airport terminal in Georgetown, Guyana



The trip

Departing the US into the Caribbean was surprisingly easy. We overnighed in Ft Lauderdale to get an early start for the first over-water, heading to Stella Maris. That first flight over the islands was both terrifying and magical. The blue water, puffy clouds, and islands are a sight to behold. Landing in Stella Maris gave it a touch of tropical paradise, a small airport with open-air buildings... you just wanted to call it a day with a cold beer. But alas, we continued, stopping in Punta Cana, Antigua, and Grenada along the way. A few extra days here and there to enjoy the weather and the beaches were well worth it. At this point in the trip the goal was not to rush things, but to make it to Rio, and take it slow on the way back.

With Venezuela closed to US aircraft, we needed a fuel stop in Georgetown, Guyana, and learned that it charges a \$230 navigation fee for using its airspace. We pointed out to them how ridiculous this was on a two-seat aircraft, and they suggested that we were welcome to go around the country. So, \$230 it is then... each way. On arriving in Georgetown (Correia Airport, the smaller downtown option) we were greeted by a very friendly ground handler, who walked us through the complex permitting, forms, stamps, fees, and handshakes required to get things moving there. Even with his efficiency, it still took an hour for a simple fuel stop, but this was one time where it was worth paying a little to have some help. Onwards to Brazil!

We departed Georgetown, Guyana for Boa Vista in the northern state of Roraima in Brazil and we were greeted by a small crowd and a TV crew. Little did we know, but our trip in a homebuilt aircraft got some attention in the local press down there. After a quick interview, we were able to get our passports stamped. We had arrived on a Sunday and Customs was not open at this small airport, but they stamped our passports (immigration) and allowed us to continue to our hotel, promising we would show up for customs first thing Monday morning.

As soon as we left immigration there was a group of 10-15 people waiting to shake our hands and welcome us to Brazil. It was so nice and unexpected. One couple gave us a gift of a wristband made by the local indigenous people of Roraima, which we decided to keep in the aeroplane to bring us luck.

Flying the Amazon region is not quite like flying in the US. Unfortunately there are not that many paved airports, fewer with fuel, fewer again with a Metar, and even fewer with a TAF. This meant short hops to ensure we could get to the next stop if there was bad weather or no fuel. It also meant we had to call ahead to each airport before departing to confirm they had fuel, and how the weather





Left Juiz de Fora, Brazil. Last stop before Rio

Below In-flight selfie
Bottom Town of Boa Vista, Brazil with international airport top right

Bottom left The mighty Amazon River

looked. We quickly learned that it tends to rain a lot in the Rainforest. Yes, you'd think there would be something obvious about that, but alas... We also learned that in the Amazon you generally only fly in the mornings, as the sun comes up and the heat makes the humidity spike through the day, causing large towering cumulus and thunderstorms. Quite a few people told us this, but it's really one of those things you need to stick your finger in the outlet to really figure out.

The next morning we headed to the airport early to meet with the Receita Federal (Customs) official. Unfortunately there was some confusion with our paperwork and he had to take it into their office in town for a higher-ranking officer to approve. No big deal, so we headed to our hotel pool to wait. By 3pm our paperwork had finally been approved and we were able to call the airport to let them know we were planning a 6am departure.

Our flight through the Amazon was incredibly picturesque. Beautiful strong greens, blues, and browns. I had never imagined there would be such beauty in a vast lawn of trees as far as you can see. It's truly a sight. The Amazon River is just





Top In the circuit at Clube Ceu, Rio de Janeiro

Above Landing at Clube Ceu, Rio de Janeiro

Right Guil being interviewed for an appearance on the national news

Below ATC view of our flight from the friendly controllers at the Rio CTA



immense, and the meeting of the different waters is very dramatic.

A few stops along the way, including an IFR diversion, and we were coming up to Rio de Janeiro. Our local friends had introduced us to one of the approach control supervisors for the Rio CTA, and he called us just as we were getting ready to submit a flight plan. “We can vector you directly to the flying club, avoiding all the craziness with visual corridors, etc.,” he offered.

At this point I paused and looked at the visual corridor chart. “Thank you, but can we take the long way round?”

So we were off heading in the wrong direction to enter the northernmost gate of the coastline corridor and flew it all the way south-west to our destination. We flew over some beautiful beaches – Niteroi, Sugarloaf Mountain, Copacabana, Ipanema and Leblon. One fantastic sight after another. Approaching the end of the corridor we heard ‘N689RV standby for a message’, and our supervisor friend came on with detailed instructions on what to do next and how to find the little flying club we will be staying at. Could not have asked for a better experience. They even included pictures of us on their radar scopes!

We spent three fantastic nights in Rio enjoying the hospitality of the local flying club. Clube Ceu really was a little piece of heaven. Large hangars, an on-site engineer to help us with an oil change and mid-trip inspection, fantastic clubhouse, excellent food and wonderful camaraderie! We joked that if they ever sell plots there, we’d be in line to build our retirement house.

Homeward bound...

Departing Rio, our first stop was the main event we’d planned for the trip, landing at Santos Dumont Airport in the Guanabara Bay.

Many US-educated pilots may not be aware, but there is some dispute as to where aviation started. It is not unanimously accepted that the Wright Brothers were first in flight, and the Brazilians believe that Alberto Santos Dumont, a Brazilian, claims that title, so they’ve named this beautiful airport after him.

It was quite the experience, SDU (SBRJ) airport is a busy commercial stop for Cariocas (people from Rio de Janeiro) and has non-stop airliner activity. We filed our flight plan, happily did a few 360° turns over beautiful beaches for spacing, and finally lined up for the approach on Runway 20R. This truly felt like the culmination of all the planning and dreaming about this trip. We made a short rest stop to drink a cold Mate (iced tea) and eat warm Pão de queijo (cheese bread) at SDU, then paid our airport fees (almost \$250) and departed up the Brazilian coastline on our return trip. At this point the Covid-19 virus was starting to really make the

news, so we decided we would accelerate our return flight plans, vowing to one day come back.

As we flew up the country we met a wide array of fantastic people in the aviation community, happy for the attention we brought to homebuilt aviation in Brazil. They were all very interested in helping us.

We learned that there was quite a challenge with local authorities applying a very strict interpretation of the airspace rules. An example we were told pilots were being fined for flying over ‘densely populated areas’, which like in the US must be avoided in an experimental aircraft. Unfortunately the local interpretation has excluded the provision for take-off and landing that allows pilots in the US to still use airports in busy cities, and thus local pilots here were fined for landing in airports with even a very small population around them. I hoped that for the sake of Brazilian Experimental Aviation, some calm minds would prevail in that discussion, and common sense rules would be applied.

Heading up the coast to Belem, we then followed the Amazon River to Santarem, Manaus, and finally back to Boa Vista. Retracing our steps through Guyana and the Caribbean. Self-handling was old-hat at that point and we’d mastered it like pros. We spent a night again in Puerto Rico where the global Covid situation really hit home. There was a lockdown in San Juan and we spent the afternoon in the hotel doing laundry and having food delivered. Honestly it was actually a bit of a relief to be in the US for a brief stop and having time to catch up.

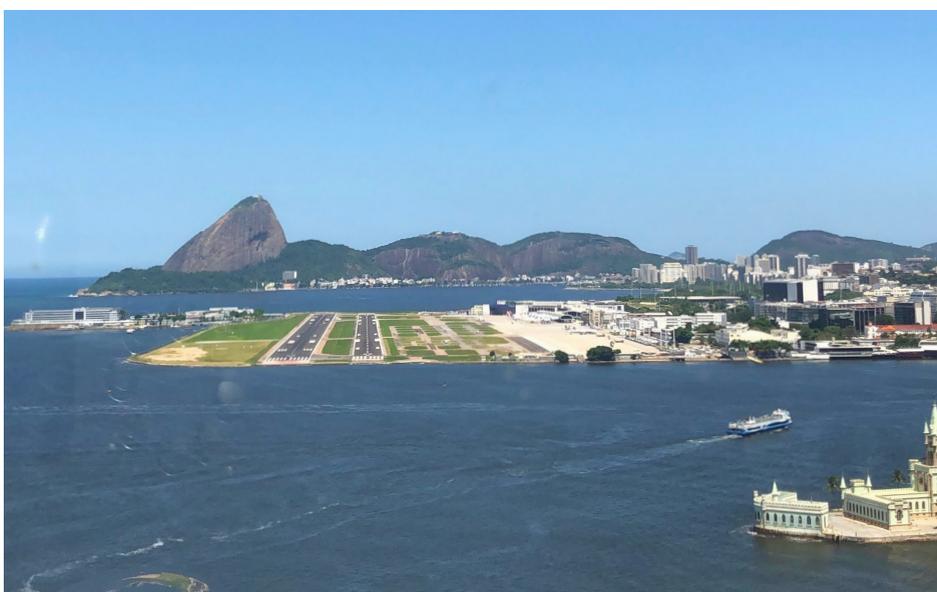
After Puerto Rico we stopped in Puerto Plata, Dominican Republic, where we definitely got the impression that they just wanted to fuel us up ASAP and send us on our way. The airport was deserted, and the customs and immigration officers did not want us near them. Continuing to Stella Maris, then Ft Lauderdale for our re-entry. Ft Lauderdale Executive’s lovely CBP facility was quick, and we managed to flag down a fuel truck to top the aeroplane off while we went through immigration.

Ft Lauderdale to Jacksonville to Gadsden, AL, to Nashville, and finally home. It had been an unforgettable journey, but the one big thing we took from it is how achievable adventures like this are to all of us. It was not hard, but just took planning, research, and making contact with some new friends who shared their knowledge.

A bit like building an aeroplane, you do it one small bite at a time.

A few take-aways

Flying in the Bahamas was downright easy – eAPIS website, file and depart. Wear your life jackets. Land, pay the fees, and enjoy. eAPIS again on the way back, call the CBP office an



Top Rio de Janeiro from Guanabara Bay
Above Santos Dumont Airport, Rio de Janeiro
Left Wonderful mural showing Santos Dumont's 14-Bis aeroplane being flown in Paris
Bottom Flying Club hangar in Belem, Brazil





Above On approach to Stella Maris, Bahamas
Above right Landing in downtown Puerto Rico
Right Guil ‘inspects’ the inside of his eyelids for a moment...



hour before arrival to let them know, file, and then depart.

I hear people talk about how easy we have it in the US for aviation but I always figured that was us just patting ourselves on the back. Flying in Brazil was expensive, with \$9/gal fuel, and large landing fees. As well as having to file for EVERY flight.

The controllers were nice and helpful, but there is minimal radar coverage, minimal weather coverage, and no VFR flight following. When we landed in Florida it felt weird deciding to keep going to Jacksonville and not filing a flight plan after the three weeks of the trip spending 15 minutes on the phone before every flight...

Many thanks to...

The aviation community is made up of wonderful people. Everywhere we turned there was someone who was happy to help. Be that finding us a hangar for the night, driving us to a hotel, or making recommendations for where to stop next. We had pilots keeping track of us and sending us weather reports for the upcoming airports by calling people on the ground and having them send us pictures of the sky and wind reports. We made fantastic new friends and memories we will cherish forever.

We were grateful to Luiz Fernando who tracked us on our inReach and sent us satellite messages with the weather ahead throughout the trip – and who made our lives immeasurably easier. To the many pilots and airports along the way that reached out, offered us housing, hangaring, fuel discounts, recommendations, a meal, or camaraderie. Clube Ceu and Jairo who welcomed us at their airport and took such great care of us. Continental Aerospace Technologies’ fantastic Titan engine gave us a comfortable feeling when flying over water, Garmin Experimental Aviation provided databases, satellite tracking, and messaging. To our employers that allowed us four weeks away from work for an adventure. And to our friends back home who watched out for us and took care of our cat Jesus all month. They all helped make it possible.

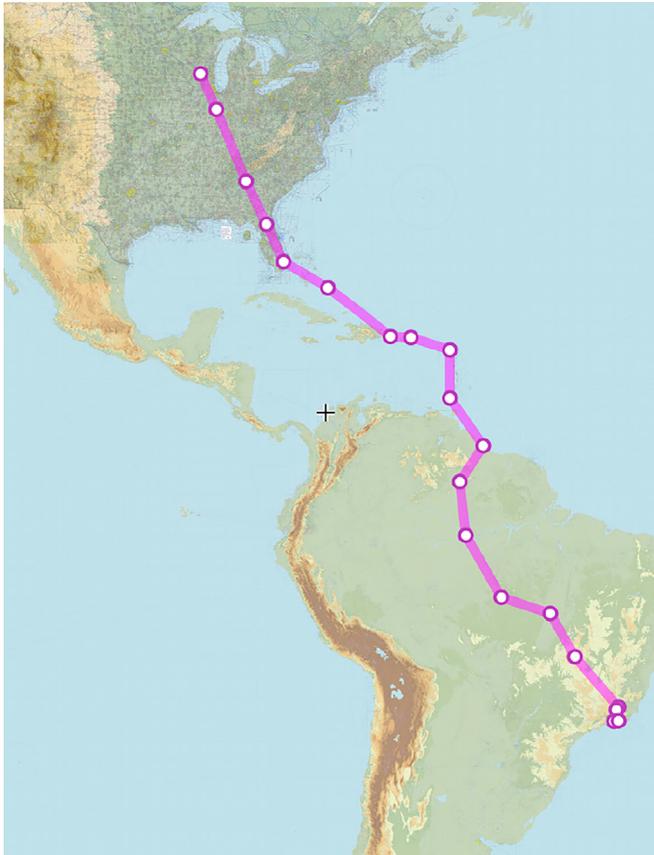
Most special thanks to Mary, who got her pilot’s licence shortly before the trip (the plastic licence card arrived on our departure day!) and allowed me to rest every so often.

We recorded the entire trip on a pair of cameras mounted on the aircraft with a FlightFlix mount. You can watch all the videos from this trip on our YouTube channel – youtube.com/BuildFlyGo

Route Map

From North to South

1. KMSN
2. KDNV
3. KPDK
4. 42J
5. KFXE
6. MYLS
7. MDPC
8. TJIG
9. TAPA
10. TGPY
11. SYEC
12. SBBV
13. SWFN
14. SBAT
15. SWFX
16. SWUZ
18. SBZM
19. SBJF
20. SIAN
21. SBRJ



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Microlight Trade Fair – Popham



09

01 The show was the first major UK debut for the all-electric Pipstrel Velis Electro. Popham Airfield is now part of the electric charging network available for this aircraft



08

02 The Sportstar SLM – one of the promising 600kg machines, is available from Ascent Industries

03 Click to watch our Popham video!

04 Flylight's 600kg version of the Nynja is nearly ready – base price under £52k inc VAT!

05 We loved this homage to 007's *Little Nellie*...

06 Who remembers the lovely little Star Lite single-seater from the 1980s?

07 Magni Gyro UK showed its first example of the Rotax 915iS-powered M24 Orion

08 Airplay Microlights Minifox Evo Speed SDDR was on show special for under £21k!

09 Dragon Aviation plans to offer the A32 Vixxen as a 600kg microlight kit, with a ready to fly example later



07



06



05



01



02



03

Click for video



04

The Popham Microlight Fair 2021

Top Gear

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PowerFLARM Fusion

★★★★★ £1,740 | flarm.com



Far left New PowerFLARM Fusion box is a startling shade of orange, but otherwise identical form factor and mounting points
Left Green circle is a Mode-S indication from the Fusion unit showing on an iPhone running SkyDemon

I must confess to being a bit of a fan of systems which reduce the risk of a mid-air collision. Having spent much of my flying career trying to spot an adversary before they saw me, I know how fallible the 'Mk I eyeball' can be.

Even knowing precisely the position of an aircraft, it can be frustratingly difficult to spot sometimes, and a radio call from the controller of 'plots merge' certainly gets your eyes out of the cockpit and your heart racing. For some, ignorance can be bliss but for me, being told of an approaching aircraft and prompted into scanning those key threat areas is important.

So, when we started planning the avionics fit of our Van's RV-8 some 10 years ago, providing a form of Electronic Conspicuity (EC) was a no-brainer. ADS-B was already gaining traction as the preferred method, but given the risk from gliders FLARM was seen as worthwhile addition. The RAF had suffered a couple of mid-air (one with a glider) and were in the process of installing FLARM on their Grob Tutors. It

was a useful aid and worked well alongside an Avidyne TAS system which covered the ADS-B in and out option.

For me, PowerFLARM Core seemed the obvious solution. Its GPS source could be coupled with a transponder such as the Trig TT21 to provide ADS-B in and out functionality as well as the FLARM in and out transmissions.

All this could be hard wired to most EFIS displays and, with a bit of trickery, connected to a mobile device running an Electronic Flight Bag (EFB) app such as Sky Demon (SD) to provide an additional display. It all worked fine but it had its foibles. Sorting the WiFi connection to a mobile device was occasionally flakey and the FLARM update process was less than convincing. Considering it is required annually, the next update never seemed far away!

PowerFLARM Core to PowerFLARM Fusion

The arrival on the scene of PowerFLARM Fusion provided a great opportunity to see how the new unit performed and to discover the benefits first-hand. I

was doing a bit of work behind the instrument panel anyway and it was therefore a good time to do some testing. Fortunately, the replacement box is an identical size, so swapping out the equipment was straightforward.

The bright orange colour of the new Fusion box marks its difference from the older Core box and gives it a rather 'data recorder-ish' look. Although to be honest, the advantage of PowerFLARM is that it can be installed out of sight, so the colour is pretty irrelevant – it just reminds you that there is something new behind the panel!

Fusion is supplied with the usual set of internal antennas and a GPS puck, but because the aircraft had been originally setup with these installed during the original build, we didn't need to use them. What we did need was an adaptor pack,, which allows all the original wiring to be used, and it can therefore be installed with just a couple of small spanners. Whereas the old PowerFLARM Core came in different versions for the USA and the rest-of-the-world markets, the new Fusion can be used seamlessly worldwide.



01



02



03



04



05



06

01 Fusion's 'worldwide' connector set-up
02 Also included with the Fusion box is a full set of FLARM antennas, GPS antenna and a wiring harness
03 If you already have the required antennas in your aircraft, then you just need an adaptor kit, which FLARM can supply - there are a couple of variations, so make sure you get the correct one
04 Fusion box fits straight in where the old PowerFLARM Core unit was removed
05 Follow the instructions and log your device on to the Fusion box using WiFi
06 In this particular set up, the PowerFLARM Fusion provides traffic inputs to the EFIS and an iPhone running SkyDemon

Will it turn on...?

Once all the redundant wiring from the old WiFi module and GPS had been cleared away – it absolutely does! A flick of the power switch and we were met with the customary flashing green LEDs, followed shortly by the WiFi broadcasting. A quick scan of the supplied QR code and a few seconds later we were connected via my iPhone to the FLARM Hub web interface using the phone's browser. Programming could now begin!

This entire process was so much more straightforward than with the previous model. Not needing a WiFi bridging module made installation easier and simplified the wiring. The elimination of the requirement to buy all the various separate licences is a real boon too. This was always a bit of a 'faff' with the old system and you were never quite sure if there would be a change to the charging structure which could leave you paying a regular fee. Now it all comes pre-installed as standard.

Setting-up too, is a real joy. You were never quite sure what was

going on with the old box. If you couldn't see the flashing green LEDs (and in most installations you couldn't!) you really were trusting the gods. Now, you simply log into the FLARM Hub's internal server and programme 'on the fly' using an excellent interface. The menus are intuitive and updating the software and configuring for our AFS EFIS worked first time, instantly showing some tracks. The little green LEDs are mirrored on the app too, so confidence is high that all is working as it should.

More tools have just been added as well. The latest Hub software has a built-in 'scenario simulator' which allows verification of the visual and audio outputs on all connected devices for the key traffic types (ADS-B, Mode S and FLARM).

How was PowerFLARM Fusion in use?

In truth, it performed just like it always has. Pairing the Fusion with an iPhone running SD was straightforward (SD already provide PowerFLARM Fusion as a drop-down menu option). This type of

connection can only be made to a single device. Fusion uses a number of protocols but in connecting with SD it is able to exchange a full information suite and you will therefore see all traffic types. Most other EFBs operate on the GDL90 protocol which usually does not provide information on mode-S traffic. So if you want to run more than one device over WiFi it makes sense to connect the main one through the SD app and the others, running SD or otherwise, using the GDL90 generic protocol. All should be capable of providing audio and visual alerts without the need for a separate FLARM subscription.

So, in short, this upgrade brings major improvements in the areas where PowerFLARM Core frustrated in the past. Being able to connect multiple devices over WiFi is an essential new feature and the FLARM Hub interface makes setting up and validating the install a real pleasure. Not being caught out by having the incorrect licenses is a big help too and the straightforward install makes this purchase, whether as an upgrade or as a fresh install, an excellent choice. **Steve Ayres**

By Association

Looking after General Aviation The UK's flying associations at work

AOPA CAA future funding model

The CAA is responsible, *inter alia*, for regulating aviation safety in the UK which it does through the Safety Regulation Group (SRG).

The CAA recovers its costs through a scheme of charges that apply to organisations and individuals that participate in civil aviation. These bodies require approvals, certificates and licences from the CAA and it's the total revenue from these charges that are budgeted to cover the costs of SRG.

The cost of regulation is linked to the number of regulations and the level of oversight carried out by the CAA.

Therefore, we would like to see a review of which regulations provide direct safety benefits against those regulations which the CAA is required to provide oversight. Over-regulation doesn't just mean a single regulation, it may relate to the total number of regulations, and therefore we feel there is a need for a detailed review into the number of regulations needed to achieve acceptable safety outcomes. This is linked to CAA finances because it would affect manpower/staffing levels, as well as the number of services the CAA would provide, including regulatory oversight.

AOPA has stated in the past that there

needs to be a better understanding of the differences between commercial and non-commercial activities when considering these costs. CAA charges add significant costs to flying and we intend to make the best of this opportunity to add a positive contribution to the discussion regarding the CAA funding model. It is understood that after an initial draft the CAA will seek to consult more widely. **Martin Robinson**



Aircraft Owners and Pilots Association
www.aopa.co.uk

BMAA Signing off...

This will be my last contribution to FLYER as BMAA Chief Executive as I am due to retire from the Association in early October.

I've been looking back over my last 15 years, and the changes that have happened within the microlight world during that time.

The extension of the deregulated single-seat category, inspired by owners wanting to develop their aircraft without rigid oversight and the understanding that very little additional risk to third parties would result, has been a success. The removal of the restriction which prevented microlights from overflight of congested areas, while other

Permit aircraft were not so restricted, has *not* led to bits of aircraft raining down on the public. The increased allowed use of amateur-built microlights for flight training to allow multiple owners to be trained in their own aircraft has made learning to fly less costly for many. The removal of archaic noise restrictions, which were much more restrictive than for any other class of aircraft, recognises the development of microlight aircraft design. The development and final acceptance of a self-declaration medical that truly reflects the risks to third parties, which can be shared by non-microlight pilots too was the result of determined campaigning by the BMAA.



British Microlight Aircraft Association
www.bmaa.org

Light Aircraft Association What's in a name?

The re-categorisation of a new generation of sub-600kg aircraft as microlights by the CAA opens new doors for sport flyers.

In short it means a new selection of factory-built sport aircraft can be made available to microlight and light aircraft pilots alike, to be flown (with suitable differences training) on either category of licence. Plus they can be operated on a Permit to Fly, administered by either the LAA or BMAA, rather than a more onerous Certificate of Airworthiness as would have been required for factory-built aircraft.

Permits to Fly offer more flexibility on

costs and maintenance by owners and, after annual inspections, the Permits can be renewed by the sporting associations including the LAA, which has the best experience in dealing with aircraft in this category. We oversee over 300 aircraft in the microlight class, so we are laid back about the adoption of the 'microlight' title, but in effect they are a new breed of sport aircraft.

However, while the new rules allow the possibility of existing designs being re-examined to determine whether they can be cleared at an increased weight, it doesn't mean an existing 450kg microlight can instantly be flown as a 600kg aeroplane. An

aircraft that's been cleared at 450kg may be under-strength if loaded with an extra 150kg of payload – that's like adding two extra people. Not to mention where the CofG might end up if the aircraft was overloaded in that way! In short, the new rules open the door for a big increase in capability and the chance to offer a new range of modern, efficient sport aircraft. That has to be good news for everyone. Check www.laa.uk.com/600kg for details. **Steve Slater**



Light Aircraft Association
www.lightaircraftassociation.co.uk

Aviation associations Got something to say? You're welcome to contribute to this page, email editor@seager.aero

THE FLYER CLUB



More Club events
are planned

Join our growing Club...

While we might be about to start heading into the cooler months, that's not going to stop *FLYER* Club activity!



This summer has seemed like a short one, certainly from where I'm sitting. But, at least it has been a busy one! We've welcomed dozens of new *FLYER* Club members, run our first events, held more webinars with experts and, (in case you haven't seen it yet), started a member's only Livestream Extra on Wednesday afternoons! Being a *FLYER* Club member is about getting exclusive access, behind the scenes insight and working towards making you a better pilot, which plenty of people are embracing.

If you haven't already done so, subscribe to the *FLYER* YouTube channel and check out our growing collection of videos. There will be much more to come as we generate content for everybody to watch on an increasingly frequent basis. Don't forget to click like on any videos

that you do like, and press the notification button so you'll be among the first to watch any new uploads.

Recently, we've had a great response from airfields who haven't taken part in the FREE landing voucher offer in a long time, as well as some completely new airfields. This month we're pleased to welcome East Kirkby and Kittyhawk Farm, and say 'hello' again to Rougham for the first time in a few years. All of these airfields are generously offering *FLYER* Club members FREE landings, so please visit them, buy fuel, tell other pilots how great they are – then visit them again in the future!

jonny.salmon@seager.aero



Out & About

We've had some great weather and it looks like you've been having fun all around the country! Thank you... and keep the photos coming!



John Hardie after his first Tiger Moth solo at Damyns Hall



Sean Link and friends in formation



Matt Coles L-4 Cubbing over a wheat field



Ben Gilmour in his Taylor Monoplane



Ben Wyatt A rare cloudless sunset over Wiltshire



Joe Fogel flying up the Essex coast



Sarah Gulzar experiencing a Spitfire for the first time... and below



Bruce Buglass in his Steen Skybolt



...having an inverted Spitfire moment



Brian Heath aeros over Jersey



Sarah Tilling happy after a Chipmunk flight



Richard Tyler flying overhead La Guardia



Andrew O'Dell flying over the Cambridge American Cemetery in a Dragon Rapide



Keith Campbell gliding at Halton



Keir Williams watching the sunset from the RV-6



Steph Murchinson at Branscombe



Charlotte Bailey
ready to roll

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If you're a member of **The FLYER Club**, [click here](#) for your personalised vouchers and save over **£59** by claiming one **FREE** landing at each of these airfields valid for September 2021, although not at an aircraft's home field. No jets. Please contact the airfield before setting off.

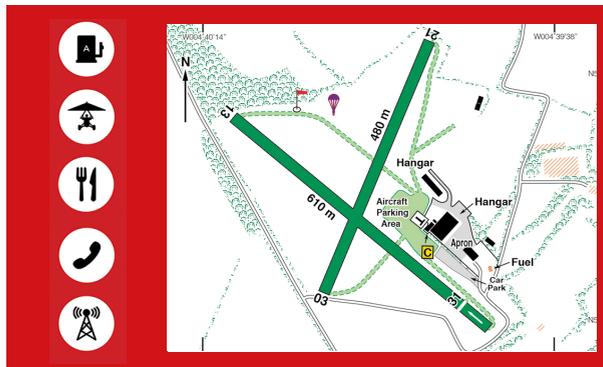
If you're not currently a member of the FLYER Club, but would like to receive six new free landing fees every four weeks plus other Club member benefits, then [click here to join!](#)

Bodmin

01208 821419 | **EGLA** | www.bodminairfield.com

Bodmin Airfield is situated on the edge of the picturesque Bodmin Moor in Cornwall and has excellent facilities, including two grass runways and a lunchtime bar and restaurant. It's operated by the Cornwall Flying Club, which will arrange accommodation, car hire and Customs, if requested in advance. CFC has a long training history and offers wing walking and vintage flights. All visiting aircraft strictly PPR. Light refreshments are available.

Nearby attractions Bodmin Airfield is only 20 minutes from the Eden Project. The rugged beauty of Poldark Country awaits you.
PPR 01208 821419
Radio 120.330

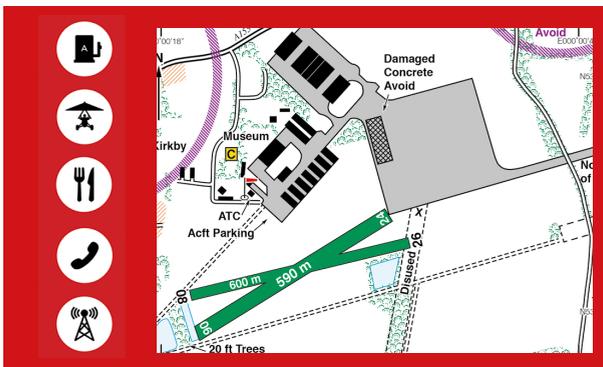


East Kirkby

01790 763207 | www.lincsaviation.co.uk

East Kirby is located inside the Eastern stub of the Conningsby MATZ and is a grass airfield with usable runways of around 600m. All circuits are to the south at 800ft, avoiding villages. Aircraft should park on the grass on arrival.

Nearby Attractions The airfield is home to the Lincolnshire Aviation Heritage Centre, which pilots can visit for an additional fee. East Kirkby is also the only place to view a taxiable condition Avro Lancaster and taxiing rides can be purchased.
PPR 01790 763207
Radio SafetyCom 135.480



Radio

Accepts non-radio light aircraft, but PPR



PPR

Prior permission is required



Refreshments

Including restaurants and cafes etc



Microlights

are welcome



Fuel

Aviation fuel available
A avgas, **UL** UL91,
M mogas

While you're there

When you visit these six airfields, why not show your support by enjoying a meal in the cafe or filling up with fuel? It's good to support GA in the UK.

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Felthorpe

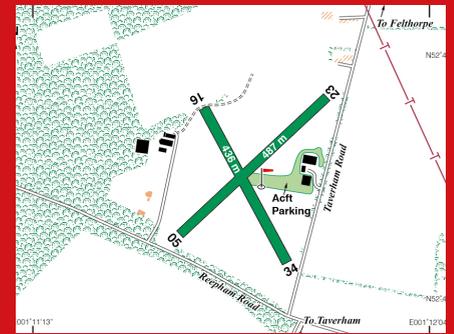
07768 823300 | www.felthorpe.net

Felthorpe is a lovely grass airfield with a rich history, located inside the Norwich CTR. It's two runways are over 400m in length and orientated 05/23 and 16/34. PPR is essential, as is reading the arrival and departure information on the website. There are lots of interesting aircraft based at Felthorpe, so visitors may see some unique flying machines.

Nearby Attractions Felthorpe is a short taxi ride away from Norwich city, and the airport is just four miles in a straightline, with the City of Norwich Aviation Museum.

PPR: 01603 867691 / 07768 823300

Radio: See website, clearance required from Norwich.



Kittyhawk Farm

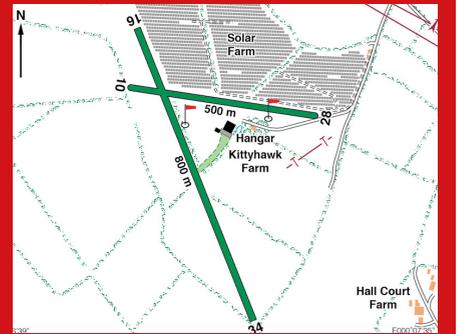
01273 921 446 | kittyhawk.farm

Kittyhawk Farm is located five miles East of Lewes in Sussex and is a growing airfield with two runways 10/28 and 16/34, both over 500 metres. Current runway status is listed on the website and fill in the PPR form for automatic approval. Circuits at 800ft to the South and West, avoiding nearby Deanland's circuit. Kittyhawk will be hosting a fly-in and BBQ on Saturday 11 September.

Nearby Attractions Lewes and its castle are a short taxiride away. Further south is the coastal town of Newhaven and Eastbourne to the south-east. The South Downs AONB is also minutes away.

PPR Via web - kittyhawk.farm

Radio 118.265



Rougham

07763 148640 | www.roughamairfield.co.uk

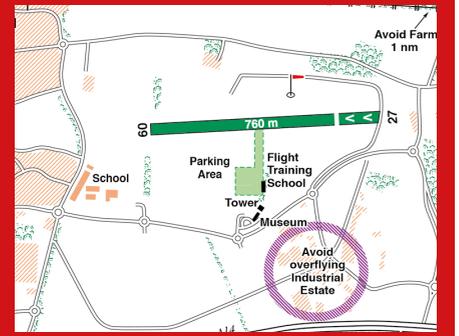
Rougham Airfield offers a well-marked and maintained 760m x 18m grass runway with short- and long-term aircraft parking. It is situated two miles east of Bury St Edmunds, Suffolk, and served as RAF Bury St Edmunds during WWII. Skyward Flight Training operate the airfield and PPR requests are made through them. Rougham Tower Museum is open to the public on Sundays 10-4, check online for changes.

Nearby attractions

Find out more about the Rougham Control Tower Aviation Museum at rctam94th.co.uk.

PPR: 07763 148640

Radio: 123.165



Sandown

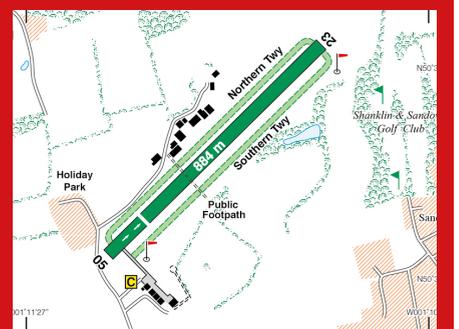
01983 716926 | **EGHN** | www.eghn.org.uk

Sandown Airport is on the Isle of Wight, a mile from the town itself, and is operated by its owners, Sandown Airfield Ltd. The Air/Ground radio frequency has a radius of 10nm and a max altitude of 3,000ft. If the station isn't manned, please make blind calls on that frequency. For PPR, contact the cafe on 01983 716926 or Dan on 07900 894044.

Nearby attractions The beautiful Sandown Bay and town are very near, with their golf course, pier and sandy beaches.

PPR 01983 716926

Radio 119.280



Win! A print or digital *Pooleys UK Flight Guide*

QUESTION: What is the distance between Bodmin and Sandown in nautical miles?

To enter, post your answer, name, address and email details to

Pooleys October Competition, *FLYER* magazine, PO Box 4261, Melksham, SN12 9BN or send an email to competitions@seager.aero
The closing date is 19 October 2021.

The winner's name and address will be passed to Pooleys, then deleted from Seager's database. Pooleys will send the winner their prize and, in order to do so, also offer to supply them with further information about the company's products and services.

*The winner for August 2021 is:
Ben Coffman*



- 1 Bodmin
- 2 East Kirkby
- 3 Felthorpe
- 4 Kittyhawk
- 5 Rougham
- 6 Sandown





No limits for Club members!

This past month *FLYER* Club members have taken part in an Upset Prevention and Recovery Training day with Ultimate High...

Nine *FLYER* Club members got the chance to spend the day at Goodwood Aerodrome, learning about upset attitudes, the theory behind them and then fly a session in the T67 with one of Ultimate High's instructors. Club member Cath said, ***"The course was amazing. Classroom stuff was excellent and really thought provoking. The flying element was brilliant. I flew the recoveries on the list and with a little time to spare was offered the chance to experience - then fly - a couple of aerobatic manoeuvres."***

If you want the opportunity to take part in events such as this then there's only one thing to do - join The *FLYER* Club!

We've got more webinars, events and other **exclusive** content for Club members. Join the Club now - it's a bargain!

Coming up...

Dave White will present another webinar on flying abroad, which is planned for early September.

Keep an eye on your inboxes for more details and the link to watch.

Join the Club – it makes sense

If you're not a member of The *FLYER* Club and you're thinking, 'How do I join? Right now. This instant...!'

Well, good news, it's easy. Just [follow this link](#), complete the simple form, decide how you want to pay and start enjoying the **benefits** instantly.

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- Free copy of *A View from the Hover*
- Get your club membership paid by Stein Pilot Insurance

- An initial conversation with Dr Frank Voeten, FAA & EASA AME

- Twice-weekly General Aviation weather briefings
- FREE Landing vouchers, available through the [FLYER website](#)
- Mini weather webinar. Catch-up if you missed it.
- Exclusive written content from our archives - first pieces now published.
- Interviews with experts on a number of key topics.
- Our first members' Fly-in was a success! We'll be announcing more events in 2021 soon!

Coming soon

- Back issues - there's another FIVE years on the way with more to follow.



Airfields



Kittyhawk Farm



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SATURDAY 11 SEPT 21

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NEXT MONTH'S ISSUE

**Available from
28 September.**



THE THRILL OF FLYING

Zara departs on microlight round the world flight

Nineteen-year-old pilot Zara Rutherford set off on her round-the-world flight in a Shark microlight on Wednesday, 18 August from Kortrijk Airport in Belgium.

Zara hopes her flight – FlyZolo – will set two records. First as the youngest woman to fly around the world, and second, as the youngest person to fly around the world in a microlight.

“I’ll be setting off on my mission to fly solo around the world, raising awareness of women in aviation and STEM, and encouraging young people to follow their dreams!” said Zara. “And hopefully breaking a couple of world records along the way!”

“I have just completed my A-levels in mathematics, further mathematics, economics, and physics, and



Shark.aero

Above Zara Rutherford in the Shark microlight which she is flying around the world

hope to go to university to study computer science/ computer engineering.

“I have been flying for as long as I can remember (both parents are experienced pilots) and qualified as a pilot last year. In my spare time I run a small sneaker business and like to code!”

Zara has recently been at the Shark factory in Slovakia for maintenance of the

aircraft and intense flight training. The Shark is one of the latest generation of 600kg microlights with retractable undercarriage, variable-pitch prop, 100hp Rotax 912ULS and has a claimed cruise speed of 162kt. [Track Zara](#)

■ Jonny Salmon interviewed Zara on the *FLYER* Livestream. [Here’s the interview](#)

Aviators Ball is back

The Aviators Ball is back this November after a virtual event in 2020. The ball is organised by Aerobility and funds raised go towards the charity.

Aerobility said, “After last year’s Aviators Ball @Home event, we are thrilled to announce that we are planning this year’s Aviators Ball as we normally would!”

“This means a Champagne reception, gourmet gala dinner, surprise live music, entertainment and casino, the Grand Auction and the very special Aerobility Awards, all at the Sofitel, Heathrow Terminal 5, on 20 November 1800 till late.”

Individual tickets cost £150 and are available online. A discount of 5% is available for a table of 10 and there’s a concession ticket £100.

[Full details here](#)



Above Amy Dewhurst, one of the winners of a 2021 aviation scholarship awarded by BWPA

Heroes & Villains

HEROES The crew of the Derbyshire, Leicestershire, and Rutland Air Ambulance helicopter, after the windscreen was shattered by a bird strike. Some of the pieces of acrylic windscreen went into the main rotor, taking a chunk out of one blade and the resulting vibration meant the pilot had to make a precautionary landing near Carsington Water.

the centre of the small town of Tisdale, Saskatchewan, Canada to buy an ice-cream cake. The town mayor, Al Jellicoe, saw the pilot leave Dairy Queen with the cake and told CBC News, “That’s probably not the right thing to do.” Police charged the 34-year-old pilot with one count of dangerous operation of an aircraft.

HERO Tom Cruise, of course, and the long-awaited sequel, *Top Gun: Maverick*, will eventually

open in cinemas on 19 November after being delayed twice because of Covid.

VILLAINS Spotters at Popham’s Microlight Trade Fair were not content with just seeing the aircraft taking off and landing, some of them

forced open hangar doors to peek inside. “Not acceptable,” said Airbourne Aviation who posted photos on Facebook.



VILLAIN A so-far unnamed pilot has been charged after landing a helicopter in



BWPA scholarships

The British Women Pilots’ Association (BWPA) has announced the winners of its 2021 aviation scholarships.

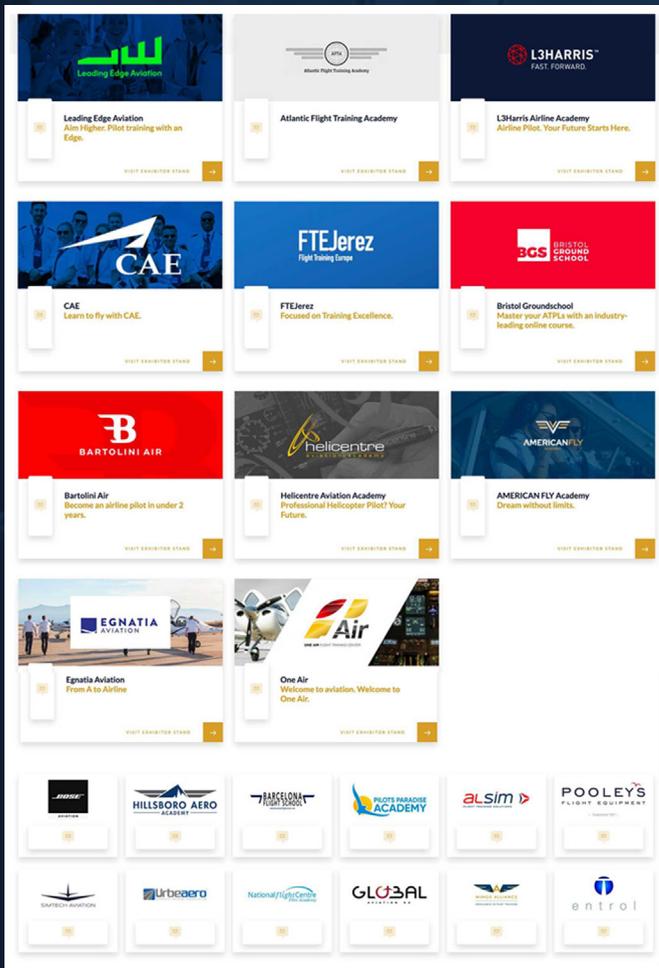
They are: Amy Dewhurst, Yasmina El Sayed, Rachel Harvey, Alison Field, Olivia Brown, Katie Stokes, Lizzy Mukori, Holly Harris, Hannah McCann, Tabitha Shaw, Sue Sheikh, Rachel Calvert, Grace McKellar, Charlotte Hill, Jayne Stubbs, Rebekah Yore, Gemma Jefferies, Daisy Bing and Fiona Smith.

You can still check out **PCLV!**

You can still visit the website and enjoy all the contents.

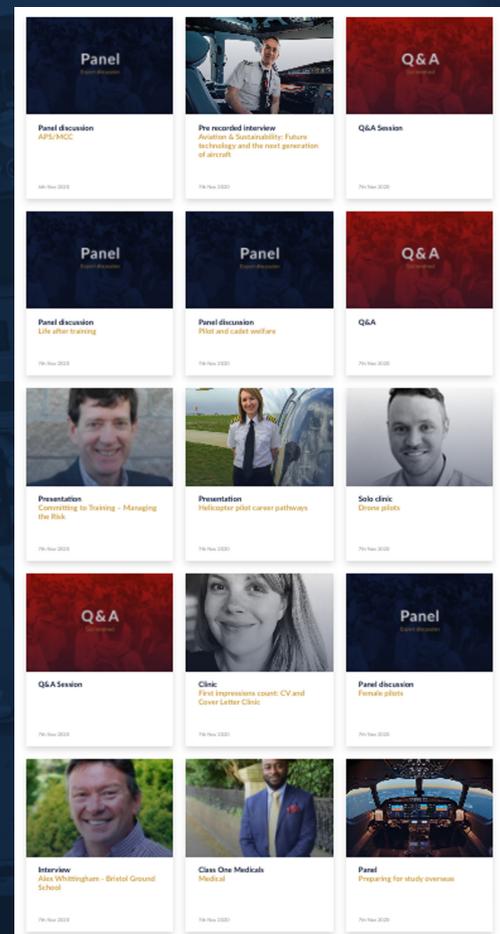
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WHAT DO ATTENDEES HAVE TO SAY ABOUT PCLV?

Again, really really well organised with fantastic speakers, amazing job, well done. BRAVO!



Thank you very much for the event over the last 2 days. Incredibly informative and helpful!



It was amazing...! Cannot wait for a non virtual seminar! I don't think it could have been better.

