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Editorial

ED HICKS

Fellowship of aviators

In 2016, I met Adrian Eichorn, a Beechcraft Bonaza pilot who was flying his beautifully restored 1962 P-model Bonanza around the world. *FLYER* Bossman Ian Seager and I helped Adrian out with some air-to-air photos of his Bonanza as he made a flight past the American Cemetery and Omaha Beach at Normandy, site of the WWII D-Day landings. Much later, Adrian recognised this occasion of assistance, among many other moments from the trip, by remarking that 'the fellowship of aviators was alive and well'.

I was given a reminder of the fellowship of aviators recently, as I worked to get the cracked engine mount on the RV-3 fixed. It's been a fairly big job to remove the engine and then the mount, send it off for repair, and then get all the parts ready and reassembled.

My good flying friends Jonathan and Steve helped with removing the -3's Lycoming O-235, and then having found a low cost, secure lifting solution, (there's a review of the Sealey hydraulic lift in Top Gear that I purchased to help with this on page 63), lifted the airframe off the gear and removed the mount. While I was tied up with work, Jonathan loaded the mount, with undercarriage legs still fitted – they wouldn't budge – into his Honda Jazz to deliver it to UK RV guru Nigel Reddish with no delay.

Nigel stripped and inspected the mount and his welder did a beautiful job of removing the cracked tube and fitting a new one. Less than a week later, he called to say the mount was fixed and ready for collection. All done for a great cost – seriously, if you need an RV engine mount repair in the UK, there is a good reason Nigel has full LAA approval for all RVs. As I was still firmly tied to the office and with Easter weekend coming up, another flying friend, Keir, offered to go and collect the mount for me.

With all these very kind bits of help, it meant that by Good Friday I could be found in the hangar repainting the engine mount. And by Easter Monday, with more help from Jonathan and Steve, the mount was back on the aeroplane – a few days later followed the engine. Huge thanks guys!

After the isolation of recent months, it has been fun to be back in face to face contact with friends – the fellowship of aviators really is alive and well.

Ed

Click for video

ed.hicks@seager.aero

Mark Mitchell

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Aviation news from around the world – for the latest visit *www.flyer.co.uk*

600kg microlights by May as CAA closes on finalising rules

Above As The CAA finalises the rules, the 600kg microlight weight limit could be in place next month, making way for aircraft like this Tecnam P92 MkII

The new 600kg microlight weight limit could be in place and functioning in the UK as early as May, according to Geoff Weighell, CEO of the British Microlight Aircraft Association (BMAA).

Geoff gave an update on how consultations with the CAA are progressing in a video seminar with microlight flight instructors.

"The current target is regulatory requirements to be in position to enable 600kg microlights from early May 2021," said Geoff, who is working with the LAA as well as the CAA on the new class.

"Airworthiness requirements are in hand and will be aligned with German and Czech (regulations) as closely as possible. Manufacturing requirements are in hand and will take into account systems outside the UK.

"Licensing requirements have been agreed, mainly focusing on differences training.

"Differences training is given to pilots to prepare them for flying aircraft which have differences to the aircraft they are used to flying. Some differences training is mandated, some is not mandated but is sensible to consider."

The mandated differences training must be given by a qualified flight instructor, recorded in the holder's flying logbook, and endorsed and signed by the instructor.

The elements which will require differences training include:

- Tricycle undercarriage
- Tailwheel
- Retractable undercarriage
- Supercharger or turbocharger
- Variable pitch propeller
- Electronic Flight Information Systems
- Autopilot
- More than one engine
- Electric engine

Other differences training covers moving from a flexwing microlight to fixed-wing and vice versa, and operating off water.

BMAA 600kg microsite

Click for video

Drone TDA proposed between Portsmouth and Isle of Wight

Another day, another drone company, another Temporary Danger Area (TDA)... this time, it's between Portsmouth and the Isle of Wight and yes, the NHS needing urgent supplies is the given reason, again.

A Leicester-based drone company called Skylift UAV, part of the self-styled British Drone Consortium, has submitted an application for a TDA to operate a four-week trial drone service supplying drugs for chemo treatment.

The TDA is an odd dog-leg shape which is not explained in the application. It operates from the surface up to a maximum of 850ft.

The trial is 'on behalf' of Portsmouth Hospitals University NHS Trust and Isle of Wight NHS Trust to transport chemotherapy drugs between Queen Alexandra Hospital in Portsmouth and St Mary's Hospital in Newport, Isle of Wight.

Skylift says, "Reducing the delivery time to a 32-minute direct flight between the two hospitals would be transformative."

Skylift says the drone will be equipped with ADS-B and a Mode S Transponder for electronic conspicuity. It will also be GeoFenced so the aircraft remains within the confines of the TDA.

Expected operating hours of the TDA will be five days per week, with four return flights per day, predominantly in daylight hours.

The TDA will be activated by Notam with at least 24 hours' notice.

Skylift Airspace Change Proposal

Main Chart showing the proposed TDA... not exactly direct **Inset above** Skylift NHS delivery drone

Shapps confirms no LPV after June

GPS approaches using Localiser Performance with Vertical guidance (LPV approaches) will stop on 25 June this year, the government has confirmed.

The Secretary of State for Transport, Rt Hon Grant Shapps, said that the government could not agree terms with the EU for continuing to use EGNOS.

The European Geostationary Navigation Overlay Service (EGNOS) is Europe's regional satellite-based augmentation system (SBAS) that is used to improve the performance of global navigation satellite systems (GNSSs), such as GPS and Galileo. It has been deployed to provide safety of life navigation services to aviation, maritime and land-based users over most of Europe.

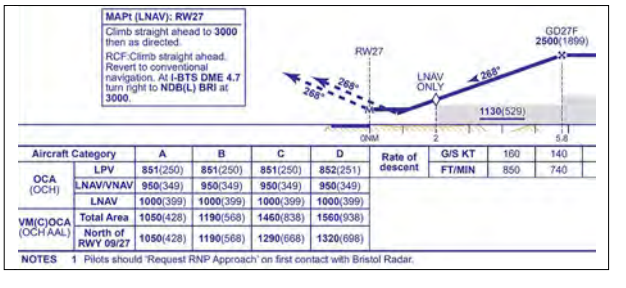
"The Government recognises that after this date airspace users will not be able to benefit from localiser performance with vertical guidance procedures and instead, where possible, rely on lateral navigation procedures," said Mr Shapps.

"The UK Government did seek to retain the use of EGNOS and throughout the negotiation period we continued to discuss the matter with our European counterparts.

"However, after carefully considering the terms that were offered to us, including the new levels of associated costs, it was not possible to reach a satisfactory settlement with the EU in the 24 December 2020 agreement."

The Government has begun work on exploring alternative options. "But it is, unfortunately, going to take some time and considerable investment to implement," said Mr Shapps.

EGNOS



Below The difference an LPV approach can make – lower decision height

Take-off

Luscombe 8 back into production

The legendary Luscombe 8F is to go back into production, initially as a Light Sport Aircraft but with the ambition of building certified aircraft. The company is due to exhibit at this April's Sun 'n' Fun show.

A new Luscombe Aircraft Corporation has been created by Steve Testrake and Stephen Young who acquired the Luscombe assets in June of 2019. They say their goal is 'to revive the legacy of the Luscombe'.

LAC is operating from a 25,000 sq ft facility at Jamestown Airport, in Chautauqua, New York.

The two owners said, "As with almost every business, Covid-19 has slowed us down. Not being able to attend any events, as we had planned, prevented us from marketing the new company face to face with potential buyers.

"We are now starting the Luscombe LSA Model 8 production. We've had several discussions on pricing and are keeping the cost as low as possible.

"Steve Testrake engineered and designed a new retro dash, we've digitised several thousand drawings and started making parts for the new LSA.

"As everyone knows we need sales to keep our crew employed. We're looking at selling the first four Luscombe LSAs at a steep discount to keep everything moving along during this Covid shutdown.

"We have also developed a digital archive of Luscombe's large collection of historical records, engineering drawings and production work orders. We have inspected and are refurbishing production jigs and tooling to resume production of those hard-to-find parts.

"LAC is working closely with numerous well-known suppliers and manufactures to establish an FAA approved supply chain – we are now an approved dealer for Trig Avionics products."

Luscombe Aircraft Corporation

£50,000 prize for cross-Channel flight

A top cash prize of £50,000 is being offered to the winning team of the Great Human Powered Aircraft Race due take place in June 2022.

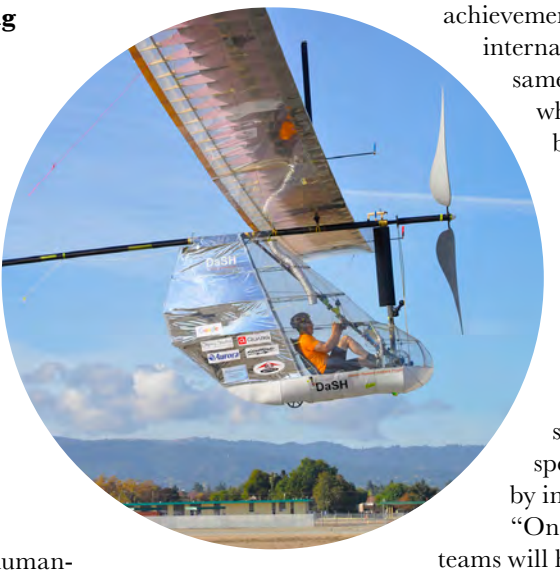
A further £10,000 prize will go to the second fastest team, and £5,000 to the fastest female pilot.

The first and only crossing of the Channel in a human-powered aircraft (HPA) was 42 years ago by Bryan Allen in *Gossamer Albatross* designed by Paul MacCready. No successful attempts have been made since.

The race will mark the 60th anniversary of the first flight of human-powered aircraft by Derek Piggott.

"Crossing the English Channel in a human-powered aircraft has been done, once before, barely," said Alec Proudfoot, a HPA designer.

"It was one of the most amazing athletic achievements of our time. To think that several international teams are going to attempt the same feat, on the same day, in a race to see who is the fastest, seems almost a bit bonkers.



Above 'Almost a bit bonkers' – crossing the Channel by leg power

Alec Proudfoot

"It will be a huge technical and logistical challenge, but most of all a supreme test of athletic and piloting skill. It is going to be fascinating to watch, and thrilling to participate in."

Entrants will have to fly 35km from Folkestone to France on the same day. Teams will be followed by speed boats with rescue divers standing by in case an aircraft ditches.

"On account of the risk and difficulty, teams will have to demonstrate past experience in HPA building to qualify," said the organisers. "Teams from all countries are invited to apply."

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Take-off

Autogyro secures future production

Autogyro has reached agreement with its shareholders and administrator to continue to manufacture and sell complete aircraft and spare parts.

This follows the German company falling into insolvency administration last year.

"We made it! The restructure plans for the company will ensure its ongoing success, and secure a solid path for the future," said a statement from Aleksandra Witkowska and Gerry Speich, joint CEOs. "No jobs will be lost."

Autogyro says it has been busy in the first three months of 2021 completing 16 aircraft and dispatching large numbers of spare parts around the world, including to Mongolia, China, USA, Europe, Australia and New Zealand.

"In parallel, our development team has readied several class-leading projects, from the fitment of specialised camera systems for aerial observation to single lever in-flight adjustable propeller control management," said the statement.

Above AutoGyro's-open cockpit MTOsport
Above inset Enclosed cockpit of the Cavalon

Autogyro manufactures a range of gyrocopters, from the open cockpit tandem seat MTO Sport to the fully enclosed side-by-side certified Cavalon Pro.

Autogyro.

Greek company successfully tests turbine-powered Bristell microlight

A new startup in Greece has test flown a Bristell 600kg microlight fitted with a prototype turboprop engine producing a claimed 130shp.

The company, Heron Engines, has yet to release any details other than a YouTube video which shows the twin exhaust stacks of the compact turbine engine with the cowlings off. For flight, the cowlings are replaced and the aircraft looks much like a standard Bristell.

US magazine *Plane & Pilot* made the point that aircraft with jet turbine engines are usually flown at high altitude where the lower drag reduces fuel burn. However, light sport aircraft and microlights like the Bristell are usually flown at lower altitudes 'where the turbine sucks fuel like a vampire locked in a Red Cross blood bank overnight'.

Heron Engines simply said, "We proudly present a teaser of our Turboprop engine's maiden flight. After many years of development and hard work, a dream comes true.

"A new era in the Ultralight category begins with our 130shp turboprop engine. Special thanks to the Bristella family for the support and the amazing Bristell aircraft, Talos Avionics and, last but not least, flysystem-aviation. Stay tuned for more..."

Students of ancient Greece may recall that Heron Alexandrinus was a mathematician, physicist and engineer who lived in 10-70 AD. Among his creations was the world's first turbine, powered by steam, which he described as an 'aeolipile', or 'wind ball'.

Heron Engines

Right Heron's turbine powered Bristell
below inset What you'll find under the cowling...

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Take-off

Royal Aero Club's races return for 2021

The Royal Aero Club's 2021 British Air Racing Championship is a go! Last year's series, like so many events, was cancelled but now the Royal Aero Club's Records, Racing and Rallying Association (RRRA) has announced a six-event season of handicap races.

The events and airfield locations are:

- 22-23 May, Beccles
- 26-27 June, Haverford West
- 24-25 July, Sandown
- 21-22 August, Llanbedr
- 11-12 September, Leeds East
- 25-26 September, Leicester

Each weekend has two races with trophies and points awarded for each. Whoever has the most points at the end of the season will be the British Air Racing Champion.

The racing uses a handicap system meaning that any aircraft that can fly at least 100mph/87kt is eligible to take part. The slower aircraft take off first and the rest in speed order. Both certified and LAA Permit aeroplanes are eligible.

"We are eager to welcome new pilots this season and are happy to meet any pilot interested in using their licence to have the greatest time ever," said a club statement. "You only need a basic PPL with a minimum 100 hours PIC to take part."

Each race is associated with a historic trophy. The most prestigious are the Kings Cup, which has been raced for since 1922, and the Schneider Trophy, which began in 1913.

The Coupe d'Aviation Maritime Jacques Schneider (commonly called the Schneider Trophy) was awarded annually to the winner of a race for seaplanes. The race was held 11 times between 1913 and 1931, then revived in 1981 by the Royal Aero Club of Great Britain to commemorate the 50th anniversary of Britain's ultimate retention of the Trophy.

Above The prestigious Schneider Trophy
Top Racing returns for Royal Aero Club where almost any aircraft is eligible

To commemorate this year's 90th anniversary of the outright win by the British team, this year's Schneider Trophy will be raced for over the same course as the original, over the Solent and the Isle of Wight, with aircraft being stationed at Sandown Airfield.

All information about the races and how to take part are on the RRRA website or email *info@royalaeroclubrrra.co.uk* for further information.

"We are also recruiting volunteers to help with the race day organisation and logistics," continued the club. "Do get in touch if you would like to join the friendliest bunch of aviation enthusiasts!'

Royal Aero Club

Jersey Aero Club reopens

Jersey Aero Club is up and running again after a torrid 2020. The club has restructured its assets and now faces a promising future.

The club issued a statement which said, "The Aero Club's newly formed Committee has established strong procedures to re-develop the Club's governance, activities and facilities.

"Despite facing difficult times and the cessation of flight training during the past year, the Club's members have been very supportive, and membership numbers have remained buoyant."

Like many businesses across the UK, the pandemic forced the Aero Club to shut its operations in May 2020. A subsidiary company that operated flight training, managed General Aviation operations at Jersey Airport as well as the bar and café, has been wound up.

Derek Fage, Aero Club Chairman, said, "Flying training has now recommenced with our new flight training partner Synergy Aviation, and the Club has now reopened to members who can enjoy the Club's catering services. In its 70th anniversary year, the Aero Club is once again financially sound and will remain a stalwart in Jersey's aviation story for its members and stakeholders for years to come."

Click for video

The Club is planning a summer re-launch party and also for visiting General Aviation aircraft to return when possible.

Jersey Aero Club

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Instant Expert

Get to know the new Skyway Code

Ed Bellamy takes a look at what's new in the latest edition of the CAA's *Skyway Code*

It is quiet on the regulatory front this month – I think most Covid and Brexit housekeeping was wrapped up last time and hopefully, by the time you read this, a lot of us will be focusing on getting back in the saddle, as it were. A few pointers, both practical and legal, can be found in the recent special edition of *Clued Up*, which is available on the CAA website.

Another good resource is the CAA's *Skyway Code*, version three of which recently came out. I should say at this point that I have been involved in editing the *Code* on and off since it first came out in 2017, so forgive me for using this month's intermission from the usual stream of regulatory updates to make a bit of pitch for it.

The *Skyway Code* was conceived as a practical guide to safe and compliant GA flying. It covers areas such as the Rules of the Air and basic operating regulations, but beyond that the focus is practical. It was not really possible to condense the content down into neat chunks as found in the *Highway Code*, but I like to think that a reasonable job was done of drawing together a range of disparate material in one place.

With this month's *FLYER* having a focus on people starting out or even just thinking of starting out with flying, it would be relevant reading for that audience as well. It does assume some knowledge, but if for example you are scratching your head over Air Law books or lots of confusing terms, it might help with the bits that are good to know in practice.

But what does this latest version bring? Version three now reflects terminology post-Brexit and makes a start on explaining how the former European regulations have transitioned into UK law. A few early regulatory changes post-Brexit are also captured, but the message on that front is very much 'watch this space'.

Frequency monitoring

Moving on to more familiar issues, all the aeronautical information content such as frequencies, frequency monitoring codes has been checked and updated. Some airport and radar frequencies have only gone over to 8.33 frequency spacing recently, so watch out for things like this and check Notams for further changes.

There are not really any major changes in policy in version three, but a few subtle changes that might otherwise go unnoticed are worth noting:

Originally the terms 'GPS', 'GNSS' etc were a bit inconsistent. The term 'moving map' is now used throughout to refer to a range of devices that depict the aircraft's position in real time. The CAA is clear that the use of these devices is strongly encouraged but they must be used in a way that enhances safety and does not become a distraction in flight.

Obviously moving maps are nothing new, but a lot of recent focus on their use has been driven by airspace infringements and the fact that many instances involve ineffective use of them, or none at all.

In 2017 when the Code first came out, Unmanned Aerial Systems (UAS) were not covered – it was never the intention for it to become a significant resource for operators of unmanned aircraft, as useful as it might be for understanding the manned aircraft world. At the time it was thought that GA pilots would not really find details of UAS particularly relevant. Things change though and whatever your views on 'drones' might be, clearly they are here to stay and manned and unmanned aircraft now have to share the sky. So you will now find a page on UAS operations with details of how to find out more.

Electronic Conspicuity (how aircraft broadcast their position electronically), has also been tweaked a bit, almost to remove detail though. Since 2017 the subject area has grown and there such a volume of information and debate that it is was thought better to provide a basic introduction and rather like with UAS, links to further detail elsewhere.

The phrase 'Threat and Error Management' (TEM) has appeared a few more times – there is no great mystery to what this means, it just refers to a more systematic approach to assessing threats involved in a flight and how they might be managed. Early on in flying you will realise that there are various risks involved, but the good news is that pilots can manage these and reduce them. A lot of threat and error management is perhaps common sense or overlap with what is often called airmanship.

A term new to the *Code* is 'Just Culture'. Rather like TEM, the term started out more in the commercial air transport world, but it has relevance to GA as well. Just Culture was first thought of in an organisational context and addresses how organisations deal with safety incidents and the individuals involved in them. Essentially it is about balancing the need to have open and honest reporting of incidents – which generally means not punishing people for honest mistakes – with the need to ensure that corrective action such as additional training is taken, and acts of negligence are addressed appropriately. It is not something most GA pilots will have to think of often, but if you ever are involved in some sort of incident that must be reported to the CAA, the principles of Just Culture should apply.

Caa.co.uk/skywaycode

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In Brief

The effect of the Covid-19 pandemic on UK aviation in 2020 has been outlined in data released by the UK CAA. Passenger numbers in and out of the UK fell by 75.3% to 68.5 million across 2020, with overall air transport movements down by 63.4%. However, freight cargo saw an increase of 56.8% compared to 2019, carrying 1,348,044 tonnes of freight.

Latvian airline airBaltic has replaced pilot briefing packages with electronic operational flight plans that pilots access by iPad. Pilot briefing packages contain operational flight plan, weather forecast, information about the relevant airports among other documentation. During the flight pilots had to fill these forms by hand and submit them for post-flight processing. Now the entire process has been implemented on iPads.

FlightLogger, a provider of management software for flight schools, believes training could be at a turning point following the impact of the pandemic, after analysing data from 118 training organisations using FlightLogger for managing daily operations. "Since September 2020 where numbers were at their highest following the first wave of Covid-19, we have witnessed a 15.4 % decline in total. However, there are signs that the curve is flattening, with a decline of only 1.8% this month compared to the 4.2% decline a month earlier. It could be a sign that both the approaching Spring and the vaccines are starting to have a positive effect."

Roll up, roll up... flight schools offering special deals

Above AirHub in Lithuania **Inset** FTA Global at Brighton City

The disruption to aviation businesses caused by the pandemic is persuading some flight schools to offer some great deals on training courses, so if you're thinking of signing up, as always, do your research and ask what's available.

Offering incredible value-for-money is an Integrated ATPL course + B737 or A320 type-rating + 200 hours + job for €69,000 from AirHub, an EASA approved ATO based in Vilnius, Lithuania. That's around £58,770 in real money.

It's a new zero to flight-deck ATPL training programme with AirHub's partner airline, GetJet. AirHub has been type-rating pilots for GetJet for some years, but has recently widened its offering to include ab initio Integrated ATPLs.

But grab it while you can. It's only at this price for the first 24-month course of 12 cadets. The 200 hours of line training with GetJet is an interesting add-on. That price doesn't include accommodation or living expenses. **More here**

How about two licences at the same time? UK CAA and EASA. Brighton-based flight school FTA has been approved to train both UK CAA and EASA commercial pilot's licences and ratings.

FTA said, "With the world in the grips of a pandemic, sourcing and travelling to flight schools abroad could understandably prove unsettling. However, the proximity of EU airspace to FTA's base at Brighton City Airport has made completing the acclimatisation flying and IR skill test in EU airspace straightforward, without ever spending a night away from British soil."

The school has confirmed that students who enrol on the 2021 Integrated Flight Deck Programme will have the option to complete training for both UK CAA and EASA issued licences simultaneously – all included within the course price of £87,950.

Students who want to obtain both a UK CAA and EASA pilot's licence will need to complete both UK CAA and EASA Class 1 Medicals (completed in a single assessment), an additional IR skill test, and sit ATPL exams with both the UK CAA and EASA (under Austro Control), also in the UK.

Completing two sets of ATPL exams may seem challenging but the syllabus is currently identical and students learn the full extent of each subject area, so the exams will be almost identical. In fact, at present, questions for both syllabuses are drawn from the same question bank.

Sean Jacob, FTA managing director, added, "The training team at FTA worked hard to ensure that when the UK left the EU, we would continue to offer the best possible solution for commercial pilot training. Our students will have the opportunity to complete their training under both UK CAA and EASA approvals and secure the broadest range of opportunities upon completion."

More here

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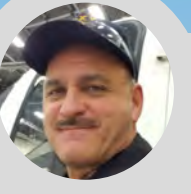
I Get Paid for This...

Troy Caudill

Tried and tested: Troy Caudill gets to fly the world's first commercial fly-by-wire helicopter in all sorts of manoeuvres. Interview by **Yayeri van Baarsen**



Flying CV

Experimental helicopter test pilot Troy Caudill is the lead test pilot on the Bell 525 Relentless programme
Started current job October 2002
Now flying Bell 525 Relentless, Bell 429 GlobalRanger, Bell 407
Favourite aircraft Bell AH-1 Cobra. "The first time I stepped into one, it was like a shoe that fits perfectly"
Hours at job start Approx. 4,500
Hours now Approx. 6,700

"In a new aircraft, you always want to hit the parameters"

How did you get into flying?
I've wanted to fly from a very young age. My dad worked at different air bases and several family members were pilots, so I started learning to fly after college. At flight school, everyone wanted to fly jets. Not me: after my first heli lesson, I knew I was going to be a helicopter pilot.

Tell us about your job?
I'm the lead test pilot for the 525 programme, which is based at Bell's Flight Research Centre in Arlington, Texas. A lot of my time is spent writing reports and reviewing test plans, it's about 70% paperwork and 30% flying. Still, I get to fly three to four times a week and use the simulator a lot to check out software.

The type of flying depends on what's tested, for example handling qualities or performance. We've just completed checking at what altitude and air speed you can survive an engine failure (H/V tests). For this, we work with an expanding envelope, building it up gradually. Some tests go quickly, with others you repeat the same manoeuvre over and over again, just with a different gross weight or CofG. I've been with the 525's test programme almost from day one, when it started as a clean-sheet design, and it's been great seeing it evolve.

Right now we're heavily involved in the certification process, which is quite tedious. We're planning to get the helicopter certified later this year. Experience is essential in my job. Most tests require you to know the systems inside out, this knowledge you only get from experience. In order to do a thorough job, you have to really understand the aircraft and the systems that you're testing. It goes without saying that good flying skills are also needed. For a test pilot, flying should be second nature.

In my opinion, it's one of the best jobs out there as you get to fly the new aircraft and test the new systems. It's still a challenge for me, especially in a new aircraft. You always want to hit the parameters. I particularly like the riskier tests but I can't do every one of them as all test pilots are Type A personalities – everyone wants to do the tough stuff.

What training did you have?
I went to the US Naval Test Pilot School in Patuxent River, Maryland, where I graduated in 1996. Afterwards I joined the Naval Helicopter Test Squadron, also based in Pax River, where I flew lots of different aircraft. In my last two years in service, I was an instructor at the test pilot school. Since I'm a Cobra pilot by trade, working for Bell would give me the chance to fly the Cobra again. I actively pursued this and joined the company in 2002.

What's been your favourite flight?
The ordnance testing we did as part of the H-1 upgrade programme in 2004, developing the AH-1Z Viper and the UH-1Y Venom. I really liked these flights as I got to fire rockets and guns from the helicopter at the Yuma ranges. Although there are no high explosives on the missile, we did use inert ammo in these tests, which is pretty cool. I'm waiting for them to put some guns on the 525 for me, but somehow I doubt they'll do this…

And your favourite airfield?
Yuma Airfield, because I love the desert. It's got a dry heat and as I get older, I like it warmer. Also, MCAS Yuma is a joint-use, civilian-military airport and I enjoy being close to my fellow marines – I miss my time in the Marine Corps.

Do you get to fly much outside work?
Currently I'm really busy with the 525 programme, but a couple of years ago I did some GA-style flying. I'd fly anything I could rent and would mainly go on local trips, flying somewhere for lunch to keep current, the typical '$100 hamburger' flights.

What's your most valuable career advice?
Find a job you love doing and you'll never have to work a day in your life.

In my job, although the paperwork feels like work, the flying definitely doesn't!

Dream of becoming a pilot?

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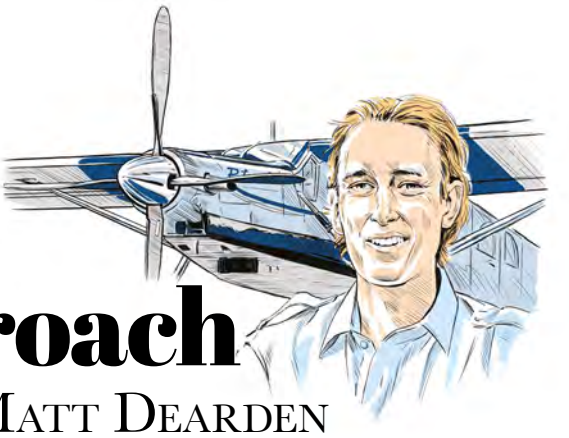


On Approach

Matt Dearden

Push to improve

After clicking the PC-12's push to talk (PTT) button during an early evening flight back into London, I said, "Scottish, Exchange four six eight uniform, radio check."

"Reading you five," came the reply from Scottish control, after a short delay. "Ah, OK. I just wanted to check as it seems a little quiet up here today."

"Yeah. It's just you and me this evening."

My heart sank. I don't think I've ever flown in such quiet airspace in my entire career and that includes flying in the middle of nowhere over far flung parts of Asia. It is a very sad state of affairs which I, like everyone else, just want to end.

During the last lockdown, I was lucky to still be flying occasionally. It is not easy however, and without the luxury of an operations department, I have to do all my own flight planning. The Covid-19 situation has forced me to stay sharp when it comes to navigating the various regulations and restrictions each country has imposed. A trip that used to take me a few minutes to organise, can now take me days whilst I wait for various permissions to come through. More often than not however, it's just not possible to actually perform a flight due to the restrictions.

That exchange with Scottish Control did remind me of how I used to find talking on the radio somewhat daunting during my PPL training. I guess it was the fear of making a fool out of myself with other pilots being able to hear it. I've never been a fan of public speaking and for ages I had the same sort of fear when using the radios.

Thankfully I got over it but I still like to refer to the PTT button as the 'muppet' button because even now, I'll push it and then make a muppet out of myself having either completely misheard an instruction or just plain forgotten what it was I wanted to say!

While I moan about all the current issues with planning flights around today's restrictions, compared to when I learned to fly, the actual flight planning itself has become a lot easier than 15 years ago. We did have computer-based information for the weather and Notams, but it was much harder to get the latter. I remember wading through dozens of Notams from the NATs website narrow route brief (is that still a thing?) before a flight, trying to work out where they were. These days it's great to be able to visually see them on a chart in any of the modern app-based flight planning systems.

Fifteen years ago, GPS was a bit of a thing, but there was no chance you were going to be allowed to use it during a lesson. More oddly though was the fact the GA community seemed rather anti the idea of using such devices over the tried and tested method of dead-reckoning. While I knew not to rely on it entirely for navigation, I could see its uses and was quick to adapt to using it once I had my PPL.

Flying from Bristol Airport and often heading over towards London, I was very aware of all the airspace around there. As I didn't want to get myself invited to Gatwick for a tea and no biscuits meeting, I went out and got myself a Garmin GPSMAP 96C, which was a wonderful bit of kit and allowed me to fly safer and without the constant worry I was clipping some corner of airspace my dead-reckoning calculations were drifting me into. These days of course we have all manner of GPS navigation systems and apps available to us.

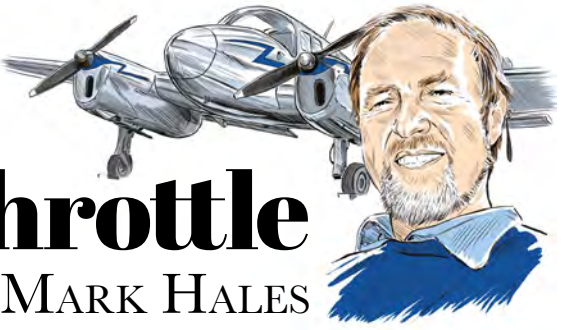
The biggest thing that unsettled me during my PPL training was my first solo. My instructor at the time was not unrestricted and so he wasn't able to sign me off for my first solo when he thought I was ready. I felt ready and was champing at the bit to do it but had to fly with the CFI before I was allowed. Unfortunately, I blew it. My nerves got the better of me and I made a bit of a hash of the circuits with the CFI who, after about half a dozen of them, suggested we land and have a chat with my instructor. I think I'd put too much pressure on myself to go solo that I was overthinking it all. It was one of the first setbacks I had in my flying career but I overcame it and flew solo after another session of circuits with my instructor. That first solo comes when you are ready, and not willing yourself to do it will change that.

> "If you just stay within 'the box', you will never get any better"

I'm reminded of the best bit of advice I've ever been given. It's especially applicable after you get your PPL and begin flying within your new 'box' of experience and ability. It's a good place to be but every so often you need to push outside the confines of the box. As you keep doing this, the box will get bigger and you'll gain more experience, and in doing so become a more confident pilot. If you just stay within 'the box', you will never get any better.

Currently dividing his time between a Cub, a Catalina... oh, and a PC-12
matt.dearden@seager.aero

Mark Mitchell



Full Throttle

MARK HALES

Jules said it first…

I remember, back in the dim and distant when I was a fully paid-up member of the motoring press, sitting next to someone very near the top of – maybe VW, or Toyota – on a flight home from some sunny car launch location. "…you know, we are being given targets for things like emission levels," he said, "…that we have absolutely no idea whether we can meet. Or even if it's possible…" I remember saying "…but you will meet them, won't you…" And of course they did.

The point I suppose is the same old, same old. If the will – and the finance – is there, chances are those guys will find a way to solve most things to do with transport. It's whether they are compelled to, and if there's a market for their products, which make it viable commercially.

The last mentioned details are what makes aviation a different case. The challenges of efficiency and fuel consumption are of considerable commercial interest to the airlines which operate turbofans, but I can't find any legislation which puts a limit on emissions from commercial jet aircraft (or for the GA aeroplanes which we fly). There's a desire to minimise running on the ground at major airports, and to route round noise-sensitive areas, but nothing to try and limit emissions as such, any more than there is for large ships. The combined emissions from 15 of the really big ships (150,000 tons/140,000hp, 1,600 gallons per hour/25kt), have been estimated to produce the same amount of pollutants as all the cars in the world.

Commercial aviation touches more of us though, so there is more awareness and will to tackle the problem. A recent press release from Airbus brings welcome news of a 'major breakthrough in electric propulsion for long range aircraft'. The company's ASCEND research project aims to combine superconductors and the use of liquid hydrogen, which I'm guessing powers a fuel cell. I've banged on about fuel cells before because, in theory, they seem like the answer to so many existing insoluble problems.

Discovered as long ago as the 1830s, the modern fuel cell is already in use for a wide range of applications like specialised transport, and power generation (and in some markets, the everyday car). It utilises a chemical reaction to produce electricity from a fuel source (usually hydrogen) and an oxidising agent (usually oxygen from the air) but making it practically usable is harder. Hydrogen is the lightest known element, so you need to compress it a lot (typically between 5-10,000psi) to create any usable resource, and there are problems with temperature control etc. All that said, if the same amount of effort had been put into that as it has into the reciprocating petrol engine, we'd all be using them. That didn't happen because fossil fuel was relatively cheap and we've made it indispensable over the last 100 years.

The superconductor, essential to the Airbus project, isn't new either. In 1911, Dutch physicist Heike Kamerlingh Onnes discovered that a wire's electrical resistance vanished if you froze it to 4.2°Kelvin (-268.95°C), and that enabled transmission of very high currents. He also found that extreme cold generated strong magnetic fields (used today in Magnetic Resonance Imaging (MRI) technology) as well as particle accelerators for nuclear fusion. It won Onnes the Nobel prize in 1913. Hydrogen gas is about 90% less dense than air, but if you cool it to -253°C it turns liquid, which is much denser, such that 5kg of it can be stored in a 75 litre tank. It's a method used to transport the gas for industrial use, and is the proposed fuel supply for the ASCEND project.

The temperature drop required to store the hydrogen will also be used to access a superconductor's conductive advantage, and the magnetic field for a high power (500kW – or about 670hp) electric motor. The goal at the moment is to halve conductive losses and halve the weight of all propulsion components, while keeping voltage below the 500 volts typical in an electric car. It won't be easy, but the team says they are intending to utilise 'existing ground based technologies'. That is, stuff already known to work, but the benefits have yet to be combined for aviation use.

> "The Airbus ASCEND project aims to combine Superconductors and the use of liquid hydrogen"

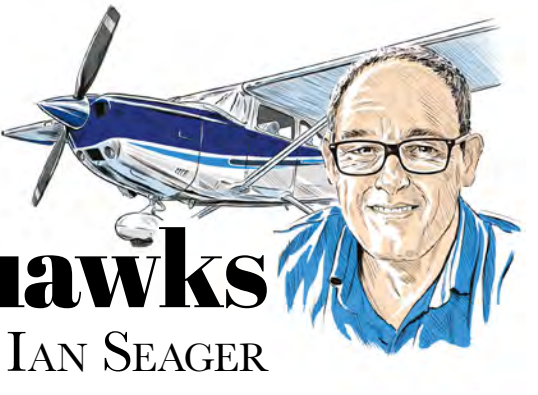
There was no mention of the ingenious MAHEPA HY-4 aircraft which featured two Pipistrel fuselages either side of a central wing and power pod and which flew successfully in 2016 and 2020, or of the US Navy's Ion Tiger surveillance drone which set a world endurance record of 48 hours in 2013. Both used cryogenic technology to store liquid hydrogen and feed a fuel cell to power an electric motor, although to be fair to Airbus, these two didn't feature any superconducting, which is key to the weight reduction and power density necessary for commercial flight. There were plenty of hints in the release that cryogenics, superconductors and hydrogen were the future of transport, which they probably should be.

They didn't say it first though. That honour falls to author Jules Verne, writing in his 1874 book *The Mysterious Island*: *My friends, water will one day be employed as fuel, that hydrogen and oxygen which constitute it, used singly or together, will furnish an inexhaustible source of heat and light, of an intensity of which coal is not capable.*

Working vintage aircraft and cars make Mark particularly happy

mark.hales@seager.aero

Mark Mitchell



Squawks

IAN SEAGER

Dear CAA…

I've been increasingly worried about our relationship and I've written you this letter in the hope that we can patch things up. Give things another go, as it were. I'm not sure what I've done to upset you. I know I've asked some hard questions, including that Freedom of Information request, which is nearly five months old, but we've dealt with things like that before, haven't we? I don't know about you, but frankly I miss the old days. You must remember them, the days when we could ask each other anything, the days when we could say what needed saying, the days when we could, like old friends, point out those awkward things that lesser friends would gloss over. I know people change with time, and I can only imagine the pain of losing your European friends, but hopefully, like me, you feel there's something here worth saving.

You can't imagine how pleased I was when I heard you were running a series of webinars. I registered within minutes and a few weeks ago, with great anticipation, sat down to watch the first of your Virtual Voyages. Let me say right away, I really appreciate the effort you put in. As you know, I believe that communication is the key to a good relationship, and this was a big step in the right direction. Congratulations.

Towards the start of the presentation Neil Winbolt (who came over very well) spoke about the CAA's top three priorities. Human Factors, Just Culture and Open Reporting. There's a bit of a problem here. I'd hoped that we could have maybe rekindled things by sharing some fun stuff, but true friends don't turn a blind eye to important stuff, so I might as well get this out of the way.

Between you and me, I am not sure that you have really understood the reputational damage you have suffered in the eyes of the General Aviation community over the last couple of years. A lot (but by no means all) of it has been caused by the whole CAP1404 process (that's the one that deals with pilots after infringements). Honestly, it's done you no favours and it's put the whole regulator/regulated relationship back quite a few years. I don't think I can remember a time over the last 27 years when more people have experienced random transient transponder failures or just plain forgotten to turn them on. Actually, let's be honest about it… If what I hear being said is true, more people than ever are flying with their transponders turned off. Yup, I know it's illegal. I know it's dumb – and I know it's not the answer. And yes, I very definitely tell anyone who'll listen that it is a very, very bad idea and that they should know better. But this is where we are right now, and between the two of us, your attitude and actions are a large part of the problem. We all need to fix this. You need to stop acting like that embarrassing friend who's let the power of being a traffic warden go to their head, and any pilot who flies with a transponder absolutely needs to fly with it turned on (with altitude and Mode S enabled if they have it) all of the time. No excuses. Maybe we could all go on one of those team building things, maybe we'd all benefit from a better understanding of Just Culture? By the way, credit where it's due, the latest edition of the *SkyWay Code* is bloody brilliant. Well done.

Next up was a long section related to drones, and how the CAA is handling them. Pretty brave of you I thought coming so soon after that embarrassing Goodwood incident. I winced for you all when I read the AAIB report. So many bullets dodged there, but as I say, good on you for not shying away from it. Thinking about it, maybe we could use that as an example of the application of Just Culture on our away day workshop? I loved the way you wove the serious subject of drones around a game of 'management buzzword' bingo, although I confess, I was so focused on leaning into my agile sandbox that I probably missed a couple of paradigm shifts taking a deep dive with the stakeholders.

> "I don't know about you, but I miss the old days. Do you remember? When we could ask each other anything"

More seriously, we do need to talk about drones. The whole segregated airspace thing has not got off to a great start has it? The amount of funding available for the sector seems to have generated a modern-day gold rush, and I know it's not your fault if some of the applicants have been a bit economical with the truth, but it is kind of your job to weed that type of thing out, isn't it? We all know that drones are here to stay, and if we're going to work, live and play together then can I humbly suggest that we stick to the traditional meaning of the term 'temporary', and that the industry stops taking us all for fools by constantly pretending the only way to save 100 orphans and their cute puppies is to deliver them paracetamol by drone – as long as the weather's OK and nothing goes wrong that is!

Please get in touch soon. Love Ian.

Publisher, pre C-19 often found flying something new and interesting
ics@seager.aero

Mark Mitchell

Bush-Air #2, C170B, C C's 'Hot Rod' C170 in its element, in the bush. Safe operation in this environmenti is the aim of C C's teaching

Bush school

Technique | Back country bush flying

Having read *Bush & Mountain Flying*, **Leonardo Correa-Luna** decided to head to Nevada for some surprising lessons in the art of backcountry flying

It is said that you should never judge a book by its cover. The contemporary equivalent could well translate as 'never judge a person by their comments on social media'. I had first encountered Milne 'C C' Pocock on social media, and I have to confess that my first impression was not good. C C is the owner, instructor, mechanic, and master chef of Bush-Air, a flight school, specialising in advanced backcountry and tailwheel flight training, operating out of Kidwell Airport in Nevada, USA.

To me, his comments in different aviation groups were cocky with a 'know all' attitude. To be honest, he was usually correct… Simultaneously, I was annoyed that he was constantly promoting his book. However, his irksome marketing technique did work, and before long I'd ordered his *Bush & Mountain Flying* handbook. The content was exciting and full of practical knowledge. It wasn't particularly well organised (there's a fourth edition on the way), but overall it made a solid case to claim a spot on an aviator's library shelf.

Our first real-life encounter was at Oshkosh 2018. He was giving a seminar about *Bush & Mountain Flying.* The venue was packed – not an empty seat.

C C is originally from South Africa. With his short khaki shorts, camouflaged t-shirt, and long white hair, his appearance is half Mick Dundee from *Crocodile Dundee*, half Doc Brown from *Back to the Future*! Definitely not your average instructor!

During the seminar, it was clear that he was knowledgeable, and shared concepts not normally found in the POH. The way he delivered the message was slightly rough for the 'sensitive' times we live in. Straight to the point, and talking in the language of a real aviator, C C reminded the audience how legal teams influence the creation of pilot operating handbooks. That struck a chord, and made me curious about the possibility of paying a visit to his flight school.

In September 2020, I was flying in his area following Route 66, he saw one of my posts on social media and generously sent me a message inviting me to visit his home. He had a room and cold beer available! How could I say 'no'…?

C C lives at Kidwell Airport in Cal Nev Ari, Nevada. Once an abandoned dusty military runway, it changed in 1965 when it was developed into a full casino town by Slim and Nancy Kidwell. The town was named Cal Nev Ari (short for California – Nevada – Arizona, as it's so close to all three State lines). The runway was called Kidwell Airport. Cal Nev Ari became the first fly-in casino town in the State of Nevada.

A well-maintained gravel runway goes through the middle of the town, and the Bush-Air operations base is just next to the runway. After landing my 1952 Cessna 170B, I made a quick right turn out of the runway. C C was waving at me, indicating where to park.

I only had time to stay for one day, but that was enough to change my perception of C C. He is a great host and an even better cook. Outside in his little oasis by the pool, he cooked some of the best ribs that I have eaten in my life. And over several cold beers, he shared the details of his life.

Born in Cape Town, South Africa, he always wanted to learn to fly, but he had to work hard to save money for flying lessons. Finally, in 1987, aged 34, he was able to fulfill his dream. He quickly went all the way and earned his South African and FAA commercial pilot's licence. From the beginning, C C knew that straight and level airline flying was not for him. He wanted to be free. He wanted to be a Bush pilot. During the following years, he did freelance commercial aviation. He is proud of his independence. "I never worked for anybody. I always did my own thing," C C declares.

During those years, he gained a vast amount of experience in the good, as well as the 'rough' way. Around 2002, realising that there was a need for a school teaching specialised Bush flying courses, was when Bush-Air was born.

Barberton Valley, near the popular safari areas in Botswana and Mozambique, was the original base for Bush-Air. He built an entire airport, runway, hangars, control tower, and accommodations for the students. From the beginning, it was a huge success, and students worldwide were booking for months in advance.

Permanent US base

Between 2002 and 2015, C C was travelling back and forth between South Africa and the US, teaching on both sides of the pond. Eventually, after a fallout with the aviation community in South Africa and feeling more at home in the US, he decided it was time to make it his permanent base.

In 2015 he bought an old derelict trailer house at Kidwell,

Above Bush school day... Keith Watts and Kirk Robertson focus on C C Pocock during a groundschool session
Left Bush-Air flag is clear proof that calm wind days are the exception in the Nevada desert
Below Kidwell town airport is at the intersection of three states – California, Nevada, Arizona

Nevada. He is a man of multiple skills, self-taught by life, using them – and following his Barberton airport-style – he slowly converted the old trailer house into an oasis in the middle of the Nevada desert. Swimming pool and fish pond included! His HQ has several comfortable rooms which can be used by the students who visit his school from all over the world. I left early the following day, but not before booking a date to return in December.

For those three days in the Bush-Air classroom, I wasn't going to be alone. My wingmen would be Keith Watts, from Tennessee, a professional race car driver instructor who owns a Cessna 172 – and Kirk Robertson, a dentist from Flagstaff, Arizona, who brought his 182 to Kidwell. You have the option to use your own aircraft for training or choose between the 172 or 170B available from Bush-Air.

Each day was a similar format, a good breakfast with espresso coffee, eggs and bacon to 'fill the tank' for the long day ahead. Groundschool, followed by flying as early as possible before the desert started to heat up. Day one of C C's advanced backcountry flying course (level one) saw him drawing diagrams and describing concepts that weren't really what I'd been expecting. He constantly repeated the words 'safety, safe, proficient, confident' – all these allied to the word 'skill'.

Stabilised approaches, optimum weight & balance, survival equipment, and safety were concepts that he

would repeat several times during the next three days. For a moment, I felt confused. I thought I signed up for a Bush flying course, but I was feeling as if I was at an airline training. Shouldn't we talk about landing on river bars, water-assisted landings, and how big your tyres are? Is that not what, supposedly, Bush flying is about these days? At least that is what you see on YouTube...

Know your aircraft

On our first day the main topic was, 'how well do you think you know your aircraft?' C C quickly fired some questions. 'What is your stall speed? What about your stall speed with flaps 0 and full, with full power?' We hurriedly mumbled some answers based on our own experience or on what the POH said. In typical C C fashion, he says, "Forget what the POH says! You need to know and feel your aircraft exceptionally well. You need to fully explore the lower end of the performance envelope of your aircraft."

He directs us to create a grid with one column for the different flaps position, one for the stall warning activation, and a final one for the actual airspeed, and says, "today, we are going to be test pilots."

The next discussion before heading to our aircraft is about weight & balance. "Do you know what is your ideal W&B to obtain the slowest possible stall speed?" A passionate debate starts, discussing the pros and cons of forward versus rear Centre of

Above left It's hard to tell if C C loves more to fly or cook, but he excels at both!
Above Fresh French coffee is the standard way to fire up the morning
Below Mmmmm, I hope there are bigger aeroplanes than this one – if not, then I want my money back!

Above Keith Watts performing the take-off on Bush-Air Cessna 172. Keith owns the same type back home in Tennessee
Right C C and Keith checking if the flaps and ailerons on Kirk's Cessna 182 are properly rigged
Below Kirk Robertson beautiful 1972 Cessna 182 performs a short field landing

Gravity and the proper amount of ballast needed to achieve optimum performance. You better have your knowledge fresh if you want to argue with C C – he knows what he is talking about!

Then the time comes to be a test pilot! We headed to my 170B and double-checked if it was loaded correctly (C C will do that with each of his students and add ballast if necessary). We also checked all the main control surfaces to see if our aeroplanes were adequately rigged. C C shared stories about many clients discovering that their aircraft were improperly rigged during his training.

He also checks my survival equipment – Garmin InReach, water, camping equipment, and a basic survival bag, including some food. He approves, it's good enough as we're flying close to the airport. If you don't have a survival bag, he will bring one from the hangar. He never leaves the airport without one. Life experiences have taught him that.

As the first exercise of the day, we perform an optimum performance take-off to determine the optimum take-off speed for a short field. We select optimum flap (first notch or 10° on my 170), hold the brakes full power, let it go, keep a tail low attitude and let it fly! CC asks me, "What was your airspeed at lift-off?" And I reply, "40mph."

The 145hp of the O-300 performed well in the cold morning temperatures. We initially remained in the pattern for an assessment flight before climbing to altitude for the stalls and slow-flying exercises.

As a part of the assessment, C C wants to see how I approach and land without any coaching, in order to detect any bad habits that could be corrected in the following days. I remain high (on purpose) on a steep approach to be sure that I could reach the field if my engine quits. It looks like that pleases him as he

tells me '…that is the way to do it, steep approaches are safer than low approaches'.

Time to climb – and become a test pilot. My 170 is equipped with a Sportsman leading-edge stall kit, and I knew that my indicated stall speeds would be pretty low, between 40 to 0, depending on the configuration.

Following C C's instructions, first no flaps. I reduce power and start to pull, pull, pull! Finally, at around 40mph IAS, the 170 slowly mushes down. I release pressure, add power, and we are flying again. We test the different flap settings up to full 40°, with and without power, recording every time the speed as the stall horn sounds and the one when the actual stall happened.

Avoid the spin...

C C temporarily takes control and demonstrates some stalls with power on and full flaps at 60° bank angle. He constantly remarks to, 'remain coordinated, keep the ball centred and avoid entering into a spin'. We completed the 'test flight' grid, and now knowing the minimum stall speed of my 170 for our current weight, we head back to the field.

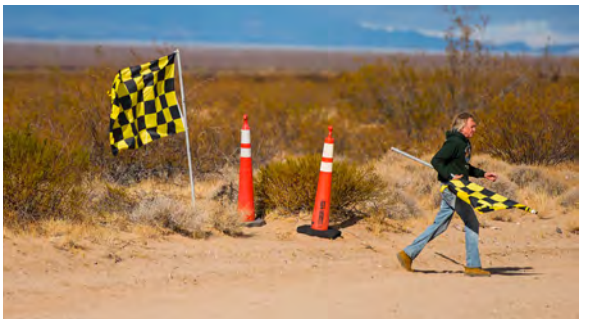
After landing, he comments that, based on his own experience with his 170s, he believes my speed indicator was off, indicating probably 10mph less than it should. He points to my pitot tube as the possible culprit. He quickly adjusts the shape of the pitot tube, and we go for a quick test flight. Compared with the speeds of the GPS, no doubt now the speed indicator was more accurate!

With enviable energy for his 61 years, C C keeps working with Keith and Kirk. Keith didn't bring his 172 and chose to use the one from the school, while Kirk uses his own 182. A few hours later, we are all smiles back at the house after completing our first day. It is time for some beers and excellent food. C C fire ups the grill and quickly cooks some great jalapeno burgers, gets the cold beers, – and it is chill time. Life is good!

Day two means it is time to apply our new knowledge about our aeroplanes' 'slow' performance to perform optimum performance take-off and landings. During the briefing, we discuss stabilised approaches. I feel familiar with this topic, which is part of every approach in my airline life. But it is the first time I hear a general aviation instructor be so adamant about it.

> "After landing, C C comments that, based on his own experience with 170s, he thinks my ASI was off, indicating probably 10mph less than it should"

Above Bush-Air Cessna 172 landing... about this point, retract the flaps to force the aircraft to land and not float



Above The face of experience... **Left** STOL competition time! C C setting flags and cones for short landing practice **Below** It's showtime! Keith Watts demonstrating what he has learned during the past two

"A stabilised approach is a steeper than normal approach in which the aircraft is in a position where minimum input of all controls will result in a safe and almost perfect landing. Normally the best approach angle is around four degrees. Once power and pitch are set, you should be able to take your hands off all controls, and the aeroplane should continue on a smooth nose-low descent towards the touchdown spot all by itself without a tendency of the airspeed increasing!"

The first flight of the day was going to be dedicated to performing stabilised approaches and spot landings. We also discussed how to aim for a spot using an imaginary 'rifle sight' and make precise landings every time. By precise, we are talking about hitting a marked line on his runway!

C C performed the first approach demonstrating his technique. He started his approach higher than you usually see in most General Aviation airports.

Long final, full flaps, he lowers the nose following that imaginary 'rifle sight,' maintaining a continuous vertical descent rate of approximately 500ft per minute with a slight amount of power. Minimum adjustments are made mostly with power only, ending the approach with a perfect landing… hands-off. Yes. Hands-off. There goes the myth of how difficult taildraggers are to land…

C C handed me the controls, and it was my turn. Luckily for me, I felt comfortable with the stabilised approach concept, as is my usual way of approach. C C helps me polish my technique and reminds me to avoid what he calls 'PIT' – Pilot Induced

Above Not your grandpas Cessna 170! Among the many modifications, you can appreciate in this photo are the leading edge slats on C C's Experimental category Cessna 170B

Turbulence! He tells me when he sees that during training, he asks the pilot to let go of the controls and amazingly, the turbulence is over. I smile as I have seen that 'turbulence' happen a lot in the airlines too.

Based on the familiarisation and test flight we did the previous day, I perform my final approach at the Optimum Stabilised Approach Speed of 50mph (we determined this speed the day before) down into ground-effect. For those not familiar with the 170, it is basically a Cessna 172 (actually is the other way around). Have you ever approached in a 172 comfortable at 50mph?

Hitting the spot

I perform several landings until I consistently hit the spot, and then it's time for a break. Each flight is around 30 minutes, to avoid overwhelming the student with far too much new information. By the time we restart, the wind has started to pick up, which was great for what was coming next. It was time to make our precision take-off and landings even shorter.

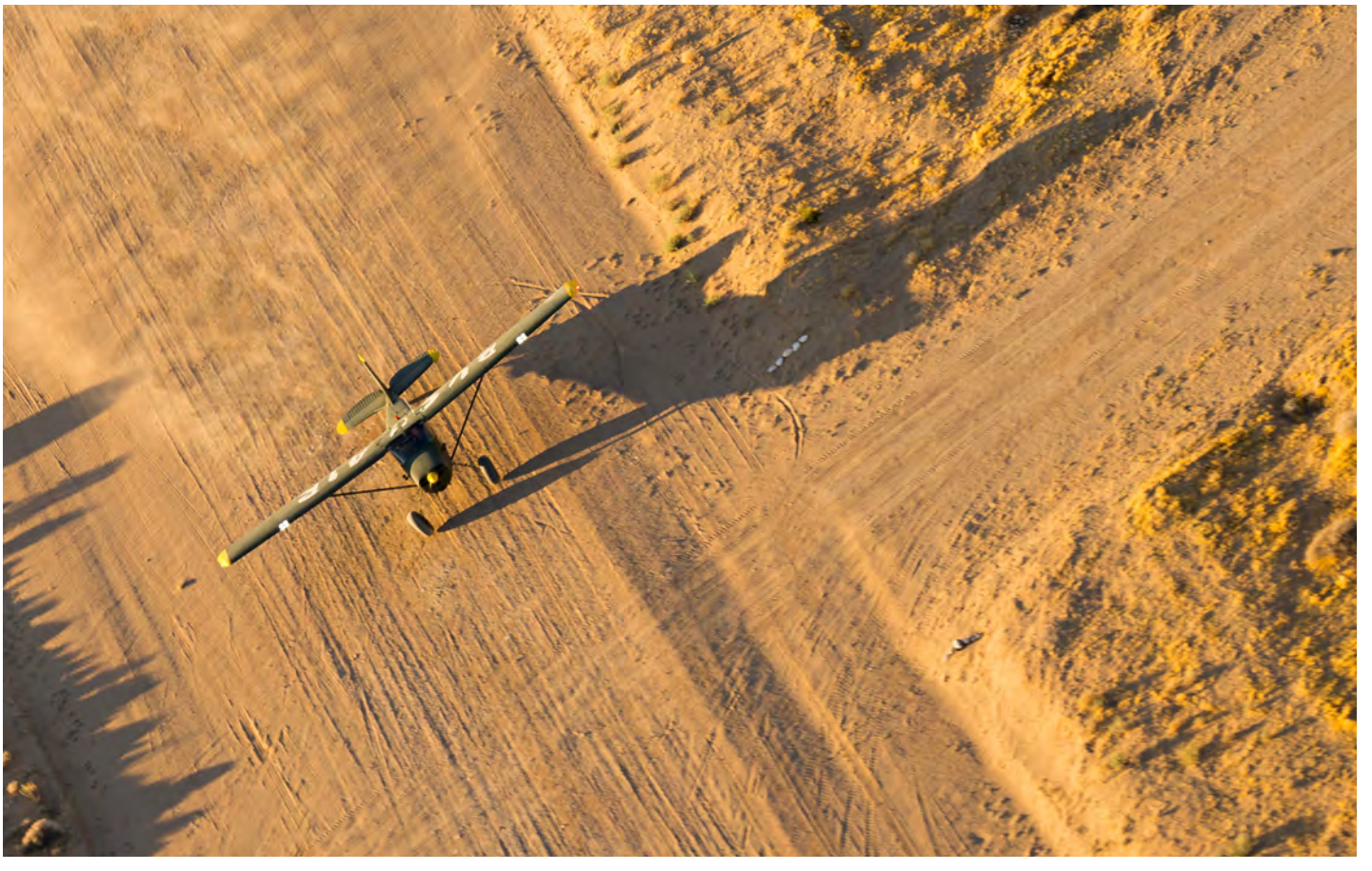
C C has a competitive spirit and a background in racing cars. Combined with his passion for aviation it is no surprise that during the past years, with his 170 'Hot Rod,' he has been a top competitor in every STOL competition around the USA, winning several of them and consistently ending in the top three. He's incorporated some of this competition experience into the Bush flying course.

Winds were up to around 15kt straight down the runway. C C set orange cones and racing flags on both sides of the runway to create an imaginary competition line. While the technique was going to be similar to what we have been practising, we would add an extra step this time. It was time to use the flaps differently!

Again, first, C C performed a demo, one notch of flaps, hold the brakes, full power, release brakes, raise the tail, and here comes the tricky part… C C has the perfect feel for my 170, and precisely times to the second that the aeroplane is almost ready to fly, and pulls full flaps forcing it to get airborne. Ground-effect, ground-effect! Remain in ground-effect, retract the flaps back to the first notch, accelerate and then start to climb, then retract remaining flaps at a safe speed and altitude. Sounds easy? Soon I would discover it is *not* so easy.

Next was the landing. As before, we performed a stabilised approach. The difference this time is that we approach with the stall warning on, at the minimum safe stabilised approach speed into ground-effect, and then arriving with a high nose attitude at the line 'hanging on the prop'. C C cuts the power and raises the flaps simultaneously in one continuous movement followed by full braking while holding back the elevator! Just like that, we were stopped – and in a distance of 120 ft! Yes, this is still a Cessna 170 with two on board, half tanks, and around 60lb of baggage.

My turn. Full power, release brakes, I am trying to feel if the aeroplane is ready to fly, and I



Above Kidwell runway is a mix of sand, gravel and rocks
Left C C's 'Trainer', the third aeroplane on the Bush-Air fleet, is another 170B for students who prefer a taildragger for the training
Below On the final to land at Kidwell, you can see houses and hangars on the right side. The main taxiway is also the main road of the town

pull the flap-actuating Johnson bar to the 40° notch. I pulled one second too early! The 170 tries to fly but mushes and settles down again. She wasn't ready! Slight bounce, and finally, we are flying. I stayed in ground-effect and slowly retracted the flaps to the first notch / 10°, and with a safe speed, I started to climb.

On a stabilised final, the wind was gusty, and I was making constant minor adjustments to my power, controlling the rate of descent. My 'rifle sight' locked on the orange cones and the line between them across the runway. I am almost over the line a couple of feet above the runway, as C C yells, "Cut the power!" We were already in ground-effect. In one move, I flare, pull the power, flaps up, and touchdown precisely on the line! "Brake, brake, this is a short field," shouts C C. The 170 shakes, veers slightly to the right, and I can feel the tail lift a foot or two, then it settles. Suddenly we are fully stopped! "Bulls eye," screams a happy C C. I feel delighted and proud looking back to the line which is only 140ft behind us.

While C C made this training fun, and making it feel like a STOL competition, he reminds us that the main point of this technique is to perfect landing and taking off in short spaces off-airport. It was amazing how the concepts he was teaching were coming along so nicely, and all in just two days and a couple of hours of flying.

The next day, another recap of the concepts learned during the previous days, and it is time to talk mountain flying. CFIT (Controlled Flight Into Terrain) is one of the biggest killers in aviation, especially VFR flying into IMC in mountainous areas. In a serious tone, feeling frustrated, he shares some stories of entirely avoidable accidents that took

multiple pilots' lives. We discuss a checklist that we need to evaluate before entering a mountainous area. "If you break any of these rules, you are opening the door for an accident. These are must-follow rules."

Weather conditions, determine the wind direction, approach a ridge, situational awareness, approach a confined runway, define an abort point, and many other concepts are discussed, all with a cautious and safe approach in mind.

A couple of examples of some of his mountain flying rules include:

- Don't go if the weather is bad, especially if clouds are obscuring the mountain tops.
- Always know the wind direction so that you don't fly into a downdraught or severe turbulence.
- Never fly in the middle of a canyon or gorge. You may not have sufficient room to turn around.
- Always remain in a position from where you can quickly and safely turn to lower terrain.
- Always cross a ridge at a 45° angle so that you can escape away from it in the event of being unable to clear the top due to turbulence or downdraughts.
- Always ensure you have sufficient fuel, water, first-aid and survival equipment.
- Use your 'sixth sense'. If it's giving you a bad feeling, then immediately turn back or abort.

It was time once again to put the theory into practice. We fly to a canyon area just five minutes from Kidwell. We discuss how to approach the canyon, evaluate the wind direction, and then discuss a possible VMC into an IMC scenario with an emergency 180° canyon turn. C C says, "If you ever find that that you are one day in this situation, the first thing you must do is to slow down, get into the white arc and apply first notch flaps – slow down, gear down, flaps down, that will buy you time, and you'll be ready for a canyon turn."

It was time to see what that 'turn' was all about. The canyon feels tight, not much space to turn, is what I thought. We are flying on the updraught side of the canyon. "Are you ready?" asks C C, "Full power, full flaps, and turn. Minimum 45°, 60 is better, remain coordinated." We're at 60° bank angle in a perfectly coordinated turn, and C C removes his hands from the yoke showing me how effortless this manoeuvre is. Suddenly the canyon didn't feel so tight anymore. We complete the turn 'on a dime', with plenty of space to spare.

C C gets me to practise the manoeuvre several

> "One of C C's best mountain flying rules…Use your 'sixth sense'. If it's giving you a bad feeling, then immediately turn back or abort"

Above Need to turn around in a canyon? Full power, full flaps and minimum 45° turn, 60° better... and, hands-off!

Above South Africa or Nevada? The 170 on final approach to land at 'Cactus', a small trail in the middle of the Nevada desert

times. It was a lot of fun and felt good to be adding a new skill that could save my life one day.

Heading back to Kidwell, it was time to practise an engine failure. C C pulls the power. The O-300 becomes quieter. I pitch for the best glide and turn towards the airport. Again he is demanding precision and wants me to hit the spot within 20ft! "Remain high, save your altitude, and don't touch the flaps until you are completely sure you are going to make the runway. If you are high, you can always make a forward slip."

Even with his reminder, I try to set the first notch of flaps too early, he tells me to wait. "Now," he says, and I pull the Johnson bar, and the large fowler flaps of the 170 go down to 40°, increasing my rate of descent. "Hit your spot," he reminds me, "Imagine you only have a 600-foot area to land in and remember to retract the flaps to force the aeroplane to land."

Once again, everything was coming together. I crossed the threshold just a few feet over the runway. At the touchdown spot, I quickly raise the flaps, and the 170's gear legs flex with a positive touchdown. I promptly apply full brakes, and we stop within 200ft. We both smile – this is flying training at its most fun.

Emergency return

We're nearly done. C C demonstrates an immediate emergency return to the runway after take-off.

Engine failure after take-off is a hotly debated light aircraft safety topic. Your instructor no doubt taught you to lower the nose, maintain a safe speed, and land straight ahead. Above all, avoid making that 'impossible' turn at too low an altitude. But what if you have a situation where you can still fly, but you need to get back on the ground fast – smoke in the cockpit perhaps? Have you ever considered those scenarios in your mind as you take-off? "Sometimes you may need to return immediately, and that means not climbing to 1,000ft and performing a normal circuit."

C C takes the controls for the demonstration. Applying take-off power, we get airborne. At around 100ft, maintaining take-off flap configuration, we initiate a left turn remaining as close as possible to the runway. We hold a constant turn, skimming the few trees of the Nevada desert performing a shortened circuit. Turning to final with the runway secured, he selects full flaps and lands. It was less than 120 seconds from take-off to a full-stop landing. One final skill added to draw on in the future.

C C performs a final evaluation to demonstrate all the concepts learned during the previous days.

He explains it's a simple one, as he covers all my instruments with stickers, and asks me to take-off, fly a circuit and land with no instrument references. This final test shows that I really have perfected the 'seat of the pants' ability with my 170.

The course was complete, and I was humbled by how much I learned in just three days.

While sharing one last beer, Keith, Kirk and I chat. We all agree that we got what we came looking for – and more. Like the 750 pilots that have previously taken C C's Bush flying course, we felt safer, more skilful, and confident and had acquired a much better knowledge of our aircraft and more critically, our personal ability.

C C's capabilities as instructor, host, and chef are second to none and hard to match. I'm already planning my return for part two of the course, and, of course, more ribs…

■ **Details here**

My First Solo
Mike Ling

When he was three years old, Mike Ling already knew he wanted to be a Red Arrows pilot.

Interview by **Yayeri van Baarsen**

Solo stats

Former RAF Red Arrows pilot Mike Ling has been a part of over 800 aerobatic displays all over the world.
When 30 June 1997
Where RAF Manston
Aircraft Cessna 152
Hours at solo Approx. 10
Hours now Approx. 4,500

How did you get into aviation?
Growing up at Biggin Hill, it was hard not to get engrossed in aviation. Back then it was the RAF Selection Centre, so apart from airshows, we'd also see new cadets all the time. Joining the Air Cadets at 13, I had my first passenger flight in a Chipmunk. It was absolutely exhilarating, especially the aerobatics. Whenever I get into a vintage aircraft and smell that special mixture of oil, fuel and the cockpit, I remember that first flight.

How did your flight training go?
At 18, I was awarded a 20 hours RAF Flying Scholarship at TG Aviation, which was founded by former Red Arrows pilot Ted Girdler. Ted was a real inspiration, he showed us his logbook and talked about his experience. The scholarship was quite a steep learning curve, we flew twice a day and had lots of teaching. However, the instructors were very good at imparting their knowledge.

There were six of us, all starting from scratch, which I liked. You can learn a lot from your peers. I learned almost as much from talking to other students as from the actual lessons.

Did you expect your first solo?
Yes, the course was structured, so the dual-into-solo lesson was planned the day before. However, this didn't mean it was a given. You still had to perform, which added to the pressure. It was really nerve-racking. When I opened the throttle and the wheels of the Cessna 152 left the runway, I realised there was no way out of it. I was so apprehensive and focussed on doing everything right, it was almost hard to enjoy the flight – but of course I did, immensely. Taxying back, having achieved my dream of becoming a pilot, I felt an incredible sense of pride.

You're the longest-serving Red Arrows pilot, which display stands out?
My first show at Biggin Hill, for personal reasons. Biggin Hill is where in 1982, aged three, I told my mum, "I want to be a Red Arrows pilot." Then in 2009, I got to perform there as Red 7, part of the Synchro Pair. During that display, the planets aligned and everything came together.

What's most important for a successful airshow?
The inspirational element. Airshows offer a chance to inspire people and show them the enjoyment that aviation brings. Therefore, you need as much engagement as possible with the crowd – by performing a great display, as well as by having pilots on the ground sharing their flying adventures with the public. As I was inspired by airshows, I know how they can influence younger people. In bigger shows, having a varied programme is important. Not everyone wants to see loud, fast fighter jets – some might prefer helicopters or vintage aircraft.

What are you up to now?
I fly for The Blades. The world's only aerobatic airline, we offer close-formation aerobatic flying experiences in our Extra 300s. Every passenger reacts differently, and we manage the flight based on their reactions. Last summer I took a woman in her 80s flying who was really quiet on the ground, but in the air giggled the whole way through!

Last year, I achieved my second childhood dream, soloing a Spitfire, and this summer I'll be flying Spitfire Experiences for Ultimate Warbird Flights. The Spitfire is such an evocative aircraft. Its iconic British sight, the sound of the Merlin engine, it's just so special.

To be able to hopefully give people the best aviation memory of their life, is quite something. We also offer fly alongsides, with The Blades flying in formation, so passengers really get to share their warbird experience.

What do you love about flying most?
I love that every flight is mentally challenging. Even after 4,500 hours, there's always something new. Another big part is being able to give something back. I've been very fortunate to have done some pretty cool flying, but giving Air Experience flights in a Grob Tutor was among the best. Seeing the look on these kids' faces, knowing the opportunity is as special for them as it was once for me, is incredibly rewarding.

"At Biggin Hill in 1982, aged three, I told my mum I wanted to be a Red Arrows pilot"

Jet transition

Training

John Page takes the journey to becoming type rated on the Cirrus Aircraft SF50 Vision Jet

For 20 years I've been lucky to be an EASA, UK and FAA instrument instructor and have been operating the SR series of Cirrus aircraft since 2001, accumulating many hours on the SR20 and SR22. I also teach on the aircraft that the SF50 is often compared to, the Daher TBM series, from the 700 to 940 and PA46T Meridian and M500. I've also had a short stint operating a PC12NG in the past.

Recently I took my SF50 Vision Jet type rating. The training has been structured and focused on safely operating the aircraft, building a wealth of knowledge of all the systems and understanding how to get the maximum out of the SF50.

Materials such as paper manuals and video content access are provided a month before the training, along with other applications such as weight & balance apps, to give you a fantastic head start for the groundschool. I watched all the videos twice or three times, learned all my memory items such as speeds, temperatures, limitations and first actions if a warning CAS or emergency occurs. In addition, I drew the systems such as fuel, bleed air and environmental control systems to get a better understanding.

Above Author John Page in the training centre at Cirrus Aircraft's Knoxville HQ, with the full motion Vision Jet simulator

When arriving in the classroom in Knoxville I felt I already knew a lot about the SF50. The group (three or four students) groundschool then cemented my previous home learning and answered questions I had and made me learn more from other questions group members had. I was fortunate to know and already teach the Garmin G3000 flightdeck in other aircraft, nevertheless I participated in the first day which is G3000 fundamental training. Pilots in the group who had never used it before had a really good understanding at the end of the day.

The next four days was a combination of groundschool, talking about different systems and cockpit procedure training, CPT. This was to make sure at the end of the five days the students were ready for the five sim sessions the following

Far left Approach to Charleston Executive for circuits
Left Vision Jet full motion simulator in the training centre at Knoxville
Below Realistic view from the P1 seat inside one of the fixed simulators

week, in either the Full Flight Device (FFD) or Flight Training Device (FTD), both of which can be logged. The simulator training is very focused on teaching, practicing and performing different tasks. These include: manoeuvres, steep turns, unusual attitudes and stalls, instrument approaches, G3000 usage, caution, abnormal, warning and emergency procedures and different types of landings.

Checklist procedures integrate beautifully into the operation of the aircraft. I wish other aircraft I operate such as the TBM and PA46T had on-screen checklists. They are brilliant, especially for sourcing Caution and Warning checklists very quickly without needing to thumb through a QRH. Plus, they are alphabetical and titled exactly as the CAS message on the PFD.

Planning for the sim flights

Every simulator flight requires planning to be done and a problem to solve. Whether that be weather, weight & balance or performance issues that require an adjustment of some sort to make the flight legal and safe. It's not just a 'get in and go'. It's well-structured and thought out. A great learning experience without a steep learning curve for anyone who has IFR time, SR experience and Garmin logic knowledge.

The five sessions are spread over three days. The check ride is on the fourth day and is also performed in the FFD. You will have seen, tried, and hopefully, somewhat perfected, everything you need to know for the check ride over the previous two weeks.

Previous study and groundschool will put you in a great position for the oral part of the test. A route to plan and a weight & balance problem is given to you the previous day by the examiner. Cirrus has many on its staff, so they are very knowledgeable about the SF50. A discussion on the aircraft systems and memory items is the direction of the oral. Don't worry if your knowledge of US airspace is not perfect if you operate outside the US. This is a type rating not a commercial nor instrument rating, and those items are not normally asked.

Outside the sim on the wall are boards that have been signed by each newly rated Vision Jet pilot. It's fun to add your name, then collect the temporary certificate and head off to start gaining experience in the actual aircraft.

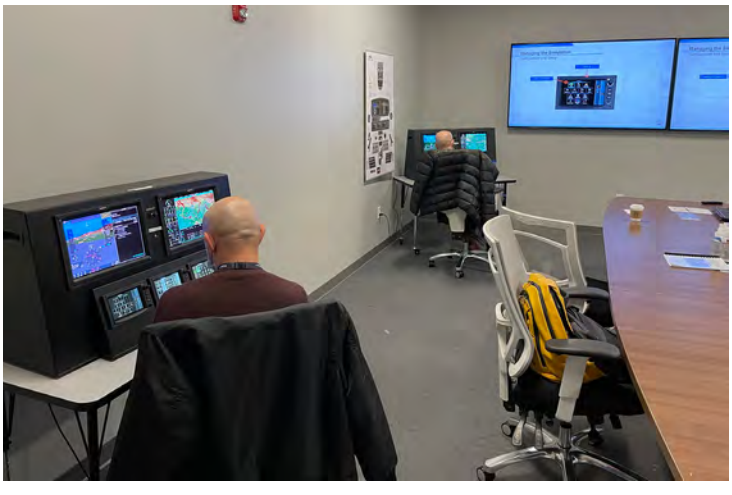
Supervised Operating Experience (SOE) is where you will put in to practice all you have learned during the two weeks. Think of this as extended training and something of which you will enjoy being a part. Twenty-five hours SOE is the normal FAA requirement and you will experience a variety of scenarios that will have you gaining

Above Cirrus really know how to wow in more ways than one. Here's a sneak peak inside the world of the Cirrus Delivery Experience...

Right In flight, the visibility from those huge cabin windows is amazing no matter which seat you are in. It's an amazing environment to fly in
Below The author's first VisionJet post-rating flight was to First Flight airport, which is right next to Kill Devils Hill Monument and the site of the Wright Brothers first powered flight

Above Waiting out the final 2-registration paperwork as the snow falls at the Cirrus Vision Centre before the Atlantic crossing home to the UK

Above Running through the fantastic onscreen checklist integrating the pilot and aircraft



Above Garmin G3000 desktop trainers helping pilots to master the avionics and flightdeck on the first day

more understanding of operating this fabulous single engine personal jet.

I've heard, over the years, from plenty of other pilots lucky enough to have operated an SF50, just how much they liked it. But as with many things, you wonder whether reality will match what they say. The Vision Jet is definitely an aircraft you need to fly to really appreciate what a pleasure it is and its particular offering provides many upsides over other aircraft. On paper it might not be the strongest contender compared with the other aircraft pilots put it up against. If you want an aircraft that can carry four people 1,200 miles non-stop, it's not going to cut it. However it will take two people and some bags, depending on the size of people and bags, 1,000 miles. You can happily take nearly 800lb, 800 miles, or 600 miles, with ease. Again, you really do need to fly it to appreciate the experience.

Loading the aircraft is easy and well designed. All the passengers can easily board and settle into the vast cabin with no dramas. Both the front seats move forward well out of the way and it's probably best to seat the front right seat occupant first, then the rear seats. However that's not a must, we just found it simple so those in the seat behind didn't need to worry about their toes.

The left front, or pilot's seat, can simply move back abeam the door so the pilot can enter last, close the door, give a safety briefing if needed, and then slide forward into the flying position. However, the pilot could also enter first and be well out of the way to enable passengers to board behind them.

If you are in a hot climate the air conditioning can be run without the engine being on. It's strongly advised to have a GPU for this task as it takes a lot of electrical power. A friendly handling agent can unplug the GPU after the engine has started so it keeps it cool inside. Brilliant!

The front seats are well ahead of the wing, and even the second row can just about see straight down. With the huge windows all around, the light coming in during the day makes for a bright and airy cabin. The views at any time of the day are second to none. It's truly an environment you need to experience to appreciate. With a cabin altitude of 8,000ft at 31,000ft, or 6,000ft at 28,000ft it's pleasurable and comfortable. Once the engine is running on the ground it's a little noisy inside for taxi and take-off if you don't have a headset on.

However, once in the air and the dump valves are closed, the soundproofing is superb. You can happily have a chat with each other without a headset on.

It's significantly quieter than the G1 SF50 and other similar aircraft I have flown.

Advanced but simple

The aircraft is one of the simplest and most advanced aircraft I have ever flown. That's not to say that structured in-depth training should be shunned by anyone with many years and hours of experience. I certainly took it seriously.

It's made easier by the Garmin G3000 equipped flightdeck, which is simple to operate, especially after you've had some focused training and been given set procedures. Extras like Flightstream 510 Bluetooth flightplan transfer makes for adding and adjusting plans quick and easy.

Engine starting is as simple as it gets with the FADEC control on the Williams FJ33 turbofan. You still need to monitor it, but it's quick and will be running and stable within 30 seconds of pushing 'engine start'. The system will shutdown automatically if it notices an issue with the start.

Overall engine operation on departures, cruise, and descents with the autothrottle is simple and effortless. The VNAV profiling in the G3000 has default profiles for each phase of flight. Pilot profiles can be added if changes in speeds or descent rates are desired to slow the SF50 earlier, or descent at a slower or faster rate.

Take-off is simple and not as long as I first expected. If you're coming to the SF from the SR, then you'll definitely notice that you don't need the rudder required to overcome the P factor from a propeller! Just like the SR, the nosewheel is free castering and it's easy to steer, with the rudder becoming effective after about 25-30 KIAS.

In the climb with the gear and flap up it soon accelerates to a climb speed of 165 KIAS and the rate of climb is very respectable up to the high teens.

Through 20,000ft up to 31,000ft it'll be about 800-1000fpm. Not as quick as a TBM but nothing to complain about too much. Reducing the IAS climb speed will get the SF50 higher in a shorter time period.

On a continuous climb from sea-level it reached 31,000ft in 25 minutes and used 45 gallons of JetA to do so. Arming the FD, autopilot and autothrottle (AT) on the ground is the same as the other G1000 and G3000 equipped aircraft with the initial use of TOGA. Above 400ft agl it can be switched on and will leave you with much more capacity for radio, checklists and navigation. The AT removing the need to manually set and control thrust especially at lower levels where forgetting to reduce thrust will push the SF50 through its Vmo of 250 KIAS.

Generally the AT stays on until minimums on an IFR arrival or when joining the circuit VFR or at 1,000ft agl. In the cruise and with the throttle at max continuous thrust (MCT) the aircraft accelerates smoothly to a cruise speed at 31,000ft of 305KTAS. At 26-28,000ft, it's at its fastest of about 310-312KTAS. The fuel burn is on average higher than the turboprops it'll be compared to by 8-10 gallons per hour for a similar or slightly slower speed. That being said, reducing the speed to 250KTAS means a longer range cruise can be achieved and 50gph.

The SF50 is easy to land, thanks to the position of the engine, which means when the throttle is retarded the natural pitch-up tendency is perfect to position the nose into the correct flare attitude, the pilot adding just the smallest amount of extra pitch for the perfect touchdown. The trailing link undercarriage cushions any firmness if you're a bit late or short on the flare!

The SF50 is a fantastic glider. A huge benefit if the unfortunate happens up high, but if you are 5-10kt too fast crossing the threshold you'll need to wait in ground effect for it to slow down. Get the speed right and it's a dream to land.

The main takeaway for the training progression, from looking at the glossy brochure to rotating in your own aircraft, is to be prepared. If you are not IFR current, don't know the Garmin systems or your general flying skills need some brushing up, then go and fly with a Cirrus instructor who understands Cirrus. Low-time pilots right up to seasoned professionals all go through the same training.

The bigger the head start you can make the better, in my opinion.

Below Click to watch John's SF50 training adventures and the ferry flight back to the UK

Safety Accident Analysis

Good craic? When it comes to aircraft, rarely is it good...

This month **Steve Ayres** reflects on where and when a fresh crack may have lethal consequences and whether some other form of warning is essential if carbon monoxide could be present

Researching this month's column on St Patrick's Day (17 March) led me to reflect on the two spellings for what is essentially the same word and how, when used in aviation, it is about as far away from the term 'good craic' – frequently used in the north and south of the Emerald Isle – as you can get. That, and a recent event at the airstrip, triggered more thoughts on cracks, how they propagate and when they might first be detected. But, it was an accident that was reported in the UK this month that convinced me something more than simply inspecting exhaust systems for cracks was needed to prevent being poisoned.

Accident 1

The pilot and five passengers of a de Havilland Canada DHC-2 Beaver floatplane, boarded the aircraft for a return charter flight from Cottage Point to Rose Bay, Sydney. Shortly after take-off, the aircraft conducted a 270° right turn in Cowan Water and then entered Jerusalem Bay, below the height of the terrain. The aircraft stopped climbing, continued along the bay and then made a very steep right turn. The aircraft's nose then dropped and it collided with the water. All on board were fatally injured and the aircraft destroyed.

Some of the circumstances regarding the accident were unexpected, given the nature of the operations and the pilot's significant level of experience. Specifically, the aircraft entered a known confined area (Jerusalem Bay) below the height of the terrain, with no need to be operating in the bay. The aircraft did not continue to climb despite being in the climb configuration.

The aircraft was capable of turning within the bay, it could have been turned earlier, and there was sufficient distance remaining to land at the position of the steep turn. A steep turn was performed at low-level and at a bank angle in excess of what was required. It was established that pilot control column and rudder inputs were necessary to travel at least half-way through the final steep turn as observed.

However, the propeller was at a 'lower power condition'. The aircraft likely aerodynamically stalled, with insufficient height to effect a recovery before colliding with the water.

Further, the front seat passenger was regularly taking photographs, but stopped during the turn in Cowan Water, and it was very likely the middle right passenger was unrestrained at impact.

Toxicology results identified that the pilot and passengers had higher than normal levels of carboxyhemoglobin in their blood. This was almost certainly due to elevated levels of carbon monoxide (CO) in the aircraft cabin.

Wreckage examination established that several pre-existing cracks in the exhaust collector ring very likely released exhaust gas into the engine/accessory bay, which then very likely entered the cabin through holes in the main firewall where three bolts were missing from the magneto access panels.

"Higher than normal levels of carboxyhemoglobin likely due to elevated CO levels in cabin"

In addition, the examination also found that the in-situ bolts used by the operator's external maintenance provider to secure the panels were worn, and were a combination of modified AN3-3A bolts and non-specific bolts.

A 27-minute taxi, with the pilot's door ajar, before the passengers boarded, likely exacerbated the pilot's elevated carboxyhemoglobin level. As a result, the pilot would have almost certainly experienced effects such as confusion, visual disturbance and disorientation. Consequently, it was likely that this significantly degraded the pilot's ability to safely operate the aircraft.

The aircraft was fitted with a disposable CO chemical spot detector, which was likely not effective due to sun bleaching. Commonly used in General Aviation, these types of detectors have known limitations and can be unreliable at detecting CO in the cabin. Further, they are passive relying on the pilot regularly monitoring the changing colour of the sensor to detect elevated levels of CO. In contrast, electronic CO detectors are designed to attract the pilot's attention through auditory and/or visual alerts, so are more likely to be effective.

While inexpensive and readily available, there was no regulatory requirement from the Civil Aviation Safety Authority for piston-engine aircraft to carry a CO detector with an active warning. Similarly, other international investigation agencies have made safety recommendations to aviation regulators to mandate the carriage of active detectors.

However, despite the ongoing threat CO exposure poses to aircraft occupants, these recommendations have not been accepted.

Consequently, the Board has recommended that the Australian Civil Aviation Safety Authority

Mark Mitchell

consider mandating the carriage of active warning CO detectors in piston-engine aircraft with a maximum take-off weight less than 5,700kg. In addition, while the aircraft carried a passive CO detector, there was no mechanism for monitoring their serviceability.

Accident 2

On the day of the accident the pilot decided to go flying to stay current as the weather was forecast to be good. He took 20 litres of mogas, in a jerry can, which he stated would have given about 90 minutes endurance. Prior to departure the pilot recalled checking Notams on his portable electronic device and placed it on the passenger's seat and started the aircraft. He remembers taking off into wind but not what runway he used or whether he used a grass or concrete runway.

His only recollection of the flight was leaving the circuit in a northerly direction for a period of time, but did not go so far as to lose sight of the airfield, before returning to the airfield to fly some visual circuits. A witness, located about one nautical mile north of the airfield, saw the aircraft downwind in the visual circuit and commented that there appeared nothing untoward with the aircraft. The pilot's next recollection was regaining consciousness at a very low altitude but too late to recover the aircraft before it struck the ground, he then lost consciousness. The pilot's next recollection was him being tended to by another witness to the accident. Police, RFFS vehicles and ambulances started arriving at the scene 37 minutes after the accident. Due to the limited access to the scene and the pilot's injuries, an air ambulance also attended.

From the ground marks it was evident the aircraft was heading east towards the airfield at the time of the accident. The first impact marks were made by the right wing tip, which touched the ground three times before the leading edge of the wing hit a small bus parked along the tree-line of the west field. On striking the bus, the wing detached and landed by the bus, while the remainder of the fuselage and left wing glanced off a flat roofed cabin located to the left of, but in line with, the vehicle.

The fuselage bounced off the top right side corner of the building's roof and continued into the tree-line. The left wing and fuselage sliced through the trees before hitting the east field at a shallow angle. The remaining wing detached and landed to the left of the aircraft's path. The fuselage continued sliding along the ground before finally stopping in a slightly right nose down attitude pointing towards the airfield.

The propeller's spinner had large impact dents but there were no radial score marks to indicate the propeller was rotating under power when it hit the ground. It is likely the engine stopped when the propeller sliced through the trees, causing one blade to separate near the root and land in the east field, while the other was bent backwards but remained attached to the hub.

The investigation found evidence of exhaust system gas leakage in the engine bay and pathways by which the gas could have reached the cockpit via the degraded firewall seals and grommets. Although leakage may have been minimal, the effects of CO are cumulative and would have built up over the duration of the flight. The available evidence is consistent with the pilot having suffered CO poisoning and being incapacitated before the accident occurred. Although he reported regaining consciousness, it was not in time to prevent the accident.

> "The pilot remembered taking off into wind but not what runway he used…"

Ayres' Analysis

Let's face it metal cracks, composite too, but most of the time experience tells us where to look for possible signs of damage. Airframe design has improved to the point where cracks are rare, mostly predictable and seldom critical, at least initially. Add a bit of thermal cycling, plenty of nasty harmonics and a raft of random stressors and the predictable becomes less so. I am, of course, referring to the engine bay where all these things are routinely in play.

Regular checks mean that most of the time we pick up the big stuff but it has left me wondering if every 50 hours or every 150 is really often enough to check on something as critical as an exhaust leak. Yes, we all inspect exhaust systems as part of our pre-flight routine, but when cowlings remain fitted, that usually limits us to a visual check at arm's length, or just handling those sections we can see for security that poke out the bottom. And then it would be down to the integrity of the firewall and those leaky bits of rubber, RTV, caulking or heater flap to keep you safe. As the other accidents bear testament, even the smallest of leaks can be lethal.

The Beaver pilot may well have experienced mild CO poisoning before he even took off, simply because he left the cabin door ajar with the engine running while waiting for his pax and during taxi. Ultimately though, the critical source of CO was a cracked pipe and these incidents remind us, cracks can occur at any time and can be difficult to spot when they do.

I had been lucky to watch the Beavers plying the waters around Pittwater, north of Sydney, earlier in the year so I followed this investigation closely. The initial findings only served to deepen the mystery. Rarely had I read of a crash where the engineering, operational and flying documentation was of such a meticulous standard. Especially when associated with what appeared to be a reckless bout of flying indiscipline. Something was out of place.

In the end, though, the only explanation for the pilot's behaviour was down to three missing AN3-3A bolts from an access panel that let sufficient CO into the cabin from a cracked exhaust. Fixing any potential leak paths through the firewall is probably the last line of defence, but given how fickle cracking of exhaust systems can be, is that something to be relied upon? Regular inspection of the exhaust system is vital but fitting an active CO monitor on all aircraft is surely the only effective last line of defence… and that is what the Aussie investigators said. So, I have just fitted one!

Safety Accident Reports

Keep an eye on the safety pilot

Steve Ayres summarises and comments on accident reports from around the world and looks at a novel way of strapping down your tablet to help keep you on the right track...

Head down, gear up!

Piper PA-23-250 Aztec
C-GDUL
Trois-Rivières Airport, Quebec
Injuries: One serious, one minor

The aircraft, with two pilots on board – a low hours trainee pilot-in-command and a passenger flight instructor – was being operated in night VFR. On approach to Trois-Rivières Airport, a decision was made to conduct a touch-and-go rather than a missed approach. During the take-off after the touchdown, the propellers of both engines struck the surface of the runway. The aircraft got airborne and turned left, and the pilot lost control. The aircraft collided with the ground 222ft south of the runway and was destroyed by a post-impact fire. The two occupants evacuated the aircraft.

The company providing the training often used an instructor as passenger, in a safety role. In this instance he intervened during the touch-and-go to resolve an incorrect flap and gear lever setting. While doing so, head down, he mistakenly thought the aircraft had got airborne and raised the undercarriage, the flaps subsequently moved to the up position. The pilot lost control of the aircraft as a result of the double prop strike following the undercarriage retraction and subsequent loss of lift once the flaps had retracted.

Comment The Piper Aztec has a quite involved interlocking arrangement between flaps and undercarriage, but the problems started after a relatively late change of intentions from a go-around to a touch-and-go. There were also no clearly defined cockpit procedures for the role of a 'safety pilot'. This is one of a number of accidents when an intervention by the non-handling pilot has resulted in an accident.

Post-impact survival

Bell 206B3 Helicopter
VH-FHW
107km south-west of Jabiru, Northern Territory
Injuries: Three serious

As part of a cull of feral animals in Kakadu National Park, a crew of three were using a JetRanger helicopter for aerial platform shooting. While operating at about 50ft, the engine decelerated to idle, lost power, and subsequently the helicopter collided with terrain.

The spotter exited the helicopter and noted that the pilot and shooter were unconscious. He attempted to activate a handheld emergency position indicating radio beacon but having lost his corrective glasses, he was unable to read the instructions.

As the pilot regained consciousness, the pilot and spotter ensured the emergency locator transmitter (ELT) was on, and the spotter tried to make the pilot and shooter comfortable.

The rifle was still in the helicopter and the barrel had punctured the floor of the cabin. The spotter made the weapon safe by removing the magazine and selecting the safety.

The joint rescue coordination centre detected the signal from the ELT and tasked a passing RAAF Hercules to search for the source. The crew subsequently found the wreckage and directed a nearby helicopter to the scene as well as the emergency medical service (EMS) helicopter which arrived some five minutes later. Following news of the event, the fuel supply at Jabiru was closed for testing as a precaution. This prevented the EMS helicopter from refuelling at Jabiru and delayed a recovery which ultimately took almost nine hours.

Comment As with everything in Australia, distances are huge so translating this accident into a European context is not always meaningful but the report does make some useful survival observations, particularly over the legibility of safety instructions (day or night) and the need to carry a retrievable spare pair of specs. Also, concern that fuel contamination may have been a factor further complicated recovery, something to be considered in any engine failure situation.

Fatal beat-up

Harmon Rocket II
C-FZXS
Hugget/Goodwood Field Aerodrome, Alberta,
Injuries: Two fatal

The Harmon Rocket II amateur-built aircraft departed for a flight to Hugget/Goodwood Field Aerodrome, with two people on board. The purpose of the flight was to join a gathering of friends who were to spend the afternoon go-karting at the racetrack adjacent to the airfield. After flying a second circuit, the aircraft descended to approximately 25ft AGL and flew over the racetrack straight from north to south. At the south end of the straight, the aircraft initiated a climb and struck the upper wires of an unmarked power line at 35ft agl. The aircraft pitched up steeply, and climbed to 700ft before rolling and descending wings-level until it struck the ground violently.

Comment The 'straight' to the racetrack and the airfield runway make an angle of approximately 60° and are very close to each other. There can have been no mistaking one for the other but the illusion may well have been to create an impression the

"During the touch and go, both propellers struck the runway"

Safety Accident Reports

straight was a runway with all the protections that would normally confer. Clearly it wasn't,and it didn't, with fatal consequences. Normal flight below 500ft is prohibited in most parts of the world for good reason and is particularly dangerous when it is impromptu.

Troubling hush

Velocity XL-5
N735D
St Cloud, Florida
Injuries: Two serious

Shortly after take-off, when the aeroplane was at an altitude of 2,000ft, the engine and electrical system failed simultaneously. The pilot was unable to restart the engine and made a forced landing to an open field, during which the aeroplane flipped over and sustained substantial damage. The aeroplane wreckage was not located until over four hours after the accident.

The aeroplane's engine was equipped with a dual electronic ignition system that required electrical power to operate. The pilot-builder had wired the electrical system through a 24v battery, including the dual electronic ignition system. Post-accident examination revealed that the lugs that connected the positive and negative leads of the aeroplane's electrical system to the 24v battery were not crimped properly and that the leads had separated from their lugs, which resulted in the complete loss of electrical and engine power.

The aeroplane's 406-MHz emergency locator transmitter (ELT) triggered on impact, and a beacon alert was sent and was received by the Air Force Rescue Coordination Centre (AFRCC). The AFRCC called the pilot's mobile phone twice shortly after the accident, but the phone had been displaced during the accident sequence, and the pilot was unable to retrieve it to answer.

The pilot's daughter did not receive a call from the AFRCC even though she was listed as an emergency contact. A review revealed that the on-duty controller attempted to locate the beacon and initially determined that the aeroplane was most likely airborne with an active ELT and closed the incident.

Comment Homebuilding can be great fun and massively rewarding, but there are some areas where poor skills can have serious consequences and the main electrical system is certainly one of them. Planning that system takes diligence too and so having a dual electronic ignition system without back-up power generation means everything will go very quiet, very quickly, should the main power leads disconnect.

> "In the wreckage was a deformed water flask wedged in the controls"

Water bottle dangers!

Robin DR400-140B
F-GYKC
Saint-Girons Antichan, France
Injuries: None

While carrying out pre-take-off checks at Saint-Girons Aerodrome for a flight to Toulouse with his 10-year-old son, the pilot was interrupted by a landing aircraft and had to reposition his aircraft to let the landing aircraft past.

Once pre-take-off actions had been completed, the pilot commenced his take-off run, but shortly after getting airborne the aircraft began to veer to the right. The pilot tried to counter the movement, but the control column seemed blocked. He decided to abort the take-off, reduced power and attempted to land on the edge of the runway. The pilot recalled hearing the stall warning, the left wing suddenly dropped and a violent collision with the ground ensued.

The pilot recalled doing the full and free control checks during his pre-take-off actions but added that his son then drank from a water flask just before commencing the take-off. Although he asked him to put it on the back seat, his son left it on his own seat.

Examination of the wreckage found a deformed water flask wedged in the controls and a number of objects from an unsecured container on the rear seat, which had been thrown forward by the impact. During the take-off roll, the flask fell on the floor and after rotation, when the pilot needed to correct a slight roll, the controls had become blocked.

Comment So, an innocuous water bottle brought down an aircraft? It would appear so! Carrying anything into a cockpit which is not properly secured creates a risk as this accident demonstrates. And that includes the bucket of aircraft tie-downs which was sitting on the rear seat!

Safety kit

Leg mount for phone/tablet

Rule out the dangers that can occur if a tablet or phone is loose in the cockpit

Price from $139 | mygoflight.com

MyGoFlight produces a whole raft of accessories for mounting smartphones and tablets around the cockpit. Well designed and nicely manufactured they can fulfil most requirements, allowing the screen to be presented at the best angle possible and, as far as iPads are concerned, kept cool in bright sunlight. By canting the attached device upwards, this new addition should ensure better access to the screen at all times and help minimise reflections. It also has the added benefit of ensuring your electronic device is secured safely to your leg and not left lying around the cockpit ready to disrupt your flying controls. Available soon direct from the manufacturer, many of the more established items can also be obtained through UK suppliers such as LAS Aero.

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Coast stories...

If 2021 leaves you wondering how you can have a good flying adventure without leaving the UK, **Paul Kiddell** reminds us that Scotland has plenty to offer…

There is no doubt that 2020 really was a challenging year, but the summer provided an oasis of exciting flying adventures between lockdowns. For me, a highlight of any UK flying year is a trip to the stunning west coast of Scotland, and at Eshott in Northumberland, we are lucky that the west coast is within easy day trip striking distance.

As west coast weather is notoriously difficult to forecast, our usual tactic is not to plan more than a few days in advance, but instead to react quickly when good weather arrives. On a Sunday early in September 2020, a ridge of high pressure saw us drop everything and head over to the west coast via a slightly circular route, taking in the Solway Firth and the wonderfully named strip of Lennox Plunton, west of Kirkcudbright.

At 0900, flying partner Alex Smith and I set off in G-CEVS, our faithful EuroStar, having agreed to meet our good EuroStar pal Roger Iveson en route. It was a glorious CAVOK day as we flew low-level down Hadrian's Wall overlooking the Tyne Valley. We took time to orbit the impressive Roman Housesteads Fort, which is half way along the 73-mile wall that runs from Wallsend in Newcastle to Bowness-on-Solway. From its construction in AD122, until the Romans' departure in the fourth century, the fort was garrisoned by an infantry regiment of around 800 men (a double cohort), part of the wider garrison of 10,000. Romans eh? What did they ever do for us?!

Passing Haltwhistle, we saw Roger's G-CCEJ appear on PilotAware (we both have permanent fits with external aerials with the PAW GPS feeding the Trig transponder to enable ADS-B out which gives excellent range), above the Pennines some 30 miles to the south. Radio comms established, we rendezvoused just north-west of Carlisle Airport (which sadly remains closed to visitors) and headed west. Both Carlisle and nearby Kirkbride are good options for those needing avgas or Jet A1 before heading to the west coast where fuel planning is always an important consideration.

Just north-west of Carlisle is the remarkable sight of the defence munitions facility at Longtown, which houses some 252 hardened explosive storehouses on a huge 1,300-acre site. The site opened in 1938 and is one of the largest ammunition facilities in Western Europe, complete with its own railway facility. It was also here that the remains of the Pan Am 103 Boeing 747 were gathered following its downing by a Libyan bomb from FL310 over nearby Lockerbie on 21 December 1988, which tragically resulted in the deaths of all 259 passengers and crew, and 11 Lockerbie residents.

Crossing the M6 in loose formation, we enter Scotland at Gretna Green, famous for its runaway marriages. Indeed, we fly over the blacksmith's shop where the tradition started in the 18th century when the 'Anvil Priest' would marry young couples keen to escape the new 1754 Marriage Act in England and Wales which required couples under 21 to have parental consent. In those days, Scottish law permitted 'irregular marriages' which allowed any two people to witness a marriage on the spot – now you have to give 29 days notice just like everyone else!

The northern coastline of the Solway Firth is a fantastic place to fly with large sandbanks and mud flats and scenic islands and villages. The only real hazard for the low-level pilot are large flocks of birds, particularly in the Caerlaverock mudflat nature reserve at the River Nith estuary south of Dumfries, which is the destination for some 38,000 Svalbard barnacle geese that migrate the 2,000 miles down from Spitsbergen every winter.

We pass the impressive, square Southerness lighthouse, which dates to 1749, and is the second oldest surviving lighthouse in Scotland. Here, the inland peaks north of the Solway rise to over 2,000ft and would pose a risk of severe turbulence at our low-level in a stiff northerly wind but today winds aloft are light, and it's wonderfully smooth.

Opposite The 1793 Clachan Bridge, also know as the 'Bridge over the Atlantic', as we head home

Above Bute airstrip
Right Hestan Island in the Solway with the world's 'ugliest lighthouse', according to Paul!
Below Robert Sproat's 1944 Piper L-4H
Bottom Lennox Plunton airstrip with Robert Sproat's Piper L-4 Cub
Below right Turnberry Golf Course, where a round of golf will cost a whopping £350...

A little further on is pretty Kippford in the estuary of the River Urr, and is popular with yachters. Nearby Hestan Island is one of 43 tidal islands that can be walked to in the UK and for me, has the further distinction of hosting the only ugly lighthouse I've ever seen – the skeletal structure looks like a giant abandoned packing case on its side. It is truly awful so I'll give it just one star on my 'aerial tour trip advisor'!

As we approached Lennox Plunton, we spied Robert Sproat airborne in his Piper L-4H Cub, G-COPS, which has been in the family since 1983.

After a brief (and slow!) chase around the patch, we followed him to land in turn on the 460m north-south strip. We received an exceptionally warm welcome from Robert who instantly produced socially distanced brews and biscuits from the obligatory strip caravan. We enjoyed a really good chat with Robert who revealed his late dad, William, created the strip in 1961.

Robert's 1944 Cub is a typical US war surplus L-4, which ended up being registered in France in 1950 and was resident at Albertville for many years. In the late 1970s it became one of the many French vintage aircraft imported into the UK, where they went on to provide cheap, fun flying on a PFA (now LAA) Permit.

Generous host

With a full day ahead, we couldn't hang around and reluctantly rose from the comfort of our deckchairs, thanked our generous host and departed for Castle Kennedy 20 minutes to the west. Crossing the top of Wigtown Bay, we passed the former Wigtown Airfield which, though still marked on Sky Demon, hasn't been active for many years now. Castle Kennedy, just east of Stranraer, is a former RAF airfield operated by Stair Estates with about 600m x 20m of really good re-surfaced tarmac available within the original R26/08.

I'd PPR'd on the airfield website with the ever-hospitable Lord Stair (Jamie), but the need for a good look-out at unmanned airfield was highlighted when a magnificent stag with huge antlers wandered across the runway as I was on short finals. I was just about to go-around when he ran off into an adjacent field at speed leaving me clear – you've got to love flying in Scotland!

Interestingly, Jamie's uncle, Andrew Dalrymple, was co-founder of the famous Chilton aircraft company which produced four magnificent DW.1 very fast (112mph on 32hp / 126mph on 44hp!) sporting monoplanes just before the outbreak of WWII. Tragically, Andrew was killed in December 1945 at Chilton's base at Hungerford along with the company test pilot in the crash of a Fieseler Storch, which the test pilot had 'acquired' in the American sector during a trip to investigate German aviation technology. Fortunately, all four original Chiltons survive, while in the UK we also have a number of beautiful modern reproductions, including three Mikron-powered examples.

After another quick stop with the £10 landing fee deposited in the letterbox, we departed north, which afforded great views of the magnificent Lochinch Castle and gardens, home to the Stair family for many generations. Post-lockdown, the gardens and associated tearooms and plant centre will again be open to the public and are about a 20-minute walk from the airfield, for those looking for a day out.

Immediately after, we passed abeam Stranraer and head up Loch Ryan, above the Stena and P&O ferries arriving from Northern Ireland, before following the coast north along the Firth of Clyde.

From our lofty perch we have an excellent view of Ailsa Craig, a 220-acre island 10 miles offshore, which has long been quarried for the special micro-granite that is used for curling stones. Notably, all the Olympic curling stones originate here.

Passing over the famous Turnberry golf course complex, we can still make out the three former hard runways contained within, a reminder of when the historic courses became RAF Turnberry in WWII operating a mix of Coastal Command and Bomber Command types. These days, Turnberry is owned by the former US President, Donald Trump, and the Ailsa Course, which has hosted four Open Championships, is Scotland's most expensive round of golf at £350. Who said flying was expensive…?!

We gave the ever-helpful Prestwick an early call to negotiate a low-level transit through its CTR/ATZ south to north and, as they were using R30, we were cleared to pass just east of the R30 threshold. In a sign of the global airline downturn, we spied the sad sight of five Norwegian 787 Dreamliners in storage on a remote apron. We exit the Prestwick CTR at Irvine Harbour and once clear of EGR515 (Hunterston Nuclear Power station), we descend into fabulous Bute airstrip and land on the 480m R27.

Bute is one of many Scottish Island airstrips built in the 1960s to enable air ambulance flights which were operated for many years by Loganair Islanders. That service is now provided by helicopters but the Bute strip remains in the ownership of the Mount Stuart Estate and the upkeep is coordinated by enthusiastic local Eurostar pilots Sandy Cameron and Willie Long.

One huge improvement has been the removal of trees on short-final to R27 and this has really opened the strip up to more types. The strip's maintenance relies on pilot donations and details are in the Control box (a wooden box mounted on a stake!), but Sandy and Willie have generously announced that as the fund is healthy, all 2021 all landings will be free!

Above Loch Craignish which stood in for Turkey in speedboat chase in the Bond film *From Russia with Love*
Right G-CEVS at Glenforsa as Caledonian MacBrayne ferry returns to Oban from Outer Hebrides
Far right Easdale Island with flooded 19th century slate mines
Below Craobh Marina
Below right Paul cooks bacon sarnies, HP sauce optional, on Bute

As luck would have it, Willie arrived in his EuroStar and we were able to catch up and thank him in person for all his herculean efforts.

Bute is a very popular strip, largely due to the nearby, and quite superb, Kingarth Pub which also offers B&B. Tragically, landlord Steve died suddenly in September 2020. Steve was a wonderful host and a great friend to visiting pilots and our heartfelt sympathies go to wife, Alayne, and his wider family.

As it was lunchtime, I broke out the Coleman 533 stove which runs on unleaded petrol from our fuel drain, and cooked oversize bacon sarnies on the picnic benches. Fully refreshed, we said our goodbyes to other visiting flyers in a variety of microlight and LAA types before heading off for Glenforsa. Soon after departure, we flew low over Bute's Ettrick Bay where Andrew Baird, a Rothesay blacksmith, made the first Scottish heavier-than-air powered flight in a monoplane of his own design on 17 September 1910. Having enjoyed a 2020 family August staycation on Bute (as a direct result of enjoying my flying visits), I was delighted to see that Ettrick Bay has a stone memorial to this momentous event.

Soon our little formation passed Lochgilphead to fly along the Crinan Canal, the traditional low-level route to access the west coast. As I write in April 2021, it's currently covered by a Temporary Danger Area (D698C SFC-550ft) for drone BVLOS proof-of-concept operations. One of a veritable tsunami of drone TDAs that are springing up all over the country and certainly, we need to be very aware. Fortunately, both the LAA and BMAA have established airspace working groups to better coordinate formal responses and challenge where required, and they are already having some success in ensuring the TDAs are both proportional and justified.

Flying low-level between the west coast's stunning islands and peninsulas over beautiful lochs and open water really is one of life's great pleasures. Operating at low-level, we are out of radio line-of-sight with our friends at Scottish Information so it's comforting to have a faithful wingman, although we also carry a GPS-enabled PLB should we have to put down in a remote area.

Being low down, you certainly see much more detail of the landscape and the many spectacular houses, castles and incredibly scenic marinas such as Ardfern and Craobh. In fact, there are lots of yachts out and we orbit a few and waggle our wings to the enthusiastic crews.

We pass over the 260-acre Eilean Righ (Gaelic for 'Kings Island) in Loch Craignish which has a helipad and hangar and even a slipway where island owner, former city trader, Christian Siva-Jothy, used to beach his Lake LA-250 Renegade amphibian G-SIVW back before he sold it. Loch Craignish also stood in for Turkey in the speedboat chase scene in the 1963 Bond film *From Russia with Love* where Sean Connery and Daniela Bianchi ('Tatiana Romanova') are pursued by hapless Spectre speedboats directed by an inevitably doomed commander with a megaphone.

Hopping over to Luing and Seil, we enjoy excellent views of the 1793 Clachan Bridge, known as the 'Bridge over the Atlantic' as it connects Seil with the mainland. Its hump-back design means that tourists visiting the island by coach are often asked to disembark to prevent the coach from grounding! We have great fun orbiting nearby Easdale Island with its flooded 19th century slate mines, one of my favourite west coast sights.

Clan rivalry

At Kerrera (where the population has bucked the Hebrides general downward trend and doubled to 68 in the last 10 years), we climb to 2,000ft and coast out the short 3.5 miles over the Firth of Lorn to Mull. We coast in at the 13th century Duart Castle, seat of the Maclean Clan and the scene of many bloody battles with the rival Campbells over the years.

Mull is the second largest of the Inner Hebrides after Skye and boasts a 300-mile coastline. It is dominated by several mountains, the largest of which is Ben More, a proper munro at 3,169ft. As a result, Glenforsa on the northern coastline can be subject to turbulence in a brisk southerly so a good brief when you PPR is essential. As an aside, Mull has the largest concentration of nesting golden eagles in Europe, so watch out for these as well as the larger and less common resident sea eagles, which have an impressive eight-foot wingspan.

After an exhilarating 45-minute flight, we join downwind over the Sound of Mull for Glenforsa's R25 and soon arrive on the famous 780m strip which is level but has a slight downslope across its width towards the sea. Hotel owners and pilots, Brendan and Allison Walsh, took the difficult decision to keep the hotel closed during the chaotic on/off 2020 season and take advantage to do some upgrades and maintenance work. However, they kindly opened the strip to visitors for them to fly in and enjoy a walk or a picnic. While we didn't see them, the refurbishment of the wonderful Norwegian log building's roof was well underway.

The hotel has a variety of rooms, family cabins and a two-bedroom lodge along with its restaurant and is often fully booked in the summer but, as ever, speak to them directly for the latest. Camping with the aeroplane is a fantastic option but come prepared for the west coast of Scotland midges, although to be fair, I've somehow always managed to avoid them during my overnight stays.

After parking, we enjoyed a walk along the adjacent beach as a Caledonian MacBrayne ferry

Top The 500ft span Connel Bridge, built in 1903
Above Glenforsa
Left Hebridean Air Services Islander that operates scheduled services around the Inner Hebrides.
Below Castle Stalker from *Monty Python and the Holy Grail* film

steamed past returning to Oban from the Outer Hebrides. But the clock was ticking and after leaving our £10 landing fee in the temporary Covid box we got airborne for Oban just 20 miles to the east.

Glenforsa richly deserves its reputation as one of most scenic airfields in Britain and is a fantastic central base for exploring the wider west coast over several days. We all agreed that we can't wait to return and overnight with a nice meal and a few beers, once restrictions finally ease.

Speaking to Oban Information, we informed them of a rather special diversion en route and headed up Loch Linnhe over Lismore Island to Loch Laich, just seven miles north of Oban Airport. Located in the loch is the 14th century Castle Stalker. While it has a fascinating history that mirrors the turbulent history of Scotland itself, its place in popular culture was guaranteed with its appearance in the iconic 1975 film, *Monty Python and the Holy Grail* (Elvis' favourite film by the way).

What a wonderful spot and as we orbited, I wondered if the chap we could see on the battlements was actually John Cleese taunting us…?

Impressive superyacht

Oban was on R01 and we joined downwind over the bay. On left base, an unusual hazard was posed by the superyacht *Ngoni*, one of the largest sailing yachts in the world with an impressive 233ft mast.

Oban R01 has a wonderfully scenic final approach over the entrance to Loch Etive which is spanned by the magnificent 1903 Connel cantilever bridge. When opened in 1903, its 500ft span was second in Europe only to the Forth Rail Bridge, which was constructed by the same company, Arrols. Originally a railway bridge, today it carries the A828. All this is framed by the impressive Scottish mountain peaks to the east.

Oban Airport was constructed in 1942 as RAF Connel with two tarmac runways, but only the 1,264m 01/19 remains operational. We park on the ramp next to the bright yellow Hebridean Air Services BN-2B Islander that operates scheduled services to the Inner Hebridean Islands of Coll, Colonsay, Tiree and Islay. Incidentally, Argyll and Bute Council operate the fantastic island tarmac strips at Coll and Colonsay and you'll need an annual out-of-hours permit to visit (due to limited space, you can only PPR outside of the Islander scheduled service times) – it's free and you can apply on the Oban Airport website. Landing fees on Coll and Colonsay are a mere £8.20, and I can't recommend these wonderful islands enough.

Since the well-known Paul Keegan retired in October 2019, Oban has been without fuel, leaving a huge gap in the region. The good news is that during our visit, the new tank had arrived and as I write at the beginning of April, the latest is that Oban should once again have fuel from the end of

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Right Friendly local Helen Whitelaw from Oban in her 1992 Streak Shadow
Below Short final for Oban's R01

April, just as Scotland opens up to recreational flyers from across the UK.

In 'normal times' we'd walk 10 minutes to the nearby Lochnell Arms Hotel, adjacent to the bridge, for fish and chips. But these are far from 'normal times' and we pay our reasonable £11 landing fee (up to 500kg, £16 for 500kg-1,000kg) which includes 24-hour parking and get our loyalty card stamped (after four visits your fifth landing is free). Should you wish to take advantage of the parking offer, Oban is about six miles to the south and accessible by bus or taxi and has plentiful accommodation options. Bear in mind that the airport doesn't open until 1000 on Fri-Sun in the summer.

Friendly locals

Oban has a thriving community of LAA and microlight flyers and we speak to a few of the friendly locals including Helen and David Whitelaw, who also own a Eurostar, although today Helen had just been flying her 1992 Streak Shadow.

David Cook designed the Shadow in 1982 and it then represented a quantum leap in microlight design, taking the class FIA world speed, distance and height records.

More than 400 Shadows were built and the classic type has seen a revival in recent years, largely due the advent of the single-seat deregulated class which has seen many old airframes restored and operated without a permit (though the aircraft must be registered, pilots must still be licenced and have third party liability insurance).

As usual on an ambitious day trip, time soon runs out and we finally mount-up and depart for home. Climbing out over Oban in loose formation, we spied what appeared to be a Roman colosseum. It turns out to be McCaig's Tower, otherwise known as McCaig's Folly, financed by philanthropic local banker John McCaig between 1897-1902. The impressive arched, circular, granite structure was meant to house a museum but only the outer walls were completed when McCaig died in 1902 and the scheme was abandoned.

We climb to a positively stratospheric 2,000ft and reverse our route down the coast to the Prestwick-Glasgow gap and then fly direct to Eshott whilst Roger breaks off for Yorkshire near the mountain-top Talla VOR.

Alex and I finally arrive home after a truly exhilarating day, having enjoyed over six hours of flying to five wonderful airfields and strips over endless breathtaking scenery.

I'm excited and optimistic for a fantastic summer of flying, and flying the west coast will be a big part of our plans – it certainly never, ever fails to deliver. Maybe see you there…

Route Map

1 Eshott
2 Lennox Plunton
3 Castle Kennedy
4 Bute
5 Glenforsa
6 Oban

VERSION 3

UK Civil Aviation Authority

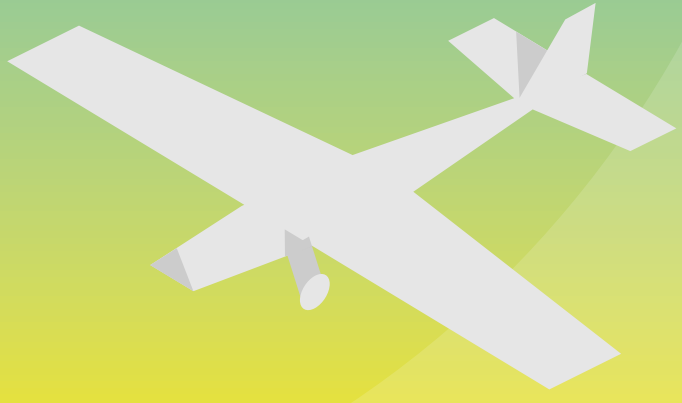
THE SKYWAY CODE

"As an aerobatic display pilot I really value the accessibility and helpful reminders of the SkyWay Code; it is a one-stop shop for everything you need to consider before you brief and head out to your aircraft to go flying. I encourage all pilots to take the time to read through this free online document."

Kirsty Murphy
Blades Aerobatic Display Pilot and former Red Arrow pilot

The SkyWay Code provides practical guidance for GA pilots, students and flight instructors on operational, safety and regulatory issues relevant to their flying.

Download your copy at: **www.caa.co.uk/skywaycode**



Top Gear

The latest aviation kit, impartially tested and evaluated

Readability5 app

★★★★ **FROM £4** | ***www.readability5.com***

As a student pilot I found making radio calls while flying the aircraft, watching for traffic, working out my location and, if I was still upright, somewhat challenging.

Enter *readability5.com*, which promises to help student pilots learn radiotelephony (RT) to exam standards, on the ground, without the associated pressures of flying.

The screen shows representations of a yoke-mounted tablet, transponder and radio.

Students are given audible instructions by a 'controller', which are repeated in a green box at the top of the screen. The student then presses the yoke transmit button and says the relevant RT.

There is also an 'instructor' button on the yoke that relays the correct RT for you, which you can then practice when 'transmitting'.

Currently the website does not listen to your voice – you still get the 'Great!' pop-up box appear no matter what you say – and the developers are planning voice recognition and the ability to record your sessions, so you can email them to your instructor in the future.

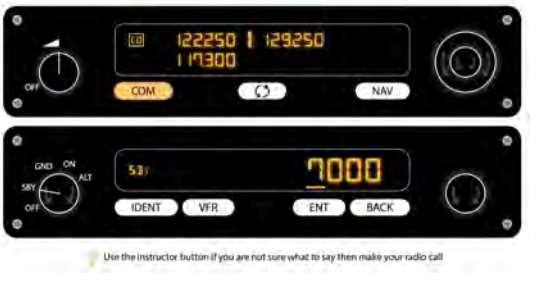
In the modules, after your RT exchanges the screen changes to the next scenarios in turn. Taxing lining up, departure, late downwind, turning base leg, orbit for separation for a landing aircraft etc. There are useful hints that appear under the transponder which are a great idea.

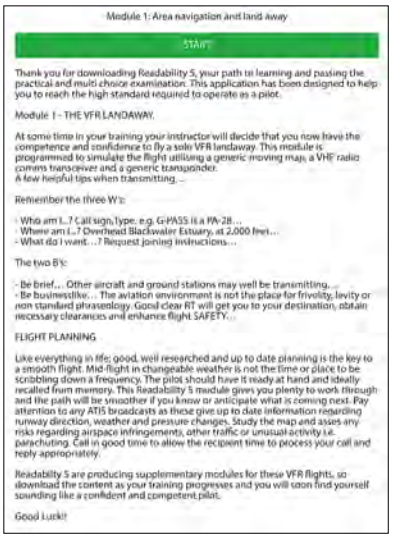
The 'VFR Landaway' module showed me how rusty my own RT had become during lockdown.

I like the details, including the way the 'controller's' accent changes as you talk to different ground stations, just as they do in real flying, and the hints such as, 'the tower has abbreviated your callsign'.

Currently, there is one module available and the developers have said they aim to release a new one every two weeks and should have all seven completed by early May, including a mock ground exam.

Peter Steele





Top Programme as it appears on screen
Above Radio and transponder
Right Module one introduction

Sealey MC480 hydraulic lift

★★★★★ **£145** | Website ***www.toolden.co.uk***

Last issue I mentioned that I had found a cracked tube in the RV-3 engine mount. That meant engine off, and because the RV-3, like most of the tailwheel RV's uses its engine mount to attach the gear legs to, required a solution to lift the airframe safely and keep it supported without the gear while the engine mount was away for repair.

While I was looking around at types of hydraulic jack, I stumbled upon a lift designed for motorcycles and quad bikes. The Sealey MC480 popped up in one of my searches, with 680kg of lifting capability which was more than adequate for the 335kg empty weight of the RV-3, and while the retail price was £200, one or two online suppliers had it for less than £150, which seemed like good value for well-engineered lifting capability.

After making a custom wood fixture to sit on its wide lift platform, we raised and supported the tailwheel and slipped it under the aircraft. Easy pumps on the lift pedal and the gear was lifted off the ground. A mechanical safety lock and stabilising feet on the lift helped keep the -3 safe while the mount was away.

Once the repairs were complete, careful use of the pressure release had the -3 lowered back onto it's wheels. **EH**

Above The MC480 is well built and requires very little assembly out of the box
Above right A sturdy screwed-together custom fixture was made to support the aircraft on the spar carry-through area – and gave a little extra height to make up for the lifts' 40cm maximum extension
Left With the safety lock engaged and a couple of improvised wing supports using some foam and adjustable bar stools, the MC480 provided stable support for the aircraft while the mount was away for repair

Flightdeck Prose & Cons

£9 | *www.amazon.co.uk*

Subtitled 'Secrets from the little room at the front of the plane', parts of this book are the reading equivalent of sharing many meals and drinks with a bunch of old experienced airline pilots while listening to their war stories. Other parts offer great learning points and practical advice. Well worth a read, particularly at this low price! **IS**

A Pilot's Life for Me

£25 | *www.amazon.co.uk*

If you are thinking of becoming a commercial pilot but don't know where to start, this excellent book will give you the basics in an easily digestible form. It won't give you all the answers (top hint – there's no single answer that's good for all), but it's certainly a great starting point for further research. **IS**

Return to the Skies

£15 | gavdfbook@gmail.com

G-AVDF, the Beagle Pup prototype first flew in 1967, a British aircraft at the centre of light aviation. But by 1969 DF was left unwanted, and it wasn't until 1993 that the airframe was saved. This book details all the challenges and the importantly the people behind the five year restoration. **EH**

By Association

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

AOPA End of EGNOS

During the EU UK trade agreement discussions, it appears that the subject of the European Geostationary Navigation Overlay System (EGNOS) fell off the table and is largely a victim of unintended consequences.

The CAA has notified the industry that unless an agreement is reached, from 25 June 2021 it will not be possible to approve LPV approaches.

Space-based augmentation system (SBAS), which is provided by EGNOS, allows airports to apply for an instrument approach with vertical guidance with minima close to that of an ILS CAT I procedure. Within the EU's legal framework, using a Safety of Life (SoL) service requires a legally binding agreement when dealing with a third country which the UK has become since leaving the EU.

While signals will continue to fall on the UK the issue is the loss of integrity monitoring. Without this any air navigation service provider has no assurance in respect of the GNSS that it is safe to use.

Our question to the CAA relates to legal certainty and how they may approve such approaches in the future. We have been informed that both CAA and government lawyers are looking into what may be legally possible in the future. The CAA nor the DfT are the bad guys in this, and both are supportive of SBAS, but it may be a case of a lack of joined up government or what an American GI would call 'SNAFU'. **Martin Robinson**

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

BMAA Know your limits...

As I write the sun is shining, and recreational aviation is allowed in England once again. We wait for instruction to begin again and look forward to a more 'normal' summer than we have had during the winter and spring.

Much of our time has been spent preparing for the return to flying, encouraging pilots and instructors to recognise the real possibility of skill fade, and with it the increased chance of incident or accident. We saw increases following the return to flying after the first lockdown in May 2020.

We have published guidance to our members for consideration prior to the first and in fact the next few flights. Take it steady, plan a simple flight, plan carefully, and know your limits. Of course we are not alone in issuing this type of guidance.

Our fellow associations have all done the same and we have all drawn attention to the excellent video tutorial produced by the General Aviation Safety Council, GASCo, of which virtually all of the recreational flying representative organisations are members. The video has been translated into several different languages and promoted by EASA.

GASCo, whose strapline is 'Saving Lives in General Aviation', has produced the tutorial as part of its charitable aims, promoting safety in General Aviation, which is funded by donations from organisations and individuals.

You may know GASCo's work having been one of the many thousands of pilots who have freely attended a CAA Safety Evening given by GASCo over the last 10 years. Oddly the CAA has decided not to continue to ask GASCo to be its spotlight safety provider from April 2021 and so future 'Evenings and Events' will no longer be CAA branded, but I know will be just as worthwhile. Visit ***gasco.org.uk***. **Geoff Weighell**

British Microlight Aircraft Association
www.bmaa.org

Light Aircraft Association Out of Step

Recent meetings with Unmanned Aircraft System (UAS) operators seeking to segregate airspace for more operational trials are intriguing.

We are keen to integrate with UAS operations in a safe and fair manner, but current practice is to segregate rather than integrate. This applies to the airspace – and to wider thinking. Past CAA policy has played a role in this. The creation of a 'UAS Unit', treating them separately from other lower airspace users created a 'silo' mentality, with many UAS operators exhibiting a lack of knowledge of established aviation protocols, and an inability to accept the need to integrate with others.

It has put them out of step with other airspace users and risks long-term damage to the reputation of the UAS industry. Forget the 2019 'dodgy drone' demo at Goodwood which gained strong AAIB criticism. In at least two recent trials, the carriage of 'dangerous goods' appears to have been permitted, in breach of the third party risk protocols that would have been demanded of manned aviation.

A change of thinking would benefit both parties. Instead of continued segregation which will constrain UAS commercial operations, we should establish clear requirements for UAS to match manned aircraft safety and operating standards, enabling their safe integration into wider airspace. We need to work to develop a risk- and evidence-based strategy, allowing manned aircraft pilots to continue to fly, yet ensuring development of unmanned emerging technologies. **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

Flying season has finally begun!

The sky is OURS again...

This is a great time to be involved in our community and get ready for the year ahead. Membership of the *FLYER* Club will help you prepare.

If you're reading this, the long winter lockdown is over and (in England at least), general aviation has resumed with solo, instructional and passenger flying. What a great feeling! We here at *FLYER* hope you're all ready to get back into it and enjoy a summer of aviating – what's more we hope you'll do so as a member of the *FLYER* Club.

We're really pleased to welcome all the new members who have joined over the past four weeks, it's great to see so many of you keen to get out and make use of the free landing vouchers, our exclusive webinars and all the other great benefits.

On the subject of webinars, we've had talks on weather, flying into Europe as well as airframe icing – all from experienced pilots who want to share their wisdom to help Club members like you get more from your flying.

As we're all getting into the air more, please send us your photos! We've published lots of great images over the next couple of pages from Club members and readers, so when you're out and about don't forget to tag us, DM us or email *jonny.salmon@seager.aero*.

If you want to take advantage of things like this – but you're not a member of the *FLYER* Club – head to *FLYER*.co.uk and click the *FLYE*R Club tab at the top of the page to find out more and join. Hopefully, with restrictions set to continue to relax, myself and the *FLYER* team will get to meet you out and about at airfields and events throughout the summer. If you see us, don't be shy!

Jonny

jonny.salmon@seager.aero

THE FLYER CLUB

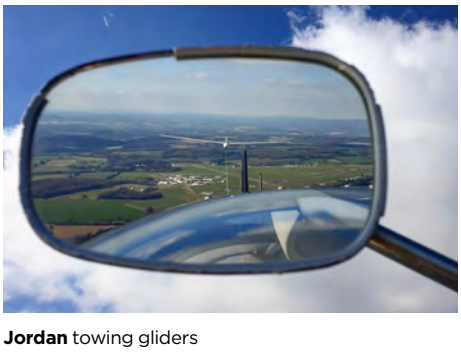
Out & About

So we're back to flying! You've all been quick to send us photos of the fun you've been having with some of the recent good weather! Thank you… and keep them coming!

David Taylor flying with Finn on his first trip to Deenethorpe

Ian Gallacher Pointing at RAF Shawbury

Bruce Buglass Formation flying out of Sleap

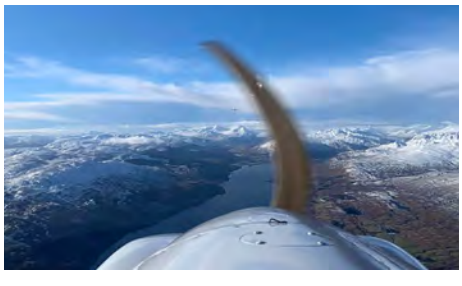


Jordan towing gliders

Mark Smith Socially distancing in a Cub

Cate Brancart Landed at Courcheval and ticked it off the bucket list

Catherine Henderson Beautiful flight to Defford



Chris Cooper Flying over Scotland

Martin Lulham Dissimilar formation

Oisín Tierney Cliffs of Moher, West Coast of Ireland

Des Hart Formation practice!

Andrew Thompson Parked up for a day trip to Salcombe....

Chris Cheetham Sandown and aeros on Monday!

Robert Jaap flying his 1956 Cessna 172 over Glennifer Lake Alberta, Canada

Barry Hunter First visit this year to lovely Breighton in his 60-year-old Condor prototype

Nick Gensler Nick Stone formation Flying

Tony Flinn Oban Located on the Firth of Lorn, north-west of Glasgow. A good launching point for the Western Isles

Charlotte Dadswell Monday was the perfect day for a test flight!

In association with POOLEY'S FLIGHT EQUIPMENT

Free Landings

THE FLYER CLUB

If you're a member of **The *FLYER* Club**, **click here** for your personalised vouchers and save over **£57** by claiming one **FREE** landing at each of these airfields valid for June 2021, although not at an aircraft's home field. No jets. Please contact the airfield before setting off.

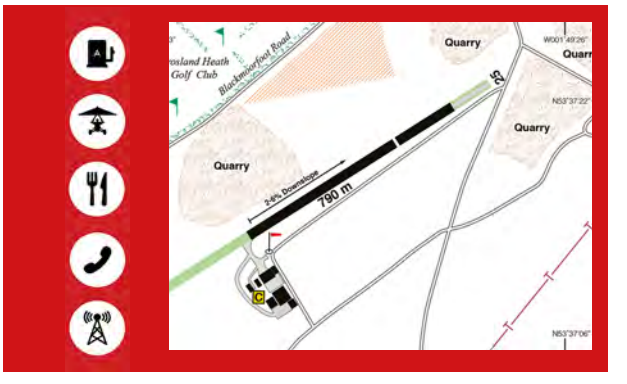
If you're not currently a member of the *FLYER* Club, but would like to receive six new free landing fees every four weeks plus other Club member benefits, then *click here to join!*

Crosland Moor

01484 645784 | *www.croslandmoor-airfield.co.uk*

Crosland Moor Airfield is a privately owned airfield built in the 1940s for David Brown (the DB in Aston Martin). Situated in the Pennines, the airfield has one runway, 07/25, which is part grass and part tarmac. The Terminal 2 building is a static caravan, offering tea and coffee-making facilities, a comfortable arrival/departure lounge, plus en suite bedroom if an overnight stay is needed. All aircraft welcome – PPR is essential – open seven days a week.

Nearby attractions the beautiful Pennines! Walking and bike trails are nearby, as is a cafe where pilots get a 10 per cent discount on food.
PPR 01484 645784 a/g 128.375

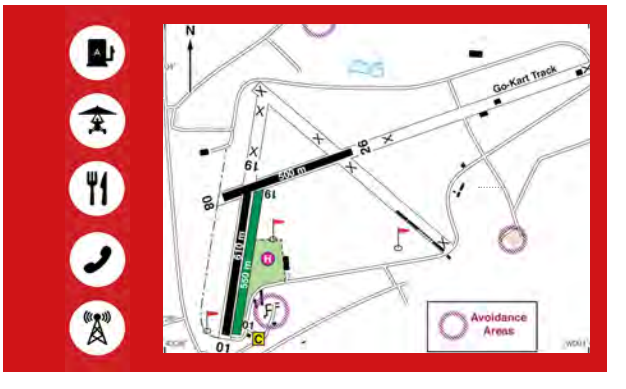


Eshott

01670 787881 | *www.eshottairfield.com*

Eshott Airfield, Northumberland's regional airport, is situated 18 miles north of Newcastle. It's Northumberland's main sport aviation centre, with two tarmac and one grass runways, and the ability to cater for all kinds of private aircraft, from microlights to twins, gyros and helicopters. Visitors receive a warm welcome, tea and coffee is always available and at weekends the clubhouse is bustling with members and visitors. PPR required.

Nearby attractions include Burgham Park Golf & Leisure Club. Alnwick Castle & Gardens and Newcastle city centre. Good B&Bs nearby.
Radio a/g 122.850



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

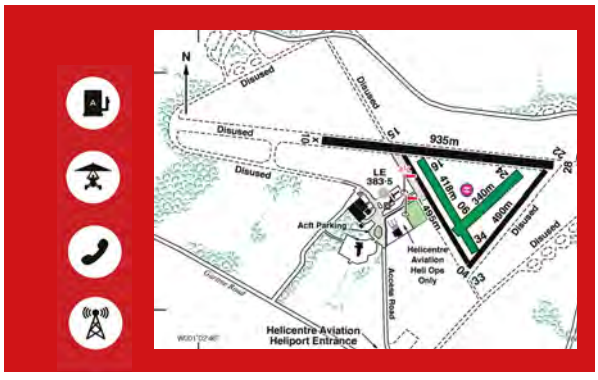
When you visit these six airfields, why not show your support by enjoying a meal in the cafe or filling up with fuel? It's good to support GA in the UK.

Leicester

0116 259 2360 | **EGBG** | *www.leicesterairport.com*

Leicester Airport is situated three miles outside the city centre and is operated by Leicestershire Aero Club, founded in 1909 and home to 380 members. There are 60 aircraft based there, including many historic types. Hard and grass runways allow year-round flying. Open 0900-1700 seven days a week plus evening food and flying Tues & Thur until 2000. Cafe and lounge area with great runway views. Fuel available.

Nearby attractions Leicester Abbey, the National Space Centre, theatres, museums, restaurants, Welford Road Tigers' Stadium and racecourse, and the Richard III museum.
AG/Radio 122.130

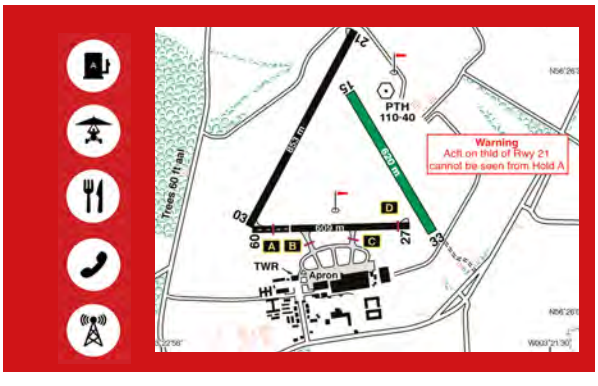


Perth

01738 551631 | **EGPT** | *www.perthairport.co.uk*

Perth Airport, with its 853m tarmac runway, is centrally located in the heart of Scotland. It's home to the Scottish Aero Club, which is Scotland's original and largest, and the clubhouse facilities are open to all visitors. There's a friendly and informal atmosphere and it's recommended that you visit the Touchdown Café where you'll love the food and drinks. Visit the ACS Aviation shop for a full range of discounted pilot supplies.

Nearby attractions include the Gleneagles Hotel, Scone Palace, Perth Racecourse and the King James VI Golf Club.
PPR 01738 551631
Radio 121.080

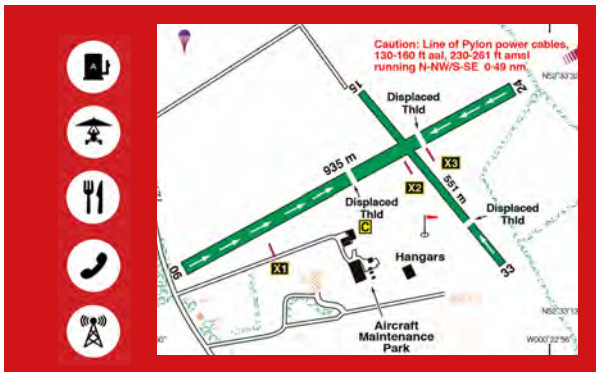


Peterborough Sibson

01832 280634 | *www.peterboroughflyingschool.com*

Peterborough Sibson was established back in the 1960s and now offers visiting pilots a warm welcome. With two grass runways, which are longer than they look in Pooleys, there are a few considerations for visiting pilots but details are on the website. Avgas is available, as is good food, except Monday and Tuesday. Microlights and helicopters are welcome but be aware of the parachute drop zone to the north. PPR required.

Nearby attractions include Nene Valley Railway, Peterborough Show Ground, Elton Hall and a selection of good local pubs.
PPR 01832 280634
Radio 120.330

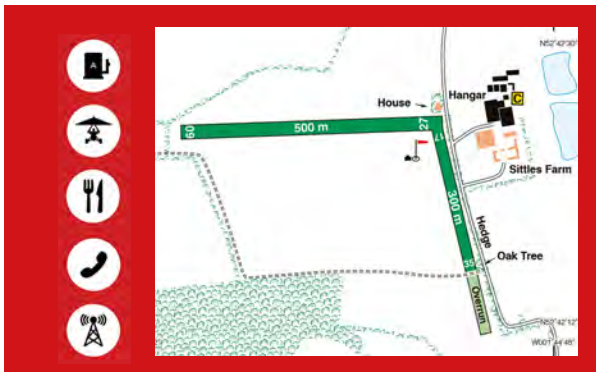


Sittles

07773 777160 | *www.sittlesflyers.com*

Sittles Flying Club was formed 22 years ago and has a new management committee which has invested several thousand pounds into a total renovation of the clubhouse with new decking and a sparkling new toilet. The kettle, coffee and tea are to hand in our luxurious clubhouse where you can make yourselves at home. PPR is required if you have not visited before and are not familiar with the site.

Nearby attractions The club is well situated in the heart of Staffordshire just a couple of miles from both Lichfield, and its beautiful cathedral and also the National Arboretum.
PPR: 07773 777160
Radio: 129.825



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

QUESTION: What is the distance between Crosland Moor and Eshott in nautical miles?

To enter, post your answer, name, address and email details to
Pooleys June Competition, *FLYER magazine*, PO Box 4261, Melksham, SN12 9BN or send an email to *competitions@seager.aero*
The closing date is 16 May 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 April 2021 is:
Eugene Morgan, Crossgar, Co. Down.

1 Crosland Moor
2 Eshott
3 Leicester
4 Perth
5 Peterborough
6 Sittles Farm

What's new with YOUR Club...

FLYER Club members are making the most of all the new and exclusive content being provided every week. You can too, by joining the _FLYER_ Club today.

This month we've seen David White talk to club members about flying abroad and how to plan for it correctly – from borders to licencing and more. Nigel Webb also spoke to members about the perils of airframe icing, including how to enhance flight planning using free internet-based tools to predict icing and techniques to remember, in case of an unexpected icing encounter. It's all great, relevant knowledge – and is provided to *FLYER* Club members.

Find out what is new at Llanbedr Airfield in West Wales with our recently published airfield briefing video – to accompany *FLYER* Club members' free landing vouchers

We've also published more safety analysis from Joe Fournier on the Club section of the *FLYER* website – so head over there and read about topics such as partial power loss and landing gear problems.

Who is the *FLYER* Club for?

Whether you are an aviation enthusiast, a pilot or thinking about becoming one, joining the Club will bring you many benefits – plus you become a part of UK's biggest GA community!

Want to join us?

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.

Current member benefits

- Extensive *FLYER* back issue library
- Save 5% whenever you shop at Pooleys (excludes Bose headsets)
- £10 off when you spend £40 at Transair (excludes Bose headsets)
- Free copy of *A View from the Hover*
- An initial conversation with Dr Frank Voeten, FAA & EASA AME
- Get your club membership paid by Stein Pilot Insurance
- Twice-weekly General Aviation weather briefings
- FREE Landing vouchers, available through the **FLYER website**
- Video briefings for your free landing vouchers. Get all the key information before you go.
- 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.

Coming soon

- Back issues – there's another five years on the way with more to follow
- Our first members' Fly-in – once things have settled down. We'll be announcing details, plus more events, in 2021!

FLYER MARKETPLACE

Shares for sale & group flying | Aircraft for sale | Helicopters for sale | Aircraft for hire | Aircraft wanted | Property for Sale

Twister £62,000. A beautiful Aircraft in excellent condition

Total airframe/engine hours 280. Jabiru 2200 Engine and GT propeller. Very quiet aircraft. Electrically Heated carb neck. Lots of nice extras and mods. Polyurethane paint not gel coat. Crash foam seat cushion. Quick jettison canopy mod. De-Rigable in minutes. Safety shell cockpit. Coloured wing strobes. Never need to trim! Numerous engine and airframe Modifications. Parachute included. Large iPhone as navigation included. First registered April 2012. Permit to Fly valid until 20 March 2021. Extensive avionics, including mode S transponder and PowerFlarm. TOCA (Thermostatic Oil Control Assembly) upgrade (Warms up quickly, airborne sooner and protects engine). Fixed undercarriage. 12 litres an hour at 120 knots. Lovingly looked after. Go places at little cost. Permit to Fly until 20th March 2022. Hangared all its life, aerobatic, idea economic cruising aircraft, really fun to fly, take off distance only 300m, based in Oxfordshire area for viewing.
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Contact John: Johnpmarriott@gmail.com

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NEXT MONTH'S ISSUE

Available from 11 May.

QSY

For the funny, the weird, the wonderful and the just plane strange...

Fly your own Draco!

Mike Patey is one of the aviation world's YouTube superstars, building, modifying and flying spectacular aircraft.

None more so than *Draco*, his Wilga 200 re-engined with a Pratt & Whitney PT6 turboprop replacing the original O-540 piston engine.

Thousands watched Mike fly *Draco* with some astonishing short take-offs and landings but it all came to an abrupt halt in September 2019 when he lost control in strong crosswinds, and *Draco* was written off.

But *Draco* flies again and you can have your own! Yes, it's a radio-controlled model, with a wingspan of almost two metres, 100amp electric motor and a host of clever details to mirror the real thing, including trailing link suspension with real King shock absorbers, antennae, wingtip skids, leading edge slats and slotted flaps, oversize tundra tyres and steerable tailwheel.

Above Plenty of fun with the *Draco* model!
Inset top Mike Patey, the YouTube superstar
Inset right The model has every real detail

The *Draco* model is fully endorsed by Mike Patey and it appears to fly with even more verve than the original.

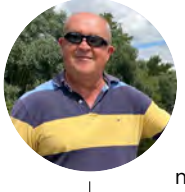
The electrical system is highly sophisticated with various battery options – bigger and heavier means longer duration but with a performance hit – and a 'smart' battery life monitoring system so you're aware of how much power is left.

If you've flown RC models before, it's claimed you'll pick up *Draco*'s extraordinary flying quickly. But if you're new to RC, then there's a training system and even an 'Envelope Protection' programme to keep the aircraft within certain performance limits.

Full details **here**

Click for video

Heroes & Villains



HERO Jeff Bell, Aerodrome Manager and 'voice' of Sywell's radio has hung up his headset/microphone after 16 years at the Northants Airfield, and 44 years in the industry. Jeff said, "A big thanks to all the Sywell folks, thanks for the friendship, the flights, the help and understanding in trying to run an airfield. We had a great award-winning team in the Tower, helping to successfully host some of the largest GA events in the country."

VILLAIN Léonore Moncond'huy, mayor of Poitiers, has cut subsidies to the city's flying clubs saying air travel should no longer 'be part of a child's dreams' because of its consumption of fossil fuels. Among her critics is the French Minister for Transport Jean-Baptiste Djebbari who described Moncond'huy's words as 'authoritarian and dying rantings'.

HERO Ronald uit de Brand and his family lost everything when a fire broke out at the maintenance hangar at Hilversum Airport in Holland, destroying their flat above the workshop. "Ronald is someone who never asks for anything for himself, is always ready for everyone and is highly regarded at the airport," said Niels Kinneging, who has organised fund-raising to help his friend. More **here**.

VILLAINS Three people were arrested by local police after they were discovered trespassing at Cotswold Airport, causing damage and being in breach of Covid regulations in March.

Polly's donkey trek

Remember Polly Vacher's flights around the world and the UK from 2001-07? Now she's back with another epic trek... by donkey-powered carriage. Polly had to retire from flying two years ago after an eye operation and now drives the donkey carriage for fun, pulled by donkeys Wizard and Muffin.

The trek is 200 miles from her Oxfordshire home to North Wales. With the donkeys' average speed of 2.5mph, the trip is expected to take eight days with 27 stops. Polly hopes to raise money for MS Research. Contribute **here**.

Gin bar for aviators

Various types of aircraft have contributed parts to The Aviator Gin Bar in Newton Aycliffe, Co Durham, including a Boeing 737 and a Eurocopter helicopter. It's the idea of pilot Wayne Richardson who told *The Northern Echo*, "You walk in the bar and you almost think you are inside an aeroplane. When you go into the bar you see all the seats from an aeroplane and the bar itself is made out of a Boeing 737. Behind we have three pods made up of different aircraft and on top of the bar we have got a full-sized helicopter. It really looks cool. **theaviatorginbar.co.uk**

Send your QSY submissions to QSY, PO Box 4261, Melksham, SN12 9BN or to *qsy@seager.aero*

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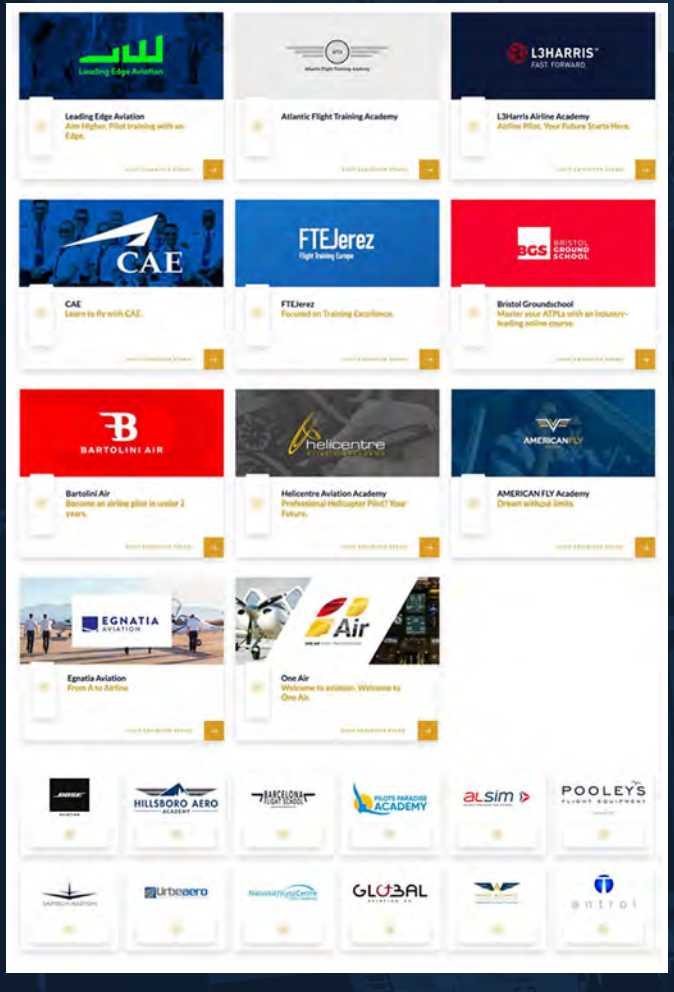
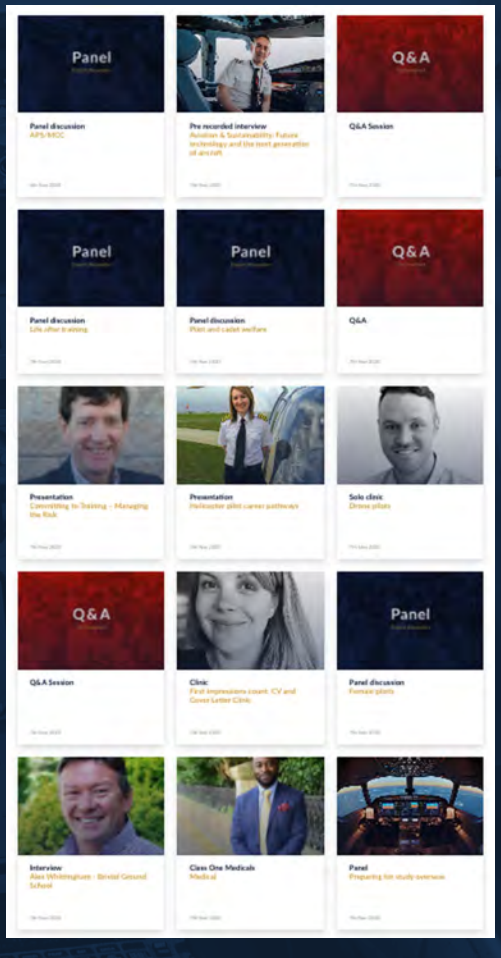


Watch the seminars

Over 14 hours of seminars, interviews, panel discussions and Q&A sessions.



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.

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