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TIME TO HAND OUT A LOT OF THANKYOUS

I WILL start this month's message with 'thankyous'. Aero Expo has come and gone for another year. It takes a great deal of planning and preparation beforehand and then it's over and we're packing up. The first thanks goes to the AOPA team who organise the AOPA marquee, and all those who volunteered their time to help set it up on the Wednesday afternoon and then manned the marquee all weekend, to finally helping with the clearing up at the end. The weather this year was typically changeable and kick-started the annual "are the numbers up or down this year?" conversation. For AOPA, the numbers visiting the AOPA marquee on the Friday and Saturday were definitely up from last year. Thanks go to Bob Darby and Allan Burrill who patiently demonstrated AOPA projects GAGA and GAINs to members and their friends. Also, thanks to the White Waltham Joystick Club who brought their Tomahawk simulator and a Red Arrows pedal car for the AOPA marquee. Both of these proved popular with children and young people and we hope will help make aviation attractive to young people. The invitation stands for next year when they will have a brand-new Seneca simulator to show off. We also found room on the Saturday for the Guild of Aviation Artists to show some of their work. They reported considerable interest and hope to repeat the experiment for all three days next year.

This is also the year AOPA formally thanks those people who have contributed to AOPA or to the wider General Aviation community in the UK. Given out at Saturday lunch time it was good to see a large number of supporters for the recipients. Finally, thanks to all of you who came along to see us, whether it was because you were looking for some advice, renewing your membership, signing a friend up or just to enjoy the excellent sandwiches. We hope to see you all again next year.

Aero Expo is important to AOPA. It is an opportunity for members to meet the Board and Executive Committee and for them to meet the members. It's also an important opportunity for signing up new members. AOPA is a membership association and without members it loses its point. This is why the Board is always reviewing the costs of running the association which, of course, impacts on the membership fee and the work the association can do. In line with its fiduciary responsibilities the Board has decided to sell its London HQ at 50a Cambridge Street. There are three benefits to this decision; it will minimise costs, London is expensive, and many organisations are moving out, including the CAA. It will enable the association to realise resources to invest in new areas; the work AOPA is doing is continually expanding as you will have noted with the projects now undertaken. Finally, it'll mean we can relocate closer to the membership: maybe on or close to an airfield which will be more accessible to everyone rather than central London.

If you'd like to understand more about this decision, remember, you are invited to the next Annual General Meeting to be held at 50a Cambridge Street on Tuesday 17 September. Until then goodbye and enjoy the summer now that the good weather is here. ■



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EDITOR'S MOMENT

Next month will see the 53rd AOPA AGM; it's your chance to have your say on what we do as an organisation and how we can move forward. It takes place on Tuesday 17 September at AOPA's London HQ and is essential to the organisation. If you want your voice heard, this is the forum for it, so go and have your say, or Boris might take over! This issue is packed with all things flying, perfect as we hit the middle of summer, so I hope you're all up in the sky as much as possible and making the most of the long evenings and calm weather.

I went and saw the Sonaca 200 at Blackbushe Airport in July and it buoyed me to see so many people milling around an airport enjoying a coffee in the sunshine and watching the aircraft come and go. It was also good to see students stopping for a bite to eat on their cross-country expeditions. Long may it continue.

David Rawlings

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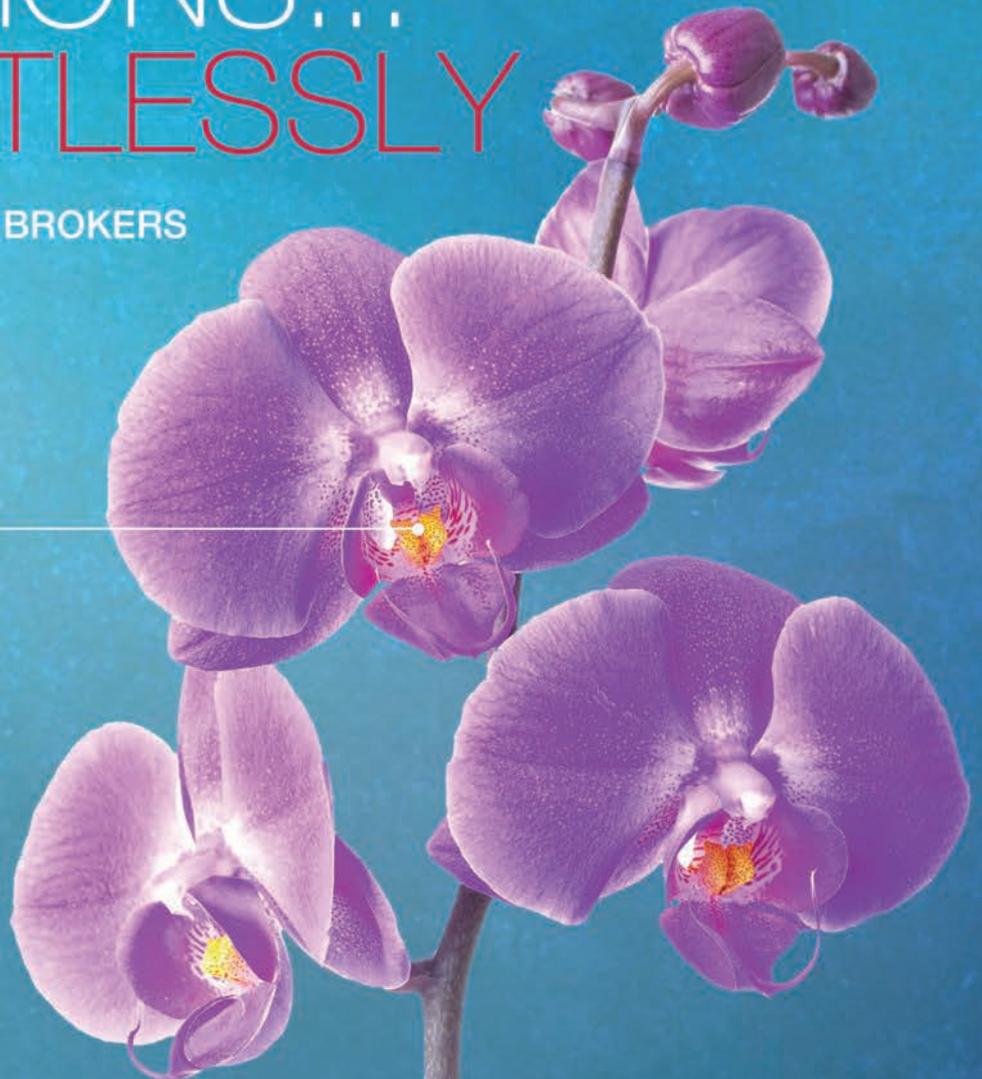




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THE WORK CONTINUES TO GROW

AOPA responded to the consultation on issues relating to VFR in Class D airspace where, for safety reasons, we rejected the proposals. Our hope is that the DfT/CAA can find a way of achieving compliance whilst taking on board the concerns that we have raised. Thank you to all of the members who shared their views with me – they were very helpful.

We also responded to the consultation on drone registration. The full response has been posted on our website, and our support was given to the requirement for drones to be registered, although we questioned the 'how' and the associated costs (supporting the BMFA position).

AVIATION 2050

The Government consultation, Aviation 2050, was also responded to by the June deadline, trying to look at where airspace, aerodromes, aircraft and pilots may be by 2050. The full response will be posted on the web soon.

It's a view, but given that the iPhone began life 12 years ago, we have witnessed the rapid progress that smartphones and tablets have made. Trying to think about GA in 2050 has been very challenging. However, we assume that airspace will become more IP driven, and as we continue to digitise, data will play an important role and GA will need to think about how using data will support our activities making GA safer and more cost efficient. By 2030 it is likely that passenger-carrying drones will be in widespread use. Manufacturers such as Boeing, Bell and Airbus are making huge investments in this area. EASA has established a task for the certification of a five seat drone up to 2000kgs. As these Urban Air Vehicles (UAV) will rely on automated traffic systems, this too will be a challenge in the years ahead and one which will impact on GA if we fail to act. At the recent CAA conference 'Share the Air' this was discussed and NATS presented the work it has been doing through operation Zenith. UK airspace is either managed or unmanaged (uncontrolled) and has an ICAO classification. Most of the time GA (VFR) operations take place in class GOLF

"There is also a proposal for another classification of airspace, which may be designed just to support drone operations"

airspace which is unmanaged airspace, meaning that most of the traffic is non-commercial and therefore there are no means or need for chargeable services. However, as the drone market expands there will be a requirement to manage the 'GOLF' airspace, as the aim overall is integration of users and not segregation. Given the eventual expected volumes of drones, ATC as we know it will become automated but this automation has to work for all users.

At European level talk around U-Space services continues to expand. There is also a proposal for another classification of airspace which may be designed just to support drone operations, squeezing GA yet again. Our position is clear integration not segregation. However as airspace use is further commercialised, who should pay? And if GA uses the automated services (designed for drone operations) should we only have to pay for what we use?

How will an automated traffic management system function where GA may need: traffic information, traffic alerting, traffic separation/avoidance, plus NOTAM and weather updates? We do not know what services drones will require! Therefore by engaging now we will be able to understand what the needs may be for each user.

EXPANSION

As more societal pressure is applied to governments globally on climate change, more focus will fall on aviation. The airline industry will begin to use biofuels more; AVGAS will come under greater scrutiny. During the EASA GA event last year the point was made about the need for GA to move toward hybrid/electric engines.

All of this will evolve but it will be at the cross-over point that we will have a better understanding of GA's future needs. Whilst an electric powered aircraft may, for some, be innovative and exciting, what about vintage/historic and airshows? If we lose airshows we will never get them back, so the government must take care.

The industrial applications around drones and the commercialisation of GOLF and ECHO airspace will force changes on GA and we need to make sure any change is affordable to GA. It is not feasible to halt the expansion of drones – there are many vested interests so we must make sure that the future airspace system focuses on integration. I believe the CAA is looking towards achieving this, as is NATS.

To cope with the volume of drones that are being spoken about, the management of the airspace will need high levels of automation – unmanned services. No one can explain what the future UTM system will look like or where GA will need to make use of the services, but this is where we will need to have more conversations if we are to protect GA's access to airspace. As the volume of airspace users of GOLF airspace increases there will be a need to better manage all of the lower airspace, and having knowledge of the numbers will push GA towards providing more data.

MEETINGS

It was great to meet many of our members at Aero Expo at Wycombe and congratulations to all the AOPA award winners. All well deserving. Finally I met with Rachel Gardiner Poole, the new head of the CAA GA Unit. Rachel replaces Tony Rapson. We discussed a number of issues covering the impact of a 'No Deal Brexit' through to 'gold plating' issues. AOPA wishes Rachel success in her new, albeit challenging, role. ■



M Robinson

Martin Robinson

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HELPING YOU STAY FLYING

Welcome to the AOPA Community section of the magazine, bringing you all the news and insights from the world of AOPA...



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WORDS Pauline Vahey IMAGES various

LATEST FROM MEMBERS WORKING GROUP

The Members Working Group meets on a regular basis to discuss the latest concerns from the world of GA. Here are the latest topics

THE MEMBERS Working Group's (MWG) latest concerns were discussed in front of the AOPA board on Friday 12 July. Here's what was discussed...

AOPA'S CEO UPDATE

AIRSPACE: Martin Robinson started with an update on CAP 1711 Airspace Modernisation Strategy, MR being of the opinion that it was in need of a rethink. He had written to the CAA to that effect. Mark Swan, Director Airspace Strategy, CAA was planning to hold a technology and innovation seminar in June. There was currently no technology roadmap and by 2030 it was expected that IP-based airspace management would be in use. Free route airspace would be managed by the aircrew with constant descent approaches.

MR had attended a meeting in Brussels where the European Parliament had told SESAR to sort out the road block. Eurocontrol said the lower airspace must be sorted before they can begin to address the upper airspace issues, for example one TMA for Luton, Stansted and Heathrow.

MR stressed that it was up to GA to start thinking about what they want, otherwise they would end up being the last in the queue for airspace. GA needs to be vocal now for the changes it wants for the next ten years. There would be a trade-off between conspicuity and better access to airspace. The US has a lot of Class E airspace and areas of high-density traffic requiring a transponder. There is also a lot of Class E airspace in France which works well, although a TMZ and Class E are not

"Drones were heading towards 5G technology and GA should look at using 5G"

synonymous.

Mode S uses 1090 kHz however it was expected that by 2025–30 the frequency would be swamped. Drones are heading towards using the emerging 5G technology and GA should also look at using 5G. In future it would be possible to geofence aerodromes and turn airspace on and off using IP communications instead of 8.33 kHz. It is important to think digital for the future. It would be wrong to mandate ADS-B by 2024, by which time it would be swamped. The US had developed Universal Access Transceiver (UAT), however it was recognised that the development of co-existence UAT and 1090 would be prohibitively expensive. UAT would never be used in Europe except for perhaps weather information. NATS is using satellite-derived information broadcast across GPS. NATS in conjunction with AOPA are developing a paper on the subject. There are 11 million flights in Europe which is expected to rise to 13 million in the next five years. CAP1122 (installation of GNSS approaches at GA aerodromes) is still frozen. MR has written to Dame Deidre Hutton, Chairman of the CAA, expressing dissatisfaction with the disconnect in the CAA. There are fifteen GA applications in with the CAA currently. Installation at Haverford West is still in progress, Gloucester is not CAP 1122 and Stapleford is proving challenging. It was thought the CAA was not prepared to take the risk



Will drones be part of our airspace soon?

associated with CAP 1122. Using the same logic, it could be argued that having an IMC Rating makes flying in IMC dangerous.

Drones are looking for U airspace, to use airspace up to 200 feet, and not just in one area. Class U would cover all airspace when air traffic service is automated. Drone activity and GA activity need to be integrated. It could be that GA could adopt the lighter drone technology and the CAA are about to start a programme to look into the feasibility of this. Otherwise GA could find itself squeezed out by drones at one end and CAS at the other. Any devices have to be affordable, improve safety and give better access to airspace. AOPA is part of this discussion and continues to take the lead.

It should be noted that the figure for Amazon drops in France is 800 drops per hour, which would indicate not just an airspace issue but also a noise issue. German privacy and noise laws will also have to be considered. Low level approaches might require rule changes, and there would be a societal impact too. Interestingly there was a proposal from Facebook to manage the lower airspace drones. The John Hopkins University in the US has developed an algorithm to stop the engines of drones working as part of their defence work.

DFT

AOPA has a good relationship with Baroness Sugg, Aviation Minister who had responded within one month to a communication from AOPA regarding the Aviation Strategy Green Paper. MR noted that anyone can comment on it. Once it becomes a White Paper then it will be more difficult to change and it will become policy for a number of years. GA is mentioned in Chapter 7. AOPA is responding and any comments anyone wants included in the AOPA response

should be sent to MR. The current line is that their hands are tied by EASA w.r.t GA. AOPA had questioned Mrs May's comments in Parliament on air transport recently and the future relationship with EASA. EASA had temporary regulation for the UK and it would continue for twelve months as the outcome is still unknown.

MID-AIR COLLISION AVOIDANCE GROUP

There were concerns regarding the rise in incidents reflected in a need for situational awareness technology. The Air Prox data collected by George Capon was to be published by AOPA. There was a 17 per cent increase in infringements in 2018 over the figures for 2017. This causes considerable issues with ATC as controllers have to be taken offline when a serious incident occurs. It is also having the knock-on effect of making controllers more difficult to recruit. The Authority is going to move to more prosecutions rather than re-education of pilots. Interestingly 40 per cent of infringements included an instructor in the aircraft. AOPA would be working with GASCo to look at the causal factors.

INCREASE IN CAA'S FEES

AOPA is saying no to the proposed increase in the CAA's fees and charges based on their poor performance.

OTHER NEWS

EASA is doing research into IMC flight using a German sim. The UK has not issued one en route Instrument Rating.

The CAA is publishing another CAT on moving maps as it seems pilots with moving maps are less likely to infringe.

With the advent of electric engines – which the CAA is taking seriously – also VAT charges on professional flight training, and tax on AVGAS are also being scrutinised. ■

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WORDS Nick Wilcock

A FIRST SOLO WHERE THERE WAS NO CHOICE

Nick Wilcock remembers his first real solo – an unusual experience, where even if he had wanted an instructor with him, he couldn't have one!

RECENT articles in our magazine make it clear that everyone remembers their first solo. But for me, my first trip in a single seat aeroplane was a rather more significant event, which (apart from a freezing cold three-minute trip in an ancient Slingsby Tutor glider in 1967) was in the wonderful Hunter GT6 at RAF Valley.

Why GT6? Well, take a standard 1956 model Hunter F Mk 6, remove the heavy 4 x 30mm Aden gun pack, radar ranging, gunsight and the draggy 'Sabrina' link collectors, replace the old 'Rebecca' DME by a TACAN navigation system, so at least you know where you are, then paint the whole thing in go-faster high-gloss 'raspberry ripple' polyurethane paint and there you have it. A true 'GT' model, unofficially christened after the Triumph GT6 sports coupé of the time, which I'd

"Suddenly we were airborne – brakes on, gear up, flaps up, gear lights out, pressurisation master on... then at 500ft start the right turn"

always wanted to own, but could never quite afford. Preferably SAH-tuned with triple 40DCOEs, hot cam, tuned exhaust...

During 1975, I'd finished my Gnat course and had been awaiting a pre-Tactical Weapons Unit Hunter course. When the course eventually started, it was a few days' groundschool, some simulator trips and then on to the Hunter T Mk 7, otherwise known as the 'barge'. After the compact Gnat with its central warning system, Hobson motor pitch system and OR 946 instrumentation, the barge was a real backward step in technology – and it seemed as big as an airliner! But after passing the simulator check and the T7 dual rides, finally the day came on 10 Dec 1975 to fly a real single seat fighter for the first time! Get kitted up in goon suit and G-suit, then out to the aeroplane parked by 'Hunter beach' at Valley.

Walk round, prod, poke, squint, then up the ladder and into the cockpit. 'Fitz', a visiting CFS examiner (or 'trapper') keeps a fatherly eye on proceedings from the top of the ladder as I truss myself into a maze of webbing which would satisfy the most earnest bondage fetishist. Unlike the T7, the single-seat Hunter had rather an ancient bang seat, with separate parachute and seat harnesses, so it takes a while to confirm that everything is correctly connected. Finally it's time to lift the gangbar and turn on the batteries. First surprise – there's no intercom sidetone. Because, of course, there's no-one to talk to in a single-seater, stupid! I do the checks then wave my finger at the groundcrew and press the button. The Avpin starter works as expected and the smell of burnt iso-propyl-nitrate soon fills the air. But all is well, gennies on, radio on, IFF on, power controls on.



Hunter GT6 of 4FTS, RAF Valley, 1975, where the weather is rarely as nice as in the photo!



Hunters are still flying – see Henry Simpson's story on p.24

'Fitz' smiles, mouths "Have fun!" and disappears, the ladder is removed and it's time to call for taxi clearance. Next surprise, it's so much easier to taxi than the barge and before long I'm at the holding point. Take-off clearance received, it's on to RW32. Power up, a quick stir of the controls then set top left and off we go. A brief 'da-da-da' from the bleed valves but initial acceleration seems much like it was in the T7. But then the extra 25 per cent oomph of the big Avon makes itself felt and there's an almighty roar from somewhere behind as the IAS increases rapidly. Suddenly we're airborne – brakes on, gear up, flaps up, gear lights out, pressurisation master on..... then at 500ft start the right turn onto 140° to intercept the 100° radial. But we're already passing 1000 ft and going like a train! Throttle to max continuous and adjust to 370 KIAS – except we're already doing over 400! Pitch up, nail the speed, there's the radial, turn left, breathe out, then ATC asks whether I'm ever going to change to Approach! Oops, to Stud 2 then up the radial towards FL 200. At around 10,000 ft, I remember to set 1013..... Finally catch up with the beast at FL 200 and check position. How can I be so far away from base already? Aim in a safe direction, think 'OK – let's see what she'll do' – set max continuous and Mach point-nine-something comes up amazingly quickly.

Tweak the control column back and the altimeter goes bananas – as does ATC as I'm in the upper airspace without clearance! Then settle down to some aeros and max rate turns before aiming back at Valley for a QGH controlled descent to a GCA approach. That all goes OK, so after a touch and go, I go back out to the initial point for a visual run-in-and-break. Overtake a couple of Gnats, call 'initials', then idle power, airbrake out....70–80° angle of bank and 23° flap on the break. Roll out, airbrake in, gear down – and the power controls go into manual as the hydraulic pump can't cope with both things together. So a bit of power and all is well. Call 'final', set 38° flap and pitch into the final turn. Then full flap, slow down to VAT plus 10 and another nice touch and go. Full power – lovely loud noise – another circuit and it's time to land. Turn off, taxi in with the hood slid back and shut down, grinning from ear to ear.

My logbook later records 'December 10 1975, Hunter F6 XF386, Self / Solo Ex RF4, 0:50 First Pilot (Captain), 0:05 actual IF, QGH/PAR, 3 landings.' But that hardly describes such an experience! And what of XF386? She lived on for nearly 20 more years before being scrapped at Otterburn range in 1996 after 40 years of loyal service. A cruel death for such a lovely lady, but I'm sure she's up there in Hunter heaven... ■

AOPA FLYING INSTRUCTORS REFRESHER SEMINARS

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

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

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

NEXT DATES

The next dates for the seminars are

24-25 NOVEMBER 2019.

All seminars are now run at the AOPA offices at 50a Cambridge Street, London SW1V 4QQ – only 5 minutes' walk from Victoria Station.



To register for a place on any of the seminars please call the AOPA office on 020 7834 5631 or join online at WWW.AOPA.CO.UK.

The seminars start at 1100 and end at 1800 each day to facilitate travel.

WORDS Malcolm Bird and George Done **IMAGES** Courtesy of AAIB

SOME WORDS FROM THE AOPA MAINTENANCE WORKING GROUP

This section is a regular feature of the AOPA Magazine, bringing you up to date with issues surrounding maintenance of our aircraft. In this issue we look at Safety Reports and MORs

TIME to look at Aviation Safety Reports or MORs. As owners and pilots we have between us a wealth of information about our aircraft and if we shared this information we could all benefit from the combined learning.

For example, if a component on our aircraft fails we might be concerned at the cost of repair, but we might be far more concerned if we knew it was happening to a significant number of other aircraft too. On the other hand, if we were sharing the information and there was a team of people looking at the data, spotting issues and acting to resolve them, we might be rather grateful? Well, such a team does exist and a method of reporting does exist. We just have to make sure we use it.

Hopefully we can see the benefits of reporting issues (and in fact we actually have a legal obligation to report certain incidents) but unfortunately not many of us do so.

The process of reporting is not as daunting as it is often feared and AOPA has prepared some guidance in the form of:

- Simple Occurrence Reporting Guide
- Occurrence Reporting Template
- Safety Report Data Release.

These can all be found on the AOPA website in the Members Reference Library.

"As long as we submit reports as expected there will be a wealth of data to mine"

Essentially, if you are aware of an incident such as:

- Airframe failure
 - Engine failure
 - Prop strike
 - Injuries caused by aircraft operation
 - Any event that posed a safety risk,
- then visit: www.aviationreporting.eu select

'I report on my personal behalf' and then 'Report a new occurrence'.

Note that the only required information is the narrative, the textual description of the issue. The form asks for further information which is optional but might well help any subsequent data analysis and follow through. Click through to 'Submit' and you are done.

For more information and guidance use the Simple Occurrence Reporting Guide and Occurrence Reporting Template on the AOPA website.

As long as we submit reports as expected there will be a wealth of data to mine. The aim is to be able to spot issues and trends so that steps can be taken to improve safety. Without the data, analysis is flawed, if not impossible. Should you be interested in accessing the database to perhaps spot similar issues to help improve safety, then follow the Safety Report Data Release guidance document on the AOPA website.

CASE STUDY – LANDING GEAR LEG FAILURE

An example of how filing a safety report can help is described below.

A light two-seat aircraft operating under an EASA Permit to Fly undertook a short flight from one grass airstrip to another. Pre-flight checks were completed which included looking at the fibre composite main undercarriage legs for any signs of cracking. No issues were found.

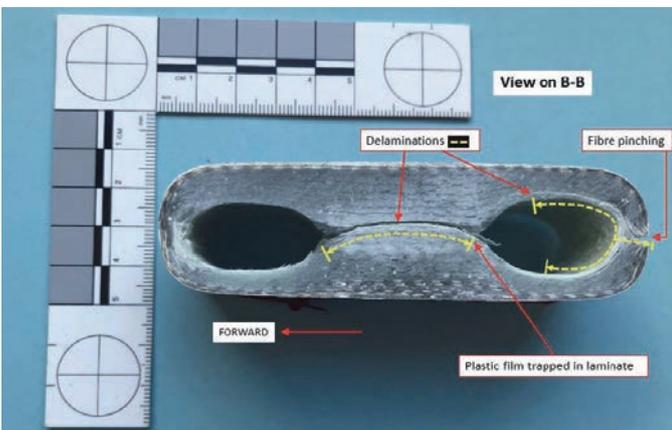
The flight and landing at the nearby grass strip was uneventful and the aircraft was taxied to the parking area as normal. Upon exiting the aircraft a lucky, superficial scan of the aircraft showed up a long crack in one undercarriage leg, running lengthwise along the leg. The aircraft was immediately grounded and not flown out of the airstrip until a replacement leg was fitted.

An Aviation Safety Report (ASR) was filed so that others might know of this failure and watch out for it. Note that no confirmation email or any response to thank respondents was forthcoming!

A few weeks later, a call was received from the UK Aircraft Accident Investigation Branch (AAIB) to discuss the ASR report. It seems that the UK CAA had noted the report and brought it to the



The crack along the undercarriage leg was noticed after landing and the aircraft immediately grounded



The AAIB report explained that some plastic material between layers of fibre composite had compromised the bonding

attention of the AAIB in case something could be learned from a review.

Interestingly, the AAIB politely asked if they could have the failed undercarriage leg so they could undertake some tests to try and identify the failure mode.

They pointed out that the investigation would involve cutting up the leg – but this was not a problem as it was not going to be used again!

The AAIB even popped into the hangar one day to collect the leg as they were passing which also provided an interesting and unusual opportunity to hear about their work.

Over the next few months the AAIB provided regular updates on their work on the case. They identified a clear manufacturing fault and went through discussions with the original equipment manufacturer to understand

how this could have occurred and what processes they were putting in place to prevent a reoccurrence in the future.

At various stages, all involved were able to offer comment on the draft report that was being prepared.

Finally the AAIB report was completed, published and made available on the AAIB website. It described how the manufacturing process had left some plastic material between layers of fibre composite and how this had compromised the bonding so that a longitudinal failure was highly likely. Clearly, lessons had been learned from this.

A final benefit came in the form of a replacement leg from the manufacture without charge. They knew of the AAIB investigation and had the report. A new leg was supplied without question. A useful close to the episode. ■

WORDS John Walker

THE LATEST NEWS ON UK AIRFIELDS

THERE are airfields across the UK currently under the threat. Here are the latest developments, updated 1 July 2019.

OLD SARUM

Site owner's planning application for housing development and 10 additional hangars amongst other work, objected to by various parties as being detrimental to the site's heritage and potentially limiting use of the aerodrome. Appeal made by owner to the Planning Inspectorate for non-determination of the application by Wiltshire Council with public inquiry hearings held in October 2018 and February 2019. The Council rejected the planning application after the appeal was made. The appeal decision is now expected on or before 26 July 2019.

CAMBRIDGE

Marshall Group will be vacating the aerodrome by 2030 and relocating to Cranfield, Duxford or Wyton. The Group has stated its intent to the local authorities to put the site forward for development as part of the next Local Plan from 2030.

HALFPENNY GREEN

Aerodrome sold to MCR Property Group, an investment and development company focused on commercial and residential real estate. In September 2018 South Staffordshire Council approved a Site Allocation Document expanding on the previously

adopted Core Strategy for their emerging Local Plan which states that the airport is allocated and protected for employment purposes. Public consultation by MCR on proposal for construction of 112 homes on south-east corner of site and aerodrome improvements including three new hangars, started on 7 March 2019.

RAF HENLOW 2023

Future of the site being progressed by a partnership between the DIO and HE. Site earmarked for mixed use/specialist employment development in Central Bedfordshire Council draft 2035 Local Plan Part 2 submitted for Public Examination on 30 April 2018 with public hearings starting on 21 May 2019.

RETFORD (GAMSTON)

Earmarked for a Garden Village with ultimately 2,500 dwellings in initial draft 2035 Strategic Plan issued by Bassetlaw District Council for public consultation which ended on 10 March 2019.

PLYMOUTH

FlyPlymouth, a local social enterprise aerodrome support group, plans to reopen the aerodrome and start regional airline services. Sutton Harbour Group, the site lease holder, has proposed a mixed use development although the adopted Plymouth City/South-West Devon Joint Local Plan retains the site for aviation use at least until the first five-year review of the adopted plan. ■

AOPA NEWS

General Aviation news from around the world



KIRKHOPE DEMANDS NEW AIRSPACE RULES

The Lord Kirkhope Inquiry regards the current Airspace Design Process as unfit for purpose and calls for it to be scrapped

by **AOPA News Team**

THE Lord Kirkhope Inquiry into Lower Airspace has called for the Government to scrap and replace the legislation that sets the direction for UK lower airspace design.

The current Airspace Design Process, the Inquiry found, is unfit for purpose at 'every level' from Section 70 of the Transport Act 2000 to the Civil Aviation Authority's (CAA) interpretation of the legislation.

Commissioned by the All-Party Parliamentary Group on General Aviation (APPG-GA), the Lord Kirkhope Inquiry

received written evidence from nearly 50 witnesses and heard oral testimony from a dozen stakeholders.

Commenting on the Inquiry's report, the Chair Lord Kirkhope of Harrogate said, "It has been clear to everyone in the aviation community, for some time, that the current Airspace Design Process is unfit for purpose and as a result the UK has one of the most complex airborne environments in the world.

"The outdated legislation and complex guidance that comes from it, has created a system that is overburdensome and potentially dangerous for

future airspace users. I hope the Government takes these findings seriously and I look forward to their response."

The expert panel recommended that the Department for Transport and the CAA base their airspace policy on the principles of 'safety, proportionality and need'.

The report also included recommendations for government to adopt, aimed at rationalising the way airspace is managed in the UK.

One important measure the Inquiry called for was the introduction of a 'ratchet down' process for removing underused volumes of

controlled airspace.

The Inquiry also suggested that the CAA makes a radical shift in its processes for airspace change to allow for greater flexibility in future airspace decision making.

Chair of the APPG-GA, Grant Shapps MP, said, "The 222 MPs and Lords of the APPG-GA welcome the new report published today. Their findings confirm the suspicions my colleagues and I have held about what is going wrong with the airspace design in this country.

"We are very grateful to our expert panel for their sterling efforts to produce this important piece of work." ■



Richard Hawkin presents the award

THE AOPA CONTRIBUTION TO THE COMMUNITY AWARD

by **Richard Hawkin**

LUC AND Edith Dufour may have already been told that they had been chosen to receive the AOPA UK Contribution to the Community Award for 2019. But they couldn't have anticipated the welcome and warmth of feeling they got when they were hustled away from their kitchen and bar at Le Coucou de Fourchette and into the main hall of Cherbourg Airport.

They were presented with the cup in front of the 80-plus

crowd of visiting British GA pilots who were attending one of Luc and Edith's Grand Summer BBQs at Cherbourg. Richard Hawkin of AOPA Channel Islands stood in for AOPA Chair, Pauline Vahey, to make the presentation in front of a paparazzi of pilots turned photographers.

The citation for the Contribution to the Community Award couldn't have been more appropriate, awarded to a person or organisation who has made an outstanding contribution to the aviation community. The

trophy is a cup donated in 1997 by Flyer magazine. "For over thirty years Luc and Edith have run the restaurant at Cherbourg Maupertus Airport in Normandy, Le Coucou de Fourchette. They have provided an unfailing welcome and assistance to the Brits who make Cherbourg their first or last stop to clear Customs and Immigration when flying to and from the continent. Luc and Edith are retiring at the end of this year. We wish them the very best for their retirement, they'll be missed." ■

A SAFER BORDER FOR ALL

by **Mick Elborn**

ALL GA pilots, operators and owners are required to submit GARs (General Aviation Reports) to advise UK authorities of their expected journey for all inbound flights and currently outbound flights to non-EU countries and the Common Travel Area. Border Force has launched a free digital service to enable electronic submission of GARs.

The system has been designed to make the GAR submission process streamlined. Pilots, operators and owners can submit GARs as far in advance of their journey as required and the deadline for doing so should still adhere to current submission timings. These can be found on GOV.UK. Once GARs have been submitted, they are received by Border Force and Police. Users will receive a

transmission reference number for their report submission.

The system has been designed with security of users and data in mind, with a two-factor authentication process when logging in, to ensure that personal information is protected.

Users are encouraged to leave their feedback on the service via a link found at the top of the initial registration homepage. ■

LOOK BACK... THIS MONTH 106 YEARS AGO



FIRST INVERTED FLIGHT

On 1 September 1913 Frenchman Adolphe Pégoud became the first man to ever fly upside down.

As a test pilot for Louis Blériot, he devoted himself to this goal with a Blériot model XI monoplane in a series of test flights exploring the limits of aircraft manoeuvres. Having modified his aeroplane, and after realistic "head down" ground training, he then flew the first inverted flight.

At the start of World War I, Pégoud volunteered for flying duty and was immediately accepted as an observation pilot.

On 5 February 1915, he and his gunner were credited with shooting down two German aircraft and forcing another to land. Soon he was flying single-seat aircraft and in April claimed two further victories. His sixth success came in July.

On 31 August 1915, Pégoud was shot down and killed by one of his pre-war German students, Unteroffizier Otto Kandulski, while intercepting a German reconnaissance aircraft. He was only 26 years old. The same German crew later dropped a funeral wreath behind the French lines.

**AOPA NEWS
HIGHLIGHTS****MILITARY HOVERBOARD**

The French military is considering the possibility of adding a hoverboard to its armoury. The jet-powered board is used by Franky Zapata, who put on a display for French President Emmanuel Macron and other EU leaders at Bastille Day ceremonies. Armed Forces Minister Florence Parly said the military is planning “tests for different kinds of uses, for example as a flying logistical platform or, as an assault platform.”

MAX PUSHED BACK

It seems as if the Boeing 737 MAX won't return to service before the beginning of 2020. This is due to regulators and Boeing struggling to come up with solutions to the problems that have been flagged. The FAA says there is no timeline for the return to service while Boeing predicts the aircraft will be ready sometime in the autumn. It has said it will have all the fixes ready for certification before it asks for them to be approved.

OOPS WRONG TOWN

The Patrouille Suisse, the Swiss air force aerobatic demonstration team, performed a planned flyby over the wrong town. The team was scheduled to display above Langenbruck, Switzerland, as part of a ceremony commemorating the 100th anniversary of the death of Swiss aviator Oskar Bider. Instead the Patrouille Suisse accidentally performed the flyby over the 31st Northwest Yodelling Festival.

AUTOLAND HAS ARRIVED

The Technical University of Munich (TUM) has successful automatic landing with vision-assisted navigation

by **David Rawlings**

AUTOMATIC landings have long been standard procedure for commercial aircraft. While major airports have the infrastructure necessary to ensure the safe navigation of the aircraft, this is usually not the case at smaller airports. Researchers at the Technical University of Munich (TUM) and their project partners have now demonstrated a completely automatic landing with vision-assisted navigation that functions properly without the need for ground-based systems.

At large airports the Instrument Landing System (ILS) makes it possible for commercial aircraft to land automatically with great precision. Antennas send radio signals to the autopilot to make sure it navigates to the runway safely. Procedures are also currently being developed that will allow automatic landing based on satellite navigation. Here too a ground-based augmentation system is required.

However, systems like these are not available for general aviation at smaller airports, which is a problem in case of poor visibility – then aircraft simply cannot fly. “Automatic landing is essential, especially in the context of the future role of aviation,” says Martin Kügler, research associate at TUM Institute of Flight System Dynamics. This applies for example when automated aircraft transport freight and of course when passengers use automated flying taxis.

In the project 'C2Land', supported by the German federal government, TUM



The Diamond DA42 was used in the test

researchers have partnered with Technische Universität Braunschweig to develop a landing system which lets smaller aircraft land without assistance from ground-based systems.

The autopilot uses GPS signals to navigate. The problem: GPS signals are susceptible to measurement inaccuracies, for example due to atmospheric disturbances. The GPS receiver in the aircraft can't always reliably detect such interferences. As a result, current GPS approach procedures require the pilots to take over control at an altitude of no less than 60 metres and land the aircraft manually.

In order to make completely automated landings possible, the TU Braunschweig team designed an optical reference system: a camera in the normal visible range and an infrared camera that can also provide data under conditions with poor visibility. The researchers developed customised image processing software that lets the system determine where the aircraft is relative to the runway based on the camera data it receives.

The TUM team developed the entire automatic control system of TUM's own research aircraft, a modified Diamond DA42. The aircraft is equipped with a fly-by-wire system enabling control by means of an advanced autopilot, also developed by the TUM researchers.

In order to make automatic landings possible, additional functions were integrated in the software, such as comparison of data from the cameras with GPS signals, calculation of a virtual glide path for the landing approach as well as flight control for various phases of the approach.

In late May the team was able to watch as the research aircraft made a completely automatic landing at the Diamond Aircraft airfield. Test pilot Thomas Wimmer is completely convinced by the landing system: “The cameras already recognise the runway at a great distance from the airport. The system then guides the aircraft through the landing approach on a completely automatic basis and lands it precisely on the runway's centreline.” ■

CAA SIGNS NEW LICENCING AGREEMENT WITH THE BMAA

by **Lucy Field**

THE British Microlight Aircraft Association (BMAA) will soon be able to issue licences to newly qualified pilots under an agreement reached with the UK Civil Aviation Authority (CAA).

The BMAA becomes the first organisation in the United Kingdom to benefit from such an arrangement.

Until now, the BMAA had helped process licensing applications on behalf of the CAA, but the regulator, as the licensing authority, would still issue the physical licence to the applicant. Under the new agreement, however, the BMAA will handle the entire application process for an initial National Private Pilot

Licence (NPPL) – with a microlight class rating – including issuing the physical licence.

Applications for a microlight class rating from an existing NPPL holder will still be part-processed by the BMAA, with the CAA issuing the physical licence.

The agreement between the CAA and BMAA was signed at this year's AeroExpo event at Wycombe Air Park (13–15 June 2019) and follows an agreement between the two organisations, reached in May, allowing the BMAA to issue initial Permit to Fly certificates.

Rachel Gardner-Poole, the new Head of the CAA's General Aviation Unit, said: "I am really pleased to reach this

agreement with the BMAA. This is in line with our GA principles of only regulating where necessary, deregulating where we can and delegating where appropriate."

Speaking on behalf of the BMAA, Chief Executive, Geoff Weighell, said: "This agreement will greatly

benefit BMAA members and those beginning microlight training by reducing the time taken to issue initial licences. It further illustrates the confidence that the CAA has in our organisation to act as a competent authority within the world of recreational flying." ■



The deal makes it easier for the BMAA to issue licences

BECOME A JET PILOT FOR THE DAY WITH BAEA

by **David Cowden**

AFTER the success of its first and second lottery, the British Aerobatics (BaeA) is launching its third prize draw with the winner being given a once in a lifetime chance to win a flight in the iconic L-39 Albatros military jet.



The L-39 Albatros you could go flying in

Proceeds from the draw go to support our British Aerobatic Teams and registered charity Aerobility. Each ticket has a one in 1000 chance of winning. You may give the ticket as a gift to a lucky friend or family member, but tickets may

not be resold. Each ticket is offered for £20, with a maximum of 10 per person.

The prize is a 30 minute, customised flight in the iconic L-39 Albatros, a high-speed military jet trainer, run by world specialist in jet flight MiGFlug GmbH, from an airfield in either France or Germany. This 'open location' booking means there will be a lot of flexibility in location and dates to suit the winner.

The prize also includes an overnight stay and dinner for two at a nearby hotel, together with a £300 contribution towards your travel costs.

The prize draw will be held on 2 August 2019. To enter visit www.aerobatics.org.uk/ lottery. ■

FREE LANDING

by **John Pett**

AOPA has been working hard to improve the perks for its members, and one of the latest is free landings being offered at Henstridge Airfield (EGHS) in Somerset.

AOPA Members can now receive a free landing on Saturdays and Sundays on production of their membership cards at the Operations Desk.

Henstridge airfield was originally a wartime Fleet Air Arm training site, designated HMS Dipper. After the war Henstridge was taken over by private individuals and has been an active airfield in one form or another ever since! There's a lively club atmosphere at weekends and visitors are very welcome. ■



One of the 33 aircraft that made the trip to Jersey

AOPA TRAVELLING THE WORLD

The Danish arm of AOPA visited Jersey for their annual trip

by **Richard Hawkin**

EVERY year AOPA Denmark DMU organises a trip for its members and not just a short hop to a local airfield for the day. Previous destinations have included Prague, Koblenz, Luxembourg and other exotic locations with the trips normally lasting four days. The destination of choice for the 2019 'tur' was the Channel Island of Jersey.

Jersey is not new to the concept of welcoming Danish pilots. In the heyday of the Jersey International Air Rally, Danish pilots were regular competitors.

Discussions with the Jersey Aero Club ensured that marshalls were on hand to help efficiently park the 33 aircraft due to take part. Customs paperwork was to be completed and submitted

ahead, fuel ordered on arrival, and billing prepared and ready for the departure. Jersey Airport mowed the grass parking area and was able to make a useful expansion of its capacity.

Jersey ATC was, as always, very helpful providing useful documentation for the visitors and asking for no more than common sense to avoid bunching of arrivals. As it happened, the weather meant that the AOPA Denmark DMU aircraft were spread over quite a long time period with the first arrivals trickling in from mid afternoon and the last arrival just before dusk.

Necessarily, it had been a long day's flying for all the participants. Many had flown from the north of Jutland, on more or less the same latitude as southern Norway and Gothenburg in Sweden. The plan had been for a lunch stop



Denmark's oldest pilot

in Seppel, Holland, but poor weather over most of the route meant that pilots had to make their own choices according to the conditions. Some opted for IFR clearances, others made significant detours through Germany and everyone had to wait for the fog to clear in Jersey.

Two of the four ultralights due to take part were the first casualties of the weather, which

forced their cancellation. A few other pilots also found the conditions too close to their limits but, by the Thursday evening, 23 aircraft had arrived in Jersey. Another three arrived the next day, giving an impressive 26 out of 33 aircraft to complete the long trip.

Departures on Sunday morning were disrupted for a while when the fog rolled in from the sea just as it had done on arrivals day. But conditions improved and everyone got away for the flight home.

In these days when GA flight is becoming more costly and restricted, it was a pleasure to see such a large group of pilots coming together for the event and to witness the efforts made by Jersey Airport, Jersey ATC, and the Jersey Aero Club who all worked hard to ensure that the AOPA Denmark DMU 2019 Tur was a great success. ■



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2019 AOPA ANNUAL GENERAL MEETING

It's your chance to have your say

THE 53RD Annual General Meeting of the British Light Aviation Centre Ltd, trading as the Aircraft Owners and Pilots Association of the UK, will be held on Tuesday 17 September 2019 at AOPA, 50a Cambridge Street, London, SW1V 4QQ, commencing at 2.00 p.m. The formal announcement and agenda of the AGM appears below.

A set of the financial accounts for the year ended 31 March 2019 will be provided in advance of the meeting on the AOPA website www.aopa.co.uk together with the minutes of the 52nd AGM and brief personal details of the members offering themselves for election and re-election. These data will also be available at the AGM.

Any member wishing to elect another member to the Board of Management must provide notice in writing or email to the AOPA office at least 10 days in advance. A statement of willingness

to serve will be expected from the proposed member together with appropriate personal details. Proxy voting is permitted, either by nominating in writing or by email a member who will be present at the AGM as proxy, or by nominating the Chairman as proxy.

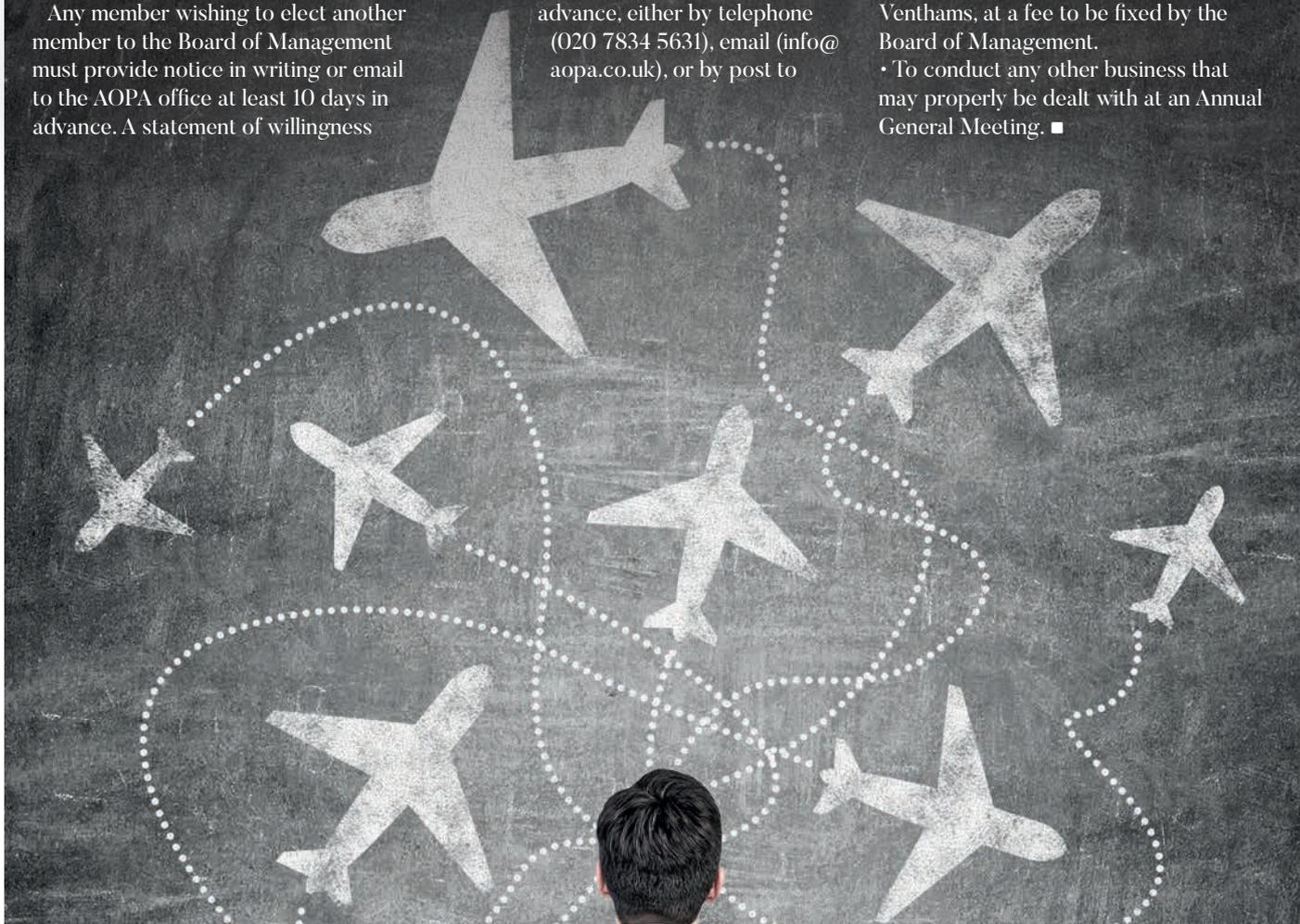
Following the formal business of the meeting, there will be time for informal reports from the Chairman and CEO and for general discussion.

Tea, coffee and sandwiches will be available for those attending from 1.30 p.m. and it is expected that the meeting will finish by 3.30 p.m. It is very important for planning purposes that members who intend to attend are requested to please let AOPA know in advance, either by telephone (020 7834 5631), email (info@aopa.co.uk), or by post to

AOPA, 50a Cambridge Street, London SW1V 4QQ.

AGENDA

- Apologies for absence
- To confirm the Minutes from the 52nd Annual General Meeting.
- To receive and endorse the Directors' Report and Financial Statements for the year ended 31 March 2019.
- The election of Directors to the Board of Management. The following Directors are due to retire by rotation: George Done, Richard Hawkin, John Walker, and John Pett. Richard Hawkin, John Walker and John Pett offer themselves for re-election.
- To appoint as Auditors Messrs Venthams, at a fee to be fixed by the Board of Management.
- To conduct any other business that may properly be dealt with at an Annual General Meeting. ■



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IMAGES Various

THOSE THAT KEEP THE HUNTER FLYING

The Hawker Hunter first flew in 1951 and left RN service in 1994, but these venerable aircraft are still earning their keep, as Henry Simpson found out when he spoke to Mat Potulski from Hawker Hunter Aviation



HENRY SIMPSON PPL HOLDER FOR FOUR YEARS **21 YEARS OLD** STUDYING BIOLOGY AND PHYSICAL GEOGRAPHY

THE LATEST in a long line of types designed by the renowned Sir Sydney Camm, the Hunter, was designed to meet Air Ministry specification F.43/46 for a new jet interceptor.

It was based on modifications to the earlier Sea Hawk design

but took advantage of the new Rolls Royce Avon engine. The prototype P.1067 first flew in the hands of Neville Duke on 20 July 1951 and it later broke the world air speed record in 1953 when modified to F.3 standard, flown again by Duke.

The Hunter was forever immortalised in RAF history

when the Black Arrows display team of No.111 squadron performed a record-breaking 22-aircraft loop at the 1958 Farnborough show followed by a 16-aircraft barrel roll, with the former record still standing.

Although originally designed as an interceptor, the aircraft also proved its worth in the

ground attack role too, with the debut of the FGA.9 in 1959. These aircraft saw combat in several theatres, particularly in the Middle and Far East. The Hunter can therefore be considered as one of the first multirole jet aircraft.

It was an export success as well with aircraft serving with



21 countries. The most notable export customer is probably the Swiss Air Force where it served as the founding aircraft of their national aerobatic team The Patrouille Suisse. The final military operator was the Lebanese Air Force which officially retired the type in 2014. However, the end of active military service has not marked the end of the Hunter's story – this is where Hawker Hunter Aviation (HHA) steps in.

WHERE IT BEGAN

HHA was founded by Mat Potulski and the late Mark Hanna and evolved out of the Duxford-based OFMC (Old Flying Machine Company) before moving to its present home at RAF Scampton in 1998 and becoming a standalone company in 2000. It was formed around the acquisition of 10 RR Avon 200 series-powered ex-Swiss Air Force Hunter Mk58

aircraft, (the Mk58 being the designation given to export aircraft for Switzerland) and a large GSE and spares pack. They had recently been retired by the Swiss as easing of east/west tensions saw the aircraft retired 10 years ahead of their envisaged out-of-service date in 1994. To aid crew conversion, these were later supplemented by the addition of three ex-RAF T7/T8 trainers. However, HHA has subsequently withdrawn from service all "little-engined" Avon 122 powered variants (due to declining support) and replaced with big-engined Hunter Trainers, such as the recently acquired ex-Embraer T72 XE688.

HHA provides trials support and threat simulation for the defence industry as well as the MOD and NATO customers. "With budgets stretched, customers are looking to save money and outsourcing is

becoming ever more popular," says Mat. Indeed, this was an emerging market at the time of their formation, but it has since become a mainstay of the defence industry, with many armed forces seeking to cut costs and free up operational types by having companies like HHA provide aggressor or 'red air' capability. The Hunter is an ideal aircraft for this role as its performance envelope is similar to most combat types under dry (non-afterburning) power.

Work performed by HHA has included Type 45 destroyer Principal Anti-Air Missile System (PAAMS) radar development, numerous weapon system development programmes, ADEX support of the sea trials for naval assets, Fleet requirements taskings and the provision of aircraft for the various aspects of Test Pilot Training. Recently they have positioned

themselves to participate and compete in the MOD ASDOT (Air Support Defence Operational Training) bid which included demonstrating the RAIDS (Rangeless Airborne Instrumented Debriefing System) pod on the aircraft.

The ex-Swiss Hunters have radar warning receivers and flare dispensers and have been further updated to maintain their potency in the modern era. They are in the process of being upgraded with glass cockpit primary flight instrumentation, thereby not only addressing the obsolescence of analogue displays but also ticking the TCAS and Ground Proximity Warning Systems safety boxes. This is supplemented by an ongoing upgrade programme aiming to provide internal and external threat simulation and emulation equipment able to replicate a variety of aircraft and missile threats. For trials

support the aircraft carry items of equipment under evaluation in addition to being used as a co-operative target for radar calibration and mission support taskings. "We treat it like a transit van, designed to carry items of equipment at certain heights and speeds," Mat says. It's this equipment which makes the aircraft credible in the modern age. Benefitting from numerous hardpoints, the Hunter can carry a wide range of internal and external stores.

MILITARY REGISTER

One of the key aspects of the company is that since 2006 it has operated its aircraft on the military register under MAA regulation. This assures that the aircraft integrate with the MOD and NATO safety systems, procedural and operating environment. HHA holds a suite of MAA approvals.

The aircraft were infrequent airshow performers up until 2008 but as this is not HHA's main line of work they now only appear on static displays.

It's pleasing to learn that these

Hunters still have a lot of life left; indeed, one of the questions often asked is how can HHA deliver a credible service with legacy 1960s aircraft? It's all about the aircraft provenance, remaining life, through life cost, supportability and the basic high subsonic performance envelope of the aircraft. "The Hunters will go on for 20 more years," Mat informed me. All the airframes were low in hours and fatigue when acquired and have been overhauled; the least-flown airframe has around 1,000 flying hours and the fleet leader just over 3,000. When this is compared to the RAF service life of the aircraft of 8 – 12,000 hours it's easy to see that these aircraft will keep flying for many more years. Ongoing supportability of the Hunter MK58 remains very high with industry support available to overhaul engines and all major components, as evidenced by more than 30,000 flying hours.

How active the HHA Hunters will be though depends entirely on customers' requirements

"All the airframes were low in hours and fatigue when acquired and have been overhauled; their youngest has around 1,000 flying hours"

in the years to come. HHA also owns three other types of aircraft, two of which are currently inhibited and in long-term anti-deterioration storage; a Sukhoi SU-22 and a Gulf War veteran Blackburn Buccaneer S2B. These could be reactivated if a customer required the performance envelope of that particular platform. Potentially closer on the horizon however is the return to flight of an ex-German AF McDonnell Douglas F4F Phantom which would provide a flexible supersonic capability. With a single airframe presently at Scampton for ground instruction purposes, it is hoped that next year an airworthy Phantom may return to the UK, an exciting prospect!

The recent announcement of plans to close RAF Scampton in 2022 leaves HHA in need of finding a new base. No firm decision has yet been taken but options are being evaluated.

It is good to know that some 68 years after its first flight, the Hunter is still proving its worth and continues to play a role in the defence industry today. ■

The Hunters owned by Hawker Hunter Aviation are based at Scampton



The paint scheme on ZZ191 has divided opinions. Some love it, others, not so much...





New on the curriculum

There's a new trainer in town, the first Sonaca 200 has just been delivered to the UK, *David Rawlings* went along to see how it's going to shake up schools



WORDS David Rawlings **IMAGES** Sonaca Aircraft

IF YOU go to any flight training facility in the UK, chances are you will see an airfield filled with ageing training aircraft that have seen better days. And it's not their fault, they've lived a hard life. But there needs to be something to replace these aircraft – they've served their time.

Sonaca Aircraft is a new company in the world of aviation, although its parent company, Sonaca Group has a long and distinguished history in aviation, and the team that was set the task of working on the aeroplane had worked in aviation for many years.

Sonaca burst onto the scene in 2015 with an idea to produce a new training aircraft

for schools; one that wouldn't be too expensive, would look good and be able to survive the heaviest handling by a student. So before they even start to build, they went to the people who would be using the aircraft and asked them what they wanted.

"We began the process by talking to lots of schools about what was needed and what

the properties are of a good trainer," explained Pierre van Watten, the Chief Commercial Officer at Sonaca, who had just landed at Blackbushe Airport in the first Sonaca 200 to come to England. "We spoke to instructors all over Europe asking what the principle characteristics are for a good trainer, and they told us. We decided to follow all the

requirements of the instructors and from this we made the Sonaca 200."

Rob Curry of Blackbushe Aviation was there to receive the aeroplane. Curry has a military background flying Tornados, but now teaches PPL, LAPL and aerobatics. He prefers the much more sedate Mach 0.142 over the Mach 2.2 the Tornado used to put out! "There's currently a problem facing schools," said Curry. "If you're buying a replacement C152, you're paying a lot of money for an aeroplane that has been around for 50 years, and they've had hard lives. Something had to replace them."

THE AEROPLANE

The Sonaca 200 is an all-metal low-wing two-seat trainer that is powered by a Rotax 914 putting out 115 hp. "95 per cent of people were asking for all metal over carbon. It's easier to repair, you can leave it outside all year and it's actually

lighter than a composite aircraft," said van Watten.

The company began in 2015 and decided to base their aircraft on The Aeroplane Factory's (TAF) Sling 2, the homebuilt aeroplane. "We decided to not start from the beginning and we would start with an existing kit aeroplane and we took that to the flight instructors and said, 'this is a base, not the final product, what do we need to do?'"

Sonaca says it modified about 80 per cent of the Sling 2.

The structure has been resized in comparison with the kit version.

The shape of the aircraft, the wing profile and the choice of materials have been maintained. Concerning the modifications and enhancements made to the prototype, the initial structure has been redesigned in order to meet market requirements on the one hand, and EASA certification requirements on the other. "We have

"If you're buying a replacement C152, you're paying a lot of money for an aeroplane that has been around for 50 years, and they've had hard lives. Something had to replace them"

significantly altered the structural resistance in order to obtain a 750 kg maximum take-off mass with a 4.4 G load factor, which is a 25 per cent increase compared to the initial aircraft," explained van Watten.

The aircraft structures have been reinforced: the main spars of the wing, the connection to the fuselage and the central spar have been redesigned and some aluminium alloys have been modified in order to take account of the aerodynamic loads and material fatigue as well as corrosion-related aspects. The changes also focus on strengthening the canopy arches, landing gear, the vertical and horizontal empennage (including its connection to the fuselage), the propeller, braking system, instrumentation and fuel system.

"I flew one of the new aircraft to Blackbushe and when Steve [Morley, the club owner] saw it and said, 'OK, I will buy two.' We didn't want to reinvent the aeroplane, just bring it up to



The 200 has seven hours endurance, which is perfect for schools, but it's also a tourer. With its roomy cabin and leather seats, pilots have stated that it's comfortable and that the 'numb bum' doesn't set in

It's a robust aircraft, perfect to withstand student punishment



Rob Curry pointed out that if it looks right, it'll fly right.



date with a modern engine, good flight instruments, handling like a Cessna. Like a Cessna, but newer," explained Van Watten.

The 200 has a big roomy cabin and benefits from hand-stitched leather seats – perfect for seven hours of endurance. Thanks to a sliding seat, the cabin ensures comfort and good leg space for pilots and students of all heights. The cabin is equipped with acoustic foam, offering low in-flight noise level; the canopy is mounted on sliding tracks and the aircraft can be taxied with the canopy open.

Wing steps and wide wing walkways allow easy access on board. There is also a luggage compartment that can hold up to 35 kg.

There are two types of panel available; the traditional steam gauge version which will cost €177,500 excluding taxes, but there is also a Garmin glass cockpit version, called the 'Sonaca 200 Trainer Pro'

"The 750 kg limit allowed us to add weight to the aircraft where it would be needed most"

which is equipped with the new Garmin G500 TXI and Honeywell KI 300 as a backup instrument. The Trainer Pro will cost €208,500 excluding taxes.

There is also an engine access panel and a steerable nose wheel which helps the students. "The access panel to the engine was one of the modifications added, so you can actually see into the engine and the students can see properly," said Curry. "And the steerable nose wheel is great. On other aircraft it can be quite hard, and as an instructor you forget how hard it can be trying to steer the shopping trolley wheel – it takes a while for students to get their head around how it works, and this is much easier."

FLYING

The 200 benefits from large control surfaces and ground clearance. Sonaca decided to build it to 750 kg specifications making it robust for schools. "The 750 kg limit allowed us

to add weight to the aircraft where it would be needed most," explained Van Wetter.

Curry, who will instruct students in his new aircraft, also believes it'll be a very good trainer. "It's the old adage, if it looks right, it flies right. And it looks right. The trick with a training aircraft should be that it's easy to fly, but difficult to fly well. This is a bit too forgiving, but I don't think that's a problem because this is helping pilots progress. The point is the end process of the student: have we produced a pilot who can progress onto a professional career or for pleasure but they're safe. And this helps."

There are alternatives out there, but Curry thinks this is more student-friendly. "There are other choices, like the PS28 Cruiser, which is a difficult aeroplane to train people in. It's got digital displays, very low wing loading and it's challenging to fly in high winds or cross winds.



Sonaca has already opened a brand new production facility, even though there are only six 200s flying. This new state-of-the-art production facility will be able to produce 80 aircraft per year when running at maximum capacity

Sonaca is very proud that there was a lot of input from schools, helping to develop this aircraft.



You want predictability and stability, which the 200 offers," he explained. "It's an easy aircraft to pick up and fly and the low-speed handling is very stable, other aircraft can be sensitive, but it's how the 200 is designed."

He also believes the reason it's good for busy schools is that it has seven hours of endurance. "You fill it up in the evening and the next morning you can put two people in it and you go flying all day, just keep turning your students around. At the end of the day you fill it to full again and there's no condensation getting in."

"The engine also has a clever touch. It's a turbocharged Rotax, but the turbo is selectable; there is a lever at the front of the throttle, so the lever is pushed and you hit the limit, but then pull the lever and add the turbo. You have the choice of operating with or without the turbo, depending on what you're doing. It's a great bit of design," added Curry.

"It's an easy aircraft to pick up and fly, and the low-speed handling is very stable, other aircraft can be sensitive"

HISTORY

The Sonaca Group is an old company with British roots. It has worked in commercial aviation for many years, building parts for all the major manufacturers. However, 80 years ago it was part of the Fairey Aviation Company; they built a subsidiary in Belgium for building military aircraft for the Belgian Army, from 1938 to 1978 and Sonaca was born just after. The Belgian armies bought the F16 and Sonaca was there to build them for the Belgium and Danish army. Sonaca built 220 F16s in that time. Sonaca came into being in 2015 and the company has gone from design to certification in three years.

THE FUTURE

Even though this 200 is the first to be delivered outside of Sonaca's native Belgium, the future is bright for Sonaca. There are already six flying in Belgium and they're performing well. "Those six already have 400 hours on them, everyone is happy with

them and the flight instructor told me last month that their students are progressing quickly because the aircraft is so precise."

There is currently a waiting list of nine months to a year, but the company has just moved to a new production facility. And a huge amount of growth is possible. In this first year of production it will build 20 aircraft with the plan to grow to 40 next year. "At maximum capacity it will be able to produce 80 aircraft a year," explained van Wetter. Which is very handy as they have just picked up an order to replace Turkish Airlines, training fleet of 25 aircraft.

Blackbushe Aviation instructors will not have to wait long before they can start putting the 200 through its paces. All they are waiting for is just a bit of paper-work before it can start helping students. The CAA wants to do an initial inspection and then it'll be flying over the skies of Hampshire, with a second one arriving in October! ■

TECH SPEC SONACA 200

ENGINE

Manufacturer: BRP Rotax
Model: 914 F-16 Turbo
Horsepower: 115hp
Propeller: 3-bladed DUC Helices

PERFORMANCE

Take off Distance: 470m

Climb Rate: 750fpm
Max operating Alt: 4,000m
Stall Speed with Flaps: 42kias
Max Cruise Speed: 115ktas
Load Factor: +4.4g/-1.76g

DIMENSIONS

Wingspan: 9.2m

Length: 7m
Height: 2.56m

WEIGHT

Empty Weight: 460kg
Useful Payload: 290kg
Fuel Capacity: 140 litres
MTOW: 750kg





IMAGES Various

STALL TRAINING – HAVE WE LOST SIGHT OF THE OBJECTIVE?

Matt Lane takes the plunge and reviews the teaching and testing of the 'applied' stall scenarios in the PPL and SEP class ratings, as well as best practice for training and flying in these scenarios



MATT LANE CPL/FI/FE/FICI HEAD OF TRAINING FOR THE RAF BRIZE NORTON FLYING CLUB **RAF TUTOR STAFF PILOT**

MATT LANE instructs and examines for a variety of schools in Oxfordshire and Gloucestershire, across MEP, SEP and Touring Motor Glider types. Matt is also the FE PPL representative on the Executive Committee of the Independent Flight Examiners' Association. Here he talks about stalling...

I have increasingly observed on licence skills test and rating renewals/training flights that there seems to be evidence of 'training for test' on stalling, and I wonder whether we have started to lose sight of what we are actually trying to get the student to learn from the exercise. This article looks at the 'applied' stalls that are part of the various skills tests and discusses some ideas for how best to train and fly these exercises.

In particular I recommend that relevant scenario-based aspects are emphasised and developed with the student. This means the student can relate the exercise to what they may actually experience and have to deal with in routine flying operations, as opposed

to it becoming an academic and somewhat forced demonstration. I also suggest how the exercise can be set up in the air, based around a PA28 but of course in reality it would be tailored for the particular training type.

There are four main stalls that can be required as described in the relevant CAA Standards Documents:

MAIN STALL 1

Stall in clean configuration, fully developed stall entering from straight and level flight, with the throttle(s) closed.

What is the scenario? This is probably the most academic scenario of the four, but it is about recognising that an insufficient power setting – perhaps because of reducing power too much or failing to add power after levelling off – while attempting to maintain altitude, will cause the aircraft to slow and approach the stall.

Common faults? The most common issue is that students and instructors aggressively pitch up and enter some kind of 'dynamic stall' from an unrealistically high nose attitude. This then causes an excessive pitch down at the stall

and serves to teach nothing other than to frighten students. The exercise should actually be a relatively slow and controlled event.

How to fly it? On rolling out of the LOOKOUT turn, close the throttle to decelerate without delay. As speed reduces, the straight and level workcycle should be used to maintain altitude; continue to trim down to approx. 70 kt, and maintain a wingtip-to-wingtip LOOKOUT scan. This should be continued until the student recognises the briefed symptoms of the full stall (heavy buffet, nose drop, sink, possible wing drop) and then carries out the SSR (Standard Stall Recovery).

What is the student learning point? This scenario is used on the test to demonstrate that the candidate can recognise the full stall symptoms and confidently apply the SSR to safely recover with minimum height loss. The key takeaway for the student is that monitoring of the aircraft attitude and speed is vital at all times to maintain adequate flying speed.

MAIN STALL 2

Approach to stall from an approach configuration, with

approach flap setting, gear down and low power. The stall should be initiated from a turn (level or slightly descending with between 10 and 30 AoB) and the applicant must recover at the first symptom of the approaching stall.

What is the scenario? This is simulating a mishandled base leg to final turn in the circuit, and a potentially dangerous low level stall.

Common faults? It is very common for students and test candidates to overbank and let the nose pitch down, with the aircraft entering a spiral dive, speed increasing and nowhere near to stalling. Sometimes followed by an aggressive rolling pitch up to try and generate a stall.

How to fly it? The aircraft should be set up as if downwind during the HASELL checks – i.e. flap and gear down. Power should then be reduced as if on base leg descent and the LOOKOUT turn entered normally to simulate entering the final turn. After sufficient LOOKOUT turn, the attitude is then held with a very low or zero rate of descent to simulate poor handling. Speed reduces, and once the

light buffet or stall warner is recognised the SSR should be carried out. Alternatively, after LOOKOUT is completed the angle of bank can be increased and elevator applied to tighten the turn (without letting the nose drop) simulating being blown through the centreline and attempting to overbank to regain the runway.

What is the student learning point? During the final turn, because of the drag from the flap and reduced power to descend, monitoring of airspeed and adjustment of the attitude to maintain adequate flying speed is vital. Also at large angles of bank it is quite easy to pull to the stalling angle of attack – if overbanking is required to regain the centreline, the approach should be abandoned and a go around performed. Due to the low level, the SSR should be immediate on sensing light buffet or continuous stall warner.

MAIN STALL 3

Approach to stall in the landing

configuration with full flap, gear down and low power. The stall should be initiated from straight flight as if established on final approach to land (i.e. not climbing); the applicant must recover at the first symptom of the approaching stall.

What is the scenario? This is a mishandled final approach – sometimes called ‘stretching the glide’ where the pilot is attempting to maintain the aiming point with inadequate power and/or speed.

Common faults? Many students and instructors complete the checks and LOOKOUT turn, then roll level and immediately select all stages of flap in one go and aggressively raise the nose to generate a stall. Selection of flap in this manner is never done normally, and it would be odd to aggressively pitch up on final approach as the runway aiming point would be lost from view.

How to fly it? Like the previous scenario, the aircraft should be set up with flap as if downwind

"Many students and instructors complete the checks and LOOKOUT turn, then roll level and immediately select all stages of flap"

Students can gain so much useful knowledge if they are trained correctly

during the HASELL checks, then a descending turn completed for the LOOKOUT. On rolling the wings level, simulating tracking the centreline on the approach, the landing stage of flap can then be selected. Rather than adjusting the attitude to maintain speed as normal, if the attitude is maintained, with perhaps a slight pitch up to simulate getting low on the approach, the speed will reduce and once the light buffet or stall warner is recognised the SSR should be carried out.

What is the student learning point? Rate of deceleration may be relatively low, and decreasing control effectiveness may be missed as on final approach large inputs are not normally made. The nose attitude is higher than would be normal on an approach, but is lower than for a stall in level flight as the aircraft is descending. As such some normal sign of the approaching stall may be masked, so during the final approach diligent monitoring



of airspeed is vital and any detection of light buffet or continuous stall warner requires application of the SSR without delay.

MAIN STALL 4

Approach to stall in a climbing turn with take-off flap and climb power (single-engine aeroplane only) the applicant must recover at the first symptom of the approaching stall.

What is the scenario? This scenario is only actually specifically detailed on the SEP class rating test schedule as opposed to the PPL/LAPL test schedule. It is a simulated mishandled go around or take off climb, designed to highlight the dangers of incorrectly handling the aircraft when climbing away and turning with flaps down.

Common faults? The most common fault is that students and instructors fail to practice or teach this scenario! There is also the danger of attempting to use extremely high nose attitudes to generate the stall which are unrepresentative

of normal flight and may be approaching the limits of the aircraft certification envelope.

How to fly it? I find this exercise is best flown as a simulated mishandled go around. The aircraft is again set up as if downwind during the HASELL checks, and a simulated final approach gained on roll out from the LOOKOUT turn. A simulated go around is then flown, with an inappropriately high (but not excessive) nose attitude selected and held. The speed will then decrease and at the stall warner or light buffet the SSR should be carried out. It should be noted that on some aircraft, IAS indications may be erroneous at high nose attitudes with full power.

What is the student learning point? Even with full power, a high nose attitude and the drag from flap can cause the speed to decrease and the stall can be approached. As the nose is high with full power already selected, a noticeable pitch down and lower attitude will be required in order to accelerate the aircraft again to a speed

"There is also the danger of attempting to use extremely high nose attitudes to generate the stall"

where the normal climb attitude can be reselected. Wing drop is likely due to the full power. Selection and maintenance of an appropriate attitude during go arounds is vital.

I hope the above gives some basis for discussion in your school or training. They are my thoughts so please 'adopt, adapt, discard' as you wish. Instructors may also wish to consider that proper scenario-based set-up and practice of these stalls does require a decent amount of altitude – too many try and rush the teaching, sometimes constrained by airspace or cloudbase, at the minimum stalling altitude. I think the time taken to seek out good weather days and operating areas for these exercises pays dividends in student understanding and will help achieve the ultimate objective of a student pilot who is confident and capable of flying the handling exercises, and understands when and how they could be caught out for real in their flying career. ■

When teaching, take time to seek out good airspace and cloudbase





ASPEN UPGRADES GLASS OPTIONS

New models priced below older units

Product Evolution MAX
Maker Aspen Avionics

THE Albuquerque, New Mexico-based firm has been upgrading customers from steam to glass for more than a decade. It is now pitching an “unprecedented” upgrade programme that allows current Aspen owners to upgrade existing Aspen Evolution installations without disrupting their current installation, since the newest generation of Evolution MAX displays retain the same form factor as their predecessors. The hardware, processors, software, and displays have all been upgraded.

The latest generation Evolution MAX units are priced below the legacy versions; Aspen also offers reduced pricing on new hardware for existing owners.

“We’re not aware of any manufacturer in this industry that offers this type of upgrade programme,” said Aspen President and CEO John

Uczekaj, in a news release. “Our corporate philosophy from the time we introduced the Evolution 1000 PFD 12 years ago was to offer new functions and safety features our current customers could adopt affordably, and provide future owners the peace of mind that their investment is protected as technology evolves.”

Aspen introduced the Evolution Pro MAX primary flight display and the Evolution MFD500 MAX primary flight display (PFD) and MFD1000 MAX multifunction displays (MFD) in 2018. The Aspen glass lineup continues to provide a flexible pathway to replace steam gauges in pairs. Evolution systems can be installed with a PFD alone; up to two additional MFDs can be added to replace the entire six-pack and add a host of new features such as synthetic vision, GPS-aided attitude heading and reference system (AHRS) functionality, and other

modern amenities while maintaining interoperability with installed avionics.

Aspen’s new pricing includes options to upgrade previous Evolution models, starting at \$4,995 for the Evolution1000 PFD MAX (that same unit is listed at \$9,995 for a new installation). The upgrade units come with a fresh two-year warranty, improved processing speeds, and other enhancements including increased screen resolution and larger text.

Aspen has also created an upgrade path for EFD1000 E5 electronic flight instrument owners to a full technical standard order (TSO) MAX display starting at \$4,995. Aspen PFD and MFD units can all be upgraded to the newest model Evolution MAX displays, though legacy and new models cannot be mixed in the same installation. ■

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MORE G1000 RETROFITS

Garmin keeps growing the retrofit options of the G1000 and has announced the addition of five newly eligible aircraft. Aircraft currently equipped with a WAAS G1000 integrated flight deck that are now eligible for the G1000 NXi include the Cessna 172/182/206 and Beechcraft Bonanza and Baron. The NXi includes a wealth of features and capabilities such as wireless connectivity, SurfaceWatch, map overlay within the HSI and more. Aircraft owners and operators can easily upgrade from the G1000 to the modern, state-of-the-art G1000 NXi with minimal aircraft downtime.

“Based on the success of the G1000 NXi upgrade programmes that are available today, we’re excited to deliver this upgrade to thousands of additional aircraft owners,” said Carl Wolf, Garmin VP of Aviation Sales and Marketing. “With the G1000 NXi, customers experience faster performance and find value in new features like wireless cockpit connectivity, visual approach guidance, SurfaceWatch, map HSI and more, all of which make this upgrade a must-have in every aircraft.”

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BERLIN AIRLIFT AND THE FATE OF THE FREE WORLD

An in-depth look at one of the bravest post-war missions that ever took place – the Berlin Airlift

Book The Berlin Airlift
Author John Grehan

THE Berlin Airlift, although not forgotten, is often one of the overlooked post-war missions.

The fate of the free world hung in the balance. Stalin's Soviet Union sought to drive the Western democracies from Germany to continue the communist advance across Europe.

The first step in Stalin's scheme was to bring Berlin under Soviet control. Berlin was situated deep inside the Soviet-occupied region of the country, but the German capital had been divided into two halves, one of which was occupied by the Soviet Union, the other, in separate sectors, by Britain, France and the USA. Stalin decided to make the Allied hold on West Berlin untenable by shutting down all the overland routes used to keep the city supplied.

The choice faced by the Allies was a stark one – let Berlin fall, or risk war with the Soviets by breaking the Soviet stranglehold. In a remarkably visionary move, the Allies decided that they could keep Berlin supplied by flying over the Soviet blockade, thus avoiding armed conflict with the USSR.

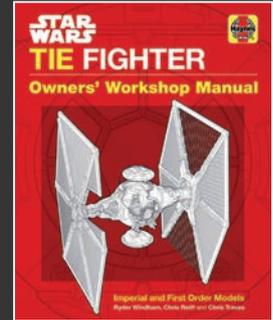
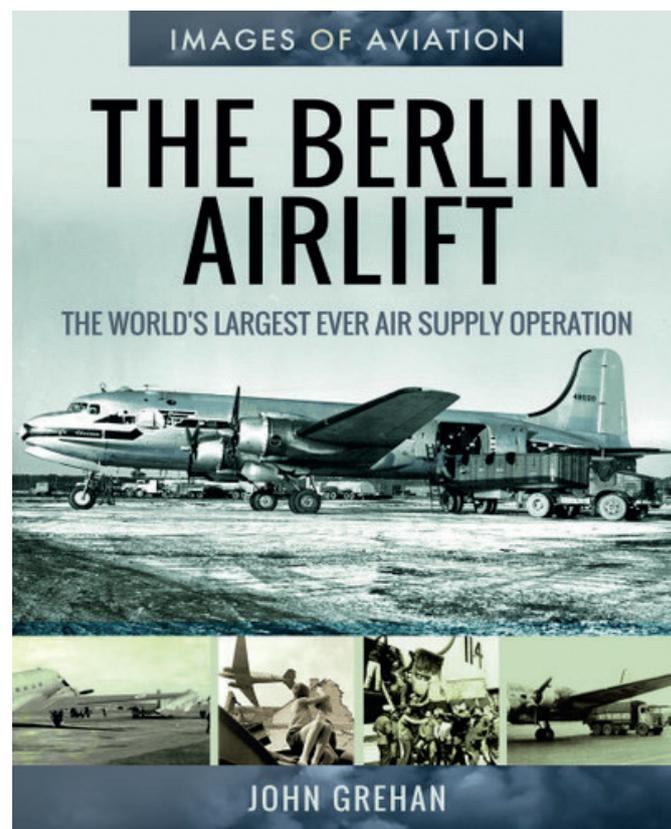
On 26 June 1948, the Berlin Airlift began. Throughout the following 13 months, more than 266,600 flights were undertaken by the men and aircraft from the

US, France, Britain and across the Commonwealth, which delivered in excess of 2,223,000 tons of food, fuel and supplies in the greatest airlift in history.

The air-bridge eventually became so effective that more supplies were delivered to Berlin than had previously been shipped overland and Stalin saw that his bid to seize control of the German capital could never succeed. At one minute after midnight on 12 May 1949, the Soviet blockade was lifted, and the Soviet advance into Western Europe was brought to a shuddering halt.

Author John Grehan has written, edited or contributed to more than 300 books and magazine articles covering a wide span of military history from the Iron Age to the recent conflict in Afghanistan. John has also appeared on local and national radio and television to advise on military history topics. He was employed as the Assistant Editor of Britain at War Magazine from its inception until 2014. John now devotes his time to writing and editing books. ■

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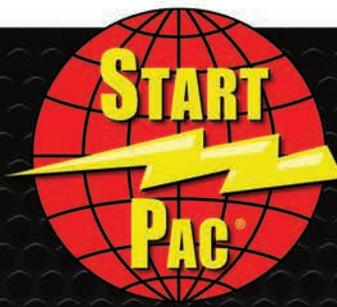
THE Tie Fighter Owner's Manual features unique specially commissioned cutaway, schematic and computer-generated artwork from Star Wars vehicle experts Chris Reiff and Chris Trevas, together with other art and photographs sourced from the LucasFilm archives.

Talking about the TIE fighter series, Ryder Windham explains: "Just as the Galactic Empire used great fleets of starships to expand Imperial control across the galaxy, the subsequent authoritarian government, the First Order, used even more technologically advanced ships to unify planetary systems and crush all opposition.

"With both regimes, the most abundant and ubiquitous ships in their respective fleets were the notoriously lethal TIE fighters. Variant models of the TIE fleet include the prototypes piloted by Sith Lord Darth Vader in the battle of the first Death Star, and by Kylo Ren during the First Order's war with the Resistance.

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HELP NEEDED

We are searching for any **FACTORY DRAWINGS** (including cutaways and repair manuals) of the **ARMSTRONG WHITWORTH F.K.8** and pictures of them in manufacture or repair. With a particular focus on the wings but anything would be useful.

If anybody has any material that can help then please email s.tomline@hotmail.co.uk

It would be most appreciated!



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