

# AOPA UK

It was that day that I  
made my wish out loud...

## I want to fly in a Spit

It's a dream for many, but what's it really like to fly  
in a Spitfire — and to fly a realistic Spit sim?



### LEAVING THE EU

How will the UK's aviation laws  
change after our exit in January?  
It should all be simpler

### GREAT WINTER DAYS

It might be cold, but there is  
some fabulous flying to be had  
— and seasonal hazards

### MAINTENANCE MATTER

New simplified 'Airworthiness  
Code' should make life easier  
for owners and operators

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# OUR CHANGES ARE ALL ABOUT YOU

**L**AST ISSUE I brought to your attention the changes in both the organisation and management of AOPA, including the on-going work on its strategy, new HQ and new personnel. As a member I hope you're interested in these things. However, at the forefront of all that we do is you, our membership. You are the reason these changes and improvements are being considered and made. You might be one of those who thinks we're doing a good job, or you might think we could do better. If you do think this, we're inviting you to tell us. For those of you who subscribe to the AOPA E-Newsletter or are on the mailing list for the AOPA Members Working Group you will have received an invitation to respond to an AOPA Members Survey. I hope you took the opportunity to respond. As I write this over 10% of the membership have responded but this will not reach you until the deadline has passed. We'll be passing on the results to you all in the new year.

The Department of Transport also wants to know what you think of the CAA and have launched a consultation into 'The effectiveness and efficiency of the Civil Aviation Authority (CAA)'. Over my forty years of involvement in general Aviation in the UK I have encountered many opinions on this topic. However, I've never had the opportunity to pass them on. Now you do, there are several ways to respond, see <https://www.gov.uk/government/consultations/the-effectiveness-and-efficiency-of-the-civil-aviation-authority-cao>. AOPA will also be responding to this call for evidence and we would be welcome your views for consideration in our response and may help highlight recurring themes. Please email Martin Robinson [martin@aopa.co.uk](mailto:martin@aopa.co.uk) with your views. The call for evidence finishes on 22nd January 2023 so please ensure you respond in time.

Finally, the last consultation from the CAA was on Pilot Medical Declarations review. Following the Covid restrictions when finding an AME proved more challenging than usual, many medicals lapsed. I know I was grateful that it gave me a route to getting back in the air in order to renew my SEP rating without delay. The CAA now want to understand how the system is working and the pilot user's experience of it. Again, the deadline will have passed when this reaches you but I hope you took the opportunity to respond.

The point is General Aviation needs you, your input and involvement. Whether it's the DfT, CAA or AOPA you are being asked what you want and to comment on how your sector is being run. Please encourage your fellow pilot friends to join and get involved. As you can see from the above there's opportunities to help improve the outlook of GA in the UK. New members will be very welcome to attend and join up at the next Members Working Group, January 14th at AOPA HQ Kemsing or on Zoom.

This just leaves me to wish all our members a merry festive season and happy new year. ■



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Articles, photographs and news items from AOPA members and other readers are welcome. Please send to the Editor. Inclusion of material in AOPA Magazine cannot be guaranteed, however, and remains at the discretion of the Editor.  
Material for consideration for the February issue should be received no later than December 2022.

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## EDITOR'S COMMENT

You have to admire Lori Thomas. While many people who either fly or are simply interested in flying would like to fly a Spitfire, the dream is often never realised, but Lori decided the cost was worth it.

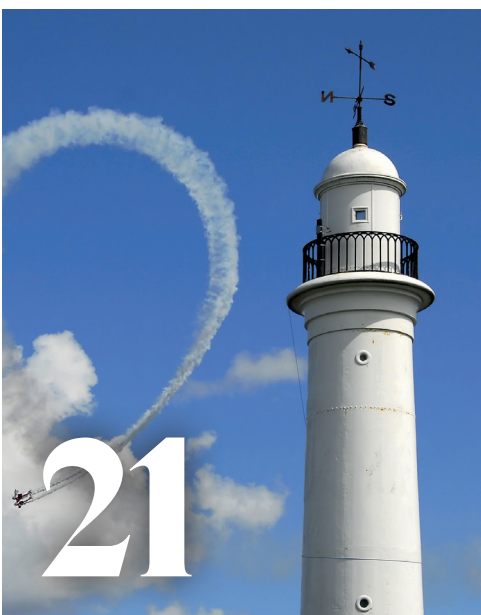
She was so captivated she went back to fly a 'real' Spitfire simulator and all credit to her for doing so.

Who knows where her adventure will take her now, but imagine if she had had the opportunity to fly years ago, she would probably have taken to it like many of us.

And that last point is important because the cost can be difficult for the young, so it's good to see schemes such as the Armstrong-Isaacs PPL bursary.

As we went to press, we learned of the tragic loss of Carolyn Grace — our thoughts go to the family and the many in the flying world who knew, and were inspired by, her.

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# SO, WILL LAWS CHANGE AFTER LEAVING THE EU?

European laws will no longer have 'priority' over UK law but we need to be careful that the CAA and EASA don't have different standards on simple things

**T**HROUGH THE industry consultation body, the DfT and CAA have been in discussion about changes resulting from the EU exit. The aviation industry from the largest to smallest have issues relating to supply lines, labour, and licensing. For example, will the CAA be able to meet the needs of aviation businesses without disrupting the activity? only time will tell!

## RETAINED EU LAW REVOCATION AND REFORM BILL OF 2022

The 31st of January 2022 marks the two-year anniversary of Brexit and the Government is setting out its plans to bring forward the retained EU revocation and reform bill.

Retained law is a category of domestic law which was created at the end of the transition period and consists of EU derived legislation that was preserved in the domestic legal framework by the European Union withdrawal act of 2018.

The government has said that retained EU law was never intended to remain on the statute books indefinitely. The plan is to end the special status of retained EU law in the UK by the 31st of December 2023.

The aim of the bill is to abolish the special status, enabling the government via parliament to amend repeal and replace retained law. The bill will also have a sunset date by which time all remaining EU law will either be repealed or incorporated into UK domestic law however there is also a provision that would allow the sunset to be extended for specific pieces of retained eu law until 2026. The government sees this as a way of reclaiming the sovereignty of parliament, restoring the primacy of Acts of Parliament. Whilst we have heard it all before the government is saying that they want to make the UK the best regulated economy in the world which was set out in the benefits of Brexit document published in January 2022." Taking back control"

I have already raised concerns with the

DfT and the CAA about the potential impact on General Aviation whilst noting that other industries may be similarly affected.

So, what does this really mean? currently direct EU legislation has priority over domestic UK law, if it was passed prior to the end of transition. The bill aims to reverse the order of priority by reinstating domestic law as the highest form of law on the UK statute book, which logically must be the case. Any retained EU law will become "simulated" law to reflect that the EU interpretation no longer features or applies which means domestic courts will have greater discretion to depart from retained case law. Therefore, the bill intends to downgrade the status of retained EU legislation and will also modify powers in other statutes to facilitate their use to amend retained direct EU legislation in the same way they can be used on domestic secondary legislation. Through the secondary legislation process it will be easier to amend, repeal and replace retained EU law. This is about the government ensuring that UK law and parliament has primacy over previous European rules, regulations, and laws. There is no argument over the UK's decision in respect to leaving the European Union but what we are looking for, is how in amending national legislation we can hold the government to account and be sure that these changes to regulations are fit for purpose, provide improved business opportunity, and better outcomes for individuals as well as for the UK economy. Recognising that aviation is global in its nature and what we don't want to see is different standards being applied by the CAA and EASA on something as simple as electronic conspicuity where in order to fly your aircraft across Europe you had to have a device that was approved by EASA which may not be approved by the UK CAA. These are issues we need to avoid so we need better engagement

with Europe which delivers positive safety outcomes.

Currently the trade and cooperation agreement which is being discussed had its second meeting in November 2022 and is still at a high level and whilst it has been reported that there has been some good cooperation between regulators (not surprising) at the political level there is still a degree of angst particularly over matters like the Northern Ireland protocol.

On tax and VAT, the government plans to make changes through a future Finance Bill which will also introduce a bespoke legislative procedure for retained EU law covering VAT, excise, and customs duty. Again, the government's plan is to revoke any remaining retained direct EU law that the government did not repeal in the taxation cross-border trade act of 2018. More details can be found about this bill on the UK parliament website.

We do not know what the effect of these future changes may be for GA, particularly for international flights, even if it is just a day trip to France it is an international flight and as a base line the pilot and aircraft need to be ICAO compliant (unless an agreement exists). Where you are not fully ICAO compliant you will need to seek permission from the state (s) you intend to visit as well as any you need to over fly.

The UK since leaving the EU is a third country operator even though we are still part of the continent of Europe. Prior to exit all flights across Europe were considered as inter European flights.

I organised a meeting with industry colleagues and the CAA to find out how much of an impact the bill might have before it reaches its conclusion on the aviation sector but specifically general aviation.

The CAA indicated that although they are aware of the bill and have been discussing with the Department for Transport, they have no idea of how much change there will be or what

*"It was particularly interesting to hear views on the future of fuel"*

effect it may have on aviation. I said I was concerned given the fast-approaching end of year deadline. We discussed the UK and EU trade and cooperation agreement which is limited in scope – the CAA pointed out the difficulties that exist which are at the political level and not the technical level due to the NI protocol.

With the recent change of government, it is likely that the Economic Research Group of the conservatives will work harder to push the bills through parliament and we will need to keep an eye on how any changes may impact rules and regulations that cover aviation. For example, the basis of all UK law is Roman law where EU law is based upon the Napoleonic code – this is where EU rules need to be written so that the individual knows what they must do. If something is not written then you must assume that the law does not cover what you want to do. Under Roman laws if the law does not say you cannot do something then you can assume that you can.

#### **THE CAA HAS COMMITTED ITSELF TO KEEPING US INFORMED.**

During my visit to Cranfield university it was particularly interesting to hear views on the future of fuel as well as future electric aero engines as they might apply for general aviation but there is a widely held belief that this is way off into the future as the technology, particularly battery technology, is going to take many years to reach a level of maturity that is comparable to the engines that we use today. However, it is clear to me that general aviation needs to take more interest in the issue of rising global temperatures and how emissions at

contribute to the problem.

Promoting 'flying green' is a subject that we should be addressing. Fraser Nash, the consultants who were engaged by the DfT to prepare a report on emissions from general aviation aircraft have completed the work and it has been submitted to the DfT, although they promised a copy of that document to me, I am still waiting to receive it. I think it is highly likely in the future that the government will set a baseline for emissions from GA operations. Meaning that we can grow the activity but subject to not increasing the volume of emissions from GA. This was the approach taken with the airline industry.

The future of airspace design will focus on decarbonization and noise, the new Secretary of State for Transport the RT Hon Mark Harper is likely to continue this approach as it forms part of the Governments wider policy towards NetZero 2050. However, due to the economic situation in the country it is also likely that the Department for Transport is going to be cutting the number of investments that they previously were looking at making. Mark Swann the chief executive of ACOG has stated quite clearly that more efficient use of the airspace could result in a 20% reduction of carbon and when combined with sustainable aviation fuels this will put the commercial transport sector on a good path to achieving net zero by 2050. Cranfield university believes that hydrogen will become the future for commercial air transport along with electric powered commuter aircraft. We will need to influence the government to provide incentives that encourage the GA sector to invest in cleaner fuels, lower emissions etc, we should be engaging with the Treasury about how tax incentives could see a greater take up of cleaner fuels, which is currently suffering from issues relating to distribution and volumes, with a new initiative around taxation it could help stimulate more activity within the general aviation. This stimulus may mean more employment and improved income for regions and the country. GA should also be part of the Government's levelling up agenda.

During the IAOPA regional meeting in Frankfurt we heard from AOPA Luxembourg that they are planting trees as a part of a campaign related to carbon offset. There was a good discussion and it was recognised that it was good PR but it was also recognised that for

some environmentalists planting trees only delays the release of carbon. We also heard of other activities including the amendments coming through ICAO with regards to firefighting services. However, I believe the UK is ahead of the game because we changed our rules several years back to allow for aerodromes to decide what kind of crash rescue service provision they wish to provide. Over 25 years ago AOPA produced a report which was produced by Alan Croxford and Jack Wells that showed in all the incidents at general aviation airfields the fire engine did not make a difference to life because the occupants were either already out of the aircraft or had perished before the fire engine had arrived. Speaking with the secretary general of IAOPA Jim Coon, I explained the role of the European Commission DG Move the European parliament's transport committee as well and the relationship with EASA. Jim fully understood this given his past working life in the U.S. Senate, I ended by saying that engagement at the higher level must be better particularly around policy development both in Europe and in the UK. After all the UK is still part of the European continent and that a few institutions such as Eurocontrol which are not subject to direct oversight from the ECJ and therefore their mandates have an ability to affect aviation in the UK.

Following the last GAP meeting I asked when we would hear from the CAA about the consultation on cost-sharing. The CAA has stated that they are hoping to release a response by mid-December 2022, but currently the draft is with the legal team. I am expecting some changes to be announced which may be a return to the rule that we had prior to the EASA change which included equal shares between a maximum of four people one of whom must be the pilot. I do not think that platforms like Wingly will be affected unless the CAA change the rules around advertising flights. We will have to see what the new policy looks like in later December. ■



*M Robinson*

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# FINALLY, THERE'S A SKYWAY CODE-STYLE MAINTENANCE GUIDE FOR LIGHT AIRCRAFT

AOPA's pressure helps bring about new simplified Airworthiness Code that will make life easier for owners and operators

**AOPA CHIEF executive Martin Robinson** has welcomed a new Airworthiness Code designed to provide practical guidance on key airworthiness topics such as the Airworthiness System and the Part-ML maintenance programme.

The CAA Airworthiness Code; A maintenance guide for light aircraft is a guidance document designed to support owners and operators of general aviation (GA) aircraft. The document primarily addresses Part 21 aeroplanes and rotorcraft subject to the Part-M regulation; and Part 21 aircraft operating on an enduring permit to fly.

Feedback received as part of a consultation looking at UK General Aviation opportunities after leaving EASA, highlighted the need for there to be an airworthiness version of the Skyway Code.

Martin Robinson, Chief Executive Officer of the Aircraft Owners and Pilots Association, said: "AOPA has been pleased to see the Civil Aviation Authority following up with an equivalent to the Skyway Code but for maintenance matters.

"This is something we have been keenly requesting and our Maintenance Working Group helped review in its early stages. We believe it should be useful for aircraft owners, operators and maintainers alike. We congratulate the CAA for seeing this important piece



Maintenance should be easier with the new guide

of work to completion and we recommend it to all aircraft owners.

"We know from the number of queries we receive from our members that maintenance issues are common and often arise because of misunderstandings of the myriad of maintenance regimes. The idea of a clear, well documented description of maintenance matters in a form suitable for owners and operators is a great step forward. We look forward to helping the CAA keep the document relevant and readable."

Michael MacDonald, Co-Head of the Civil Aviation

*"A clear, well documented description of maintenance matters in a form suitable for owners and operators is a great step forward"*

Authority's General Aviation & RPAS Unit said: "This new Airworthiness Code has been produced in a similar style to the much-loved Skyway Code and we hope this new guidance will go some way in supporting GA owners, not only in their regulatory understanding of Part-ML itself, but also how to apply it to their aircraft.

"I would like to thank in particular the Aircraft Owners and Pilots Association (AOPA) Maintenance Working Group and other members of the GA community who contributed to the Airworthiness Code and hope that you will find it useful." ■

WORDS and IMAGES Mike Powell

# CONTROL SYSTEMS, DEFLECTIONS AND CABLE TENSIONS

Control deflections might not change significantly in normal use, but cables can stretch and pulleys can wear insidiously

FLIGHT CONTROL systems are a critical area for fairly obvious reasons. Loss of any, or part, of a control system during flight may be expected to present the pilot with something of a problem to say the least. For this reason tread carefully and make sure that a second (duplicate) inspection is carried out by a Licensed Engineer or LAA/BMAA Inspector if any control system (flying control surfaces, engine controls, fuel systems) are disconnected and re-connected or adjusted. For certified aircraft this must be carried out by a Licensed Engineer and for permit

aircraft by a LAA or BMAA Inspector. This inspection must be recorded in the aircraft log-books.

Flight controls are generally cable or tubular rod systems and may be adjusted to give the required tension and aileron, elevator and rudder deflection range.

Cables are multistranded and of either galvanised steel or stainless steel. Generally galvanised steel is the preferred material as it is more flexible and has a higher yield strength.

The required tension and control surface deflection may be found on the aircraft technical data sheet, build manual or maintenance manual.

*“Less than specified up elevator might result in a heavy landing”*

Correct tension is important – too slack and the control surface may ‘flutter’, too tight and the cables may distort the airframe or overload any pulleys or guides. Cable tensions may be checked using a tensioner (Fig 1) (available

from LAS for around £230) – another case of begging/borrowing. Typical cable tensions will be in the order of 20 to 30 lbs. (9-14 kg.). Rod system tensions are usually fixed and any adjustment is related to control surface deflection. Changes in direction will be achieved by rose-bearings and/or bellcranks which should be inspected for wear and lubricated at every annual inspection.

Control deflections do not change significantly in normal use but cables do stretch in use (but not by any significant amount) and wear in pulleys and guides will take place over time. Elevator deflection is particularly important – Insufficient elevator deflection on approach to landing can make life difficult for the pilot when a reduction in airspeed reduces elevator authority and less than specified up elevator may result in a heavy landing and damage to the airframe. (more on energy paths in another article). Left and right aileron deflections should be similar so that the aircraft responds to left and right inputs in a similar way – likewise rudder inputs can become critical as airspeed reduces during ground movements. Insufficient rudder deflection, or unequal deflection, can lead to handling problems on the ground especially when the rudder is close to the aircraft c-of-g (close-coupled).

In the case of older aircraft, and some of the GA fleet are



Checking cables for the correct tension and broken strands is a must



Fig 1: Cable tensiometers are a good way to check cables



Note how the turnbuckle is wire-locked before undoing it

getting on for 60 + years old (early Cessna models, the De Havilland Moths, Chipmunks and so on) the control cables are as old as the airframe. The condition of cables may be checked by visual inspection and by running a piece of felt back and forth along the length of the cable. Any broken strands will be picked up by the felt and broken strands, usually found adjacent to pulleys and guides, may call for replacement of the cable. A worn cable may be spotted visually by a shiny length of cable running over a pulley or through a guide. As a general rule it is not necessary to adjust cable tension if it is within 5% of the specified figure.

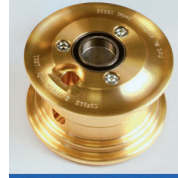
Cable tension is generally adjusted by means of turnbuckles which will be wire-locked to prevent rotation (Fig 2). Note how the wire-locking is arranged so that you may replace it after adjusting the cable tension. Adjustment is done by removing the wire-locking and rotating the

centre body of the turnbuckle to tighten or loosen the cable tension. Make sure that the turnbuckle forks do not rotate with the centre body and twist the cables.

Control deflections will be given in degrees or ins/mm usually measured at the inboard end of the aileron and elevator (Fig 3). This is a two-man job – one in the cockpit to operate the controls and one to do the measurements.

Finally ensure that all split-pinned fasteners are secure, all wire-locked fasteners are secure and all stiff-nuts have at least 1 ½ threads visible above the nut.

Finally, if any control is disturbed or altered in any way then a second (duplicate) inspection must be carried out by the owner/pilot giving his/her pilot license number and the second (duplicate) inspection carried out by a Licensed Engineer or appropriate LAA/BMAA Inspector and the details entered in the aircraft log-books. ■



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WORDS Chris McGine IMAGES Various

# CAA CHIEF TO STEP DOWN

After 10 years with the CAA Richard Moriarty is to move on from his role, and a new Director comes in to the Airprox Board

**THE UK CIVIL Aviation Authority has announced that Richard Moriarty, its Chief Executive Officer, is to step down from the role in Spring 2023.**

Richard has worked for the organisation for more than ten years, in senior roles including Director of Competition and Economic Regulation, Director of Consumers and Markets, Deputy Chief Executive and latterly as Chief Executive for the last five years.

“At the end of this financial year I will have served the Civil Aviation Authority for over ten years and I have decided that at this time it will be right for me to step down and start the next chapter of my career,” he said.

“The Civil Aviation Authority is a truly unique organisation that achieves amazing things, and I am confident it will continue to do so given the strength of talent and leadership within the organisation.” The CAA will start the process of finding Richard’s successor.

Former Tornado GR4 Flight Commander Simon Oldfield has been appointed as the new Director of the Airprox Board. Simon saw operational

service in Iraq, Kosovo and Afghanistan and amassed around 2500 flying hours, including three years’ exchange with the French Air Force flying the Mirage 2000D.

He first learned to fly as a glider pilot with the then Air Cadets (now RAF Air Cadets) and towards the end of his time in the RAF was posted to the newly formed Royal Air Force Safety Centre as the Fast Jet Flight Safety subject matter expert.

During his time there he developed a passion for the improvement of aviation safety and gained an MSc in Safety and Human Factors in Aviation from Cranfield University.

While at the RAF Safety Centre he became a UKAB Board member for five years which led to a natural progression to becoming an Inspector in November 2019 when he left the RAF.

He was promoted to Senior Inspector in April 2021 and took on the role of Director in September.

With a continued appetite for aviation he is training for a Private Pilot’s Licence at Halton Aeroplane Club in a Cessna 152. ■



Richard Moriarty



Simon Oldfield

WORDS Chris McGine

# FINANCIAL HELP FOR FIS TO DEVELOP

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existing instructors who wish to gain additional instructing qualifications or to revalidate/renew existing ratings. The bursaries aim to support those who might otherwise not be able to afford to pay for the training or renewal costs.

There are no set figures for the funding and the Company aims to assist as many instructors as possible within the limits of its available budget.

All applications are based on merit and are considered by a panel of experienced

instructors who are members of the Company. It is not necessary to join the Air Pilots in order to apply. For more information, go to <https://www.airpilots.org/scholarships/flying-bursaries/> ■

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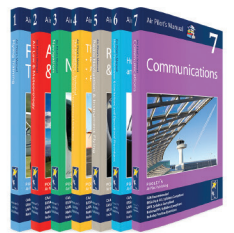
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# FIVE FLYING STUDENTS TO GET £1,500 HELPING HAND

Bursery for students aged under 30 must be used exclusively for flying training or examinations

**FIVE BURSARIES of £1,500 are being offered to support young post-solo student pilots to help them complete their courses.**

The 2022 Armstrong-Isaacs PPL bursary scheme run by the Light Aircraft Association (LAA) is open to student pilots under 30 years of age. The funds will be lodged with the flying school of winners' choices and must be used exclusively for flying training or flight examinations.

To qualify, a pilot should be under 30, have completed a minimum of two hours solo training and have gained the necessary medical and ground qualifications to continue their training.

The Armstrong-Isaac's fund is supported by legacies from former Association luminaries David Armstrong and John Isaacs. The bursaries support young pilots who have reached the financially challenging latter stages of PPL training, with longer cross-country flights requiring greater outlay in aircraft rental costs.

Applicants should complete a form which can be downloaded from the LAA website. Applications must be lodged with the LAA by 31 December 2022.

The UK Civil Aviation Authority has launched a Call for Evidence for the Barnsley region of the UK's airspace. This is the second area it has chosen to review under its CAP 1991 procedure and has been based around the Barnsley Altimeter Setting Region.

This is a sizeable region, and for the past few months the Civil Aviation Authority



The latter stages of PPL training can be financially difficult for the young

has been carrying out an initial scoping exercise to highlight some of the key facts related to this region. The Civil Aviation Authority is now seeking the views of all stakeholders that are familiar with airspace in the Barnsley Region to help it to identify volumes of airspace that may need changes to their classification.

The responses to this Call for Evidence will then inform what, if any, volumes of airspace in the Barnsley Region will be taken through to the Amend stage of the classification review procedure or how we can use alternative solutions to remedy identified issues.

Stu Wain, Manager of Future Airspace at the UK Civil Aviation Authority, said: "We are delighted to be launching our Call for Evidence as

*"We are encouraging anyone who has views about this airspace to tell us what they know"*

part of our review into the classification of airspace in the Barnsley region. We are encouraging anyone who has views about this airspace to tell us what they know to help us identify what changes we can make to it to ensure that it is fit for purpose and access is more equitable.

"Stakeholders will also be pleased to know that while the Call for Evidence is happening, our team is already using existing stakeholder feedback about airspace in this region. Most notably, we are currently undertaking a detailed review of the Manchester Low Level Route to better understand the issues raised with this portion of airspace and identify any opportunities as to how we may address them."

This call for evidence is open until 08 January 2023 ■

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WORDS Martin Robinson

# AOPA RESPONSES TO CAA CONSULTATION

AOPA suggests ways to improve the PMD scheme and ‘the evolution of current GA pilot licensing’ rather than unnecessary revolution

**RECENTLY THE CAA launched two consultation documents inviting responses to legislative proposals of direct relevance to GA pilots. These were:** CAP 2335 GA Pilot Licensing & Training Simplification which was released on 18th October, with a comment response deadline of 16th December 2022.

CAP 2408 Pilot Medical Declaration Review which was released on 24th October, with a comment response deadline of 5th December 2022.

On behalf of AOPA, I conducted a preliminary review of both consultation documents, circulating my views to the Board of Directors, all AOPA Corporate Members, the AOPA Training and Education Working Group and all AOPA Instructor members.

CAP 2408. Due to the shorter deadline, we first considered our response to the PMD review. AOPA strongly supports the PMD scheme, which has proved to be entirely safe ever since its introduction. However, guidance notes for the ‘5700 kg’ PMD may not provide sufficient detail for some declarants. For example, does ‘history of alcohol abuse’ include being convicted of a drink-driving offence some 50 years ago? We also noted that the CAA has had some concern about declarants who have been refused a Part-MED certificate by an AME immediately making a PMD; as we really wouldn’t wish to see an end to the PMD scheme due to pilots taking such an action, we considered that

the declaration form should advise declarants that if they have been refused a Part-MED certificate, the CAA might require further information from their GP before accepting the declaration. We also considered that solo flying by sub-ICAO student pilots should be permitted with a PMD as they do not fly with passengers and always fly under the supervision of an instructor who will not permit them to fly if their fitness is in any doubt. Currently this only permissible for NPPL students flying non-Part 21 aircraft and only if they meet the ‘5700 kg’ criteria; we have also recommended that the ‘2000 kg’ criteria should apply to all sub-ICAO students. Following approval by the Board of Directors, our response was submitted including all these points.

CAP 2335. This introduces the quite laudable aim of simplifying the current private pilot licensing regulatory regimes. It is quite reasonable for private pilot licences issued under Art.152 of the ANO and those issued under Part-FCL to be harmonised with a common set of privileges and we support this. However, the CAA proposals for sub-ICAO pilot licences would, we consider, introduce complexity rather than simplification. In effect the CAA proposal at sub-ICAO level, for what they propose to call the ‘PPL(Light)’, would combine microlight and NPPL/LAPL licensing into a single scheme, with a plethora of ‘operating restrictions’ which could be removed by further

*“Many pilots, instructors and examiners do not fully understand even current requirements and the last thing they would need is yet another licensing scheme”*

upgrade training and testing requirements. This we feel would introduce complications, particularly for instructors and examiners and would fail to provide any real simplification. Many pilots, instructors and examiners do not fully understand even current requirements and the last thing they would need is yet another licensing scheme with which to contend. Instead AOPA proposes that NPPL and LAPL privileges could be synergistically harmonised to form a UK LAPL, retaining the LAPL-to-PPL upgrade route and restoring the NPPL to LAPL / PPL conversion criteria which existed in 2018, particularly for Microlight licence holders wishing to upgrade to SEP / TMG licences. With the approval of the Board of Directors, we have responded to CAP 2335 with the following key points, which we consider would be of greater benefit to UK

pilots and could be introduced sooner than the proposals of CAP 2335:

- Harmonisation of ‘ANO’ and UK Part-FCL PPL licensing.
- Harmonisation of NPPL and LAPL licensing, including the restoration of pre-8 Apr 2018 conversion criteria, into a UK LAPL with retention of LAPL-to-PPL upgrade criteria in accordance with Part-FCL.
- Adoption of NPPL revalidation and renewal criteria for the LAPL
- Leaving Microlight licensing in its current form, but restoring NPPL(M) to LAPL conversion criteria.
- No obligation for any pilot to convert any existing licence into any new licence unless they wish to do so.

AOPA does not support the sub-ICAO ‘PPL(Light)’ pilot licensing requirements of CAP 2335. We have provided the CAA with proposed amendments to FCL.105A, FCL.110A, AMC1 FCL.115A, FCL.140.A and NPPL to LAPL(A) conversion proposals based on CAP 804 Part 1 Section 4 part P which would facilitate our alternative proposals. These basically recommend amendments to current licensing requirements and would, we consider, better meet the needs of current and future UK sub-ICAO licence holders. As the UK is no longer an EASA Member State, such amendments could be introduced reasonably quickly; in effect the AOPA proposal considers evolution of current licensing rather than the wholly unnecessary levels of revolution proposed by CAP 2335. ■



**WORDS** John Walker

## THE LATEST NEWS ON UK AIRFIELDS

**THERE ARE** airfields across the UK currently under threat from developers and local councils.

### **BOURN**

ite earmarked for some 3,500 homes in 2031 Local Plan adopted by South Cambridgeshire District Council on 27 September 2018. The Council approved a planning application for the development on 19 February 2021 subject to the completion of prior conditions.

### **CAMBRIDGE**

Marshall Aerospace and Defence Group will be vacating the aerodrome by 2030 and have signed an option to lease land at Cranfield. An outline planning application for the new facility at Cranfield has been submitted to Central Bedfordshire Council and was validated on 2 November 2022. The Cambridge site has been put forward for a major housing development in the First Proposals for the new Greater Cambridge Local Plan issued for public consultation that ended on 13 December 2021.

### **CHALGROVE**

Site included in South Oxfordshire District Council 2034 Local Plan adopted on 10 December 2020 for a 3,000-home development with a new runway for Martin-Baker Aircraft (MBA) operations for which development a planning application was submitted by Homes England (HE) the

land owner. The application was withdrawn on 21 May 21 pending a review of the plans after the CAA recommended that the proposed development be discontinued as it was incompatible with MBA's current site operations. HE has stated that they will use their CPO powers if negotiations about the development with MBA (their tenant) are unsuccessful.

### **CHATTERIS**

Anglian Water has started a public consultation on a proposal for the aerodrome site and its surroundings to become a new water reservoir.

### **DISHFORTH**

Aerodrome site being disposed of but not included for development in the 2035 Harrogate Borough Council Local Plan adopted by the Council on 4 March 2020 but site is expected to be considered during first five-year review of the adopted Plan.

### **WYCOMBE**

Site lease holder has agreed new leases with the land owner, Wycombe District Council (now part of the new Buckinghamshire Council). The Council's adopted 2033 Local Plan provides for an industrial / warehousing complex on south-eastern part of the site requiring shortening of runway 35 and relocation of gliding activities to the north, for which changes a planning application for a new glider track was approved on 8 December 2021. ■

# AOPA INSTRUCTOR REFRESHER COURSES

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

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

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

## NEXT DATES

The next dates for the course are

**14/15 March 2023**

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

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

Further information can be obtained from the Course

Administrator, Mandy Nelson, on 020 7834 5631.

Please book the course online at [www.aopa.co.uk](http://www.aopa.co.uk)



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

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

# AOPA NEWS



PHOTO - Spaceport Cornwall

## FIRST UK SATELLITE LAUNCH GETS SET

The first launch from UK soil will take place via Virgin Orbit's Cosmic Girl

THE UK'S first orbital space launch has moved a step closer to lift-off with Spaceport Cornwall receiving the UK's first ever spaceport licence.

To receive the licence, Spaceport Cornwall, based at Newquay, has had to show it has met the appropriate safety, security, environment and other aspects to operate a UK spaceport. The approval also means it also has the infrastructure, equipment and services for horizontal space launches.

The first such launch from UK soil will take place via Virgin Orbit's Cosmic Girl,

a converted Boeing 747 that has already arrived at Newquay and has previously flown five such missions from the U.S. The 747 carries the LauncherOne rocket into the upper atmosphere before releasing it and allowing the rocket to do the rest and place satellites in orbit.

This latest licence adds to nearly 150 satellite licences already approved by the CAA since becoming the UK's space regulator in July 2021.

It's hoped that the UK's growing space industry will boost innovation and is estimated to be worth £16.5 billion and support 47,000

jobs, with 2,500 apprentices opening the sector up to even more people.

"This is an historic moment as we licence the first ever spaceport in the UK," said CAA Chief Executive Richard Moriarty. "We're proud to be playing our part in facilitating the UK's space ambitions through assessing the safety, security and other requirements of these activities.

"This is another major milestone to enable this country to become a leading launch nation."

"When we became the space regulator, we committed

to delivering in an open, effective and proportionate way, with public safety at its heart.

"Our work does not stop with this licence decision as we continue to assess other licence applications and oversee the effectiveness of licenced activities, all enabling the UK's space sector to grow safely and securely."

Melissa Thorpe, Head of Spaceport Cornwall, said: "Cornwall is now ready to open up the use of Space for Good, and support the UK industry in harnessing the power of space to benefit life on Earth." ■

# WILLIAMS DONATES \$500,000 TO AOPA 'YOU CAN FLY' SCHEME

TURBINE ENGINE manufacturer Williams International has donated \$500,000 to the Aircraft Owners and Pilots Association You Can Fly High School Aviation STEM Curriculum.

When presenting the half million dollar gift, Williams International CEO Gregg Williams said he is living proof that teaching kids about aviation can spark a lifelong passion, a terrific career, and the ability to make an impact.

"We have always been a leader in advancing

*"The donation will enable AOPA to expand the program"*

education through a combination of apprenticeships, our internal education program, the aviation industry's best rotational engineering program, and our WINGS flight training program. This donation to You Can Fly supports this vision, as it's a

significant step to help high school students get a head start in careers in aviation," Williams said. The donation will enable AOPA to expand the program, which offers the aviation-based STEM curriculum free to high schools across the nation.

Launched in 2017, the curriculum is developed and updated by a team composed of teachers, curriculum professionals, pilots, and flight instructors, according to AOPA officials. In the current school year, more than 14,000 students are enrolled in 44 states. ■



## AOPA NEWS HIGHLIGHTS

### System update

The CAA have published these supplementary instructions regarding surveillance systems and updated the associated manuals and publications:

Supplementary Instruction SI 2022/10 (CAP493 SI 2022/10) to the Manual of Air Traffic Services Part 1

Supplementary Instruction SI 2022/02 (CAP413 SI 2022/02) to the

Radiotelephony Manual

Supplementary Amendment SA 2021/01 Version 2 (CAP670 SA 2021/01) to ATS Safety Requirements

The changes come into effect from 23 January 2023 and the purpose of the documents is to facilitate the use of cooperative surveillance systems in support of flight information service (FIS) provision.

AOPA UK were fully involved in projects to test the use of ADS-B in GA aircraft. This work has contributed to the CAA being able to enable the use of cooperative surveillance systems in support of FIS provision that does not require the same level of integrity of ATS surveillance systems currently used to provide ATC surveillance separation and some aspects of the UK Flight Information Services.

### New Trig nav/com

Trig have unveiled a new nav/com unit that provides a second 8.33 kHz VHF radio for redundancy. The slimline TX56 supports both legacy and modern CDI / indicators. It also provides redundancy to GPS, for VOR navigation and ILS approaches. If a GPS system failure occurs, the unit becomes a navigational back up.

## WARNING OF ACTION OVER PLYMOUTH AIRPORT CLOSURE

PLYMOUTH CITY Council will take legal action to regain control of Plymouth Airport, closed by property developers Sutton Harbour Group 11 years ago, if a deal cannot be reached.

In 2013, the city council

approved SHG's application to build houses on the southern part of the airport, rendering one of the runways useless for aviation.

Earlier this year, SHG unveiled its masterplan to build on the remainder of the

113-acre site, and put a value of more than £27m on the land.

Campaign group FlyPlymouth says the airport was "still worth fighting for" and said it had offered above the market value for the site. ■



# GUY RITCHIE UNVEILS COMPTON ABBAS PLAN

Movie director says airfield will keep running ‘in the spirit that has been curated by the Hughes family over their years of ownership’ with improvements to buildings and infrastructure in a ‘sympathetic manner’

MOVIE DIRECTOR Guy Ritchie has confirmed flying will continue at Compton Abbas Airfield in north Dorset, following the purchase of the airfield.

In a letter to ‘the staff, residents, aviators and wider community of Compton Abbas Airfield and the surrounding area of Cranborne Chase AONB’, Mr Ritchie said:

“We are pleased to announce that Ashcombe Estates are purchasing Compton Abbas Airfield from the Hughes family. Compton Abbas Airfield is an important part of the local area and has been the

heart of the flying community here for many years.

“We will keep running the Airfield in the spirit that has been curated by the Hughes family over their years of ownership. We will make some improvements to the buildings and infrastructure, this will be done in a sympathetic manner, with the current community of users included in the planning.

“We will continue to operate the Airfield for both resident and guest aircraft. Resident aircraft can continue to rent hangar space here. We will keep the café and bar running so that it will remain a regional

*“We will continue to operate the airfield for both resident and guest aircraft”*

destination for families.

“We want to maintain flying training, but we cannot manage the flying school ourselves. We would like to discuss with those currently involved in the school ways that we could enable flying training activities to continue. Resident organisations which run

independently of CAA will be welcome and encouraged to continue to operate.

“We will move some of the storage and workshop activities which currently take place at Ashgrove Farm to the Airfield. This will not interfere significantly with current flying operations.

“There will be a carefully managed transition period with the Hughes family to ensure that nothing is rushed. As discussions develop, we will keep you up to date with plans and ensure there is opportunity for regular dialogue.” ■

# 'CARBON' FEARS GROUND SUNDERLAND AIRSHOW

EUROPE'S biggest free airshow has been grounded by local authorities over fears it creates too much carbon.

Sunderland International Airshow attracted hundreds of thousands of spectators to the seafront each year. It was previously cancelled during the pandemic and by fog in 2008.

It has now been shutdown by what the city council is citing as "the global climate emergency" and the city's

ambition to be carbon neutral by 2040.

Highlights at previous airshows have included displays by the Red Arrows, the RAF Falcons, and the Royal Navy Black Cats, which performs helicopter stunts. Launched in 1988 as a single-day show, it became a two-day show then three days of flying.

The event's cancellation has sparked a petition calling for a rethink over the event – hugely

popular with aviation fans and local families alike.

One theory is that the city council may have been put off by the cost; with regulation costs and bills for inspections, safety and crowd management amid the cost of living crisis, local authorities may well be studying expenditure more than ever.

Airshow rules were tightened following the crash at Shoreham in 2015 which killed 11 people and left 16 injured. ■



Sunderland International Airshow attracted hundreds of thousands of spectators

## AOPA NEWS HIGHLIGHTS

### Farewell Johnny

Family and friends have paid tribute to the final survivor of the World War Two Dambusters who has died aged 101.

Sq Ldr George 'Johnny' Johnson, was a bomb-aimer in the 617 Squadron, which destroyed key dams in Germany, in an operation to halt the war effort in the Ruhr Valley. It was Mr Johnson's role to target the Sorpe Dam as part of the attack, which was codenamed Operation Chastise and carried out by the RAF's 617 Squadron, based at RAF Scampton.

The former RAF navigator John Nichol, who was captured during the first Gulf war, paid tribute to Johnson. "The nation has lost a true hero. Blue skies Sir."

### e-R44 takes off

A modified Robinson R44 has made the first helicopter flight between two airfields solely by electric power.

"Progress in the development of all-electric propulsion is similar to other periods of significant advance in aviation," said Glen Dromgoole, President of Tier 1 Engineering one of the partner companies in the venture, following the successful 21nm flight by the e-R44 in the U.S. "Today's historic flight demonstrates the potential of all-electric rotorcraft," he added.

The e-R44 uses a quick-swap technology for its battery packs to enable return trip flights without waiting for a recharge. The swap time is just 15 minutes compared with an hour for a full recharge.

Helicopter operator, OC Helicopters, hopes to offer organ delivery services via the electric R44.

## THREE MORE INVESTIGATIONS INTO CHINESE PILOT TRAINING

THE GOVERNMENTS of France, Australia and Canada have joined the U.K. investigating whether their retired military pilots are helping to train Chinese pilots. All three powers have warned their former employees, all of whom swore an oath to defend

their respective country, that helping the People's Liberation Army gain the upper hand over Western allies likely makes them criminals.

Earlier this week, the U.K. confirmed it was getting in touch with about 30 ex-RAF pilots who had been

approached by a South African company with an offer of about \$250,000 a year to train the PLA's finest. France, Australia and Canada have not yet confirmed their former personnel have taken the bait but they are looking into it. ■

# CAROLYN GRACE

1952-2022

FOR MOST pilots the name Carolyn Grace, who tragically lost her life in a car crash in Australia, is synonymous with modern Spitfire flying — she was, quite simply, one of the best, well known for her passion for the marque and her dazzling displays.

As many pilots will know, the first steps to her becoming the world-renowned Spitfire pilot she became were taken when she and her then husband Nick spent five years restoring the 'Grace Spitfire' in Cornwall.

Following the tragic loss of her husband, Nick, 34 years ago she believed that the Grace Spitfire should continue to fly to keep her husband's memory and dream alive, so she learned to fly herself.

Carolyn quickly became a skilful pilot and, over the following decades, became one of the world's great Spitfire pilots, amassing some 900 hours. The emotive, choreographed displays she put on, often set to music, have been described as 'graceful ballet' in the air.

During her years displaying the two-seat Grace Spitfire, ML407, both in this country and abroad, she also flew in a number of commemorative and record-breaking formations, including the 'Big Wing' formation of 23 Spitfires at Duxford.

But Carolyn was more than 'just a pilot'. She was also passionate about people and successful in business. Her business acumen sustained not only the

continued successful operation of the Grace Spitfire, but also the integrity and work ethic of Air Leasing, based at Sywell, which since 1984 has specialised in the

restoration, maintenance and operation of Second World War era fighters which she ran with her son, Richard, and daughter, Daisy. ■



PHOTO - Alamy/Andrew Parsons

# RUFUS HEALD

1925-2022

WE ARE also saddened this month to record the loss of former fighter pilot turned instructor Rufus Heald MBE at the age of 97.

Many people, particularly in the south-west, will know of Rufus for his passion to pass on his skills and knowledge to upcoming generations of pilots, particularly while he was an instructor at the former Exeter Flying Club.

Rufus joined the RAF in 1942 and flew numerous aircraft including Spitfires and the Tempest. Notably, he moved into the jet age and, while flying a Vampire, he survived a spectacular crash at Kai Tak following an engine failure.

Rufus enjoyed a fascinating and varied RAF career, in which he became, among other things, an instructor on Vampires and Meteors, and

for a time while desk bound in Whitehall he became the author of a column in the RAF magazine Air Clues.

He retired in 1980 at the age of 55, but that, of course, wasn't the end of his flying — far from it. Rufus had too much to knowledge to pass on to others from his years of RAF experience and he became known widely for his skilful instructing technique and also for his writing. During this time he also worked as the CAA Operations Officer in Flight Crew Licensing, specialising in the approval of FTOs, alongside special responsibilities for flight safety.

He also had many a tale to tell to aspiring (and experienced pilots) both when you met him and

through informative articles he wrote for flying magazines, and an autobiography entitled Rufus Remembers.

He finally hung up his headset at the venerable age of 83 in 2008 having

accumulated some 15,279 hours flying some of the worlds most iconic types, and leaving behind countless pilots who remain grateful for the knowledge he passed on to them. ■



# A TEST PILOT'S LIFE FULL OF SURPRISES

**Author** Chris Taylor  
**From** Pen and Sword Books

WHEN FLIGHT 110 lost power during a thunderstorm on approach to New Orleans, the crew prepared for a forced landing but options were limited.

Incredibly, the youngest pilot put the aircraft on a grass levee with no one aboard sustaining more than a few minor injuries. A few days later, as the Boeing 737 started to sink into the soft earth, the two engines were replaced, ready for two test pilots to fly out and return the aircraft to service.

Just another day in the office but also a glimpse of the role carried out by highly qualified and courageous professionals who continue in the spirit of Chuck Yeager and thousands of like-minded pioneers.

Test pilot Chris Taylor's experiences have taken him on a fascinating journey through all kinds of airspace in 400 different types of aircraft, as a licensed Category 1 test pilot and flight test instructor for aeroplanes and helicopters, which probably makes him one of the best qualified and widely experienced test pilots.

After serving at Boscombe Down for ten years as a test pilot he joined the CAA as an aeroplane and rotorcraft test pilot. With the closure of the CAA's Flight Test Department he formed Dovetail Aviation Ltd and has continued to test fly aircraft ever since as well as being an examiner and instructor.

As you'd expect for a test pilot not everything went according to plan during his career, even on simpler aircraft. While testing a microlight at Old Sarum, for example, he was setting off down the runway when the

instrument panel caught fire with "flames shooting out".

"That was a completely unexpected occurrence when I was all geared up to do something dangerous in flight and I was caught out on the ground within 30 seconds of setting off," admits Chris.

He also talks about some other close calls including, testing a twin near London. To experience its single-engine performance he shut down the left-hand engine but on restart it there was a "rattling and clattering", which forced him to shut it down again and return on just one engine. Clearly the performance wasn't too bad...

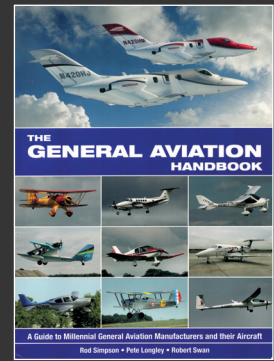
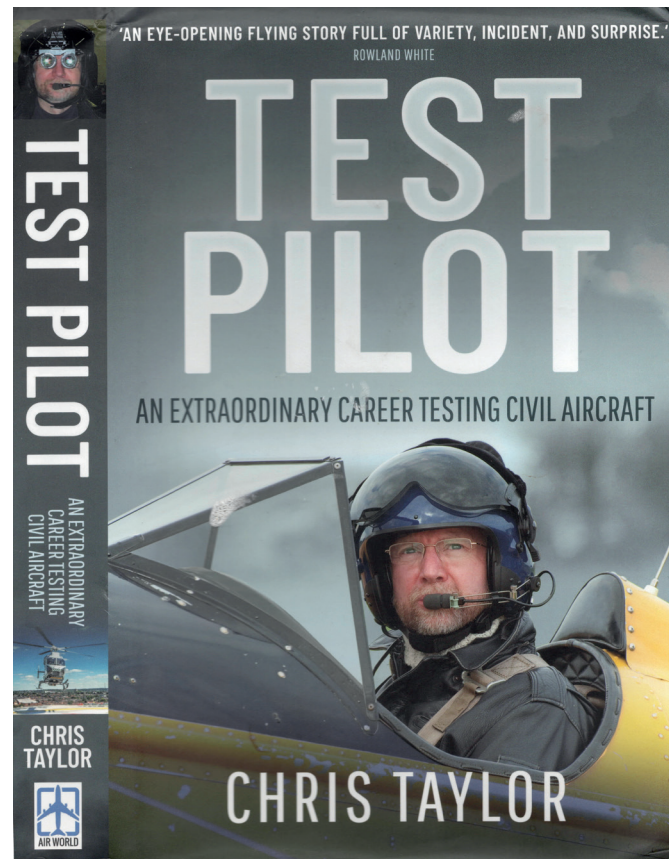
Then there was the idea of modifying a Stearman to fit a wing-walking rig on the biplane's upper wing. The testing took place at Oaksey Park in Wiltshire and Chris initially flew with just the rig to

get some baseline data.

All went well so Fred, a shop mannequin, was installed for a 'person' test. The handling was fine so the final part of the flight was to test the effect of maximum speed on a wing-walker. It was time for a steep dive, then it happened... Fred lost his leg but fortunately no control surfaces were damaged and the Stearman landed with a one-legged wing-walker and another test pilot anecdote.

Rather than just the usual cutting-edge fast jets one associates with test pilots, Chris Taylor's book covers GA aircraft, including homebuilts, helicopters and autogyros. It also features the testing of ex-military jets and warbirds such as the Fieseler Storch, Sea Fury, Spitfire and the Mustang. A fascinating book. ■

**Price** £18.75



**Author** Rod Simpson, Pete Longley, Robert Swan  
**From** Air Britain

THE SIXTH edition of the handbook has been 17 years in the making and limits itself to GA aircraft since the year 2000, simply because of that explosion in numbers.

As author Rod Simpson, who compiled the guide along with Pete Longley and Robert Swan, points out: "There has been an explosion in sales of affordable new light aircraft driven by the availability of the Light Sport and Ultralight category models."

It covers fixed-wing aircraft built in production quantities, but does not include types built only as a prototype unless those are part of the manufacturer's wider activities. It excludes rotary wing aircraft, weight-shift microlights and hang gliders, balloons and airships.

There's everything from business jets and turboprops to piston engine singles and twins, factory-built and kitplanes. Altogether, 1,500 different aircraft types are mentioned across 256 A4 pages with 562 colour photos. ■

**Price** Air Britain Members £35.00 Non-members £49.50

WORDS Adam Winter IMAGES Various

# WINTER IS COMING

Just because it's cold out there that's no excuse not to fly

**I**T'S BEEN a bit of an unusual run into this year's winter.

**The weather's hardly been autumnal with mild temperatures through October into early November — but the change to proper winter is in the air, potentially bringing with it some of the best flying days but also some of the worst flying conditions and hazards.**

While there will be some great days with fabulous views, the flip side is the two factors that really affect flying in the winter — the weather and the early onset of evening. Don't get caught out by either.

The weather is, of course, characteristic of the air mass that dominates the UK at any given time. These are the polar continental or maritime masses of air, and are either cold and dry or cold and moist as they are forced up over the relatively warmer landmass of the UK.

These masses cause the weather characterised by the temperature and moisture content of the air. For example, a Polar Continental air mass comes down from the North and if it has travelled mainly overland it will be quite dry. This will bring the weather we want as it is likely to be a crisp clear winter's day.

Engines love the winter as each breath into the cylinder can contain up to 11% more oxygen than in the summer. Unfortunately, some of the negative aspects of winter far outweigh these advantages. Aircraft take-off performance can be affected by factors such

as wet grass, which although not confined to the winter it is prevalent.

My flying career was mainly spent in Africa and the Caribbean. My priority in winter here is to remain warm and comfortable. That way I can perform all tasks without hurrying or being distracted by shivering and thinking of Africa or the Caribbean. Winter is at its most miserable when doing the first pre-flight of the day. I have to wear gloves and a hat that covers my ears otherwise I really do rush things.

When checking for fuel contamination in the winter it's more likely that condensation has occurred in the air above the fuel in the tank, and a few drops of water might appear in the fuel sample, so take extra care to inspect it. This won't happen if it's your aircraft and the tank is left full, but if you fly with a club or school check whether they want it left full for the next flight.

Ice and snow have to be completely cleared from all surfaces... ice and snow have to be completely cleared from all surfaces... ICE AND SNOW HAVE TO BE COMPLETELY CLEARED FROM ALL SURFACES. Got the message? It won't blow off down the runway! If the weather has been hovering near freezing overnight and it's going to be clear in the morning, an hour or two in the sun will often melt all the ice and snow, so a plan to take off mid-morning might solve an ice problem.

If you fly with a club or school, check with them how they want you to de-ice; personally, I use a brush initially to sweep

off the 'fluffy stuff', then de-icing fluid (mixed with water) sprayed over all other surfaces. Once the ice is melting from the fluid and water is dripping satisfyingly from the surfaces, I go around and check for ice or snow on the pitot tube and static vents, engine intakes and elevator and aileron hinges. If the aircraft has wheel spats, check they are clear too.

Another consideration in freezing conditions is ice you can't see. Most light aircraft have drain holes. If one has become blocked, which isn't uncommon, the trapped water can freeze. As it freezes it can cause damage as it expands, or control imbalance. Learn where the drain holes are and check them. Also check under the wings and fuselage for dried mud and, just like ice, don't take any flying with you. Gently wash it off with water and be careful not to clean any lubricant away from the hinges.

Once you are ready to fly, think about your warmth and that of your passengers. You know how effective the heating is or isn't in your aircraft, so dress accordingly and advise your passengers. Imagine being in a two-seat Cessna and your passenger decides they need to remove their triple insulated puffed-up ski jacket at 2000ft...

Starting your engine is likely to be different to the summer start. The oil is thicker and the fuel less inclined to evaporate in the manifolds, so it can be harder to start. Priming then becomes an option for some types, but be wary of over-priming to avoid an engine fire on start-up.

Once the engine is running,

*“Another consideration in freezing conditions is ice you can't see”*







the heater (if there is one) can at last begin to take effect. The warm air from it not only starts to warm you but also the interior, starting to evaporate and dry out any dampness from the overnight cold.

As this newly saturated warmer air touches the cold windows, it will condense anew, coating said window with an opaque film of tiny water droplets. Added to this your duffel-coated passenger will have started sweating but won't be saying anything just yet — oh no, they will wait at least ten minutes and announce their discomfort at 2000ft... The excessively moist air will clear quite soon, and opening the doors briefly a couple of times before take off can clear it more quickly.

You can, of course, wipe it from windows with a cloth to allow for careful taxiing, but make sure the cloth is clean, absorbent and non-abrasive. Also try not to wipe in circles, but straight up and down (this

applies also when cleaning the outside of the windscreens as well).

I mentioned earlier about the reduced performance on take-off in certain conditions, and this can apply equally on landing. Braking on ice and mud will be poor. Also take care to taxi slowly and carefully as you won't necessarily know whether or not there's ice under the wheels. Taxiing in strong winds can be tricky especially if ice is causing reduced braking. Think about your personal crosswind limits with poor braking action in mind and perhaps refine your thinking there.

Understanding the weather and forecast for a route is essential any time of year, but as you well know the weather can change very quickly in the winter. Be careful, too, that you know exactly when sunset is and plan to be on the ground well before it. If you get to where you are going at

*“Remember that the 30 minutes after sunset and before dark (twilight) can be a lot shorter if there's cloud cover, especially to the West”*

sunset with a westerly runway and visibility is very poor, don't panic. With the sun so low in the sky and shining through the haze the visibility might be pretty bad, but once it has gone below the horizon the visibility should improve.

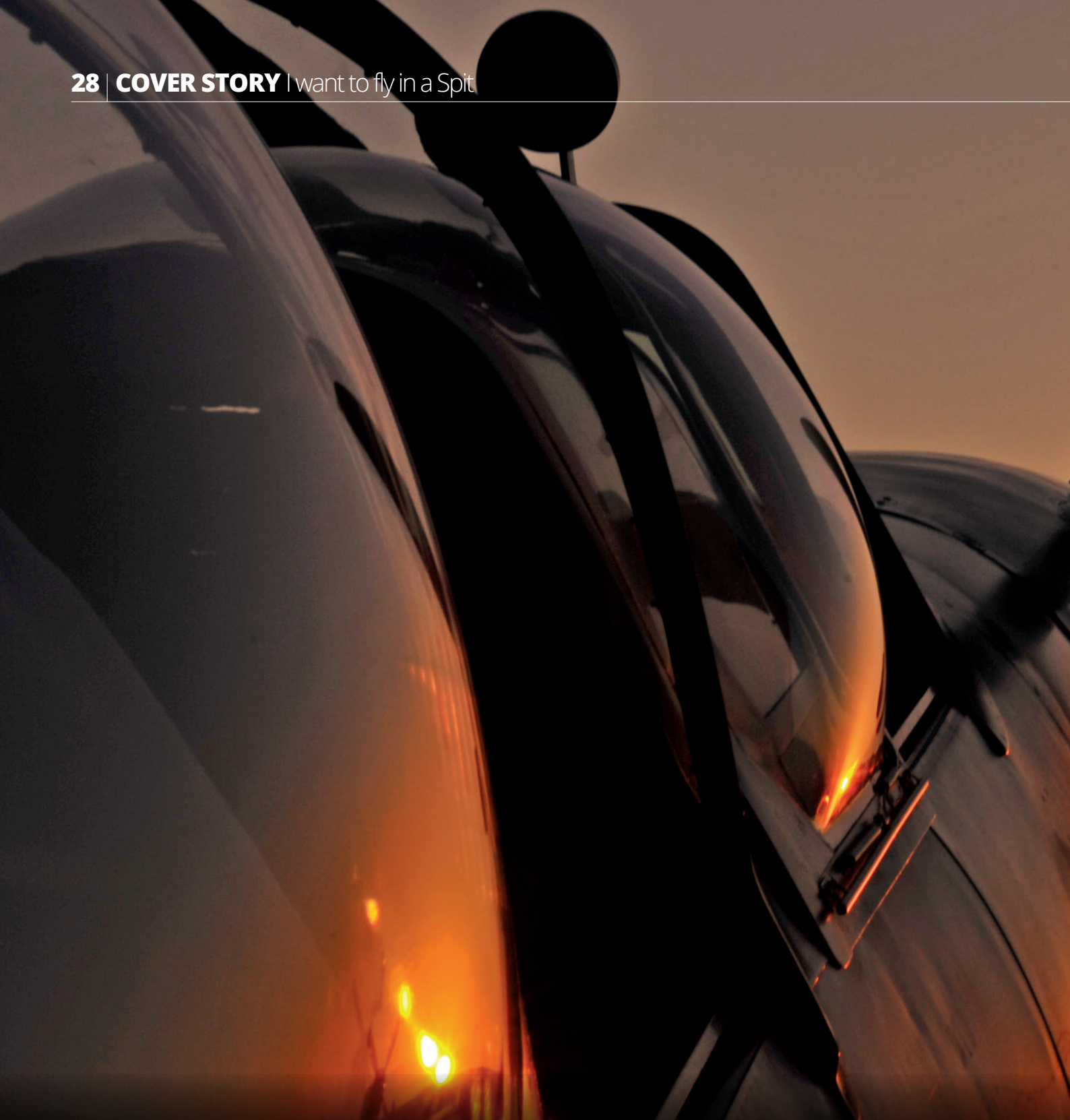
The forecast might well have stayed with '9999', but this haze can reduce visibility considerably below ten kilometres. While your plan should have been to get back while the sun was still higher in the sky, if you do have to land after sunset —and that's cutting things a bit fine with little room for diversion — remember that the 30 minutes you have after sunset and before dark (twilight) can be a lot shorter if there's cloud cover, especially to the West.

It might be winter but it's still a good time to fly and keep up the flying skills, and if you're relatively new to it's also a good time to consolidate some of your experience — just don't forget your hat and coat. ■



Pre-flight checks in winter need to be carried out – make sure you do them thoroughly





**LOT of ladies I know collect shoes and handbags — not me. My main hobby is model railways, I'm huge collector of A4 Pacific steam locomotives, and I also enjoy zip wires, and wild swim all year round. But... my other great interest is aircraft, specifically military, old and new.**

At the 2014 Dunsfold 'Wings

and Wheels' the Canadian Lancaster flew with our own BBMF Lancaster. There were few dry eyes when they flew majestically in front of the crowd. In 2015 'Wings and Wheels' was the last year the Vulcan flew. To stand, hear and, more to the point, feel the sheer power of this elegant plane was breathtaking. It's such a shame we'll never see it in the skies again.

What was even more astounding that day was to see the flying Synchro75 formation of the Eurofighter Typhoon FGR4 and Spitfire Mk II. It was an epic piece of aerial theatre despite the 75 years between them. It was that day that I made a wish out loud — "I want to fly in a Spit". A friend pointed out that a) The Spitfire was a single-seater and b) I

didn't know how to fly. It was a good point but it didn't stop me telling everyone that one day I would fly in a Spitfire.

Some years later, a friend phoned and said they were pretty sure they had seen a two-seater Spitfire flying over Selsey, West Sussex, and they thought the only place it could have come from was Goodwood. It didn't take long to find out that there was a

WORDS Lori Thomas IMAGES Andy Annable

# Life<sup>is</sup> out there and she's not missing a single moment

It doesn't matter who you are, there are some things you just have to do — and getting your hands on a Spitfire is one of them

two-seater at Goodwood. More importantly, they took people up for flights. My excitement subsided a little when I saw the cost, but a friend pointed out: “You wanted to fly on Concorde, too late; you wanted to sail on the QE2, you were too late for that as well. Do you want to make it third time unlucky?” Five minutes later it was booked with what's now known as spitfires.com (if you're thinking

‘just a Spitfire joyride story, bear with me...).

There were several weeks to wait but, finally, a beautiful ‘blue sky’ day arrived — perfect flying conditions. At the time the aircraft was at Solent Airport and there were four of us due to fly — it's amazing to see the vast age range and distances people will travel for such an experience.

If you've never tried a

*“We were then kitted up with a flying suit, lifejacket, gloves, helmet and parachute”*

flight like this, it starts with a thorough brief including a video describing all the steps that had to be taken for the CAA to allow these flights to take place, followed by an intensive flight safety brief going through everything from where to put your feet, what not to do and the crucial emergency exit routine. We were then kitted up fully with a flying suit, lifejacket, gloves, helmet and

parachute. The ground crew are exceptional and make sure you have all the correct equipment.

SM520, KJ-I (G-ILDA) is a TR9 Spitfire with an interesting history. Originally a single-seater, she went to South Africa in June 1948 and was retired in 1954 to be sold as scrap. She was recovered to the UK in 1989 and restored. A new owner in 2002 rebuilt her as a two seat TR9. She started flying again in 2008 and continues to fly thanks to the amazing technicians who look after her.

Getting into the seat is amazing, if a little unnerving. Jack, ground crew for the day, made sure I was strapped in correctly before I was asked to go through the emergency routine to ensure I fully understood the process; it also helped to give me the confidence that I knew what to do.

Left in Gilda for a while I began to realise the enormity of what was about to happen. It was fascinating to see the

basic setup inside the cockpit. No digital bits and pieces, no high-tech screens, no bells and whistles, just simple essential levers, trimming wheels, switches, buttons, rudder pedals and, of course, the Spitfire spade stick. It all casts you back in time to basic technology which was essential as the planes had to be constructed quickly and as cheaply as possible during the war.

Then there's the smell. The mix of paint, leather, metal, oil and Avgas is so evocative and perhaps unique to these old warbirds. Those few minutes gave me the chance to cast my mind back to the days when these magnificent, highly effective planes were used in anger, piloted by young men, sometimes with very little experience but buckets of enthusiasm, who willingly ran to their planes never knowing if they would come back.

Matt the pilot clambered in and we went through the plan. Take off, let me have control for a while if he felt it safe and

*“It was quickly clear, though, that a Spitfire does not want to be on the ground”*

then some aerobatics. Simple. The preflight checks started, and I was surprised to be asked to take part. Okay, it might only have been to check a gauge reading, but I immediately felt a real part of the flight.

Checks done and with clearance from the tower we taxied out smoothly to the runway, but as the throttle went forward the noise and shaking as we gathered speed was staggering. It was quickly clear, though, that a Spitfire does not want to be on the ground, as Gilda suddenly lifted off, easing elegantly through the air. The distinctive engine sound clearly heard.

We climbed, banking as we went and my thoughts, perhaps unsurprisingly, were of the pilots that used to take off from Goodwood and Tangmere to engage in combat. As I write this I silently thank them for all they did. For those who did not come back: Let perpetual light shine upon them.

The views over the Solent were spectacular, but within seconds, Matt said “get ready,



The fulfilment of a dream for Lori and many pilots — that first takeoff

Into the blue  
— and what a  
beautiful sight



Low pass, well  
you would,  
wouldn't you...





you have control". My reply "I have control" was a sweeping statement from someone not yet a pilot (more on that later).

A Spitfire as you'll no doubt know is the most amazing plane to fly; light on the controls and so responsive. You will never experience anything like it — as the saying goes, 'you don't fly a Spitfire, you wear it'. I would have willingly flown in a straight line forever, but Matt took back control and said "Let's play" and play we did. A Victory roll, where I knew roughly what the plane would do, then a barrel roll, where I again had an idea of the manoeuvre. So far so good.

Matt then suggested a Half Cuban. I had no idea what was coming but I think I stopped breathing as we soared upwards and then down. This was all carried out above the Solent which enhanced the whole flight. Trust me, aerobatics at their best. G-force? Amazing. Experience? Beyond belief. Is it scary? Yes, but in the best way possible.

Would I do it again? Yes, in a heartbeat.

It seemed that we'd been in the air for only five minutes before we screamed past the airfield, then Dunlops down and a gentle descent to the runway. This was a truly wonderful experience and the adrenaline was buzzing. There is a smile, apparently, known as the 'Spitfire Smile' — did I have it? You bet.

Fast-forward a while and I discovered a Spitfire simulator had been installed at Goodwood and, unsurprisingly, I had the bug so booked a slot — well you would, wouldn't you... Make no mistake this is no PC game, you sit in a proper Spitfire cockpit; the fuselage is built from roughly 50 percent wartime parts, the next 40% is from parts destined for modern restorations that didn't pass the strict standards required, and the final 10% were made specifically for the simulator to aid the conversion from analogue to digital information. All of this means

*"There is a smile known as the 'Spitfire Smile' — did I have it? You bet"*

the cockpit is indistinguishable from the real thing.

The fuselage is mounted in a fibreglass dome with a 220° display so when you look forward and up all you can see is the projected world. The centre of the dome is situated at the pilot's eye point while the nose of the aircraft is projected, as are the wings, but exactly correct to size and scale. The flaps and ailerons all move as you'd expect.

The 220° display shows a very realistic view of the local area, but what really fools you into believing you are actually flying are the motion and force-feedback systems. The motion system works in pitch so you feel the bumps on the runway, engine vibrations, turbulence etc. The controls, meanwhile, are attached to force-feedback units designed to mimic the characteristics of a Spitfire's controls and, as you accelerate, they become firmer to move, as they do when moved to full deflection. Yes, but what about the glorious



- 1: Could that be a bird strike?
- 2: Concentration is everything
- 3: Start-up has a nice warm feeling to it

sound of the 27-litre Merlin, you might ask? Sound for that comes realistically through the headset.

As with all flying, even on the ground, you need a briefing first so instructor Nigel briefed me as to what would happen and, when I was ready, he handed control to me. It was terrifying/amazing/incredible all at the same time even though it was 'just' a sim; every decision I made was totally my responsibility (with the expert guidance, advice, laser pointer indications from Nigel).

With the cockpit moving you really get the feeling you are in a real aircraft and it was just as I remembered when I had control of Gilda. Oddly this actually caused a problem; the issue was that I struggled with doing simple, gentle banking. The brain can play strange tricks on you. In Gilda, I was wearing a flying suit, helmet, and most importantly, I was strapped in. In the sim you're not strapped in at all. In a way

that's reasonable as there's no way can you fall out, but try telling your brain that.

I simply could not do anything other than a very gentle bank without feeling as if I was about to fall out of the cockpit. If I was strapped in a harness, I'm sure I would have been all right, but I simply couldn't get used to the movement. It was ridiculous. It was a very tame flight but I began getting more used to it towards the end of my time and I'd actually managed an aileron roll. Still, I was cross with myself afterwards and wanted to stop being so daft so I booked a second session.

Back to Goodwood and Nigel again — goodness knows what he thought but he was wonderful. Back in the sim we talked the routine through again. This time it was amazing. I just went for it under his instruction; a victory roll, a loop, tight turns, to name a few manoeuvres. After some free flight Nigel then talked me through the landing, which

*“The experience of flying a Spitfire both real and simulated was incredible”*

I accomplished more by luck than judgement.

With a little time to spare, Nigel set the sim up for me to try a takeoff which was a total, unmitigated disaster — I crashed and wiped out half of Goodwood (the computer decided it would join in and crashed as well...).

The experience of flying a Spitfire both real and simulated was incredible, unbelievable, humbling, emotional, exhilarating and unforgettable. Forget handbags and shoes, my interest in and knowledge of military aircraft is even deeper now because I have the 'feel' for them. I hope to be back. My advice for those who say 'I'd love to...' — just do it.

Thousands of Spitfires to be mass-produced in UK...really?

Airfix is launching a new Supermarine Spitfire Mk.IXc model — and it will be manufactured in the UK, the first time Airfix has produced a major kit in this country for more than ten years.



Simply beautiful, even  
as a two-seater





Bird's eye view of Goodwood from the sim

# IF YOU CAN'T FLY THE REAL THING... HOW ABOUT A SIM?

THE SPITFIRE SIMULATOR is the only one in the world and, as well as giving people the chance to experience what it's like to fly a Spitfire, it's used to train potential pilots for the real thing.

The fuselage is mounted in a fibreglass dome that covers 220 degrees horizontally, so when you look forward and up all you can see is the projected world. The dome's centre is situated at the pilot's eyepoint, so the pilot looks over the nose as per the real thing and the wings appear to be at the side, correct to size and scale. As you'd expect, the flaps and ailerons all move correctly.

Make no mistake, this is no wooden reconstruction. The fuselage is built from roughly 50 percent wartime parts, the next 40 percent has been made from parts destined for modern restorations that didn't pass the standards required. The final 10 percent

has been made to aid the conversion from analogue to digital information. The gauges are original, with the workings replaced with modern electronics so that the computers can drive them, but the original dials and needles still work as they should, so the cockpit is indistinguishable from the real thing.

Many of the controls are original including, of course, the classic spade grip on the stick. Other original wartime parts include the undercarriage selector, primer pump, seatbelt mechanism, canopy frame, door mechanism, the throttle quadrant, the gunsight, numerous other controls and even some fuselage frames and the rudder mechanism.

The final components that persuade a pilot that they are flying a Spitfire are the motion and force-feedback systems. As this aircraft that's essentially flown by feel

*“Make no mistake, this is no wooden reconstruction”*

(it really does talk to you) it was considered essential for realism.

The motion system works in pitch so that bumps on the runway, the engine vibrations, turbulence etc can all be felt through the airframe. The force feedback units on the controls mimic the characteristics of the Spitfire's flight controls, so as you accelerate the controls get harder to move.

So what about the 'outside'? There's photo realistic countryside of Goodwood Aerodrome, Southampton and Shoreham Airports and the surrounding area, and every house on the ground is represented in the projection.

And the sound of the glorious Merlin engine without which something would definitely be lacking? That's provided through the headset. It's about as close to the real thing as you can get without actually flying one. ■



- 1: Instruments and gauges are original, but some innards are now electronic
- 2: View over the nose approaching the Isle of Wight
- 3: Look to the sides and you'll see the 'wings'

WORDS Nick Wilcock IMAGES Various

# PERFORMANCE MATTERS

Making mass, balance and performance calculations are vital

**I**'VE GOT in, but can I get out again?'. This isn't simply a question that lobsters might ask themselves from the bottom of a pot, but also applies to the operation of light aircraft, particularly when visiting small, unfamiliar landing sites.

My introduction to the world of light aircraft flight instruction came when I was serving at the University of London Air Squadron, the RAF's premier UAS at RAF Abingdon. We used the excellent Scottish Aviation Bulldog and operated from nice long tarmac runways. The Bulldog had quite decent performance even with two chunky occupants and full tanks, so performance was never really much of an issue, even in the few days the UK thinks of as summer.

After I'd obtained my R/BCPL/FI rating through the CAA crediting system which was available to RAF QFIs in those

days, I applied to instruct for the flying club at a nearby RAF aerodrome, which operated the PA-28 Warrior II and Cherokee 140C from a 10,000ft asphalt runway. My only previous experience of the PA-28 had been 23 years earlier at Weston-super-Mare aerodrome; it had seemed much bigger than the Cessna 150 on which I obtained my PPL, but I did recall that flying it with three on board and three-quarter tanks had made one landing a bit firmer than I'd expected, but that was about all.

My FI conversion consisted of a trip to the maintenance aerodrome and back in the

Warrior, then another trip in the Cherokee a few days later. 'Standardisation' consisted of "Just teach the way you do in the Bulldog" and that was it.

My first day instructing came some ten days later, involving slow flight, stalling and circuits in the Cherokee. RAF Benson was happy to take me for circuits as the resident UASs were on block summer leave, so the aerodrome was very quiet. I'd been told to take a couple of students, neither of whom was exactly 'petite', but that didn't seem an issue to me – I'd do the slow flight



and stalling with the first chap, then some circuit work before landing, switching students and doing some circuits with the other one. "Oh – and pop in to Oxford to fill it up on the way home, would you", were the CFIs parting words as I walked to the aircraft.

All went well for both students, the refuelling was done pretty quickly and it was time to set off home. In those days, Oxford had RW27, an 880m grass runway, which was the one which the wind was favouring. Blissfully unaware of the effect a hot day, full tanks and three adults would have, I summoned full noise from the mighty Lycoming and set off.

Acceleration was somewhat pedestrian and we were still on the ground as we crossed RW 01/19, before eventually struggling into the sky. Querying this with the CFI when I got back, he said "Oh, sorry – I thought you realised I meant 'tabs' fuel!" I'd no idea what that meant, until he showed me, so then I thought that

I'd better look into the mass and balance and performance graphs before flying in limiting conditions again.

Which brings me to the point of this article. It is absolutely essential that pilots must be aware of not just the mass and balance limits of their aircraft, but also the take-off and landing performance values and how these are affected by wind, temperature, atmospheric pressure, aerodrome elevation, runway slope and runway surface. To which I would add the nature of terrain in the immediate vicinity of the aerodrome.

#### MASS AND BALANCE

Although you might find various 'apps' appearing on sale for working out the total mass and CG for your aircraft, the only definitive source is the graph published in the aeroplane POH. Be careful not to confuse metric, imperial and U.S. units! You'll probably be sold fuel in litres, but will need to convert the volume into mass for the mass and balance calculation and there are a

few gotchas to be had if you confuse density and specific gravity, particularly when using U.S. gallons. Just remember

that there are 3.7854 litres to a U.S. gallon, which has a mass of approximately 6.0lb when using 100LL. If you find that your total mass or CG would be outside the envelope shown in the POH, it is essential that you take the necessary action to rectify the situation. Defuelling is not normal an easy option, so to avoid disappointed passengers, if your aeroplane is operated by others I recommend that you instigate a prudent refuelling policy within the group.

For example, if your group owns a Cherokee 140 which hasn't been too laden down with extra toys, if at the end of the day you refuel to 'tab' level on one side and 'full' the other, you'll probably be just within mass and balance limits to fly it the next day with three PoB, assuming that they're no more than 80kg each and have no luggage.

You won't notice any asymmetry, particularly if the third occupant sits on the 'tab' side. I read somewhere that a pilot on a CAA test had been refused the examiner's weight; not only was that inexcusable but it also put the candidate under unreasonable stress. Anyone who refuses to give you their weight when they're going flying in your aeroplane stays firmly on the ground, in my book, no matter who they might be! I recommend CAA Safety Sense Leaflet 09 for further reading on the topic of

mass and balance; see the link at the end of this article.

#### PERFORMANCE

When I was learning to fly the VC10, as part of the course we had a fortnight of hell, graphs and exams being taught all about scheduled aircraft performance. Planning a flight from take-off to destination could involve a number of limiting factors; as well as the take-off distance available, landing distance available and en-route obstacle clearance in the event of an engine failure all had to be considered.

For single-engined light aeroplanes things are rather simpler, but no less important. Usually it is the take-off distance available which is the limiting factor, but if you're intending to land somewhere on short, wet grass you could perhaps find that more limiting. Once again the POH is the bible to use and any 'app' you might be tempted to use will be unofficial unless the manufacturer has approved its use. The CAA has another excellent Safety Sense Leaflet on this topic, SSL 07C, a link to which is also at the end of this article.

There are a few general points to be made when using the POH graphs. Firstly, make sure that the graph you're using is the correct one for the variant and configuration

you intend to use. Not just flap setting and assumed technique, but also the type of propeller fitted. Some aeroplanes may have been fitted with coarse pitch 'cruise' propellers; not only will they probably not be the same as the type fitted when the POH graphs were originally drawn up, they can also have a significantly deleterious effect on acceleration during take-off.

Even if the propeller is of the same type, the condition of both engine and propeller may have deteriorated over the years. For this reason, the CAA advise the use of a 1.33 safety factor when calculating take-off distance required, once all other calculations have been completed. SSL 07C and probably also the aeroplane POH provide the factors to be applied for runway condition, elevation and slope and atmospheric conditions to which pilots should always refer, rather than trying to commit them to memory.

**TO FLAP OR NOT TO FLAP, THAT IS THE QUESTION**

Not all POH include performance information for 'short field' take-off or landings. For example, nothing official has been published for take-off with flap for the Cherokee 140. Most of us know that use of some flap will reduce the take-off ground roll, but cannot quantify the actual benefit. My original brief when I first flew the Cherokee was to use 10° flap, for take-off, but there was nothing in the POH when I was instructing to substantiate this. If you elect to use anything other than the criteria stated for the POH graphs, you're on your own!

**HE GOT IT IN, BUT COULD I GET IT OUT?**

Some years ago, one of our flying club members was conducting a solo PFL. When he tried his final engine response check, nothing happened. So he applied what he'd been taught and

*"I drove to the site, to find the aeroplane sitting totally undamaged in the field"*

converted his PFL into a well-executed actual forced landing, then rang me to tell me what had happened.

I drove to the site, to find the aeroplane sitting totally undamaged in the field he'd used. Although there was nothing immediately obvious to indicate the cause of the failure, we resisted the temptation to try to start the engine and went to find the farmer. A genial son of the soil, he told us that he and 'Pup', his rather impressive Rottweiler, would happily keep watch on the aeroplane while we decided what to do.

After a check over by our LAEs, it was thought that there might have been an obstruction in the carburettor air intake filter, which they changed before running the engine and passing it fit in wind and limb.

So now came the question of getting the aircraft out of the field. Could we take-off, or would we have to recover it by



1. The POH provides factors to be applied for runway condition, elevation and slope and atmospheric conditions
2. A Vickers VC10, one of Nick's training aircraft
3. When using the POH ensure CAA Change Sheets or Supplements are included



truck with the wings off? Time was of the essence as the weather was due to turn nasty and the wind was forecast to back to an unfavourable direction. Nevertheless, after an hour or so spent poring over the POH and a chat with the met man, I'd calculated the take-off distance required for the expected conditions.

Although the field had recently been mowed and had a beneficial downhill slope, at the far end it fell away into a small valley. It looked quite doable, so over we went to meet the farmer and 'Pup' before I paced out the take-off distance available. That was greater than the calculated TODR, so I was soon taxiing to the very edge of the field before lining up for take-off.

Acceleration was entirely normal and I'd also remembered the rule of thumb of achieving 2/3 of the rotate speed by half the available distance, so was looking for 48mph by halfway.

But the rattling and bouncing on the field surface made the ASI needle rather unsteady and the downhill section was rapidly approaching. So down with one click of flap before some gentle back pressure had me safely airborne, albeit slightly further down the field than I'd anticipated and with a nagging flicker or two from the stall warning light. Which was something of a surprise as I'd been very careful with my calculations and the aircraft had a good engine and propeller, so why had it taken longer to become airborne than expected?

The probable answer came a week later. We received a CAA Supplement advising that, for this particular model of Cherokee, the POH figures are 10% in error! Which is something else described in SSL 07C; when using the POH make sure that any CAA Change Sheets or Supplements have been included.

*“So spend a little time checking your figures”*

#### IN CONCLUSION

With the days soon beginning to get lighter again as the new year progresses and the opportunities for touring hopefully increasing, it's worth reminding yourself about mass, balance and performance calculations, particularly when visiting an unfamiliar aerodrome. There have been quite a few accidents caused by light aircraft either being overloaded or attempting to take-off from runways which weren't long enough; prior planning prevents poor performance, so spend a little time checking your figures and don't become an accident statistic. ■

**A Cherokee, as used by Nick, is a great training aircraft**





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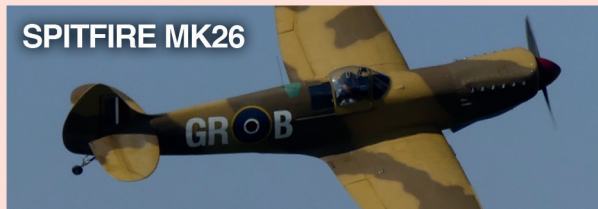
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Built in 2000 this white with blue strip motor glider is in superb condition and comes with a new ARC. Based at Lasham and always hangared. GTR 225A Garmin 8.33 Khz. Transceiver. New ELT. New S Mode Transponder. New vacuum pump. New DI and AH. New LX VSI with glide computer. Naviter GPS with Oudie 2 (See You installed). New propeller with zero hours. Rotax 912 engine with 830 hour remaining.

**FOR SALE @ £65,000.00 + VAT (shares considered)**  
Contact Richard Morgan on 07785 771669 or [rjm6@btinternet.com](mailto:rjm6@btinternet.com)

## AIRCRAFT FOR SHARE



### PIPER SARATOGA PA32R

Share for Sale Biggin Hill EGKB  
Friendly 5 person group along with a group instructor (CRI) available for check-out, conversion training etc.  
Great IFR Tourer, HSI, A/P, Traffic, Weather, Hangared  
Willing to consider Equity (£250/month, £200/tacho wet) or Non-equity (£250/month, £250/tacho wet).

Contact Paul Sodagar at [paul.sodagar@gmail.com](mailto:paul.sodagar@gmail.com)

# CLASSIFIED ADVERTISEMENTS

## AIRCRAFT FOR SHARE

### NAZAJO 1978



Navajo 1978 TTAF about 4000 G CBTN  
based at Biggin Hill EGKB - Share in region of £25000

**PLEASE CONTACT CHRIS WOOD**  
07770398274 durbantentalcentre@btinternet.com



### MOONEY 201 HANGARED AT BOOKER WITH GTN 750

Share £2,999 Monthly £130 Hourly £170  
Contact details @ [www.zitair.aviators.net](http://www.zitair.aviators.net)

### GRUMMAN AA5



Thruxton based, mode S. 8.33 radio  
£75 per hr, wet. £60 pcm no engine fund  
Engine time, 780 of 2000, annual usage 170 hrs  
Airframe time 6666 of 10,000  
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**CONTACT DAVE LEDDY** 07973161906



### DA40NG SHARE AT REDHILL

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Contact **Bill Roberts** at 020 7564 5461  
or at [williameroberts2@aol.co.uk](mailto:williameroberts2@aol.co.uk).



### ROBIN DR40 SHARE FOR SALE

Robin DR40 G-ELEN shares for sale or  
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G-ELEN has been operated for the past 9 years at Andrewsfield (EGSL) in Essex. Due to a change in shareholders, the opportunity exists to purchase shares in one of the best examples on the market of this popular 180 hp version. Registered in 1997 G-ELEN has only 570 hours total time on the airframe and engine and is in immaculate condition.

Share price £22,500 or consider an outright sale.

**For more information contact**  
**JOHN 07889 106459** [johnsinnott@me.com](mailto:johnsinnott@me.com)

# CLASSIFIED ADVERTISEMENTS



**PIPER NAVAJO PA31-310C**

1978 Piper Navajo PA31-310C. 1/4 equity share for sale, competitive price. Based North Weald. TTAF 4405. 100 hour check completed March 2019. Co-pilot panel. Extensive avionics including Garmin GNS430, Garmin MX20, King KLN90B second GPS, King RDR2000 weather radar, radio altimeter, Shadin fuel computer, altitude alert  
Contact **RON** 07771 841613 ron.priorhouse@gmail.com



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The group is very well run and was formed over 30 years ago it has had 2 BA pilots join and stay for a number of years. Full IFR Avionics. Availability is very good and booking is online.

Share **£4000, £225/month, £120/wet**



Contact email

[jrhaynes8@gmail.com](mailto:jrhaynes8@gmail.com) 07709 675182



## SA120 BULLDOG AT KEMBLE - EGBP

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Call **ROGER HAYES** for more information  
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CONTACT **ROGER HAYES**

01285 851333 or 07860 257333 or [roger@skysport-uk.com](mailto:roger@skysport-uk.com)



## 1973 N REG PIPER ARROW 2 BASED AT DENHAM - 1/5 SHARE FOR SALE

Long established and friendly group looking for a 5th member. Airframe 5900hrs. Engine TSO 2050. IFR equipped. Garmin 430. Garmin GTX330 Transponder ADSB equipped. Digital CHT/Fuel flow monitor. Piper Autocontrol 2 autopilot. On line booking system with good availability.

Share £4000. £170/month £90/hour wet. Minimum 100hrs total. 10hrs complex. Please contact **Andrew Levison** 07956 282940 [andrewflyboy1@aol.com](mailto:andrewflyboy1@aol.com)

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# CLASSIFIED ADVERTISEMENTS

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reproperty6@gmail.com to arrange discussion

## OTHER



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