

August 2016

# AIRCRAFT

## OWNER & PILOT



The official magazine of the Aircraft Owners and Pilots Association

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[www.aopa.co.uk](http://www.aopa.co.uk)

## Chairman's Message

# AOPA Celebrates 50 Years at AeroExpo



By George Done

What a great day it was in the AOPA marquee on the Saturday at the recent AeroExpo at Sywell! AOPA UK celebrated its 50<sup>th</sup> year of operation by hosting a lunchtime barbeque for members, guests and friends - the collage of photographs within these pages gives an idea of how pleasant the occasion was. The burgers and hotdogs were hugely popular, as were the accompanying refreshments and, especially, the opportunity to sit down and relax after touring exhibitors' stands. The *al fresco* dining area in front of the marquee was abuzz with conversation and, apart

***They were all unanimous in their support and praise of the activities undertaken by AOPA, parting with the wish "...keep up the good work...!"***

from one heavy shower, we were blessed with sunny weather. A massive 'thank you' is due to Dave Impey, our energetic Head of Advertising, for liaison with the event organisers, and the subsequent management and arrangement of all the facilities. His charming assistants, Charlotte and Louise, helped promote AOPA throughout all three days of AeroExpo, with the distribution of the AOPA Flying Directory to visitors. Thanks are also due to Jeppesen for their invaluable sponsorship.

Others who provided major contributions were Mandy Nelson, from the AOPA office, who, as well as being

involved in the setting up arrangements, found herself cooking over a hot stove! She was aided initially by Board member and co-chef Mick Elborn, who had spent some time on the Friday puzzling over the assembly of the stove. The indefatigable Dave Impey later took over from Mick. Board member Chris Royle performed a sterling job as roving barman.

Over 300 members, friends and guests visited the AOPA marquee on the Saturday (we know from the number of burgers consumed!). On display was the picturesque 50<sup>th</sup> birthday cake, or rather cakes, large and small - arranged like a group of aircraft in formation. When the time came to cut the cake, a moment of serendipity occurred with the arrival of one of our esteemed Vice Presidents, Jack Wells, accompanied by his wife Cynthia. Jack was easily persuaded into doing the honours. He had started flying in the 1960s and later on became heavily involved with AOPA under the chairmanship of the late Ron Campbell. Together with David Ogilvy, he was instrumental in creating, and then promoting, the General Aviation Awareness Campaign, which subsequently became the General Aviation Awareness Council (GAAC).

I was present on the Friday and Saturday, and the loyalty and support of our members revealed was impressive. It was particularly gratifying to meet members whom AOPA had helped with specific problems, particularly those who had suffered with maintenance or engineering issues, my own particular area of interest. They were all unanimous in their support and praise of the activities undertaken by AOPA, parting with the wish "...keep up the good work...!" And that objective is, without a shadow of doubt, what we shall continue to aim for!

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AVIATION SERVICES

By Ian Sheppard

### Improve Your Flying: *Instruct!*

There is one sure way to sharpen up your flying in all its aspects - not only in the air but also in terms of theory, paperwork, procedures and knowledge. And that is to become an instructor.

At the moment I am doing the flying instructor course at Redhill Aviation, with very experienced instructors. We are flying Cessna 152s.

Doing the Flying Directory for the June issue of this magazine brought home the number of flying schools in the UK so there is a capacity for training. The problem seems to be that there are not enough instructors around, let alone very experienced ones.

I'll be reporting back on my experience doing the FI course, which is essentially like doing a PPL again but having to "teach back" each exercise. This is challenging but also fun! In fact several 'newby' instructors have said to me that the course is "difficult but fun."

One aspect that came up twice recently was that some airline pilots are being discouraged from instructing by their employers as the extra time in the air will count towards their total - and there is a limit! Such airlines are jeopardising the future supply of pilots. Private flying does not count, though!

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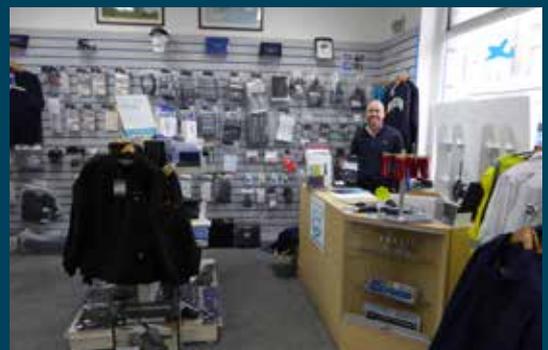
## 46 Classified Adverts



## the pilot store

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Next time you're in London why not call in to the Pilot Store? (PLBs are now available, for example!) It is conveniently located a few minutes' walk from Victoria Station. You can also buy pilot supplies online at [aopa.co.uk/thepilotstore](http://aopa.co.uk/thepilotstore) or call Anton on +44 (0)207 834 1949. 50A Cambridge Street, London SW1V 4QQ.





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## Chief Executive's Diary

# China Unlimited

By Martin Robinson

CEO of AOPA UK

### 2-3 June

EASA has been going through some restructuring, and so have some of the stakeholder advisory bodies. That includes the EASA Advisory Body (EAB), which is in the process of becoming the Stakeholder Advisory Body (SAB). It will incorporate additional input from the former Safety Standards Consultation Committee (SSCC).

The SAB's primary function will still be to give advice to the EASA Board of Management on the work plan of EASA and on its finances, two important topics. The SAB, in my view, must remain the independent voice of the aviation industry across the board. The Management Board does not have to follow the advice of the SAB but the process should be one of cooperation between the regulator and those being regulated.

The lack of an independent, proactive industry body would, in my view, jeopardise delivery of the right safety outcomes. The proposed changes to the Basic Regulation should ensure proportionate risk-based regulation in the years ahead.

### 7 June

Meeting with Philip Clark of the CAA, who worked on the 'No Gold Plating' issue...more to follow in the next issue.

### 20-25 June

I was in China where I was invited to the city of Anyang to lecture at its aviation university. Among other things we discussed helicopter operations in cities. I gave a short presentation on Battersea Heliport and helicopter operations in and around London.

Anyang has the largest volume of free airspace in China and GA is beginning to take advantage of this.

I also gave a lecture to over 200 university students about the opportunities that will become available as GA in China expands – as it will!

It was a very positive end to the week and I was very honored to receive an honorary visiting professor award.

### 1-3 July

AOPA was highly visible at Aero Expo at Sywell Aerodrome. I would like to add my appreciation to that of AOPA chairman George Done, in saying thank you to all the AOPA members and prospective members, and others who helped out or visited us. They all made Saturday a memorable day. With 300-plus guests it was impossible to get to speak to everyone, but my appreciation for your continued support is gratefully acknowledged. I will never take members for granted. The show organisers also did an outstanding job.

### 8 July

I attended a GNSS Approaches for General Aviation (GAGA) meeting – AOPA and Helios have been granted 60% funding to develop six LPV



approaches at three GA aerodromes (Haverfordwest, Stapleford and Gloucester). Ken Ashton will manage the project supported with Philip Church over the next 30 months.

### 6 July

One of the AOPA supported working groups – the Maintainers Working Group – met. The CAA also takes part in this highly motivated group, which aims to improve maintenance standards in GA. It is a group of experts that have more than one hundred years of experience between them – so they know what they are talking about!

The ultimate aim is to make sure aircraft owners get the right work done at a fair price. All these maintainers have signed up to the AOPA Code of Practice (See page 11).

### 4 July

I attended a CAA-led meeting discussing the next steps for Farnborough and its airspace change proposal. It has been agreed that discussion will continue so that a resolution may be found. There will be more to report on this soon.

## A NOTE ON SKYÜBER

It is important to explain the position we've adopted with "Sky Über". Firstly, AOPA UK does not make the rules and regardless of what individuals may think the fact is the CAA has deemed Skyüber-type operations (Wingly being another) to be within the existing legal framework on 'cost sharing'.

This means that many pilots (800) have registered to take part. The app acts like a dating system and the rules around cost sharing means that the pilot cannot profit from this activity. AOPA UK has sought to educate and inform the providers of such apps, and we believe that when members decide to take part they do so in full knowledge of the rules and responsibilities they have as pilots. I stress again, AOPA doesn't write the rules or police them.

However, some people may take the view that having more people getting involved with GA is a good thing. If some people break the rules they will, when they are caught, face the full weight of the law.

## 11 July

I attended the first day of the Farnborough International Airshow, as I had been invited to take part in a panel discussion organized by FIA from the Chinese city of Chengdu. The aim is for FIA to support the development of a civilian air show in Chengdu in 2019 (if possible). Another Chinese colleague – Lydia Yang of the Chinese General Aviation Help Desk – also had a booth, and was seeking to provide information to both UK and Chinese businesses on business opportunities in the UK and China.

China is a fast developing GA market. If you would like to know more please send me an e-mail at [martin@aopa.co.uk](mailto:martin@aopa.co.uk)

The other large Chinese Airshow is in Zhuhai, and I understand that during this year's event the Red Arrows are likely to display.

## 12 July

The CAA hosted an infringement workshop at the Royal Aeronautical Society in London. Infringements of controlled airspace remain at an unacceptably high level, with about 30% of the 1,000 events being serious enough for NATS to seek new solutions from the CAA.

This conference included three speakers who had direct experience of an infringement – two pilots and one controller. Pat Malone, who will be a familiar name to AOPA members (not least as the long-running previous editor



David McIntosh Photography

Although it didn't visit Farnborough every day from Fairford, the Lockheed Martin F-35 Joint Strike Fighter still managed to steal the show. Four aircraft came across the Atlantic for the two airshows.

of this magazine), spoke openly about how he had infringed controlled airspace while returning from an infringement workshop!

The controller spoke about the impact on the individual controller who becomes 'task saturated'. Such a controller is taken out of their position when a loss of separation occurs even when the pilot is at fault. The CAA has said it will temporarily suspend pilots' licenses in the case of serious infringements. The feeling is that because of the lack of progress on improving the number and seriousness of infringements, the CAA has no options but to take a stronger line.

AOPA continues to engage with the CAA and NATS on the subject.

## 13 July

I attended the BBGAs House of Commons Farnborough reception, which was hosted by Sir Gerald Howarth MP. Sir Gerald is a long-time supporter of general aviation and remains one of our strongest advocates. It was also good to catch up with Andrew Haines, who has also done a lot for GA.

But all thanks to Marc Bailey and his staff from BBGA. We share many common goals and work well together in a cooperative and supportive way. Thank you Marc and your team.

## 14 July

Back to Farnborough – the UKTI had a session on Building GA Business relationships between the UK and China, which I attended. The UKTI will produce a report soon on where they see the opportunities developing in the years ahead.

The BBQ on the Saturday afternoon at AeroExpo, Sywell Aerodrome, proved to be a huge success. Some 300 people descended on the griddle to celebrate AOPA's 50th anniversary.



15 July

My final day at Farnborough – this week was extremely busy so it was great to see the flying display, which included the Airbus A380 and A350 plus the A400M – Boeing was represented by a 727 and 737. However, it was the Lightning II (F-35) Joint Strike Fighter that stole the show. My small gripe though; it would have been good to see a few more aircraft in the display.



Wet weather on Friday and Saturday kept aircraft numbers down but there was still a good turnout, and the usual fine display of aircraft such as the Eclipse (below) and Cirrus.



AOPA CEO Martin Robinson with AOPA Member Brian McBeath, the lucky winner of the draw for a Bose headset at Sywell.



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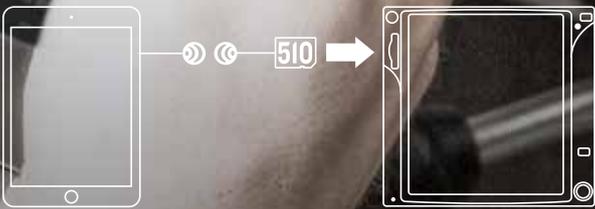
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# AOPA Code of Practice for Maintenance & Repair



The letter from Michael Powell in the June 2016 issue of AO&P drew attention to the AOPA Code of Practice for Maintenance and Repair, and, as promised by the Editor, this article provides the background. Michael owns a small maintenance organisation in Norfolk and subscribes to the code. His letter was prompted by an article written by aircraft owner Martin Wellings who described in sad and painful detail his engine overhaul experience in the April 2016 issue of AO&P.

The story begins with the AOPA Maintenance Working Group which first met in October 2010, one of the main objectives being to provide a forum for discussion of maintenance issues to the mutual benefit of aircraft owners and maintainers.

One of the objectives of the WG is to discuss and/or provide help with maintenance problems encountered by a number of aircraft owners; in the past year these numbered 15 of which 3 were complex and expensive.

Considering that the 2,000-to-3,000 aircraft owned or partly owned by AOPA members visit a maintainer for an annual or periodic regular check at least twice a year, the relatively small number of problems arising clearly indicates a high degree of overall owner satisfaction with their maintainer generally.

Nevertheless, the WG members decided in 2012 that it would be a good idea to draft a Code of Practice for Maintenance and Repair that they themselves follow and could be recommended to other light aircraft

maintainers. In particular, in cases where aircraft change hands and the new owner transfers to a new maintainer, the latter will take nothing for granted, and unforeseen extra costs may arise. In this case of the owner having had no previous dealings with the maintainer, the C of P can be used to establish a basis for the future business relationship between maintainer and customer. If a maintainer is happy to indicate to a wider world that he/she has 'signed up' to the C of P, then an email or letter indicating as much should be sent to AOPA\* and the organisation name will be added to the list on the AOPA website. Any such request will be independently verified to ensure integrity. For those who have signed up, a certificate for display along the lines of that shown is available on request. The Code of Practice appears below left.

\* Letters should be sent to AOPA at 50a Cambridge Street, London, SW1V 4QQ and emails to [george@aopa.co.uk](mailto:george@aopa.co.uk). A sample request letter appears on the AOPA website.

## AOPA CODE OF PRACTICE

We will endeavour to contact you at least two weeks in advance of any scheduled maintenance due to fix a mutually acceptable time and date to receive your aircraft at our facility. A full explanation of any mandatory requirements ADs, SBs, etc. that you need to have carried out when your aircraft is with us, in addition to the routine scheduled work, will be given in detail. Any additional work requested by you will be agreed at the time of booking. Estimates and quotations can be provided upon request and before any work is carried out if required.

Accepted methods of payment will be confirmed prior to any work commencing. (For lengthy or expensive projects stage payments may be agreed)

We will agree with you the parts to be used. Should you wish to source and pay for parts directly this can be discussed and we may be able to agree, subject to the inclusion of a suitable administration fee to cover the approval of any necessary paperwork that you need to provide. All parts supplied by us remain our property until we are in receipt of cleared funds. Replaced parts will be made available to you for examination upon request. (Unless required for part exchange by our supplier.)

The quality of any subcontract work e.g. avionics, weighing, welding etc. remains our responsibility unless purchased directly by yourself.

Any additional work found to be needed, during the maintenance procedure, will be advised to you in writing or by email, and will be required to be prior authorised by you, unless otherwise agreed.

All elements of the work carried out will be explained in full upon collection/delivery.

Final invoicing will clearly show labour, parts, additional charges and VAT. Once our explanation of the work is complete payment is due upon collection/delivery, which should be within seven days. Thereafter, a daily storage charge may be raised.

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In the event of a complaint our Chief Engineer or Accountable Manager should be informed immediately.

*By George Done*



# PPL Corner

By Adam Winter

*“True Track, Magnetic Track, True Heading, Magnetic Heading, Drift Angle and Correction, Variation and Deviation - let's sort this whole thing out!”*



If you get into a car with the intention of driving to Scotland, a quick glance at a road map will tell you that generally you will be heading north. It doesn't really matter, the roads are fixed tracks and the friction between the road and your tyres will keep you on track (literally). The wind won't be drifting you off in the wrong direction. Also it doesn't matter if you are referring to true north or magnetic north; you follow the road and so your track is predetermined.

However, anything that is airborne travels through a moving medium, and travelling in a straight line on a predetermined course becomes a bit more awkward. We need to calculate how much off course we will be blown, and correct for it. We also need to work out how long it will take us to get there.

So let's go back to the map and draw a line. We have drawn an imaginary line that we would like to follow (i.e. our desired track). Now we have to measure

its direction with a protractor and take a measurement. The lines we are measuring against on the map are the lines of longitude and latitude that all line up to the north/south rotational poles. These are 'True Tracks'. The rotational poles are known as True North and True South.

### Effect of Wind

Now is a good time to work out what the wind is going to do to our track, in order to determine a True Heading. The winds you get from the Met Office are also measured in degrees true. So if the wind is blowing from the west, causing easterly drift, you are going to have to turn slightly to the west.

There are several ways of calculating the drift angle. By far the easiest way is to draw a scale diagram. Let's say the wind is from 270 degrees at 20 knots.

If a journey is 100 nautical miles heading north (true), and our aircraft's true airspeed is 100 knots.

We draw a line pointing to the top of the page (north) and make it 100 units long (see diagram).

Then, from the top of the lines draw another line to the right (from the west) that is 20 units in length.

You have drawn two vectors (a vector is a line with both magnitude and direction).

Draw another line from the bottom of your track line to the end of the wind line, and that is the track you will take if you don't correct for wind.

You need to measure the angle at the bottom, and that is your drift, and you correct for that drift in the opposite direction.

Looking at the diagram, however, there is a slight problem: measuring the angle this way doesn't take account of the fact that once you point the aircraft into wind, you slow down. So now we need some trigonometry.

This is easy for a right-angle triangle,

## Take Your PPL Theory in London!



Following the popularity of the first series of courses, AOPA is pleased to advise that it is running more evening Ground School courses for ab-initio pilots. The PPL Ground School takes place at the AOPA offices at [50A Cambridge Street](https://www.aopa.co.uk/50a-cambridge-street) each Tuesday and Thursday evening, 7-9pm, on the dates shown below. The AOPA office is only five minutes' walk from Victoria Station. All nine subjects required for the PPL (Aeroplanes) is taught over a period of approximately 70 hours. The lecturer is Adam Winter, a highly qualified and experienced flying instructor who works for the Flyers Flying School at Elstree. You can read more about the training and subject matter at [www.flightgroundschool.co.uk](http://www.flightgroundschool.co.uk)

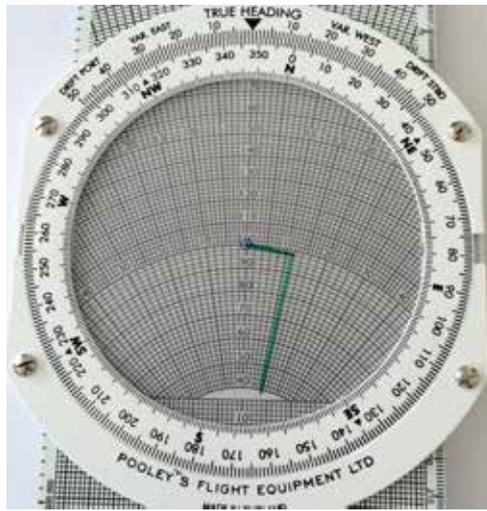
### Course Dates 2016/17

<b>Air Law</b>	October 4, 6, 11, 13
<b>Operations and Procedures</b>	October 18, 20
<b>Human Performance and Limitations</b>	October 25, 27
<b>Revision</b>	November 1
<b>Exams</b>	November 3
<b>Navigation</b>	November 8, 10, 15, 17, 22, 24
<b>Meteorology</b>	November 29 December 1, 6, 8, 13, 15
<b>Revision</b>	December 20
<b>Exams</b>	December 22

### 2017

<b>Aircraft General Knowledge</b>	January 5, 10, 12, 17, 19
<b>Principles of Flight</b>	January 24, 26, 31
<b>Revision</b>	February 2
<b>Exams</b>	February 7
<b>Performance and Planning</b>	February 9, 14, 16, 21
<b>Communications</b>	February 23, 28
<b>Revision</b>	March 2
<b>Exams</b>	March 7

It is not necessary to attend the full course and candidates can select the individual subjects they wish to study from the published dates. You do not have to be a member of AOPA to participate. Further details can be obtained from Mandy at the AOPA office on 0207 8345631 or [mandy@aopa.co.uk](mailto:mandy@aopa.co.uk)



The Whizz Wheel is not everyone's favourite device but it is still provides a good way to envisage and calculate the effect of wind on your ground speed and track.

but the wind is rarely exactly 90 degrees to your track, and then the maths becomes more complex.

There is an easier way of doing a scale diagram. The tool is the much loved (by me anyway) circular slide rule, or "Whizz Wheel" (see image, above). This immediately tells me my drift correction - 12 degrees to port - and the small headwind component. All in one!!

Now we know that to go north on this particular day we have to make our true heading 348 degrees and our groundspeed will be 98 knots.

The next problem is that the aircraft compass is not aligned to True North, as it aligns itself with Magnetic North, and they are not in the same place (see diagram).

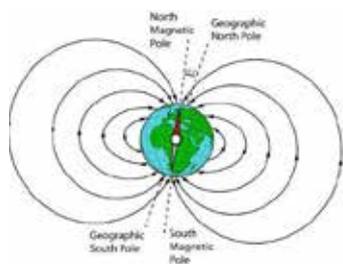
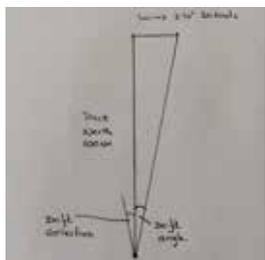
The angular difference between pointing to the true North Pole and the Magnetic Pole is 'Variation', and we apply the Variation to the True Heading to get the Magnetic Heading.

And then we get in to the aircraft and turn the electrics on and all the electromagnetic waves they generate make the compass itself deviate. So we need to make a correction to our compass heading to get a correct Magnetic Heading. This is Deviation.

If you have a PPL, the above should be old hat. You did it for your general flight test, and your navigation skills should have improved. However, with the advent of Sky Demon and other navigation programs, as well as GPS navigation, you might feel a bit rusty or reliant on the technology.

Another part of your PPL training that may have eroded is the use of traditional navigation aids like VORs and NDBs. I teach PPL Navigation at AOPA in Victoria and we have a great simulator for teaching PPL radio navigation or refreshing VOR/NDB tracking. It is also very useful if you have an IMC rating and want to practice radio navigation and approaches, especially if you are coming up for renewal.

Don't forget the pleasure of navigating using a stopwatch, compass and a line on your map!



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# Airfields Update



**JOHN WALKER** provides the latest information (as at 21st July) relating to UK airfields.

## Andrewsfield

Braintree, Colchester and Tendring Councils are co-operating in developing a Local Plan for north-east Essex and have identified Andrewsfield airfield (above) as one of four sites for potential housing in a new garden city with 10,000 homes. Public consultation on proposals in progress after which a definitive Local Plan will be drafted for further consultation.

## Bourn

Site earmarked for 3,200 homes in current draft Local Plan by South Cambridgeshire District Council. The draft Plan is the subject of examination by a Planning Inspector. Current site leases expire this year. Planning consent recently given for outside storage of shipping containers, plant etc. on most useable runway.

## Chalgrove

MoD owned airfield occupied and operated by Martin-Baker Aircraft being transferred to the Homes and Communities Agency. Site is one of seven being considered for a 3,500 home development in South Oxfordshire District Local Plan consultation document.

## Deenethorpe

The latest Joint Core Strategy for north Northamptonshire has identified Deenethorpe Airfield as a potential exceptional opportunity for development as an exemplar garden village with around 1,250 homes. The Brudenhall Estate, the site owner, who have supported the development, now need to produce a master plan for the site in accordance with the Core Strategy, for approval.

## Dunsfold

Site owner has applied to Waverley Borough Council for mixed use development with 1,800 homes on site which area is in planning Core Strategy for employment purposes. After an extended consultation, the Council expect to determine the application in August 2016.

## Elvington

York City Council Local Plan Preferred Sites Consultation document issued in July 2016 includes a development of up to 3,330 dwellings partly occupying the middle section of the Elvington airfield runway. Consultation period ends in September.

## Halfpenny Green

(Wolverhampton Business Airport) Aerodrome sold to MCR Property Group an investment and development company focused on commercial and residential real estate resulting in much speculation about the future of the site.

## Kemble

Commercial Estates Group (CEG) proposal to build a 2,000 home sustainable village on this 'brownfield' site as an alternative to the draft Cotswold District Local Plan proposal for a greenfield site near Cirencester. The draft Local Plan has been issued for public consultation and full Planning Inquiry into Plan and alternatives to it scheduled for late 2016.

## Long Marston

Planning permission for 400 homes on site granted in November 2015. Airfield is in Stratford-on-Avon adopted planning Core Strategy for housing with

up to 2,100 homes by 2031. Developer is Cala Homes in conjunction with site owner. See Wellesbourne (below).

## Manston

River Oak has given notice of intent to apply for a Development Consent Order for the aerodrome as a Nationally Significant Infrastructure Project. The current site owners have submitted a planning application for a mixed use development with land earmarked as a park allowing occasional landings by Spitfire aircraft in conjunction with existing museums. Thanet District Council has refused this application which will now be the subject of a full Planning Inquiry.

## MoD Sites

RAF Hullavington airfield, the former RAF Wethersfield and RAF Wyton airfield (see below) now being disposed of by MoD along with sites currently occupied by USAF at Alconbury, Molesworth and Mildenhall. Further airfield sites expected to be declared as surplus resulting from the current review of the MoD estate which is due to be completed in September 2016.

## Nottingham City (Tollerton)

With the support of the land owner, site earmarked for up to 4,000 homes in Local Plan Core Strategy adopted by Rushcliffe Borough Council after approval from Planning Inspector.

## Old Sarum

Site owner's proposal for housing development and 10 additional hangars amongst other work, objected to by various parties as detrimental to the sites heritage and potentially limiting use of the airfield. After prolonged discussion

with Wiltshire Council, the proposal has been amended to delete the on-airfield accommodation and the amended application is the subject of further consideration.

### **Panshanger**

Site earmarked for housing in draft Local Plan by Welwyn Hatfield Borough Council with final draft Plan open for public consultation in August 2016 and Planning Inquiry to be held in early 2017. Recent proposed site development plans include 3 different scenarios for a new runway to the north, south or across the previous runway 11/29.

### **Plymouth**

Central Government have commissioned a study into viability of reopening the airfield with a report now due sometime in 2016. FlyPlymouth, a local social enterprise aerodrome support group, plans to reopen the airfield by 2017 and start regional airliner services by 2018. Sutton Harbour Holdings, the site lease holder, have proposed a mixed use development of the site although the current draft Local Plan retains the

site for aviation. The Plymouth City Council Local Plan will be the subject of a Planning Inquiry in July 2016.

### **Rochester**

Judicial Review into Medway Council approval of hard runway, 3 new hangars and new control tower postponed from November 2015 as Consent Order issued for Council to review decision at a special meeting to be held shortly. Enterprise Zone status granted for commercial part of the proposed site development.

### **Wellesbourne Mountford**

Gladman Developments in conjunction with the owner have proposed a housing development with 1,600 homes on the site although the Stratford-on-Avon Local Plan Core Strategy has earmarked Long Marston as a preferred housing development site. The Core Strategy after approval by a Planning Inspector has been adopted by the Council and states that "The aviation related functions at Wellesbourne Airfield will have been retained and enhanced". Tenants notified by owner that flying activities will cease on 24 December 2016.

The District Council has agreed to fund a feasibility appraisal of the site to try and secure the future viability of the airfield for local businesses.

### **Wycombe Air Park**

Site lease holder (Helicopter Aircraft Holdings Ltd) after prolonged discussions with the land owner (Wycombe District Council) has agreed a new lease.

Draft Local Plan provides for an industrial / warehousing complex on south-eastern part of the site potentially resulting in loss of a runway and cessation of gliding activities. Council expects to submit final plan after on-going public consultation to Planning Inspector by January 2017.

### **RAF Wyton**

Airfield site being disposed of - the Defence Infrastructure Organisation and local property developer Crest Nicholson have issued a proposal for 3,750 homes on the site which has been earmarked in the draft Huntingdonshire District Council Local Plan for mixed use development including housing.

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# EASA Flight Crew Licensing Update

By Nick Wilcock

More fascinating news from the highly exciting world of EASA Flight Crew Licensing:

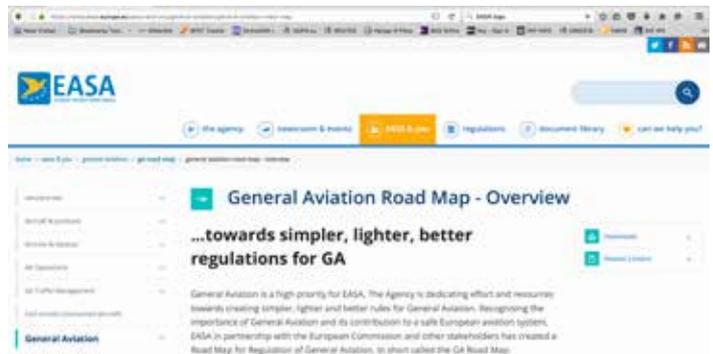
## New EASA HQ

EASA has now relocated across the river from its old site to the new building at Konrad Adenauer Ufer 3, close to the main railway station. Well, perhaps not exactly 'new' as it's one of the few which largely escaped Bomber Command's attentions in 1943, although badly damaged. Later to become the headquarters of German Federal railways, the building was acquired for development in 2011 and the interior has been completely rebuilt. Rather austere at present and with a few teething issues, such as the problematic electronic access gates which don't always work reliably. There's not much colour and something of a lingering smell of new concrete in places. But there's a lot more interior space than the old building offered, enabling larger meetings to be programmed more easily.

## RMT.0657 Training Outside an ATO

A 'Decision' is imminent concerning the future for 'Training Outside an ATO'. Older readers may recall that back in 2014 under Notice of Proposed Amendment (NPA) 2014-028, EASA proposed a simpler form of regulation for 'Non-Complex Approved Training Organisations' conducting PPL-level training activities, which it later decided to suspend due to another EASA group, the 'GA Road Map', having had other ideas.

Following work by the Rule Making Task (RMT).0657 group, this GA Road Map initiative eventually led to the concept of the 'Basic Training Organisation' under NPA 2015-020. Although oversight was proposed to be pretty light and IAOPA Europe was largely supportive, others said «Non!». So, earlier this year, RMT.0657 came up with the idea of a 'Registered Training Organisation'. Again a certain EU Member State's National Aviation Authority said «Non!», apparently because it might expose them to some legal risk thanks to Napoleonic Law. No prizes for guessing who! However, RMT.0657 then came up not with an ATO, nor a BTO nor an RTO, but this time a 'Declared Training Organisation'. Unfortunately IAOPA Europe wasn't able to attend the workshop which agreed this, so we weren't able to support it at the time as we simply didn't know what was being proposed. However, now that we have seen the proposals, we have informed both the GA Road Map section



and the UK CAA of our support, provided that any oversight is both proportional and performance-based. At present the scope of DTO activity appears to be LAPL, PPL, night, aerobatic, towing and mountain ratings only. Of course, this won't affect NPPL and IR(R) training, which remain outside the scope of EU Regulation.

## RMT.0677 Easier Access of GA Pilots to Instrument Flight Rules (IFR) Flying

The GA Road Map recently provided clarification regarding their intent for the 'Basic IR' proposal which has been under development since mid-2015. The aim now is for easier access to an IR for the purpose of typical A-to-B planned IFR flights, so the original concept of BIRs with partial privileges to suit other needs has been reviewed. IAOPA (Europe) considered that there was still a need to provide a simpler instrument flying qualification to support the needs of a pilot needing to regain VFR after encountering IMC and although it would have been possible to incorporate this into the BIR proposal as a first module, to have done so would probably have delayed BIR progress to an unacceptable degree. So it has been agreed that proposals for a simple VFR-to-IMC-to-VFR rating, perhaps similar in nature to the Sailplane Cloud Flying Rating, would be better considered under a separate rule making task. The BIR Task Force has made good progress with theoretical knowledge examination requirements, the basic idea being not to duplicate anything already learned at PPL level and only to include items considered essential for supporting the practical needs of the IFR pilot. The opportunity is also being taken to ensure that Performance Based Navigation requirements are included; the RMT.0677 Task Force also agree that, with suitable oversight caveats, BIR training should fall within the scope of a DTO. Hopefully the NPA will be released in Q3/2016.

## RMT.0596 Review of Provisions for Examiners and Instructors (Subparts J & K of Part-FCL)

Although the EASA Flight Crew Licensing Implementation Forum (FCL-IF) has had an extra-Agency Working Sub Group reviewing current instructor and examiner requirements for some time now, the formal EASA Rule Making Task group has yet to form. However, the Terms of Reference (ToRs) have now been drafted and the RMT.0596 Task Force should start work soon. With the agreement of the RMT.0677 chairman, agreed lighter proposals for instrument flying training and testing at BIR level have already been forwarded to the coordinator responsible

for the group's activities. In addition, concern at the ability of industry to maintain a supply of flight instructors has also been noted, largely caused by the disproportionate requirement for PPL-level FIs to have passed the CPL exams. The UK's interests will be represented by the UK CAA, in whom AOPA UK has every confidence. Yes really we do!

## **RMT.0678 Simpler, Lighter and Better Part-FCL Requirements for General Aviation**

EASA has accepted that progress on many aspects of GA flight crew licensing aspects has been somewhat tardy, even when the issues in question have been non-controversial. So a new Rule Making Task Group will form shortly as RMT.0678, to consider a wide range of GA topics highlighted as needing quicker action.

Many of the items stem from IAOPA (Europe) points raised at the FCL-IF, the 'TAG/SSCC/FCL' (now renamed the 'mTeB FCL-SSC Aircrew Group'....) and the LAPL Review Board. I have been nominated as the IAOPA (Europe) representative on RMT.0678; we have already reviewed the ToRs and have included the RMT.0677 recommendation for a simple VFR>IMC>VFR aeroplane safety qualification to be included within the scope of 'Activity XIV - Other GA issues'.

**So it's not all doom and gloom! We should soon see work on simpler requirements for PPL-level training, the Basic IR, lighter requirements for instructors and examiners and resolution of various other GA training issues leading to a considerably less onerous regulatory regime for general aviation.**

# **AOPA 50<sup>th</sup> Annual General Meeting**

The 50<sup>th</sup> Annual General Meeting of the British Light Aviation Centre Ltd, trading as the Aircraft Owners and Pilots Association of the UK, will be held on Thursday 8th September 2016 at AOPA, 50a Cambridge Street, London, SW1V 4QQ, commencing at 2.00 p.m. The formal announcement and agenda of the AGM appears below.

A set of the financial accounts for the year ended 31<sup>st</sup> March 2016 will be provided in advance of the meeting on the AOPA website [www.aopa.co.uk](http://www.aopa.co.uk) together with the minutes of the 49<sup>th</sup> AGM and brief personal details of the members offering themselves for election and re-election. These data will also be available at the AGM.

Any member wishing to elect another member to the Board of Management must provide notice in writing or email to the AOPA office at least 35 days in advance. A statement of willingness to serve will be expected from the proposed member together with appropriate personal details. Proxy voting is permitted, either by nominating in writing or by email a member who will be present at the AGM as proxy, or by nominating the Chairman as proxy

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

Tea, coffee and sandwiches will be available for those attending from 1.30 p.m. and it is expected that the meeting will finish by 3.30 p.m. It is *very important* for planning purposes that members who intend to attend are requested to please let the AOPA office know in advance, either by telephone (020 7834 5631), email ([info@aopa.co.uk](mailto:info@aopa.co.uk)), or by post to AOPA, 50a Cambridge Street, London SW1V 4QQ.

**2016 AOPA Annual General Meeting**  
**The 50<sup>th</sup> Annual General Meeting of the British Light Aviation Centre**  
**Limited trading as the Aircraft Owners and Pilots Association of UK**  
**will be held at AOPA, 50a Cambridge Street, London, SW1V 4QQ**  
**on Thursday 8<sup>th</sup> September 2016 at 2.00 p.m.**

### **Agenda**

1. Apologies for absence
2. To confirm the Minutes from the 49<sup>th</sup> Annual General Meeting
3. To receive and endorse the Directors' Report and Financial Statements for the year ended 31<sup>st</sup> March 2016.
4. The election of Directors to the Board of Management. The following Directors are due to retire by rotation: Mike Cross, George Done, Richard Hawkin and John Walker. Mike Cross, George Done, Richard Hawkin and John Walker offer themselves for re-election. The election of other properly nominated Members of AOPA.
5. To appoint as Auditors Messrs Waller & Byford, at a fee to be fixed by the Board of Management.
6. To conduct any other business which may properly be dealt with at an Annual General Meeting.

**By Order of the Board**  
*George Done, Chairman*

# GA News Roundup

## New Rules Will Require Carriage of PLBs, Documents...

From 25 August 2016, EASA Air Operations Regulations come fully into effect. The Regulations (EU No 965/2012) already apply to Commercial Operations and from 25 August 2016 will be extended to cover Non Commercial Operations (NCO). Commission Regulation EU 800/2013 amends EU No 965/2012 and lays down the technical and administrative requirements (see EASA website). The implementing rules are referred to as Part-NCO and will apply to non-commercial operations using non-complex aircraft. The UK CAA has set up a website intended to provide useful information about these implementing rules. The website can be found at [www.caa.co.uk/nco](http://www.caa.co.uk/nco). A major difference is the requirement for the carriage of ELT or PLB at all times on certified and EASA Permit aircraft. (Other Permit aircraft operators should clarify requirements with their Regulator). And if flying internationally you should check the relevant AIP for any derogations for international flights.

### NCO.IDE.A.170 Emergency Locator Transmitter (ELT)

(a) Aeroplanes shall be equipped with:

- (1) an ELT of any type, when first issued with an individual CofA on or before 1 July 2008;
- (2) an automatic ELT, when first issued with an individual CofA after 1 July 2008; or
- (3) a survival ELT (ELT(S)) or a personal locator beacon (PLB), carried by a crew member or a passenger, when certified for a maximum passenger seating configuration of six or less.

(b) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121.5 MHz and 406 MHz.

For Helicopters:

(a) Helicopters certified for a maximum passenger seating configuration above six shall be equipped with:

- (1) an automatic ELT; and
- (2) one survival ELT (ELT(S)) in a life-raft or life-jacket when the helicopter is operated at a distance from land corresponding to more than 3 minutes flying time at normal cruising speed.

(b) Helicopters certified for a maximum passenger seating configuration of six or less shall be equipped with an ELT(S) or a personal locator beacon (PLB), carried by a crew member or a passenger.

(c) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121.5 and 406 MHz.

### NCC.GEN.140 Documents, Manuals and Information to be Carried

(a) The following documents, manuals and information shall be carried on each flight as originals or copies unless otherwise specified:

- (1) the AFM, or equivalent document(s);
- (2) the original certificate of registration;
- (3) the original certificate of airworthiness (CofA);
- (4) the noise certificate; (5) the declaration as specified in Annex III (Part-ORO), ORO.DEC.100, to Regulation (EU) No 965/2012;
- (6) the list of specific approvals, if applicable;
- (7) the aircraft radio licence, if applicable;
- (8) the third party liability insurance certificate(s);
- (9) the journey log, or equivalent, for the aircraft;
- (10) details of the filed ATS flight plan, if applicable;
- (11) current and suitable aeronautical charts for the route of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;
- (12) procedures and visual signals information for use by intercepting and intercepted aircraft;
- (13) information concerning search and rescue services for the area of the intended flight; (14) the current parts of the operations manual that are relevant to the duties of the crew members, which shall be easily accessible to the crew members;
- (15) the MEL or CDL;
- (16) appropriate notices to airmen (NOTAMs) and aeronautical information service (AIS) briefing documentation;
- (17) appropriate meteorological information;
- (18) cargo and/or passenger manifests, if applicable; and
- (19) any other documentation that may be pertinent to the flight or is required by the States concerned with the flight.

(b) In case of loss or theft of documents specified in (a)(2) to (a)(8), the operation may continue until the flight reaches its destination or a place where replacement documents can be provided.

Included in the EASA documents is one which provides guidance on the acceptable means of compliance.

Meanwhile the UK CAA says that it is working on its own guide, which we hope to publish in AO&P, October issue, and on the AOPA website.

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## EASA Certification Proposal

EASA has issued its proposed rewrite of certification rules governing light aircraft; the new European CS-23 regulation could be released later this year. The U.S. FAA had already proposed to rewrite its Part 23 certification rules. The NPA anticipates a three-month consultation period followed by a final decision in the fourth quarter.

## CAA Solent Trial

GA pilots have been asked by the CAA to collaborate in a new 10-week trial from 1st August to help reduce the risks of infringements in the Southampton Control Zone and the Solent Control Areas. See <http://www.caa.co.uk/General-aviation/Safety-information/Solent-airspace-trial/>

## CAA 8.33 Radio Funding

The CAA is to receive EU funding of €4.3m to encourage the timely transition of the UK GA fleet from existing 25 kHz radios to 8.33 kHz equipment. The authority says this application is for the maximum permitted grant of twenty percent of the estimated total cost of 8.33 kHz equipage.

This will go some way to easing the burden for aircraft owners converting to 8.33 kHz equipage in the UK and continues to demonstrate our commitment to get the best deal possible for the UK GA community.”

## CORRECTION

In the AOPA Flying Directory 2016/17, included with the June issue, we incorrectly stated the address of Western Air, Thrupton Airport. The correct address is as follows: Control Tower, Thrupton Airport, Thrupton, ANDOVER SP11 8PW, Tel : 01264 773900. Email: [westernair@thruptonairport.com](mailto:westernair@thruptonairport.com). Website: [www.westernairthrupton.com](http://www.westernairthrupton.com).

## The AOPA Simulator

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# Cessna TTx receives EASA certification

Cessna announced at AirVenture Oshkosh in late July that its new TTx single-engine piston aircraft had received EASA certification approval the previous week. Coincidentally, *Aircraft Owner & Pilot* headed up to Cambridge Airport to fly the aircraft on the Saturday before Oshkosh (23rd July) - and was given the news "on embargo". The aircraft, which is the fastest fixed-gear aircraft in its class (235kt high-speed cruise), is now certificated in more than 40 countries.

Particularly impressive is the capability of the aircraft's Garmin G2000 avionics, giving the TTx an all-glass touchscreen cockpit, so any business jet pilot would be as at home as an experienced PPL who has had a few hours to get used to the relatively easy-to-learn avionics. The TTx also has an all-composite body and wing, and push-rod controls rather than cables. It is powered by a 330hp twin-turbo Continental IO550 engine and with pilot Peter Herr we took the aircraft to 11,000ft and 200kts TAS, while burning less than 20gph. A technical report appeared in the June issue of this magazine.



Pictures by Sebastian Sheppard



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## Dutch Warning!

AOPA Netherlands says that all pilots flying to or passing through the country should be aware that the Dutch government has chosen to convert to 8.33kHz radios early. In short, you can only operate VFR with a 25 kHz radio in class G airspace and small airfields in class G airspace.

An operator shall not operate an aircraft above FL 195, unless the aircraft radio equipment has the 8.33 kHz channel spacing capability; An operator shall not operate an aircraft flying under instrument flight rules (IFR) in airspace class A, B, C, or converted airspace in the Amsterdam FIR, unless the aircraft radio equipment has the 8.33 kHz channel spacing capability; With regard to the carriage requirements of 8.33 kHz channel spacing radio equipment identified in the previous paragraph, an operator shall not operate an aircraft flying under visual flight rules (VFR) in areas operating in 8.33 kHz channel spacing, unless the aircraft radio equipment has the 8.33 kHz channel spacing capability; From 01 January 2018 an operator shall not operate an aircraft in airspace where carriage of radio is required unless the aircraft radio equipment has the 8.33 kHz channel spacing capability; All operators and agents acting on their behalf shall ensure that the letter Y is inserted in item 10 of the flight plan for aircraft equipped with radios having the 8.33 kHz channel spacing capability.

**DO NOT** insert the letter Y in your flight plan if you do not have an 8.33 radio and you wish to operate in airspace or land on an airport for which 8.33 is mandatory! The Dutch ATC will not reject your flight plan because the flight planning goes through Eurocontrol. They will not match 8.33 with your route of destination. And if you enter airspace or land on an airport for which 8.33 is mandatory and you do not have an 8.33 radio, you will be fined. Fines start at 2,500 Euros.



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## Old Sarum Airfield Marketing Manager Wanted

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No direct airfield marketing or operational experience needed but a good understanding of the GA market will be helpful.

Target markets are the domestic GA user; the international training market including night flying; domestic commuter start-ups.

Aviation background of interest – commercial; general; military.  
General aviation enthusiasm essential.

Reply with CV to:  
Matthew Hudson  
The Control Tower, Old Sarum Airfield,  
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Include any information relevant to this challenging opportunity to rebuild the aviation business at this historic airfield which has rights to unlimited flying.

Remuneration to be agreed with the successful candidate.

[manager@oldsarumairfield.co.uk](mailto:manager@oldsarumairfield.co.uk)



# Electronic Conspicuity, or..

## “See and be Seen!”

**Alan Burrill explains how in-cockpit devices are developing and allowing pilots to have far better awareness of other traffic.**

As VFR pilots we are taught from day one to maintain a good lookout outside the cockpit. This is not only to help us to navigate but also to look for other aircraft – which could be anything from balloons to gliders to commercial aircraft.

A new concept is being explored which provides an additional aid in the form of an electronic “conspicuity” device. This will allow an aircraft to transmit its position electronically while also receiving signals from other aircraft, decoding the information to provide an indication in the cockpit of aircraft in the vicinity.

The gliding community has already made use of products such as FLARM to improve situational awareness of other gliders, especially when “thermallng,” so this is not an entirely new concept.

Some “powered” pilots have also taken to using FLARM devices in their aircraft, especially where they interact on a regular basis with areas of intense gliding activity.

The CAA set up the Electronic Conspicuity (EC) Working Group in 2013, with representation from AOPA, NATS, LAA, BMAA, BGA, BHPA and the RAF. Less than a year later, NATS started the European-funded Project EVA (Electronic Visibility via ADS-B) with participation of AOPA, F.U.N.K.E. Avionics and Trig Avionics, to demonstrate the benefits of EC to the GA community. In parallel, NATS also initiated the use of uncertified GPS connected to Mode S. Both these activities are described further below.

### Uncertified GPS as a Source for ADS-B Out

ADS-B is usually associated with a Mode S Transponder that has Extended Squitter. There is also a non-transponding type of ADS-B transmitter, which is explained in the LPAT section below.

The ADS-B based technologies allow the routine broadcast of traffic information including: Aircraft Identity, quite often the aircraft registration, the ICAO allocated aircraft address; Pressure altitude based on the 1013.2 hPa (29.92 inch); and the Latitude and Longitude position from a GPS source.

The information is broadcast by the transponder on a timed basis and is therefore not restricted by the need for an Secondary Surveillance Radar (SSR) interrogation from the ground.



***“Presentation of the information is a significant consideration and certainly the glider community has the most experience based on the development of the FLARM Product.”***

The Mode-S GPS trial to encourage the connection of a Mode-S transponder with extended squitter to non-certified GPS equipment has proven very successful and the final report from NATS, who monitored aircraft with this configuration, have concluded that the position data is comparable with that received from Commercial Air Transport using certified GPS. This has resulted in the CAA agreeing that connecting non certified GPS to a Mode S ADS-B enabled transponder can continue and is available as a minor mod for Annex 2 and certified GA aircraft as well as gliders, microlights etc.

### Low Power ADS-B Transceiver (LPAT)

This is a device developed by NATS and F.U.N.K.E. Avionics, which has been evaluated in the UK and Germany. AOPA has played a key role during development of this device by enlisting volunteer pilots to explore the safety benefits of the device in the average GA aircraft. It provides an ADS-B transceiver broadcasting aircraft identity and location plus the ability to receive ADS-B signals and display relative location to pilots, and is also able to detect Mode S and Mode A/C transponders, and FLARM signals, providing alerts (but no direction).

The LPAT device will be ideal for those aircraft who have no capability for the fitting or powering of a conventional transponder. The device does not provide the means to provide a conventional response to an SSR interrogation so is currently limited in ability for the information to be displayed to ATC.

However, ADS-B is under trial in a number of countries as it reduces the requirement for a complex and expensive radar installation. The Dutch have mandated the use of ADS-B in an area of the North Sea to assist in the provision of Air Traffic Services and, with NATS having a trial system in the UK, the future of ADS-B is moving forward. *That said, LPAT does not provide an acceptable means of compliance for an aircraft to operate in an area mandated for ADS-B.*

A second LPAT device is under development by Trig Avionics to provide similar capability, and in addition to the work on the LPAT there are a number of devices currently on the market providing traffic alerts based on devices able to detect the aircraft response from SSR transponders, Mode-S and Mode A/C, as well as ADS-B and FLARM. The following is a summary of these.

## FLARM

FLARM was developed for the gliding community as an aid for pilots to maintain situational awareness and specifically provides tactical information on gliders climbing and descending in thermals where a number of gliders will be operating in close proximity to gain that all-essential height.

It operates in the unregulated and unlicensed frequency band around 868 MHz, and while initially a low-powered device with a range of a few kilometres further developments have resulted in the production of devices that can be fitted to certified aircraft, powered from the aircraft electrics, and able to achieve longer detection ranges. 'Power FLARM' is popular where powered aircraft and gliders operate together.

The FLARM community has perhaps the most experience of displaying electronic proximity warnings to pilots and therefore a range of display types and methods have developed. The range of displays include overlays on an electronic chart displayed on a tablet providing GPS locations as well as detected traffic, to a ring of LED which provide a simple direction to look and a possible range and height of any target.



FLARM devices have come a long way and some now also have ADS-B and Mode A/C/S reception.

Software filters are often included to promote the targets of threat and therefore interest to filter out a multitude of detected targets.

While FLARM may at first appear to be attractive only to gliders it has developed an extensive following in Europe, including the UK, especially as it has been in existence since 2005. A number of suppliers, including the FLARM manufacturers, have portable and installed versions of FLARM transceivers incorporated with ADS-B, Mode S and Mode A/C reception with threat detection and display integrated with the FLARM display products.



## Pilot Aware

Relatively new to the GA scene, the Pilot Aware (PiWare) product is based on a Raspberry Pi single-board computer developed for educational purposes, but which is now finding a multitude of uses in many projects (including a trip into the Space Station).

A number of interested pilots acted as beta testers during the development of the PiWare and over the winter of 2015/2016 a hardware development of a plug-in device to provide a transmission on the unregulated and unlicensed frequency band around 868 MHz was undertaken.



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<p><b>Air Protect Cockpit Safety Foam</b></p> <p>13mm thick £19.0 25mm thick £28.0 50mm thick £42.0</p>		<p><b>Parachutes</b></p> <p>Quality and Comfort Prices approx £2,210.00</p> <p style="text-align: right;"><b>SOFTIE</b> EMERGENCY PARACHUTES</p>								
<p><b>Kanardia Instruments</b></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">   <b>NEW</b> Horis 80 £950.00             </td> <td style="text-align: center;">                   Horis 57 £852.00             </td> </tr> <tr> <td style="text-align: center;">                   EMSI/PFD £1,092.00             </td> <td style="text-align: center;">                   NESIS Price on application             </td> </tr> </table>	 <b>NEW</b> Horis 80 £950.00	 Horis 57 £852.00	 EMSI/PFD £1,092.00	 NESIS Price on application	<p><b>Winter Instruments</b></p> <p>The whole range is available Please check website <a href="http://www.lxavionics.co.uk">www.lxavionics.co.uk</a></p>					
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The Pilot Aware uses off-the-shelf components comprising USB versions of DVB-T receiver, GPS and WiFi together with the proprietary PiWare 'Bridge' which transmits a GPS location on the unlicensed frequency and can detect other PiWare devices. The DVB-T receiver is used to detect ADS-B and Mode-S Transponders.

The unlicensed frequency is not the same as used by FLARM and the differences in the protocols used mean that FLARM and PiWare transmissions are not compatible and therefore aircraft are invisible to each other unless they also carry an ADS-B or Mode-S Transponder.

The PiWare device is able to be linked through WiFi to a number of tablet GPS applications, SkyDemon, RunwayHD, Easy VFR and a number of other applications and therefore does not incorporate its own display or filtering software. Targets are displayed as an overlay to the GPS map chosen by the user and any alerts for target proximity are part of the GPS application selected.

### Traffic Alert Devices

A number of Traffic Alert devices have been on the market for some years and were marketed as Portable Collision Avoidance Systems (PCAS) and detected conventional SSR transponder transmissions. These have developed in to more sophisticated devices which incorporate the ability to detect ADS-B, Mode-S as well as Mode A/C transponders. Some even incorporate FLARM receivers.

ADS-B obviously provides the device with a means of indicating a relative height and position while Mode-S and A/C transmissions, lacking the GPS data, generally are displayed as an alert based on estimated range and any relative height information from the Mode C response.

### Other Considerations

Uncertified GPS and LPAT both use the conventional SSR transponder frequency, 1090 MHz to transmit and receive and here lies a challenge. While the reception of the 1090 MHz signal can be achieved relatively easily using off-the-shelf tunable radio receivers i.e. in a USB DVB-T dongle, transmission is regulated by the authorities and therefore the

The LPAT display on the prototype Funke device.



availability of low powered devices able to transmit on this frequency is limited and currently expensive. The UK CAA has released a document, CAP 1391, outlining requirements for a low powered 1090 based transceiver and interested manufacturers are investigating the possibilities of low cost devices.

***“These devices should provide assistance to VFR flight by prompting pilots to scan outside of the cockpit more often. Traffic information displays must be readily comprehensible with a brief glance, otherwise they may degrade a pilot’s scan by keeping the pilot’s eyes inside the aircraft for longer than is necessary.”***

There are devices including FLARM and Pilot Aware which provide a broadcast of an aircraft position using a low powered transceiver operating in the unregulated and license free frequency band around 868MHz. These devices have been developed independently and currently cannot detect each other. Generally, however, they can see the ADS-B transmission on 1090 MHz.

Presentation of the information is a significant consideration and certainly the Glider Community has the most experience based on the development of the FLARM Product.

While some pilots may prefer the display of detected targets as an overlay to their chosen GPS solution, others may decide that a separate display with simple indications of direction and relative height and distance provides the information to prompt the direction of lookout. Certainly an audio alert

to conflicting traffic is well worth considering as an additional prompt.

In all instances the key thing to remember is that these devices cannot provide information or warnings of aircraft with no EC device. Therefore, pilots are still required to maintain a meticulous scan at all times.

These devices should provide assistance to VFR flight by prompting pilots to scan outside of the cockpit more often. Traffic information displays must be readily comprehensible with a brief glance, otherwise they may degrade a pilot’s scan by keeping the pilot’s eyes inside the aircraft for longer than is necessary.

In choosing a device pilots should consider the environment in which they operate. If there is heavy glider activity then FLARM may be the answer while the other devices may be more suited to conventional powered traffic with conventional transponders.

Electronic Conspicuity has one major theme and that is SEE and BE SEEN because of the mutual obligation to separate ourselves from one another. If an aircraft is not transmitting any information either by choice or lack of equipment then they cannot be seen electronically by other pilots or by ATC.

### The Future

Electronic conspicuity will become more prevalent as an aid to the pilot’s visual scan and devices including LPAT, FLARM, Pilot Aware and Traffic Alert systems provide the pilot with alerts of detected aircraft to supplement situational awareness.

The most important point is that these devices are pilot aids and still require the visual scan to maintain situational awareness and avoiding action.

FLYING OVER THE

# PACIFIC

## *How to Find Your Orientation Using Your Watch (‘Back to Basics’ Could Save Your Life) - By Sotirios Antonopoulos.*

When I was a young man, first class cadet of the Hellenic Air Force Academy, I had been taught a simple trick to find my orientation using only my watch and a little bit of celestial navigation, namely the sun’s position. Ever since I remember myself, for some reason I am apt to put in my mind things that most students consider as unnecessary and ignore. However, many times my little individuality has been life-saving.

By the end of October 2015 I had a new job, a year contract with Hansen Helicopters, flying as a “tuna pilot” in the western Pacific. The company’s helicopters were fitted with only a compass and a GPS designed for floating vehicles rather than aircraft. There was no other means of navigation.

The environment of the Pacific is whimsical. The weather during the vast majority of the days was scattered to broken clouds based at 1000 to 1500 feet AMSL. The sun during the wet season is not always discernible due to haze. There is a total lack of any kind of landmarks or sky-marks. The sea, of course, is a blue surface without any deviation of the color of it, when it comes to fathomless oceans.

On the first day of my first trip, I was ordered by the fish master to take off and fly 50-60 miles ahead to check the radio. Every boat was using their own frequency in order to avoid information leak concerning the location of the fish. The helicopter was indeed used as a “chess pawn,” among its other main

purposes. It was therefore absolutely vital that no other vehicle could get any information transmitted and we had to ensure privacy.

After departure I drew on my GPS a straight line beyond the boat’s stem, following the same course as the boat. I still remember that we were cruising from Majuro in the Marshall Islands to the intersection between the international date line and the Equator, which was 135°.

***"Utterly disappointed,  
I stared for a moment  
at the helicopter’s floor.  
There I noticed a slight  
shadow formed from  
the door’s strut."***

Fifteen miles later, my GPS went caput. I had an easy task turning around approximately 180° to find the boat. I roosted the bird on her perch and had the electronics fuse checked. The problem was solely attributable to salt water in the electronics compartment. The GPS came back to life, so I took off again to accomplish the mission.

However, having flown 22 miles I again had a GPS failure. At this point it is important to cite that the GPS was my

only means of navigation. The compass – as I mentioned before – didn’t work, and the requested replacement came at the port 45 days later, when the boat returned to unload. As a result, post my second landing, I deemed it prudent to teach Chen, my Chinese radio operator, how do a kind of “ground controlled approach” (GCA). Using the simplest English words, I explained to him that all he had to do was to find on his radar screen the approximate shortest angle between the helicopter’s heading and the boat; then divide it by three (that would be the amount of seconds required to turn in order to make the heading change using a rate-one turn); then ask me on the radio to “turn Left or Right... now,” while simultaneously starting to count down the seconds found by the division. Finally he had to re-order me to level my wings and go straight when his countdown was over.

As a matter of fact the trick was not very accurate; the bank angle I used was about 10° (found from the formulae: Bank for 1 rate turn = TAS/10 + 7, for a helicopter cruising at 60 KIAS at 1000’). However all I needed was a rough direction.

My third-ever takeoff from a tuna boat in the Pacific was right after the conversation with the radio operator. The GPS again failed about 35 miles after departure, but I kept my heading, did the job and flew back following the instructions from Chen.



By the second and third days we had arrived in the fishing ground in Kiribati waters. I was launched to run after schools of tuna and I was finding my way back by virtue of Chen's GCA. Before the evening of the third day, I was about 50 miles west of the boat. Frankly, I wasn't sure about the boat's location in relation to us at all. Both Jerome, my fish spotter, and I were looking for fish. All the maneuvering around schools of tuna, floating logs and transition to hovers to deploy satellite buoys, was very disorientating. After about one hour and ten minutes of flying I glanced on the GPS and radio panel to realize that I had lost both!

The Hughes 369A helicopter, fully refueled, with 380lbs had an endurance of two and a half hours. Therefore, I could keep in the air for a maximum of an additional one hour and twenty minutes!!!

I was dismayed because for the first time in my career I had no way of finding my orientation and this had happened in a place where ditching is certainly not a good idea. I started circling and staring at the horizon for other vessels. I was sure that my boat, Kwila888, was at least 50 miles to the west, but in the absence of a clearly visible sun I couldn't even guess where was west!

Utterly disappointed, I stared for a moment at the helicopter's floor. There I noticed a slight shadow formed from the door's strut. In the heat of the moment I recalled an old trick taught to us from a navigator when we had our first

navigation classes in the Hellenic Air Force academy.

This trick can be used anywhere on Earth during the day and when the Sun is visible.

In the Northern Hemisphere:

1. Lay the watch flat and face up on your palm so that it is parallel to the ground.
2. Point the hour hand in the direction of the Sun. Turn the watch, your hand or your entire body so that the hour hand of your watch is pointing directly at the Sun. The time on the watch doesn't matter, as long as it's accurate. If you have a hard time lining the hour hand up with the sun exactly, you may want to use a narrow object's shadow to help you. Stick a twig or narrow post into the ground so that the shadow it casts is clearly visible.

Then, line the shadow up with the hour hand of your watch. An object's shadow is cast away from the Sun, so lining your hour hand up with a narrow shadow is essentially the same as lining it up with the Sun itself.

3. Bisect the angle between the hour hand and the 12 o'clock mark to find South. This is the tricky part. Find the middle point of the angle between your hand and the 12 o'clock mark on your watch. Before noon, you will have to measure clockwise from your hour hand to the 12 o'clock marking, while afternoon, you will have to measure counterclockwise from your hour hand to the 12 o'clock marking. The middle point between the two marks South,

while the point directly across from it marks North.

For example: If it is exactly 5 o'clock in the afternoon and you have lined up your hour hand with the Sun, South is the direction exactly between the 2 and 3 o'clock marks and North is the spot across from this point (exactly between 8 and 9).

Note that during Daylight Saving Time, your watch is most likely one hour "off" from the "real" time. If this is the case, substitute 1 o'clock for 12 o'clock before finding your North-South line.

In the Southern Hemisphere:

1. Hold the watch horizontal, as in the Northern hemisphere.
2. Point the twelve o'clock in the direction of the Sun. The key difference between the Northern and the Southern Hemispheres when it comes to using a watch as a compass is that in the Southern Hemisphere, it is the 12 o'clock mark, rather than the hour hand that you must line up with the sun. Reversing the orientation of your watch relative to the Sun allows you to account for the difference in the Sun's orientation between the two hemispheres.
3. Bisect the angle between the hour hand and the twelve o'clock mark to find North. The 12 o'clock mark and the hour hand on your watch marks North, while the point directly across the face of the watch from it marks South.

For example, if it is 9 o'clock in the morning and we line the 12 o'clock mark on our watch up with the sun, the midpoint between the 10 and 11 o'clock markings is North and the point across from this (between the 4 and 5 o'clock markings) is South. The Daylight Saving time correction applies here too.

In my case, on the day in question, we hadn't crossed the equator yet. So I used the first technique to find that the West was indicated to my left. I informed Jerome. I also wanted his opinion as he had spent his entire life in tuna boats in the Pacific.

His response was disappointing. He was under the impression that the boat was somewhere in the exact opposite direction. I replied "OK, bro, I trust you because you have more experience. Just so you know: in case you are wrong we have no chance to fly to where I said. I also briefed him: "If we find another boat without helicopter on the deck, we will land there. If we find a boat with a helicopter on the deck, then we will hover until they come out to watch us ditching. If we find nothing, at two hours and twenty minutes past our takeoff time, I will transit to a hover, you will deplane, deploy the raft, get in and watch me ditching a safe distance away."



The moment I finished my briefing, Jerome white-knuckled, said: "Bro, I am not sure about the heading I suggested. You are a pilot and I trust you better. I think we should fly towards the direction you said to me".

I felt horrible. In fact I was not a hundred percent sure about the "mathematics" I did with my watch, I couldn't "Google" the trick to make sure it was correct and there was not a handbook to read. It was only us, our knowledge and experience.

The scenery was giving us an extra

feeling of desolation and the task of flying back had started to look insurmountable. I took the decision to stick with the watch-hand trick.

I recalculated our heading to find that my initial choice was the correct direction to the west. Then I repeated the aforementioned emergency briefing and asked Jerome to search the horizon for boats with his binoculars. 40 minutes later, he noticed there was a boat on the horizon. While approaching it we didn't see any helicopter on the deck and to our great relief, it was our boat, Kwila888!



# A Risk-Based Approach to Airspace



David Wood, head of training at GoFly, Old Sarum Airfield, asks if it is time for a rethink on airspace infringements by GA pilots.

There can be very few GA pilots who have not noticed that the subject of infringements into controlled airspace or danger areas is hot news. It may be getting even hotter. The CAA has just published CAP 1404 which focusses on Infringements and Remedial Actions. It has also fairly recently published CAP 1074 which outlines the enforcement regime designed to keep us all honest. The message is that the problem of Infringements must be addressed and that enforcement action is likely to become more common. But having read these and having also recently attended a workshop on the subject with NATS, I found myself asking whether the CAA is looking at this problem in the wrong way. Is CAP 1404 on the right lines, or is it time for a rethink about our approach to infringements? Perhaps even time to think the unthinkable?

Firstly, let's get this straight. I am not condoning infringements into controlled airspace or danger areas by anyone at any time. Each time it happens it represents failure at some level. However, let's get real; no-one is perfect and there can be few of us who have not committed an infringement somewhere at some time. I certainly have, albeit momentarily. It happens, and it will probably always happen to some degree.

Perhaps that is the first unthinkable point to make: let's be realistic in our aspirations. We will never totally eradicate infringements and it is foolish to expect that we will. What we can do is bear down on the problem and reduce it to more acceptable levels. We can also ensure that every infringement, not just those that make the headlines, becomes a learning opportunity.

The second unthinkable point to make is that it is not all the pilot's fault. There are few who would argue with the fact that the structure of controlled airspace in much of the UK is so complicated, so layered and, in some cases, so downright illogical as to make it very difficult to

circumnavigate the irregular blocks of three-dimensional airspace without a real risk of infringing some anomalous corner or jutting ledge. Add to that the real-world impacts of weather and VFR choke-points and it is undeniable that the very design of controlled airspace is a significant causal factor in the overall problem of infringements. Indeed, a cynic might suggest that controlled airspace in the UK seems almost purpose-built to catch out the unwary or the distracted. Frankly speaking, it's a dog's dinner. Nonetheless, we are where we are and so we need to work out how best to address the problem that faces us now, rather than the problem that we might wish was facing us.

***"We can also ensure that every infringement, not just those that make the headlines, becomes a learning opportunity."***

So why do infringements matter? Well they matter, we are told by the CAA, mainly because of their impact on the other controlled traffic operating within controlled airspace, some of which is passenger-carrying commercial traffic.

The primary responsibility of Air Traffic Control is of course to manage the safe transit of traffic operating under its control. To do this controllers have prescribed separations that they must maintain between traffic. To do all of that neatly, efficiently and safely is an impressive act of three-dimensional choreography. And so clearly an infringer blundering into controlled airspace unbidden, who is by definition not under control, causes controllers additional problems as they struggle to manage the remaining traffic in order to ensure that no conflicts occur and that the prescribed separation is not lost. The poor

controller is also a human being like you and me. His or her job is difficult and stressful enough without some infringer spoiling their day. But, unlike you or me, it is worth remembering also that if a controller fails to maintain the prescribed separations then he is likely to be immediately suspended and his very job may be on the line.

So it is quite understandable that the message that infringers cause danger and cost money is rammed down GA's throat at every safety seminar, and of course that is absolutely right...to an extent. And, at the risk of repeating myself, I am not saying that infringements are not a problem. They are a problem. But it begs the question, how much of a problem need they be? Also, are we going to find the solution by focussing on these Effects, or on their Causes?

## The CAA Approach

Currently the CAA views the problem of infringements principally through the prism of the effect they cause. CAP 1404 makes this clear, stating that prior to action infringements will be reviewed and filtered on the following basis:

*Did the infringement have a direct safety impact; was there a service disruption?*

These are both Effects. They are nothing to do with the Causes.

Ranking by Effect is a perfectly valid way of ranking infringements. But it isn't the only way, and it may not be the best way. It also skates over an important and uncomfortable issue; that is, if the problem is in the disruption caused, then does an infringement need to cause quite so much disruption?

Well, obviously this depends greatly on the nature of the infringement. But it is also defined to a large extent by the mandatory responses of the controller. The scale of this may come as a surprise to you. So let's diverge for a moment and look at what the controller has to do if a non-communicating infringer (the worst case) enters controlled airspace. If

this happens then the controller must immediately impose a sterile area around the infringer. In other words, if he can't control the infringer then he must control everyone else and keep them separated from the infringer.

## Huge Separations

What may come as a surprise is the staggering dimensions of the separation that the controller is required to maintain. A controller is mandated, yes mandated – and his very job depends on him achieving this – to keep **a separation of five miles laterally and five thousand feet vertically between the infringer and any IFR traffic under his control.**

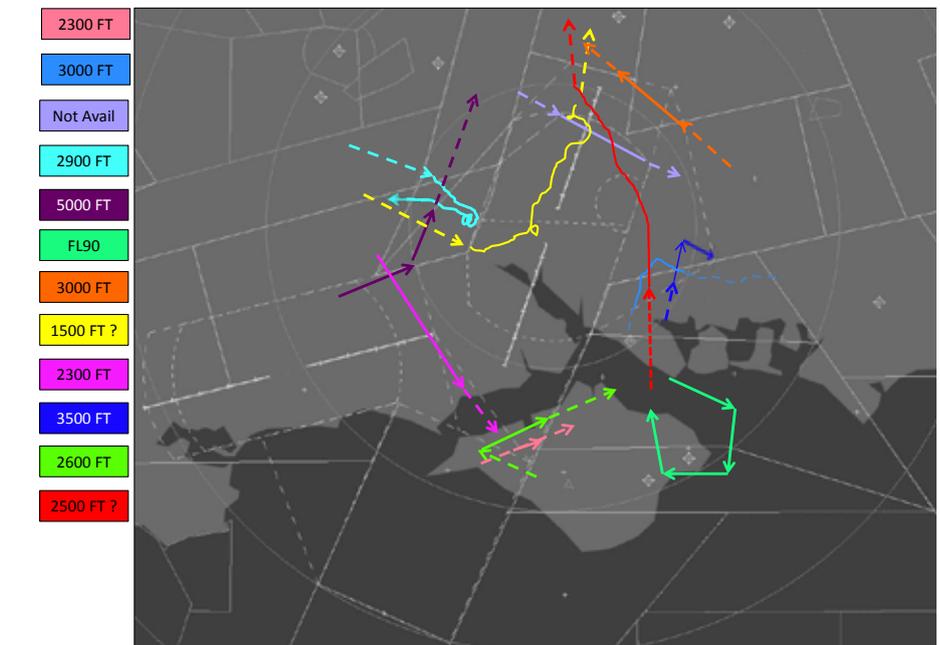
Now let's just think about that. That's a sterile area of potentially 13 square miles (a circle with a radius of 5nm) in a vertical block extending 5,000 feet above and in theory 5,000' below the infringer – potentially ten thousand feet high. It is an *enormous* block of airspace. And it is hardly surprising that such a huge block of airspace attached to a hapless pilot chugging unbidden around a control zone is going to cause problems for controllers.

But why does it need to be so large? After all, the average GA aeroplane is likely to be doing 90-120 kts on a good day and it probably has a maximum rate of climb of less than 1000 feet a minute. Even a GA 'hot-ship' is unlikely to be doing more than 160 kts and is unlikely to be able to climb at more than 2000' a minute. So to have to immediately apply up to 26 cubic miles of exclusion zone around the infringer seems hugely disproportional to the real-life capacity of the infringer to endanger anything on the periphery of such an area.

Furthermore, in many cases an infringer may simply clip the corner of a control zone while maintaining a steady track and altitude, or may inadvertently climb into the base of a control area while otherwise flying normally.

*It may be perfectly clear to the watching controller that the infringer is behaving rationally and predictably and so it seems absurdly harsh to impose such an enormous sterile area around this sort of infringer when any objective risk-based assessment of the hazard would indicate that a very much smaller sterile area should be sufficient.*

But these risk-based judgements are not permitted. The controller is



Courtesy of NATS

required to assume the worst case. He must assume that, notwithstanding the infringer's previous behaviour and notwithstanding the feeble performance of his steed, that the infringer is potentially agile, unpredictable and whimsical and that he may suddenly climb several thousand feet, abruptly change direction and speed, and otherwise do his very best to endanger other traffic.

Not only is this assumption illogical but it is also oddly inconsistent with the CAA's own approach to risk-based assumptions. For example, if a non-altitude-reporting, non-communicating aircraft is detected beneath the base of controlled airspace, or indeed over the top of it, then the controller is entitled to assume that it is flying clear of that controlled airspace. That seems quite sensible.

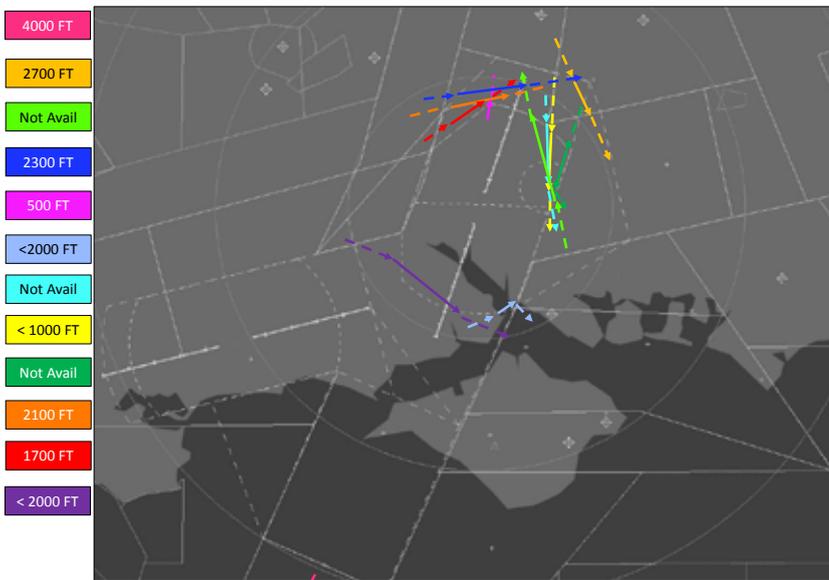
Furthermore, if you think about it then you will see that to assume otherwise would risk paralysing much of the controlled airspace in the UK for much of the time. So, it seems entirely appropriate for the system to make that assumption. But it is intellectually inconsistent to take in the case of such traffic the least-burdensome assumption, i.e. to assume in the absence of any other evidence that a potential infringer is clear of airspace, while at the same time making the most burdensome assumption in the event of an infringer inside CAS, which is to assume - in the absence of any other evidence - that such an infringer is likely or indeed able

to leap five miles laterally or 5,000 feet vertically.

Being inconsistent isn't a crime but it seems to me that as a result of this inconsistency, the CAA is guilty of creating a problem where there may not actually be one. So my next unthinkable thought is this: it is not actually the infringement *per se* that causes the disruption; it is the controller's mandated response that achieves that.

If we limit the response then we limit the impact. That doesn't solve the problem of infringement, of course, but it does potentially reduce its impact in terms of time and cost. And if we reduce the hysteria about the time and cost effects of infringements, then it allows us to focus on the infringements themselves, and to work out what to do in order to reduce their number.

In other words, if we persist in measuring the seriousness of infringements on the basis of the disruption that they cause, then we owe it to ourselves to be sure that the disruption isn't at least partly self-inflicted. And in this case it seems that it is. So, the logical deduction is that there ought to be a mechanism by which we can distinguish between those infringements that are genuinely disruptive and those that are not. For example, in the case of an aircraft that inadvertently climbs a hundred feet and infringes the base of an airway after following an otherwise steady track and level, then it ought to be possible for the controller to take a risk-based view of the hazard posed by



such an infringement and to adjust the separation required accordingly.

To mandate such a controller to apply an enormous one-size-fits-all sterile zone seems utterly disproportionate and creates self-inflicted disruption. After all, the same aircraft was flying 100 feet below the base of the airway the controller wouldn't be required to assume that he might suddenly climb 5,000 feet and endanger an airliner. Indeed, the controller may not even see it because it is not flagged up in his display. But if that aeroplane nudges into the base of the airway even for a moment then the controller will certainly see it and must assume exactly that. That's inconsistent and illogical.

**But before I go on, let me re-state, for the third and final time: I am not condoning this or any other form of infringement. I am merely pointing out that:**

1. **Not every infringement need be as disruptive as it currently is;**
2. **That the disruption is largely a function of the controller's mandated response, over which he has little choice;**
3. **And, more importantly, that if we measure infringements on the basis of the disruption that they cause then we risk missing the far more important causal factors.**

Without addressing those causal effects (ie, tackling the root of the problem) we have little chance of reducing the incidence of infringement.

So let's look at the problem from the other end; the causal end. If we are not going to rank infringements on

the basis of their disruptive effects, as CAP 1404 currently does, how might we more usefully classify them? Well, it seems to me that we'd be better off classifying them on the basis of their broad causal factors. After all, if we want to stop infringements then we're much better looking at each through the eyes of the infringing pilot so that we can understand why they happen rather than getting hung-up on how much disruption they caused.

### Categorise Infringements

With this in mind, I would split down infringements into three categories (see box); and note that each of these categories is centred on the infringing pilot himself since it is he that sits at the root of the causal factors. I would classify infringements according to the motivations and/or skill deficiencies that caused them.

Notice that in taking this approach I have not given any weight to the effect of the infringement. After all, any particular infringement's effect could be huge or could be nothing, and in any case will be quite independent of its category. On the contrary, these categories are grouped according to their main causal factors, centred on the pilot.

A Category A Infringer is, frankly speaking, a menace. The causal factors are the pilot's own indifference or recklessness. There is little point considering re-training or re-education with such a person. If caught then he should be subject to the full force of regulatory enforcement action now outlined in CAP 1074.

On the other hand, the causal factor

in a Category B Infringer is simply inadequate skills and/or incomplete knowledge. He is doing his best but for whatever reason he lacks the skills or the knowledge required to safely operate near controlled airspace. He can and should be taught those skills, or re-taught them if he has forgotten them. Once he has (re-)acquired them he is far less likely to infringe in future.

Finally, the causal factor for a Category C Infringer is simply inattention. In all other regards he has the necessary skills but he has made a mistake, maybe just momentarily. He may or may not benefit from training. It is likely that he just needs to be more careful in future.

### Wrong Approach?

So, what would I do? Well, to start with I don't happen to think that it helps for the good people in the CAA to just shout louder and louder about how terrible it is that there are infringements. Nor does it help to mutter about tighter rules, or threatening harsher penalties. After all, apart from those very few whom I have categorised as Category A Infringers, no-one else sets out to infringe. Those who have done so are usually either Category B or C infringers and will invariably feel a sense of self-admonishment that surpasses anything that the CAA can do.

So that isn't the answer. Nor, incidentally, does it help to endlessly list infringements on the various occurrence reports without, it seems to me, giving much thought into why they are happening.

Nor, I'm afraid, do I think that CAP 1404 currently hits the nail on the head, although it is a start in the right direction and does contain some useful points. After all, as previously mentioned, CAP 1404 is still primarily focussed on looking at infringements which are ranked on the basis of their effect.

I would suggest that solving the problem of infringements requires a two-pronged attack. The first lies with the CAA, which should take a clean-sheet view of the response that they require controllers to take in the event of an infringement. Critical to this is that it must be *risk-based*. It cannot be sensible to apply a one-size-fits-all response to each and every infringement, since they are often very different in characteristic

and threat, and so they should be responded to differently.

Until the CAA does this then it should stop belabouring GA with the argument that infringement causes disruption since, to be blunt, that disruption is largely self-inflicted at present. In parallel with this the ongoing efforts to simplify and rationalise controlled airspace must continue, since the current architecture of controlled airspace is a significant contributor to the problem.

The second prong is to take a firmly causal-factor based approach to each and every infringement. There is no rocket-science here. The first step should be, just as CAP 1404 advocates, a questionnaire sent to every infringing pilot asking him to provide information on his or her infringement. The reply to this, together with the MOR (Mandatory Occurrence Report) submitted by the controller, forms the basis of the evidence surrounding the infringement.

However, I depart from CAP 1404 when it comes to the next steps. Just to recap (for those who haven't read it), *CAP 1404 currently advocates a stepped process that can be summarised as follows:*

- 1. Collate the facts from the point of view of the infringer and the controller.*
- 2. Review and filter each case on the basis of its effect. NB: by implication, take action most readily in the case of the most disruptive events.*
- 3. Determine the need for the infringer to take an online tutorial and test.*
- 4. If necessary, suspend the pilot's license while he does so.*
- 5. If he fails the test, take further action.*

Without repeating myself on this issue of cause and effect it seems to me that CAP 1404 is getting ahead of itself and is making two important mistakes. The first is that in focussing mainly on the disruptive infringements it risks skating over other potentially more interesting infringements that may not have generated such effects and thereby slipped under the radar (no pun intended).

The second is that it seems unlikely that a full understanding of the factors at play in an individual infringement are likely to be collated from the two main written sources envisaged by CAP 1404: the pilot's report and the controller's report. There will almost always be much

## PROPOSED INFRINGEMENT CATEGORIES

### Category A

These are infringements where the pilot has deliberately entered controlled airspace without a clearance. Perhaps he had already asked for and been denied one. Perhaps he just thought that no-one would notice if he 'nipped across'.

Believe it or not, there are pilots who commit these sorts of infringements; indeed, some of them are serial offenders. I would therefore group together this type of (thankfully rare) infringement into one category which can then be addressed specifically. The defining characteristic is that the infringement is a deliberate act of a pilot who may be perfectly competent and might be situationally aware but who, for whatever reason, has simply elected to infringe.

In a nutshell, a Category A Infringer is well aware of the controlled airspace, knows the rules but just disobeys them. There are thankfully few of these pilots around, but just one is one too many.

### Category B

These are infringements where the pilot has accidentally entered controlled airspace as a result of perhaps not recognising it as controlled airspace; or not being sufficiently spatially aware to avoid airspace that he knew about; or not being sufficiently accurate in either the planning or execution of his flight. I would group together all of this type of infringement into one category whose defining characteristic is that infringement has been caused by defective planning, defective knowledge and/or defective navigation by an otherwise responsible pilot.

A typical Category B Infringer may be a conscientious pilot and might in many respects be perfectly capable. He may be doing his best but he simply lacks some of the skills required to fly safely in close proximity to controlled airspace. Sadly, there are lots of these pilots around.

### Category C

Finally, these are infringements where the pilot has accidentally entered controlled airspace that he knew about and was intending to avoid, perhaps entering it marginally and only for a brief period. Such an infringement is most likely to be the result of a minor navigational or piloting error, either laterally or vertically. I would group infringements of this type together since their defining characteristic is a minor defect in the piloting skills of an otherwise competent and situationally aware pilot.

A typical Category C Infringer will have simply made a momentary lapse in concentration.

more to each infringement than meets the reader's eye. Such nuances only emerge on examination of the event.

Finally, the vast majority of infringements are caused by a pilot's poor skills, gaps in knowledge, or inattention. These can be readily addressed by better training or, if necessary, re-training. But this training is much, much more than just filling in an online test. I'm sorry to say that this online test approach smacks literally of box-ticking.

Since each infringement is likely to be different from the next, its solution will also be different. To suggest that a pilot's deficiencies in skills, knowledge or attention can be addressed by completing an online test is ludicrously over-simplistic.

*CAP 1404 then goes on to suggest that if an infringing pilot fails the online test then he will be required to complete one of three options:*

- 1. A viva-style Q&A with a CAA Staff Examiner; or*
- 2. Retake the Air Law and Operational Procedures exams; or*
- 3. Unspecified re-training at an ATO.*

And here at last, in Option 3, I believe that CAP 1404 gets to the right answer, having exhausted all the wrong ones first. Options 1 and 2 miss the point utterly and are really not worth considering further; the solution lies in Option 3.

The only way in which the right lessons can be drawn from an individual pilot's individual infringement will be when he has an opportunity to sit down with someone appropriate to talk it through in a non-adversarial, collaborative way. This should be the second step of the whole process, not the last one.

So, in my view, CAP 1404 is on the right track but has over-complicated matters and drifted towards an over-centralised, over-processed, and (dare I say it) rather red-taped solution.

It could and should be much simpler. The process should simply require that any pilot who has committed an infringement (to the extent that it has generated a MOR) should be required within, say, one month of the infringement to spend an hour of time with a Flight Examiner at his local ATO

specifically to address the issues around his infringement. That hour might merely be an opportunity to talk through how it happened and tease out the reasons. The matter may end there, or it may expose knowledge or training gaps that need to be addressed.

The FE should then be able to mandate the completion of such training within a given time period, just as he might currently mandate additional training in the event of Skill Test failure. Once the additional training has been completed and signed-off then the matter ends.

### Classify First

The first stage of this approach would also quickly identify whether the infringement was (Category A, B or C, for example).

## ***"Vitaly, it engages the GA community in solving the problem, one infringement at a time, rather than just threatening or coercing it."***

If it is a Category A infringement then the matter should be passed back to the CAA for further enforcement action on the recommendation of the FE. But for the vast majority of infringers who are in Category B or C, completing the process means that they are likely to have learned something positive and helpful from their experience in this way.

Vitaly, it engages the GA community in solving the problem, one infringement at a time, rather than just threatening or coercing it. Such an approach would be a welcome and productive de-centralised and personalised way of ensuring that whatever individual piloting defects led to the infringement are addressed in a timely and sensible manner.

It would also reap useful data about where the common deficiencies lie in terms of skills and knowledge. These would, in time, inform better initial training.

As a bi-product, the CAA's workload would be eased and the problem of tackling infringements, which are

everyone's problem, would be passed in the first instance out into the wider GA community under the stewardship of Flight Examiners, allowing the CAA itself to focus only on the real problem cases. This is how problems get solved.

My proposal is the stepped approach (see box, right) that would modify the process outlined in CAP 1404.

### Conclusions

In summary therefore my conclusions are these:

- Infringements are a problem, but if we measure the problem solely by its impact only then we risk missing the important causal factors. Without addressing these factors we will not reduce the incidence of infringements.
- Lessening the impact of infringements is important, but this is largely a matter for the CAA, not the GA community. The solution is for the CAA to permit Air Navigation Service Providers to take a more logical risk-based approach to managing infringements on a case-by-case basis.
- Identifying and rectifying any causal factors arising from the structure of airspace is a parallel problem for the CAA to solve, although we should all recognise that this is a slow process.
- Identifying and rectifying the pilot-orientated causes of infringements is very much GA's problem. To achieve this requires that the various forms of infringement be separated out and each dealt with appropriately.
- Category A offenders should be dealt with firmly. There is no place in the GA community for such people.
- The key to addressing the others (Cats B and C which, after all, represent >99% of all infringements), is training. Such training needs to be targeted, timely and relevant; an online tick-test simply does not fit the bill. Nor does an over-centralised approach.
- The CAA should empower FE's to mandate remedial training for pilots who infringe, based on a collaborative investigation designed to unearth the need (if any) for such training.
- Such training (if required) should then be delivered promptly by ATOs and recorded appropriately.
- Once the mandated remedial training (if any) has been completed then the matter should be closed.

### Step 1

Collate the facts from the point of view of the infringer and the controller. Exactly as set out in CAP 1404.

### Step 2

Require that any infringing pilot must attend a meeting with a Flight Examiner (FE) at his local ATO within thirty days, the purpose of which is to tease out the causal factors behind the infringement in a non-adversarial, collaborative way. Prior to that meeting, they should provide to the FE the MOR and any other information including any relevant information; for example, the pilot's previous infringement history and any CAA comment which might include reference to other factors including the effects.

### Step 3

Require that the pilot to complete whatever ground and/or flight training is then mandated by that FE on the basis of what he has identified during the meeting. This might be none at all, or it might be a complete revision of the rules around controlled airspace, or navigation revision. It will depend entirely upon the circumstances of that individual infringement and the degree to which the infringer has already learned from his mistake.

### Step 4

Complete that training (if required) within a reasonable period (perhaps a further thirty days), and then have it signed off by the FE.

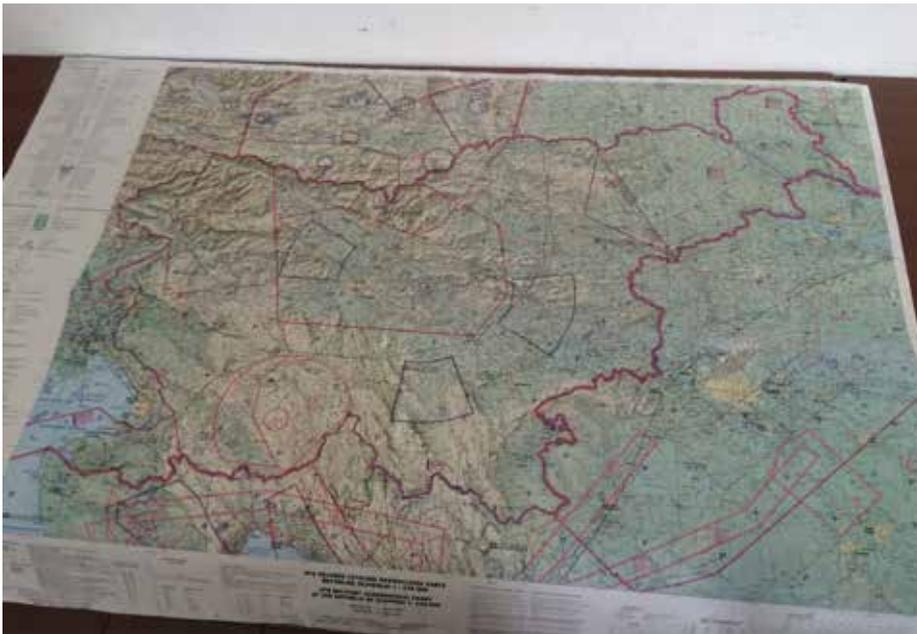
### Step 5

Close the matter at that point unless, as a result of the FE's investigation, it is clear that the infringer is what I have classified a Category A infringer, or if the infringer refuses to cooperate in the process in a collaborative manner, in which case the matter should be passed back to the CAA for enforcement action. Such an approach would be relatively quick, relatively easy and genuinely useful in terms of helping the infringing pilot avoid infringing in the future. It would also provide a lot of very useful information about common causal factors. It would also counter any drift towards centralist habits which are evident in CAP 1404.

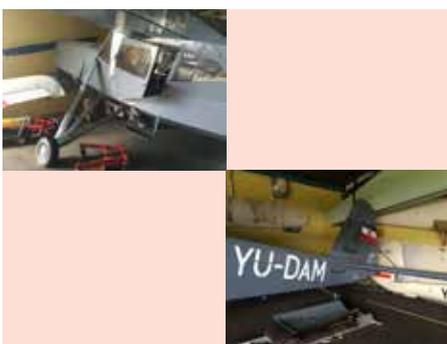
Solving the problem of infringements is more complicated than some might wish and is likely to take longer than many might hope. Responsibility for so doing is also not confined to GA pilots, even though it is they who commit the majority of infringements; other parties also have their parts to play. Like a long journey that must be made one step at a time, solving the problem of infringements is a long process that must be made one pilot at a time. The sooner we start, the better.

# Slovenia!

Following the IAOPA meeting in Ljubljana, Slovenia on 16th April this year, **IAN SHEPPARD** visited some of the airfields in the country with representatives of AOPA Slovenia.



L: DC-6 in original Adria Airways colours, now a gate guardian at Ljubljana Airport. Above L: SkyDemon when driving! Top L: Chart for Slovenia, with military airspace restrictions. Top R: Postojna Airfield. Below that, Miha Matevžič of AOPA Slovenia with his aircraft; below that is the cafe at Postojna, his home airfield. Above, a CRJ900 of national airline Adria (at Ljubljana Airport); Below: A Kurir at the "Old Timer" show at Postojna Airfield. The aircraft is in the process of being restored. Note the old Yugoslav colours. Thanks to Miha for being an excellent host and "airfield guide" for the day.



Milan Korbar

# The Beautiful and Historic Lake Bled



Arriving by car at Lesce-Bled Airport (LJBL), a flight over Lake Bled followed a short introduction to the head of the Aero Club, Janez Polenec (top) – who was particularly friendly once he realised AOPA was involved! After the flight we drove to Tito's mansion (now a hotel)

and saw his desk, still preserved, before heading out on a boat to the Assumption of Mary church on Bled Island. Bled Castle (Top) is the oldest in Slovenia (12th Century). Also visible from the lake (below left) is Tito's breakfast room overlooking the lake. Tito died in 1980.



# Flying to the Festival of

# SPEED

Goodwood has started to grow the presence of aviation at its iconic motoring events, the Festival of Speed and the Goodwood Revival. By Ian Sheppard.



When a friend from Biggin Hill's Heritage Hangar, Paul Campbell, suggested that we try to fly to Goodwood again for the Festival of Speed I was concerned at the cost of the landing. He had two tickets courtesy of Biggin Hill Airport, which was a sponsor of the event, so flying in would be the best way to avoid the traffic - and more fun!



Pictures by Paul Campbell



The Carbon Cub was at Goodwood but it was only at Sywell that I managed to catch up with the dealer for Europe, who is Polish but is based in Ireland. The U.S. manufacturer, Cubcrafters, is working on a new aircraft, the XCub, which will be a Cub on steroids really - highly capable field performance-wise along with an excellent cruise speed. Also pictured (right) is Goodwood-based Ultimate High's Slingsby Firefly (in case you fancy some aerobatic training!) and (left) pleasure flights that were available over the Festival site, airfield and Goodwood's racecourse.

In fact the last time we flew in it was for the Goodwood Revival last September. This magazine had been invited by Shell to cover the opening of its new fuel station. Having been to the Festival once, in 2014, it was interesting to see the difference of the Revival event. For one it is down at the airfield (which has the racetrack going around it), whereas the Festival is up on the hill near Lord March's house and the other main buildings, and the famous test hill.

The Revival is a period event with more classic vehicles, whereas the Festival of Speed also has many modern vehicles. In terms of aviation the Revival sees far more going on at the airfield with Spitfires and other historic aircraft. The Festival is a case of turning up at the airfield and taking a courtesy car up to the house, where there is a huge area each side of the test hill with exhibitors showing off their latest cars, along with the paddock and areas with different kinds of cars. This is all fascinating even for someone who is not a complete petrol-head (luckily Paul is, and is always good for spotting any famous racing drivers!)



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So how did we get to fly in again? Well, the very nice people at Goodwood were happy to be covered even if we are only a fairly obscure magazine as far as car enthusiasts are concerned.

The aviation area is something that seems to have great potential - manufacturers, dealers, flight schools and others had flown their aircraft into a temporary landing site and the aircraft had been towed to an exhibition area just over a footbridge from the main Festival site.

Goodwood Aviation may not be an AOPA Corporate Member any more but we live in hope that they will rejoin! There is no denying that the airfield is an important GA one although they had a torrid winter, with this grass-only airfield suffering badly. When we landed in the Cessna 172 (from Thurrock) it was the Sunday lunchtime and the ground had firmed up but all around the site there were signs of the mudbath they had endured at the Festival.

Heading out, we (Paul, my car-loving 14-year old son Sebastian - who was helping Paul with pictures) and I got the flash courtesy car back down to the airfield. In contrast to the last time we came, there was no queue of aircraft to depart and we were soon away. I dropped in to Biggin (always PPR before leaving by the way, even if you are with one of their own!) and then we repositioned the aircraft back to the little hard runway at Thurrock. I hope to fly to the Revival in September, and may even dress up!

# Letters

## Time to stem the losses at Old Sarum Airfield, and up the flying

I was the 'angel' investor who saved the Optica aircraft business from insolvency in 1988, subsequently becoming the owner of Old Sarum Airfield (where the Optica was being produced at that time).

Salisbury District Council investigated noise at the airfield in the 1990s and obtained the opinion of legal counsel. The Council's conclusion was that use of the airfield for unlimited flying predated the Town and Country Planning Act 1947 (unlimited flying has been continuous since 1915) and was therefore lawful and not subject to any planning conditions or restrictions. Therefore at Old Sarum there are no restrictions on: number of flights; types of aircraft; or hours of operation.

This is also recognised in the Wiltshire Core Strategy, Policy 25. The supporting text (paragraph 4.134) acknowledges: "There are no controls over the level and intensity of flying activity from the airfield."

The justification for the allocation of housing land adjacent to the airfield is to give the planning authority an opportunity to impose "reasonable controls" over flying activity while requiring the owner to "retain" and "safeguard" flying activity.

All flying activity must be and is in accordance with the requirements of the CAA. Indeed, the CAA often uses Old Sarum as an exemplar. However, these requirements impose heavy fixed costs on the airfield which are unresponsive to volumes of traffic.

Controlling the loss-making flying activity while retaining and safeguarding it can only work if the owner dedicates a substantial portion of presumed housing profits to the creation of debt-free non-flying revenue assets. Creating such presumed profits involves perhaps 15 years and many millions of pounds in further investment.

In exchange for promises made by the Council (in its Core Strategy) in 2007, I voluntarily agreed to control flying activity (lose money) to reduce noise complaints. These controls consisted



Many years of keeping activity artificially repressed in order to achieve a sensible compromise between flying activity and housing, the owner of Old Sarum has decided activity must now be allowed to increase as demand dictates, so the airfield can find other ways to be profitable at last - and secure its future.

of suspending most night flying, most helicopters and also the heavier, more lucrative twin-engine aircraft.

Flying fell from more than 60,000 annual movements to the (least lucrative) 35,000. At this level – essential to mitigate noise complaints – the airport not only makes a substantial operating loss, but loses the profits to which it would otherwise be entitled for reinvestment and ROI.

The difference in the asset value of the airfield with unrestricted flying on a 24/7 basis – thus all types, all hours – versus that of the very restricted airfield operations required by the Core Policy is not less than £40 million, potentially considerably more.

As the never-ending delays by Wiltshire officers continue, more money is lost and the airfield is further damaged.

Based on bad faith by those officers recently, I decided to resume normal operations; we have already accepted a client providing international pilot training.

This first client has been flying two small single-engine helicopters, and has been training SAR pilots since February. Following the most recent example of bad faith, I authorized extension of this service to multi-engine turbine helicopters with some night flying.

After 10 years absorbing large losses as a good neighbour, during which period we have explained airfield economics to SDC/Wiltshire Council, we have had no engagement whatsoever until a few days ago.

I will provide the finish to this story in the next issue of the AOPA magazine.

**Matthew Hudson**

Dear Sir,

Re: John McAdam's article on the Imperial Airship Scheme (April 2016).

Thank you for publishing Paul Ross' thorough response to the historical aspect of the Airlander (AO&P, June 2016),

I also take issue with John's account. Even though he acknowledges the doubt cast on 'Slide Rule'; Nevil Shute's novel (Retracted in 1953). He needs to read more widely before writing such inaccuracies and perpetrating myths. There was no 'Good Ship, Bad Ship'.

If John had read Masefield's 'To Ride the Storm' or consulted the Airship Heritage Trust's 'airships-online,' he might have achieved greater accuracy.

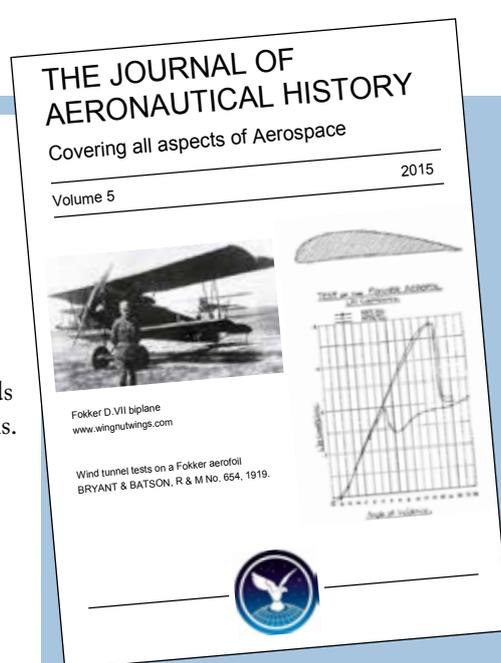
The Honourable Company of Air Pilots, of which John is a Liveryman, was originally GAPAN. Four of the founder members died on the R.101 along with 44 other gallant souls. The first Master was Sir Sefton Brancker, a champion of air-mindedness in the 1920s. The Deputy Master was Ernest Johnston, Britain's most capable Air Navigator. First Officer Noel 'Grabby' Atherstone and Meteorological Officer Maurice Giblett who planned and charted the pioneering route to India.

The India flight and the two transatlantic crossings (R.34 in 1919 and R.100 in 1930) set in place much of the initial infrastructure and processes we rely on today for long distance navigation, communications and forecasting. Unfortunately the industry still suffers from Political interference but that is another story.

For the really serious researcher requiring primary sources may I direct them to the RAeS Journal of Aeronautical History [Available online, and see image, right].

Regards,

**Peter Davison AMRAeS**  
Curatorial Advisor, AHT



Dear Sir,

Far be it for me to be a picky proof reader, but I thought I'd just point out one petite erreur on page *x* of the *AOPA Flying Directory*, included in [the June issue of *Aircraft Owner & Pilot*].

Martin's otherwise excellent little article is a tad marred by confusing his left and rights:

*Downwind* (left hand/right hand)

*Vent arrière* (main droit/main gauche)

Which may confuse some people or lead to them saying something wrong in le circuit. Just thought I'd point it out.

**Chris Sellen**

## "Windshear Again"

Dear Sir,

Bob Gilchrist's letter 'Windshear Again' [*Aircraft Owner & Pilot* - June 2016]

distinguishes between momentum and inertia and appears to consider the latter irrelevant. Inertia *is* relevant because it relates to axes fixed in space and the effects of inertia become apparent when a body is moved in relation to these.

Imagine an object floating in the centre of a bowl of water which is stationary. When the bowl is moved the object's tendency is to remain fixed in space and therefore to drift across the bowl in the opposite direction to that in which the bowl is moved. The greater the inertia of the floating object and the more rapidly the bowl is accelerated, the more marked the drift.

Thus an aircraft subject to an accelerating tail wind, which it will experience because of inertia when it turns downwind, will lose airspeed although the effects of this may be

masked in most instances by other variables; for instance, unless corrected, an aircraft entering a turn will lose airspeed because of the increase in drag.

In the case cited of the steady state turn, which must by its nature be comparatively gentle, it is unlikely that the balance of inertia, aircraft speed and wind speed will cause a detectable difference in air speed between the upwind and downwind sectors.

The effect of inertia will be most evident when the aircraft turns rapidly, the airspeed is low relative to the wind speed, and the aircraft's mass is relatively large. In a steady state turn, given steady aircraft speed and steady wind, an equilibrium condition will be attained where the centre of inertia of the orbiting aircraft will move over the ground at the same speed as the wind.

This situation is analogous to a model boat orbiting in a bowl of water. The boat will behave in the same way irrespective of whether the bowl is stationary or in a train travelling at speed until either the

bowl/air mass or boat/aircraft change speed and/or direction when inertial effects will become apparent.

Bob Gilchrist's argument, that stalling results from the pilot looking at the ground instead of the ASI, is plausible - but the fact remains that inertia causes a reduction in airspeed when turning downwind, and an increase in airspeed when turning upwind, although less evident at moderate rates of turn.

Finally, for those who believe that the performance of an aircraft is related only to the air in which it moves, consider an aircraft landing in gusty conditions, say 25 knots gusting 35. If the aircraft arrives over the threshold in a gust and then the wind suddenly drops there is no change in the momentum of the aircraft but because of the aircraft's inertia there will be a sudden loss of airspeed. Why else does one increase speed on the approach in gusty conditions?

**Roger Bunbury**

R. H. M. Richardson-Bunbury

## Launching the R101 Airship

Dear Sir,

I read the article on airships in [the AOPA] magazine with interest as my father helped launch the R101 from Cardington in 1929. I enclose a photo and data from a booklet I have on the history of my family. I thought you might find the airship part useful.

Yours sincerely,

**John Carter**



## GOOD JOB!

Dear Sirs,

Just to say what a superb *AOPA Flying Directory* issue that has just arrived, which must have taken hours and hours of work. Each article was so engrossing, but the words from George Done made me realise my age as when I joined the Royal Aero Club and BLAC in 1966 I must have been at the beginning. In those days bless him our CFI insisted that we all join!

Looking back on my 60 years of flying it is quite amazing how things have changed over the years. The list of aerodromes under threat is chilling.

The sortie management for Instructors was great as was the article on the D&D Cell. Indeed a friend in the village who has just started flying has asked me to cut out the D&D page so he can keep it in his flight bag. I have told him it is high time he joined AOPA.

Finally what a great Flying Directory and it made me feel very proud of my Platinum Wings. Just wish now I was forty years younger, but then I would have missed all the fun of the relaxed flying in the Sixties.

Finally, so sorry to read about all the troubles the Tiger Club is having to endure.

Thanks again,

Yours,

**David [D.J. Hastings]**



## AOPA FLYING INSTRUCTOR REFRESHER SEMINARS

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

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

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

**AOPA is pleased to announce that an additional *flight instructor refresher seminar* will be held at the AOPA offices, 50A Cambridge street, London SW1V 4QQ on 8-9 November 2016.**

The London Seminars were last held 10 years ago and it is as a direct response to requests that AOPA is reinstating a London-based Seminar. The Seminar will be directed by David Scouller. The charges will remain the same, **£240 for AOPA members and £275 for non-members**, and will be run over two consecutive days. Your Flying Instructor Certificate will be revalidated, or renewed, and an attendance certificate will be issued as at the other seminars.

To register for a place call the AOPA office on 020 7834 5631 or join online at [www.aopa.co.uk](http://www.aopa.co.uk).

There is ample accommodation locally – we are 5 minutes from Victoria Station. The Seminar will start at 1100 and end at 1800 each day to facilitate travel. Our main venue is in Abingdon and the dates for the next Seminars there are as follows: **13/14 September 2016; 18/19 January, 10/11 May & 20/21 September 2017.**

# Book Reviews

## HOWARD PIXTON

### Test Pilot and Pioneer Aviator

by Stella Pixton

ISBN: 978 1 47382 256 6;

Pen and Sword Books Ltd: £19.99

Here we have something quite different from any book that I have seen previously. Howard Pixton was flying for A.V. Roe as early as 1910 and is recognised as Britain's first professional test pilot, carrying out development work on the machine that became the famous Avro 504.

By 1914, working with Tommy Sopwith, he became the first Briton in a British aeroplane to win the Schneider Trophy international air race, in which the Sopwith Biplane achieved 172 miles in 2 hours and 13 seconds, making it the fastest seaplane in the world.

By the end of the war in 1918, Howard had flown about 3,500 hours on 80 types but, perhaps surprisingly, none of these had been at night.

There is so much of interest in this publication – so ably compiled by Howard's daughter, Stella, who assembled the key details over a period of 30 years – that decisions on what to mention and what to print have almost beaten this reviewer.

Nothing is boring or monotonous and an appendix covering typical advertisements and official announcements of the time adds much to the overall value of the book. How many of us knew that Tabloid was a registered trademark of Burroughs Wellcome and that Sopwith needed to change the name of that aeroplane to Scout following complaints from the patent holders? Or that in April 1914 if a pilot flew dangerously, as there were no rules of the air, the Home office would “undoubtedly exercise their powers and close the flying ground” rather than pursue the offender?

This book is evidence of the seemingly endless research that Stella Pixton

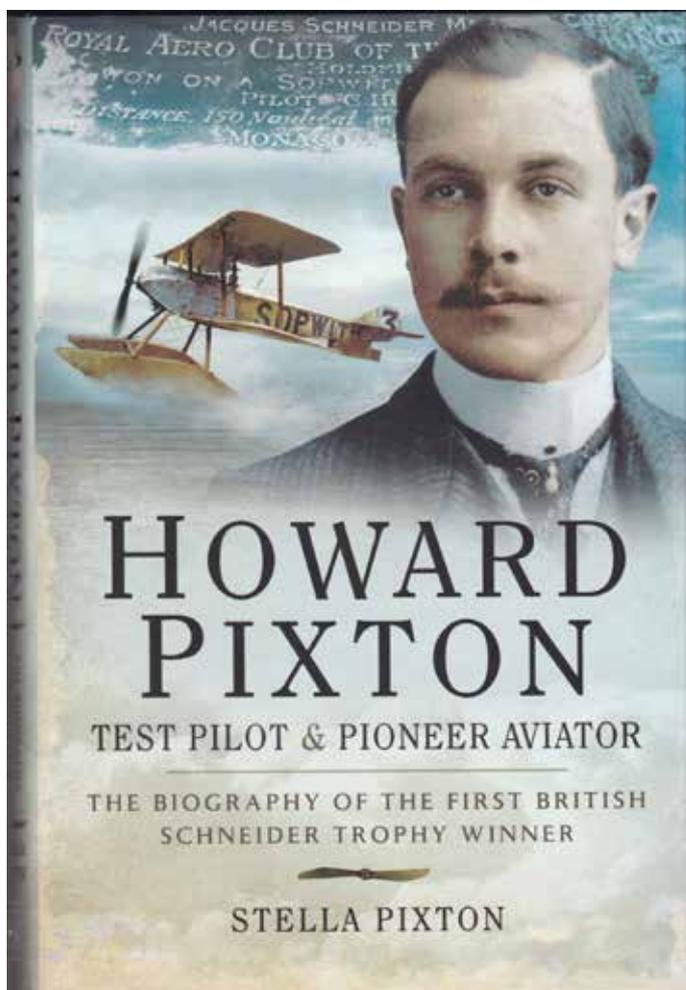
carried out. She has been very generous in her thanks to people who helped her to establish the facts, without which – understandably – her father's name would have remained virtually unknown; yet his endeavours and achievements prove, belatedly, that he deserved far more recognition than he received.

Although at heart an engineer, it was his flying that stood out, including teaching many of the earliest RFC and RNAS pilots to fly. Also, he carried out much life-saving work as one of the

earliest experts in accident investigation.

There is so much to read – and learn – that I will not attempt to summarise the content. I leave it to you, hopefully, a future reader, to devote sufficient time to absorb the content; and to realise just how much activity there was in the years before the flying machine became firmly established as a practical piece of kit. Clearly, Howard Pixton played a key part in those efforts.

*David Ogilvy*



# BRITAIN'S JET AGE

FROM THE METEOR TO THE SEA VIXEN

By Guy Ellis

Amberley Publishing 2016

ISBN Print 978 1 4456 4900 9

Paperback £14.99

ISBN eBook 978 1 4456 4901 6

This book is one of a growing series on aviation subjects from Amberley Publishing and covers the early days of jet-propelled aircraft, from even earlier than the subtitle suggests.

Well before the first Gloster Meteors failed to get airborne through lack of power, the Gloster E28/39 first flew on 15<sup>th</sup> May 1941, using the Whittle W1 as the design from which the gas turbine was progressively developed. Credit for the first ever pure jet flight, though, must be granted to the Germans, whose Heinkel HE 178 flew as early as 27<sup>th</sup> August 1939.

After the initial failures to fly, the Meteor was developed to become the first and later the backbone of the RAF's jet fighter force. It had several shortcomings including badly positioned engine relight buttons and a potentially fatal Phantom Dive, but pilots liked the Meteor because of its excellent handling qualities (which your reviewer is pleased to confirm) and it had

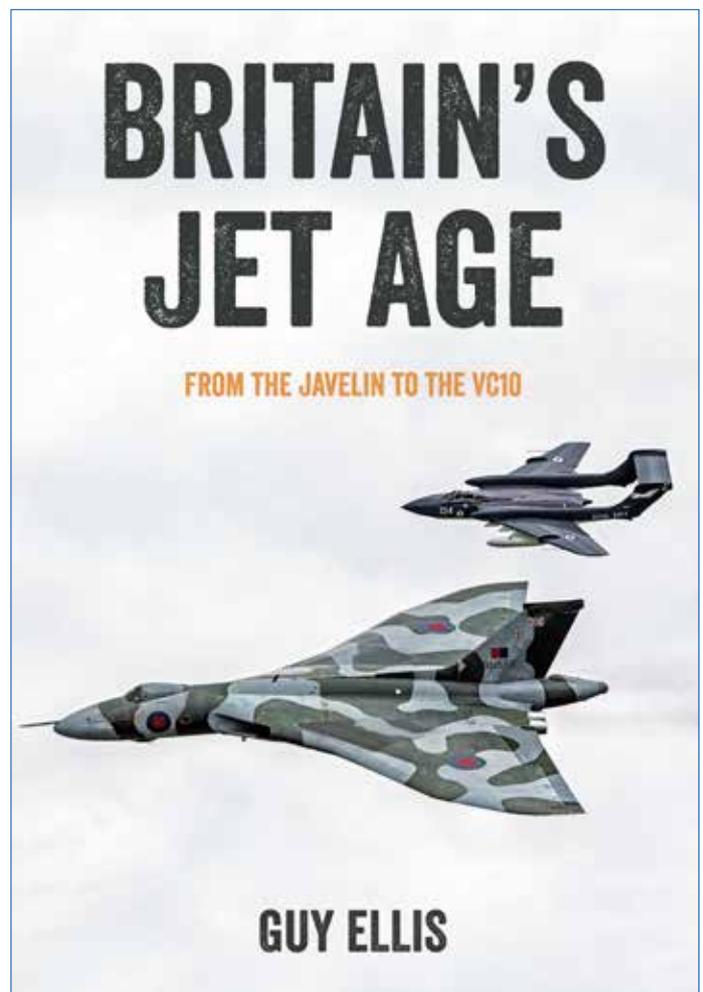
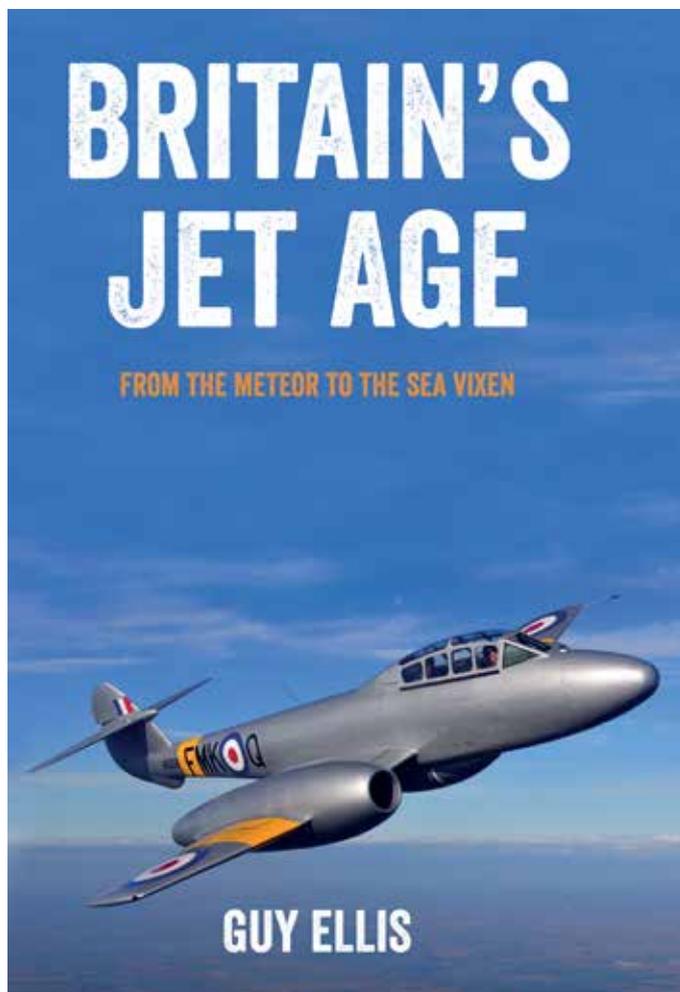
a highly successful operational career, including service with several other air forces.

Not surprisingly, the majority of the aircraft described are military, but the de Havilland Comet airliner receives a fair reading. There is much valuable information about the Gloster Meteor and Javelin, the de Havilland Vampire, Venom and Sea Vixen, the Hawker Sea Hawk, Supermarine Attacker and Swift, in some cases explaining the technical problems that needed to be overcome – or at least reduced – before a type could be put into service.

This selection of aircraft reflects the long-term effect of the unwise decision in World War 2 that Britain would concentrate on fighting aircraft and the United States would produce transports – a move from which British Aviation has been unable to recover.

This interesting book contains a vast supply of photographs and a relatively short text, but the overall result is very palatable. The only annoying feature is the regular use of a capital 'D' for de Havilland. Perhaps it is fortunate that Sir Geoffrey is not able to react! [Note: We hope to review the second volume in a future issue of the magazine - Ed.]

*David Ogilvy*



# How to get an FAA licence using your EASA/CAA one...

*Many UK/European pilots head to the US to fly and broaden their experience/have fun. Andy Torkington explains how he went about it.*

Have you ever dreamt of some fair weather flying in the USA? Perhaps you are considering a new rating to your existing licence as rain and wind beat against the window? Well, if it something that you have thought about, then what's stopping you? Lack of knowledge? Bureaucracy? Cost?

It's easier, quicker, more efficient and certainly cheaper than you might think. Would you be surprised if I told you that to validate your EASA/CAA Private Pilot Licence for an FAA licence with the same privileges, it would only cost you £43.00 and about an hour of your time using only the contents of your regular flight bag?

I went through the process myself and was amazed at the simplicity of the process. I have converted my UK CAA/EASA PPL (single engine SEP) to the FAA equivalent.

All of the information is out there, but research is required to pull all of the information from various sources together. This guide will talk you through the whole process. Here is a comprehensive guide on how to do it: There are three main bodies that you will need to communicate with:

**The UK CAA;**

**The US FAA; and The US Flight Services District Office (FSDO) in the region that you are intending to fly.**

The process is simple and consists of the following steps:

## STEP-BY-STEP GUIDE

Complete CAA Form SRG1160. When completed you email it back to the CAA along with the fee (currently £43). At the same time as completing the above, you must send a similar form to the FAA (Form 8060-71) to make the official request to the CAA for verification. There is no fee for this service and the form is self-explanatory. You simply complete the form and email it to the FAA.

It is worth noting, that on this form, you must specify which FSDO (Flight Standards District Office) you intend to present yourself at in the USA. You will need to look on the FAA website and select the correct FSDO, as once this is submitted it cannot be changed, unless a further letter and instruction is issued by the FAA. So don't nominate Florida if you are planning on flying in Alaska!

There is then an email of acknowledgement from the CAA reminding you to send the FAA a Form 8060-71. It's then a waiting game. The CAA processed my payment after about three weeks, so I knew the process was moving forward. This was over the Christmas holiday period too, so I would expect at other times of the year it may be even more expedient.

Approximately one month from initial submission of your CAA and FAA forms you will receive a letter (Form AFS-760) from the Airmen Certification Branch of the FAA in Oklahoma City confirming the verification of your UK PPL and relevant medical certificate. The letter of certification is valid for six months and details the FSDO you have specified on your earlier form 8060-71. It also worth noting that the process can take up to 90 days to complete, so leave plenty of time.

You must then contact the FSDO (Flight Standards District Office) in the area that is relevant to where you intend to enjoy your flying.

The website lists all of the FSDOs

and the areas that they cover. For example, I flew from the UK into Boston, Massachusetts, although I was to be flying in New Hampshire. So for me, it was the Burlington, Massachusetts FSDO.

You need to go back on to the FAA website and download a further form, FAA 8710-1. You complete the details of your current hour totals and other personal details. They recommend bringing this, completed in the main part, on a USB flash drive, so they can complete their sections and print it off during the following appointment. [http://www.faa.gov/documentlibrary/media/form/faa\\_8710-1.pdf](http://www.faa.gov/documentlibrary/media/form/faa_8710-1.pdf)

The appointment takes approximately 20 minutes and involves an examination of your UK licence, UK medical and passport by their on-duty inspector.

There is no charge for this service or licence issuance. Your licence will be issued during the appointment.

[http://www.faa.gov/about/office\\_org/field\\_offices/fsdo/](http://www.faa.gov/about/office_org/field_offices/fsdo/)

(NB: You could bypass the appointment in person with the FSDO in the USA and complete this part of the process in UK. I obtained the details from AOPA UK, and the FAA gentleman I communicated with could not have been more helpful. Unfortunately the cost for this service is £385, yet it is free once you arrive in the USA. So I chose the latter!)

## SEVEN STEPS TO FLYING IN THE USA

1. Email a completed form SRG1160 to the CAA.
2. Payment to the CAA for the verification process (currently £43).
3. Email a completed Form 8060-71 to the FAA with your choice of FSDO (Flight Standards District Office) included. This is where you present yourself to collect your licence in the USA.
4. Email of acknowledgement from the CAA and processing of the £43 fee.
5. Receive your letter of confirmation AFS-760 from the FAA.
6. Make an appointment with the relevant FSDO.
7. Present yourself and form FAA 8710-1 at the nominated FSDO for final verification and issuance of FAA licence.

# Flying in the U.S.A.

By Andy Torkington



So you are an EASA/CAA-licensed pilot and you want to fly in the U.S.? If you follow the advice in the Get Into Flying Step-by-Step Guide to validating an EASA/CAA licence (see page 42), now it is time to enjoy some general aviation flying in the USA.

Here is what you need to do and some handy tips to take with you on your trip. Much of what you are about to read is based on my own personal experience in June 2016, where I flew in New Hampshire, USA.

## Renters' Insurance

Make sure you have your renters insurance to hand, as your FBO will need to see that too. They'll also advise you in advance of how much cover is required. Look no further than AOPA for all your Renters Insurance needs.

I searched around and did my homework, but I do not think that the service I received from AOPA could have been better. I am sure that many people reading this article will be members of AOPA UK (If you are not, then please join - without a doubt the finest and most influential aviation membership association), so you will already know just what superb service, advice and information this organisation provides.

AOPA arranged my US membership (free for the visiting pilot) and arranged my Renters Insurance, which began on the day that I landed in the USA. You obtain the insurance for a period of one year, but please note, if you cancel your policy within 6 months of its inception, you will receive 50% of your policy back, as this is designed to help the foreign pilot reduce costs and fly that extra hour Stateside, rather than run an insurance premium long after they have returned home. A truly outstanding service.

## Pre-Flight Study?

Airspace is categorised differently in the USA. Sectional and Terminal Charts are different from UK Charts. Many abbreviations are the same on both sides of the Atlantic, however the USA METAR and TAF facilities are more detailed than in the UK. It all makes perfect sense when you understand it, it's just different from what we, in the UK are used to looking at.

***"It is fair to say that the choice of a suitable FBO in the USA is vast. If you want to experience flying across mountains, you can. Alaskan Glaciers, no problem. The clear blue skies of Florida, why not? Simply stunning New England, you'd be crazy not to!"***

I would strongly recommend checking out the Boldmethod study courses. For a nominal cost, you can study Airspace, Weather Reports and VFR charts from your PC, Phone or tablet. The courses are interactive and fun, with section checks and final exams at the end. You can even email your prospective FBO your results should you wish.

My groundschool in the USA was significantly shorter as a result of having studied before I flew. Again, I strongly recommend you check out the website. It is a fantastic site, with lots of tips, advice and videos about all things aviation.

You will have likely considered purchasing USA Sectional Charts before you travel and it's a wise decision. Sporty's has everything that you will need and the cost is far less than the equivalent UK charts and Airfield Directories. You will need the Sectional

Charts(s) for the areas you intend to fly and the Terminal Area Chart.

The Airport Facilities Directory (AFD) is invaluable if you are looking to get a few extra airports in your log book. Crammed with information on each and every facility, this is a book you cannot do without. Two charts and the AFD will cost you no more than £20 at today's prices.

## Where to fly?

It is fair to say that the choice of a suitable FBO in the USA is vast. If you want to experience flying across mountains, you can. Alaskan Glaciers, no problem. The clear blue skies of Florida, why not? Simply stunning New England, you'd be crazy not to!

From Pilot's Paradise in Florida to Emerson Aviation in New Hampshire, there are hundreds of FBO's in between. That said, Get Into Flying would advise that if in Florida, then you should utilize Pilot's Paradise for all things aviation.

Similarly, if in the New England area, you absolutely must check out Emerson Aviation, Laconia Airport, New Hampshire. Emerson Aviation is nestled amongst one of the most scenic parts of the world I have recently discovered. They have it all, from mountains to lakes and beautiful airports and airfields in abundance. I cannot wait to fly in Autumn (the Fall) on a subsequent trip!

You've chosen your FBO. With all the relevant documentation in place and your flight bag bristling with charts and an AFD, it's time to get down to your FBO for your check out.

Emerson Aviation at Laconia Airport, New Hampshire were outstanding. From the moment I sent my first email, many months before my visit, until the moment I chocked N40812 for the



final time, I was made to feel extremely welcome. An online scheduling system meant that my rental time was booked well in advance and I received email updates and reminders about my flying. It was effortless.

## Check Ride

You will require a check ride before you are permitted to solo rent their aircraft. My check ride with one of their fantastically competent Flight Instructors (FI) was great fun. We departed Laconia for some upper air work, stalling, slow flight and such like over Lake Winnepausakee. Make no mistake, I was tested! We did three full stop landings at Laconia and a glide approach from the downwind. I was shattered at the end.

The following day I returned and flew three cross-country legs with a different FI. There was no requirement for me to do this, but it was invaluable as a first time flyer in the USA. There are no overhead joins in the US. Instead, you join at circuit height, 45 degrees on the downwind leg and join the active circuit. It isn't a difficult procedure to get your head around, it's just different. That second day of tuition was well worth it and I strongly recommend it.

Many airports offer a CTAF (Common Traffic Advisory Frequency). Many Municipal Airports, although offering lengthy asphalt runways and approach lighting / Instrument Approach Facilities, are not towered and therefore you advise other traffic of your position and intentions. It is worth that

extra instruction and I quickly became comfortable with it. Many airports use the same CTAF frequency, so it's important to always use your airport name on each transmission.

You will also learn about the Flight Following Service. Essentially, I took off from Laconia Airport and spoke to Boston Approach. In order to request a flight Following Service, you provide them with:

- **Their call sign (eg: Boston Approach).**
- **Your Type and tail number (eg: Archer 40812)**
- **Your 3D position (position, heading and height)**
- **Departure point to destination point (eg: Laconia Airport, New Hampshire to Manchester Airport, New Hampshire)**
- **Request Flight Following**

You will be given a squawk code and acknowledgement of the service and then advisories about other traffic in your area as you fly en route. I landed at Manchester, NH, taxied and took off, followed by a landing at Concord, NH, with another taxi and take off without having to request Flight Following again. A professional service indeed, but worthy of practical demonstration in company with an FI.

## Weather

The biggest surprise for me was the Weather Briefings. An amazing service that is free. You dial 1800 WXBRIEF and after a short animated message are connected to a weather briefer in person,

who will provide you the most detailed and professional weather briefing I have ever known. You'll get everything at your current location, your en route and destination airports. NOTAM's are detailed and information on any Temporary Flight Restrictions (TFR's), such as Government Flights, natural disasters or other special / unusual events.

## Second Checklist

1. Validate your EASA/CAA licence
2. Arrange your Renters Insurance through AOPA.
3. Complete Boldmethod Online courses on Airspace, Charts and Weather.
4. Order your charts and Airport Facility Directory from Sporty's.
5. Ensure you have the current FAA charts for Airbox RunwayHD.
6. Collect your Temporary Airman's Certificate, Check Ride and FLY!

## In Summary

Flying in the USA is wonderful. The weather and Flight Following Services are excellent, as is the level of instruction and the abundance and quality of the airports, airfields and aerodromes.

The cost of validating your EASA/CAA licence to an FAA one is £43.

Renters insurance is approximately £170 (in my circumstances) of which I have received £85 back.

Rental costs for an SEP are between \$100 and \$130 an hour.

One question remains. What are you waiting for?

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Trial period possible Ideal candidate will have 200+ hrs. For further details, contact: Bill Roberts 0207 564 5461 williameroberts2@aol.co.uk



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Fournier RF6B-100 - Serial Number 1 (1976) TTAF&E 2150. New Hoffmann wooden propeller. Annual valid 08/Apr/2017, ARC valid 02/May/2017. Microair 760 Com & King KT76A Transponder. +6/-3g Aerobatic fun. As S/No 1 it was the first production aircraft and was flown by Fournier himself. Formerly registered in France as F-BVKS. GBP£18,450 No VAT.

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 • Go To function  
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SKYVIEW



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**FlightDEK-D180** £2350

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**Bad-Elf Pro+** GPS ..... £ 199  
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**GNS 2000** GPS ..... £ 65  
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**TT22** Mode S transponder .. £1675  
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### Icom

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**Peltor** Helicopter headset .. £225  
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**David Clark** H10-13.4 ..... £259  
**David Clark** H10-13H ..... £276  
**David Clark** H10-60 ..... £295  
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