August 2015

AIRCRAFT OWNER & PILOT

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AIRCRAFT OWNER & PILOT

August 2015

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AOPA is a member of the International Council of Aircraft Owner and Pilot Associations.

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Chairman's Message

AOPA: Working for you.

By George Done

One of the most pleasant aspects of attending aviation gatherings, such as the recent AeroExpo, is meeting AOPA members. At Sywell, AOPA's marquee incorporated a dedicated area for members to relax in, have a coffee and chat to other members, including those of us more deeply involved with the running of AOPA. The ones I talked to were unanimous in their support and praise of the activities undertaken by AOPA, and many encouraged us to "Keep up the good work!" as they left.

These welcome sentiments remind me that nobody *has* to join AOPA – it is entirely optional. The membership consists of a wide range of individuals, groups and organisations who wish to support the activities that AOPA undertakes to ensure the future viability of general aviation in the UK.

Members may be students or licensed pilots, owners of GA aircraft (including those in group ownership), instructors, flying clubs and schools (corporate members) and maintainers. This makes us somewhat different from the specialist associations and organisations, focussed on looking after the interests of particular categories of aircraft – such as gliders, microlights and the various EASA Annex II aircraft, including homebuilt.

The absence of any obligation to subscribe to AOPA is a sensitive attribute, since members may leave just as easily as they join – something that would obviously happen if AOPA stopped doing what the majority of members want us to do. In reality, it actually provides clear and unambiguous direction to our activities and future strategy, because in order to continue as a viable association, we must remain tuned into members' views.

This is why AOPA hosts an AOPA Members Working Group that meets quarterly. *Any* AOPA member can come along to a meeting and air their views, whether critical or supportive, and contribute to discussion on current matters of interest.

White Waltham is where the group meets usually, reflecting the high volume of general aviation activity in the South East, but it also meets in other parts of the country to widen the scope. The most recent meeting was at Sherburn-in-Elmet on Saturday 6th June. More than twenty members from north of the Humber had indicated that they planned to fly in, but strong, gusty winds from a passing front deterred many.

Topics discussed contribute directly to AOPA's lobbying activities. One that has been a vexed issue for several years, for example, is the current inability to self-handle and avoid disproportionate agency handling fees at airports that also handle commercial air transport flights.

Increasingly, and particularly since the establishment of EASA over a decade ago, the future viability of general aviation in the UK has depended on being active in Europe, as well as nearer to home. Our current engagement in the various committees, conferences and projects is summarised in the 'Chief Executive's Diary' within these pages. This illustrates the considerable breadth and scope of the work being undertaken on behalf of AOPA members. This work is important to ensure the sustainability of future general aviation and our efforts will concentrate on achieving this objective.

Please show this magazine to any pilots you may meet who are not AOPA members, and please also let them know why you support us and why they should join too!

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Editorial

By Ian Sheppard

When it comes to designing aircraft it is very difficult to attract investor interest to build a prototype in a country that doesn't have any scope for experimental aircraft.

That the CAA has now launched a consultation of so-called "proof of concept" flights is excellent news.

In this issue of *Aircraft Owner & Pilot* we take a close look at the Optica, designed by John Edgley in the 1980s. Edgley has long been chair of the Royal Aeronautical Society's General Aviation Group and it is the RAeS that has been instrumental in proposing this new opportunity. At the same time the gradual change at the CAA to a risk-based approach, which EASA is also starting to migrate to, has helped enormously.

As for the Optica the fact it was the only purely British-designed aircraft at the Paris Airshow underlined how far the UK has slipped behind - especially when there are relatively new GA aircraft from all over the world there (see pictured on pp22-23).

The other staggering aspect of the Optica is that a great idea was developed only to be shut down mainly as the result of one accident where there was nothing to point to the design of the aircraft being at fault. On the contrary, flying the aircraft last month I can vouch for it being incredibly easy to operate and very stable. Ultimately it could be the world's leading observation aircraft and a sensible alternative to helicopters - quieter, cheaper, less complex, safer to be in and around, easier to operate and maintain - the list goes on! See report on pages 38-45 of this issue.

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2015 AOPA Annual General Meeting

The 49th 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 **Tuesday 22nd September 2015 at 2.00 p.m.**

The 49th Annual General Meeting of the British Light Aviation Centre Ltd, trading as the Aircraft Owners and Pilots Association of the UK, will be held on Tuesday 22nd September 2015 at AOPA, 50a Cambridge Street, London, SW1V 4QQ, commencing at 2.00 p.m. The formal announcement and agenda of the AGM appears right.

A set of the financial accounts for the year ended 31st March 2015 will be provided in advance of the meeting on the AOPA website www.aopa.co.uk together with the minutes of the 48th 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 1.15 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), or by post to AOPA, 50a Cambridge Street, London SW1V 4QQ.

Agenda

Apologies for absence.

To confirm the Minutes from the 48th Annual General Meeting.

3. To receive and approve the Directors' Report and Financial Statements for the year ended 31st March 2015.

4. The election of Directors to the Board of Management. The following Directors are due to retire by rotation: Mick Elborn, Charles Henry, Ian Perry and Nick Wilcock. Mick Elborn, Charles Henry and Nick Wilcock 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

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[1]SVT™ synthetic vision comes standard on the G600 series; it's optionally available on G500.
[2]Initial FliteCharts® will disable when data is over 6 months out-of-date. Updates available on single-cycle or annual basis.
[3]Contact your dealer for a full list of EASA-qualifying aircraft on Approved Model List (AML).

G600/GTN750

Chief Executive's Diary

STOP Gold Plating

By Martin Robinson, CEO, AOPA UK

I will begin from where I left off in the last diary - Gold Plating. If the report on so-called "gold plating" issues that was submitted to the government's Red Tape Challenge is not on the CAA and AOPA websites by the time you read this, it soon will be. I should like to thank Philip Clarke and Andrew Lowe from the CAA for their determination in producing the most comprehensive reply possible to the submissions, which related more to interpretation of the rules rather than CAA gold plating. The CAA is truly committed to removing, where it exists, all gold plating from EASA regulations.

Some people I speak to about issues relating to CAA regulations, or the application of existing rules, fear speaking to the CAA about it. In short, they believe that some form of retribution might follow. But I can assure you that this is not how this CAA works. If you have an issue which you believe to be subject to gold plating - where the CAA is requiring more than EASA requires - we can still address the subject with the CAA. Feel free to contact me at AOPA.

On 15th May I met with Matthew Bolshaw and Matthew Day from aviation insurance specialist Hayward Aviation. With the support of Haywards we intend to run a GASCo Safety evening in the City of London, at Hayward Aviation's offices. AOPA is a long-time supporter of GASCo and I think that it is a great initiative to have a GASCo/AOPA evening. If you would like to see certain topics covered please let me know. Also please keep an eye on the website for further details and booking information.

On 23rd June we had a meeting with some of the AOPA Members Working Group (AMWG) and AOPA's advertising sales and marketing agent Dave Impey to discuss how to continue to improve our advertising and membership benefits. This is an on-going process – the team leader is Mick Elborn; if you have some suggestions please email him (mick@aopa.co.uk).

The following day I had a meeting in London with a simulator manufacturer from Belgium which specialises in sims for the GA market. We plan to follow up on this later in the year with an article in this magazine.

"If you have an issue which you believe to be subject to gold plating, where the CAA is requiring more than EASA requires, we can still address it with the CAA."

On 25th June I attended the Mid-Air Collision Challenge Group Meeting (MACCG). This group includes senior figures from both the civilian and military aviation worlds, and included in its remit is the thorny topic of infringements. There was some discussion about the definition of a 'near infringer,' which led to a suggestion that sending out questionnaires would be more likely to attract truthful responses.

The objective is risk reduction. However, while AOPA supports the aim of reducing infringements it is difficult to support the notion of the 'near infringer,' because the aircraft can legitimately fly up to the boundary (we are not suggesting that you do!) and - so long as you do not infringe it - there should not be an issue. It is analogous to someone stopping at a red traffic light and receiving a letter for stopping on double yellow lines.

Given the CAA's new approach to the risks posed to third parties, AOPA questions whether there is a need to look at all infringers, given that 85% of occurrences are non-risk-bearing. Perhaps the focus should be on the more serious events given the limited resources of the CAA.

AOPA fully endorses work to reduce the number of infringements and in the past two years, AOPA has seen fewer members being subjected to infringement investigations. This may be due in part to our members following the advice that we have published in the past. The key is to remember that good pre-flight planning is the key to good execution, and if you get stuck and need help, make a call on the frequency that is reserved for this purpose (121.5 MHz).

Other issues discussed included airprox matters, with concern remaining high with respect to visual 'conspicuity'. 'See and avoid' is of paramount importance!

Also, with so many aerodromes having non-standard circuits, if you are going somewhere new make sure you brief yourself fully on the arrival procedures – and if in doubt don't hesitate to call the aerodrome for a briefing.

The CAA continues to develop its 'Skyway Code,' which AOPA also believes will be a good thing. However the challenge for the CAA will be keeping it up to date.

Visual and electronic conspicuity working groups have been formed and I have agreed to chair them, although the first meeting was chaired by the CAA as I was not available. The overall aim is to develop/improve situational awareness for pilots both electronically and by visual means. AOPA is committed to improving safety of general aviation commensurate with risk and affordability. We want to see low-cost, low-powered devices being made available where they can improve safety for all airspace users.

There was also a lengthy discussion on UAVs/RPAs and the development of guidance material and policy.

Flying with the CAA

On 29th June I took Andrew Haines and Rachel Gardener (from the General Aviation Unit) flying from Elstree to Stapleford and Gamston. Andrew was able to talk to AOPA members and get feedback (good and bad) on the progress the CAA is making with its new approach to GA.

I appreciate very much that Andrew Haines gave up a full day for this activity. He always comments on how far we travel in a day!

On all the points raised, I know from past experience that Andrew will address them where he can, and I thank him for his continued commitment to improving the situation for GA.

On 30th June I attended the Industry Consultation Body (ICB) meeting in Brussels. The ICB advises the European Commission on Single European Sky issues and involves all the major stakeholders, plus the Commission itself. It is important to state here that this body was created by an EU Regulation which, inter alia, names IAOPA as a member and not just an observer.

Under development is a new European ATM Master Plan, although unfortunately this plan does not really include GA. Underpinning this is the development or evolution of the Single Sky Vision. I asked that the Commission look more closely at how the FAA NextGen programme is more inclusive of all airspace users. In this I was firmly supported by the European Business Aircraft Association (EBAA), European Regions Airline Association (ERA) and the International Association of Air Traffic Control Associations (IFATCA).

Automatic Dependent Surveillance – Broadcast (ADS-B) and the development of an Implementing Rule is also under discussion. The Commission is likely to ask EASA to begin a rulemaking task and to consider an extension which would include general aviation. Working together with EBAA and GAMA (General Aviation Manufacturers Association), IAOPA has submitted a paper which effectively says the 'one size fits all' approach does not work for GA.

Also on the table is the further extension/evolution of 8.33kHz radios into the lower airspace system. The Regulation stipulates that carriage of 8.33 radios will be required from 1st January 2018. IAOPA is looking into whether some funding can be made available.

On 6th July AOPA had its Board and Executive Committee meeting where I reported mostly on what is reported in this diary. The following day I had a meeting about the AOPA shop (The Pilot Store) and how we might improve the stock that it carries.

Members will continue to receive 5% discounts on products other than electronic items.

On 8th July I spent all afternoon with Helios at their offices in Farnborough. AOPA has had a long association with Helios. However, the main purpose was to discuss the way airspace charge proposals are handled. This is part of a piece of work which has been commissioned by the CAA – eventually there will be some recommendations made which should lead to increased transparency.

Airfields

Recent issues of AOPA *Aircraft Owner & Pilot* have focussed very much on threats from inappropriate property development to larger aerodromes such as Wellesbourne in Warwickshire and Bourn in Cambridgeshire. However worthy these efforts are, small flying sites and farm strips are just as important to sport aviation – and they take up every bit as much time for the GAAC and AOPA airfields team!

Often these strips are home to just a single aircraft and operator, but we believe they deserve just as much effort as the bigger sites. In many cases, the ability to fly from one's own private strip marks a lifestyle choice, even the fulfilment of a dream, and in almost every case an inappropriate development can bring huge amounts of worry and stress. We're committed to do what we can to relieve that.

In the recent past, we have prepared lengthy planning responses on behalf of three flying site owners, all of whom faced developments threatening the continued use of their private strips. There were three different reasons for their problems, but in each case a common factor was that in the absence of safeguarding maps being lodged with the local authorities, the person putting in the proposal for a development was able to claim, rightly or wrongly, that the air strip did not officially exist.

In one case it was the seemingly inevitable wind turbine being proposed just a few hundred meters from the runway threshold. In another it was a plan to build a small, but likely noise-sensitive housing estate right under the runway climb-out and in the case of the third, the flying site operator arrived one morning to discover the local power company's contractors preparing the footings for a line of electricity pylons just over the hedge from his runway!

In the latter case, the power company were, legally, completely 'in the right'. Over two years previously they had carried out all the appropriate consultations and had applied for planning permission, which in the absence of any objections, had been duly given.

Sadly the operator of the strip was merely a tenant, and it seems previous communications between the power company and the land owner had bypassed him. In addition, the site was being operated under the '28-day rule', which allows any site to be used for flying for a maximum of 28 days a year subject to a land-owner's permission without formal planning permission, and no attempt had been made to offer the local authorities a 'safeguarding map', so there was nothing on their records to indicate the flying site even existed.

The partial good news in this case is that the power company did immediately stop their construction work while they discussed potential mitigation with the flying site operator. Some relocation of the cable line and reduction in the height of the pylons will we hope allow a viable solution to allow flying to safely continue. So saying you can understand their frustration as much as the stresses placed on the flying site operator, as their carefully planned work schedule (and no doubt budget) went out of the window.

It is at this point, as I continue to advocate 'voluntary safeguarding' that the 'Letters' page may fill up with correspondence indicating that strip owners fundamentally distrust local planning authorities and fear that any attempt to lodge safeguarding information will lead to undue scrutiny of their flying operations. It is also noted that the response from local planning authorities is far from consistent.

Sometimes authorities resist unofficial safeguarding. For example an application was rejected for a safeguarding zone around an aerodrome in the south-west of England, the council instead offering a "constraint maps" agreement (whatever that is), and other local authorities have also resisted becoming involved due to the perceived bureaucracy required.

Even if a local authority accepts a safeguarding map, experience demonstrates they don't always adhere to it and do not necessarily notify the operator, even of quite busy aerodromes, of applications for development. For example Denham Aerodrome's owners discovered in 2008, that during an office move its local council had lost the safeguarding maps that had been deposited with them.

"The response from local planning authorities is far from consistent."

A further recent case was highlighted when a County Council themselves shortlisted a site close to the end of a runway, for a waste incineration plant with a tall chimney!

There is only statutory obligation for Local Planning Authorities to refer planning applications in the vicinity of an aerodrome for CAA assessment for military airfields and about 40 of the largest civilian aerodromes across the UK. All other flying sites rely on voluntary or unofficial safeguarding.

It is not unknown for unscrupulous

KEEPING YOUR HEAD DOWN...

...IS NOT A SOLUTION.

developers to attempt to interpret this as the tacit approval of the CAA for their developments. It's not helped by the rather woolly official CAA advice that authorities should merely "hold safeguarding maps and develop safeguarding procedures with operators wherever appropriate."

In fact there is clear advice, both in government policy (ODPM circular 1/2003 (and Scottish Executive Planning Circular 2/2003), the Town and Country Planning Act and enshrined in CAA document CAP 738 'Safeguarding of Aerodromes', that the LPA should give due consideration to the expertise of the aerodrome operator.

The CAA actually makes the lodging of voluntary safeguarding information with relevant local planning authorities, mandatory for operators of flying sites licensed for the carriage of paid passengers (CAA CAP 168, Licensed Aerodromes). In addition, guidelines for operations at unlicensed flying sites (CAA CAP 793, Safety at Unlicensed Aerodromes) recommends "that voluntary or unofficial safeguarding agreements are made with the appropriate LPAs."

So what does that lot all really mean?

Simply, safeguarding in planning law means to safeguard an established land use. In reference to aviation it is achieved by a process of checking proposed developments so as to:

- Protect the blocks of air through which aircraft fly, by preventing penetration of surfaces created to identify their lower limits. ie. No towers or wind turbines close to a boundary!
- Avoid any increase in the risk to aircraft of a bird strike by preventing development such as rubbish tips which may increase hazardous bird species in the vicinity of an airfield.
- Protect the integrity of radar and other electronic aids to air navigation, by preventing reflections of the radio signals involved.
- Protect visual aids, such as approach and runway lighting, by preventing them from being obscured, or prevent the installation of other lights which could be confused for them.

Permission for wind turbine development at Bullington Cross near Popham (pictured above) was refused and then the appeal failed also. The General Aviation Awareness Council (GAAC) resists wind turbine development proposals in the immediate vicinity of 'farm strip' as well as larger, more active airfields. In a significant number of cases GAAC has experienced unscrupulous developers have clearly ignoring visible and long-established flying sites.

"PLEASE don't keep your head below the hedge and hope that planning issues won't happen to you."

In March this year, with the aid of Transport Minister Robert Goodwill and the DfT, pretty much the same advice as above was circulated to every planning authority in the country, so they can't say they 'don't know'. That though puts the onus back on us, as pilots and where appropriate, as flying site operators.

First of all, keep a lookout in local papers, or even in gossip down the pub, for potential threats and if you hear something, don't assume it will just go away. PLEASE don't keep your head below the hedge and hope that planning issues won't happen to you. At very least log onto the GAAC website at www.gaac.org.uk, download and have a read of our fact sheets on the matter. Better still have a chat with the GAAC's specialist airfield safeguarding expert Richard Vousden who has a special low tariff for preparing submissions for GAAC and AOPA members. I promise you, it will not be time wasted.

Stephen Slater

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Licensing Round-Up

France needs to find a solution for its 'Brevet de Base' aeroplane pilot's licence. Pictured: A Robin at Compiègne Margny Airport, France. Pictured in June, en route to Salon du Bourget.

Use of 'Sub-ICAO' licences to fly N-reg aircraft

About two years ago, following queries from our members, I sought clarification of the topic of flying N-reg aircraft using the provisions of FAR 61.3 with sub-ICAO pilot licences.

The CAA had already learned that the FAA had rejected an application from a LAPL holder for an FAA Airman Certificate under FAR 61.75, so there was some concern about whether it was actually lawful to fly such aircraft in the UK using an NPPL or LAPL under FAR 61.3.

Cliff Whittaker at the CAA tried valiantly to obtain an answer from the FAA, but none was forthcoming. However, the CAA has recently had a response from an attorney in the Regulations Division in the Office of the Chief Counsel of the FAA and the answer was "Yes" - which means that it *is* lawful for NPPL or LAPL pilots to fly N-reg aircraft, but within UK airspace only. This is because FAR 61.3 refers strictly to a licence issued by a 'foreign country' for use in airspace of that country – and, much as some might like it to be, the EU is not a 'country' it is merely a politico-economic union of 28 member states. So FAR 61.3 refers in our case to exercising the relevant privileges of a UK-issued licence on N-reg aircraft solely within UK airspace.

The '25% rule' amendment to FCL.1005

Regulation (EU) 2015/445 introduced an amendment to the Aircrew Regulation, which effectively states that an examiner may test someone to whom he/she has given no more than "25% of the required flight instruction for the licence, rating or certificate for which the skill test or assessment of competence is being taken."

At June's EASA TAG/SSCC/FCL meeting, I pointed out that the word "required" was ambiguous - did it mean the minimum stipulated flight instruction, or the *actual* dual training the applicant required to reach test standard?

This prompted much debate; however, as there is a parallel proposal from the ballooning community to raise the figure to 50%, the decision was that the rule should be clarified and in the opinion of those at the meeting, "required" should indeed mean "as needed by the applicant." Our recommendation is that, pending formal amendment of the rule, if an AOPA member thinks, as an examiner, that he/she might need to fly more than 25% of the minimum flight instruction with a particular applicant, they should contact the AOPA office and we will confirm the latest CAA policy in this respect.

LAPL Review Board

There was to have been a LAPL Review Board immediately following the TAG/SSCC/FCL meeting in June, but it was postponed until late July.

France needs to find a solution for its 'Brevet de Base' aeroplane pilot's licence and particularly for its 'Brevet de Pilote Planeur' glider pilot licence after 2018, so rather than propose yet another new licence such as the 'Basic LAPL' they are considering a modular route for the LAPL, which will meet the needs of a significant number of French pilots who only wish to fly in the vicinity of their local aerodromes. I don't really see that having much appeal in the UK, but if a 'Restricted' LAPL solves the problem for France, then fair enough.

Mountain Rating

It has been confirmed by EASA that the Mountain Rating is available for LAPL(A) holders, as well as for PPL(A) holders.

Thanks Matthias!

After many years in what became the Aircrew and Medical section at EASA, Matthias Borgmeier (right) has moved within the Agency to Technical Training. Over the years, Matthias has helped AOPA to understand the bewildering complexity of EASA rules and regulations; it has always been a great pleasure to work with him and we wish him well in his new post.

More thoughts on instrument flying...

By Nick Wilcock

Jim Thorpe's article in June's AO&P raised some interesting points concerning the range of instrument flying qualifications now available to UK GA pilots, particularly the CBM IR and the IR(R). I work with both Jim and another of his PPL/IR colleagues, Julian Scarfe, on a couple of EASA groups and while we may not agree on everything, we certainly agree that UK pilots are currently rather better placed to cope with our capricious weather than are our fellow pilots on the continent.

A couple of points of clarification from Jim's article: Although 10 hours of instrument flight training time for the IR(R) is, as Jim stated, the absolute minimum, the total instrument training time is 15 hrs, with up to 5 hrs instrument ground training time in an EASA-approved synthetic training device (STD) making up the remainder.

At our January 2015 EASA meeting, we made the point that approval requirements and costs for the level of STD needed were disproportionate. This needs to be addresses if more pilots are to make better use of appropriate 'simulators'.

I sympathise with Jim and anyone else who has tried to hunt for the official source of IR(R) approach minima! They do still exist and can in fact be found hidden away in the UK IAIP under the section titled **AD1.1 Aerodrome and Heliport Availability** in section 4.8.2 on page 1.1-7 referring to **'Determination of DH/MDH'**:

IMC Rating / IR (Restricted) Holder in Current Practice

Pilots with a valid Instrument Meteorological Conditions (IMC) Rating or Instrument Rating (Restricted) (IR(R)) are recommended to add 200 ft to the minimum applicable DH/MDH, but with absolute minima of 500ft for a precision approach and 600ft for a non-precision approach. The UK IMC Rating / IR(R) may not be valid outside UK territorial airspace, therefore such pilots should check the validity of their rating for the State in which they intend to fly. If the rating is not valid pilots must comply with the basic licence privileges, subject to the regulations of that State.

However, these 'recommendations' are somewhat ambiguous. For example, say the applicable MDH is 430 ft. An IR(R) pilot could therefore choose one of the three following interpretations:

"It's only advisory, so I'll ignore it anyway and use 430ft"

"430+200 = 630, but the IR(R) advisory minimum is 600ft, so I'll use 600ft"

"430+200 = 630, which is greater than the IR(R) advisory minimum, so I'll use 630ft"

Personally I'd say that the last interpretation is the correct one. I don't really believe in 'advisory' limits where safety is concerned - either we have a limit or we don't.

Fluffy-headed libertarians will probably disagree though, arguing that pilots will always be capable of self-regulation.

But if they haven't been trained and tested to lower limits, then if they do risk flying down to lower limits in anger, they are probably well on the way to becoming a statistic.

Incidentally, while I'm on the subject of self-regulation, there is a school of thought which considers that it's safe and legal to make an IMC approach to an arbitrary DA at an aerodrome without a published or discrete IAP.

So, particularly for those with such a mindset, here's what the UK IAIP states:

Aerodromes Without Published Instrument Approach Procedures

For an aircraft landing at an aerodrome without an instrument approach procedure either:
(a) a descent should be made in VMC until in visual contact with the ground, then fly to the destination; or
(b) an IAP at a nearby aerodrome should be flown and proceed as in (a); or
(c) if neither (a) nor (b) is possible, first obtain an accurate fix and then descend not lower than 1,000 ft above the highest obstacle within 5 nm (8 km) of the aircraft. If visual contact (as at (a) above) has not been established at this height, the aircraft should divert to a suitable alternate with a published instrument approach procedure.

Theoretical Knowledge Requirements

If there's one topic about which we're all in agreement, it's that the current level of theoretical knowledge requirements for the CBM IR (and EIR) are excessive.

Even though Jim and his FCL.008 colleagues reduced them by around 40% compared to the way they were, they're still disproportionate.

The FAA requires a single 60 question exam, for which the pass mark is 70%. So why does the Aircrew Regulation require so much more? In contrast, the IR(R) theoretical knowledge syllabus is entirely adequate for the rating privileges.

Although I wouldn't agree with Jim's description of the IR(R) exam, perhaps in the future it should be reviewed and ideally some credit allowed towards a simpler 'FAA-level' exam for the CBM IR? By the time you read this, I will have posed such a suggestion to my EASA GA/IF Task Force colleagues.

Mindsets

Jim made an interesting point about mindsets in his article. However, many IR(R) pilots do not 'plan a flight of a couple of hundred miles'; rather, they use the IR(R) as a simple tool to meet their immediate needs.

Many years ago, during RAF training, we were shown an old USAF movie entitled 'Verdict Vertigo', which highlighted the cause of certain accidents as being 'vertigo' - we'd probably call it disorientation these days. But it had the excellent American strap line "GET ON GAGES!"

IR(R) pilots probably find themselves in unpremeditated IMC more often than their IR colleagues, whose interests perhaps lie more in compliance with IFR on well-planned routes. Hence the IR(R) holder must be able to cope safely with sudden immersion into IMC and the need to "GET ON GAUGES!" quickly and confidently.

In a similar vein, I was chatting with a former CAA chief examiner some years ago and mentioned that the 'Playstation Generation' was pretty good at flying published NDB/ILS procedures, but less so at coping with vectors to the Final Approach Fix from random directions.

He admitted that he'd never thought about that, as all their IR testing tended to focus on rather 'canned' airways routes to the NDB hold, followed by the procedure. Hence my comment about mindsets - they are indeed different and neither is more important than the other.

Instrument Training

Although an instructor who teaches IF needs to have sound, competent instrument flying skills, there is a lot more to being a good IF instructor than simply holding (or having held) an IR oneself.

When I was a flying club CFI, I noticed a marked reluctance from a couple of 'fATPL' part-time FIs who, despite their shiny new IRs, were less than keen to climb up to VMC above cloud in order to teach something even as basic as Straight and Level 1 against a clearly defined horizon.

Most of their 'IFR time' had been spent practising for the much-feared IR with a CAA staff examiner and precious little had much to do with the needs of a PPL instructor.

TB10s at Redhill Aerodrome on a cloudy day. The qualifications and privileges for you to be more than a fair-weather pilot are now more accessible. However the world of GA instrument flying can be confusing and sound research and decision-making for safety is critical, along with good training.

Without a pre-planned route and a PLOG, they were a bit out of their depth when having to instruct and maintain a mental air plot simultaneously.

Appropriate technical knowledge and a sound knowledge of the flying exercise requirements are also important, but perhaps the most important asset of a good instructor is the ability to impart skill and knowledge. But instructors whose only IF time has been at some CPL/IR sausage machine school are going to find it rather difficult to impart instrument flying skill and knowledge to a reasonable standard with such a limited background, even after completion of the IR(R) instructor course.

Incidentally, the course is exactly the same as that for an IR instructor except that, to instruct for the IR(R), there is no need for the prerequisite of 200 hours IFR time (probably spent watching people tubes fly themselves along magenta lines in glorious sunshine), nor to hold an IR.

Flight time recording

Jim mentioned that, in theory, an IR(R) holder with sufficient experience requires a minimum of 10 hours instrument flight instruction for the CBM IR, plus the exams and the Skill Test. So a quick reminder of the vagaries of flight time logging:

Instrument flight time

This is the actual time spent flying the aircraft by sole reference to instruments. Hence it cannot be the same as 'block' time. I used to record all 'foggles time' plus any real IMC for my IMCR students as their 'instrument flight time'. Note that was the student's 'instrument flight time'; some FIs probably record their own IF time whilst watching their student flying, but I didn't consider that to be very reasonable.

IFR flight time:

This is the total time during which the aircraft is operated under Instrument Flight Rules. EASA has confirmed that, as an aeroplane flight is from 'chock-to-chock', a flight planned to be flown entirely as an IFR flight does so for the entire 'block' time, even in 8/8 VMC.

Unrated PPL holders flying IFR in VMC: Under Part-FCL, only pilots with instrument qualifications (or under training for such) may fly under IFR.

Whereas holders of an old-style UK PPL without any instrument qualification are still permitted to fly under IFR in VMC outside controlled airspace if they really, really wish to do so (and there was also a flexibility clause permitting this under JAR-FCL).

But this is not allowed under the Aircrew Regulation, so Part-FCL holders without instrument qualifications may not log 'IFR time' except when receiving instrument flight training.

Incidentally, unlike holders of Part-FCL or JAR-FCL PPLs, neither may 'unrated' old-style UK PPL holders fly out of sight of the surface nor down to ICAO VFR limits.

EASA 'IF/GA' Task Force

One of the six major commitments made by EASA at last year's safety conference in Rome was that there should be wider availability of instrument flying for GA pilots. Along with the UK CAA and Europe Air Sports and others, IAOPA is represented on the 'Task Force' developing IF/GA proposals for EASA. We're having our second meeting during July 2015 (after AO&P had closed for press); however, no matter what is proposed for the Rest of Europe, I am determined that nothing will be allowed to undermine the tried and tested UK IR(R).

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GA News Roundup

CAA consultation on experimental aircraft

New simple requirements for the initial testing process for experimental aircraft in the UK moved a step closer at the end of July with the launch of a final consultation by the CAA. The consultation is aimed at "reducing the red tape and financial burdens associated with securing airworthiness and operational approval for new light aircraft designs."

The CAA said the move was part of its" commitment to deliver a risk-based and proportionate approach to overseeing general aviation. The Royal Aeronautical Society (RAeS) made the original proposal last year. It will make it possible for aircraft designers to try out a new concept aircraft (up to a maximum take-off weight of 2,000kg) in the air without going through a costly and time consuming procedure.

"The main objective of the move is to reverse the decline in the number of new aircraft designed and developed in the UK," said the CAA. Details of the consultation, including how to respond, can be found at caa.co.uk/consultations. The consultation will run for four weeks.

ONE Aviation unveils Eclipse SE

The company formed from the merger of Eclipse and Kestrel, ONE Aviation, has announced the Eclipse Special Edition (SE) twin-engine jet, a "factory-renewed" Eclipse 500 which has been "substantially upgraded and reconfigured to include nearly all new features introduced on the new Eclipse 550, including a Dual Avio Integrated Flight Management System (IFMS), anti-skid brake system, and a newly designed pilot-side standby display unit.

The Eclipse SE comes with a comprehensive three-year factory warranty and three-year Eclipse Advantage maintenance program, which covers all required, scheduled inspections including the 300 hour, 24 month inspection. "The Eclipse SE is much more than an upgraded Eclipse 500, it is a factory supported, like-new aircraft for a very reasonable price," said Alan Klapmeier, ONE Aviation's CEO.

Also included in aircraft cost is one initial type rating and access to all of the optional features and equipment that are available on an Eclipse 550, including auto-throttles and TAWS.

With the introduction of the Eclipse SE, ONE Aviation will discontinue the Total Eclipse series of aircraft. SE base price is $2.195 million, "about the same as a turboprop."

A-G Centenary

In June Brooklands Museum in Weybridge commemorated the centenary of the first successful voice transmission anywhere in the world from an aircraft to the ground - over Brooklands in June, 1915.

During the summer of 1915, the Marconi Company - in conjunction with the Royal Flying Corps - conducted experiments using radio equipment to allow the crew of an aircraft to be able to talk to people on the ground. Following several trials during the week ending 26th June, for the first time in history, a voice was heard on the ground from an aircraft flying above.

Until then, aircrew could communicate with the ground only by dropping messages over the side or, from about 1912, via wireless telegraphy using Morse code.

Aeros partners with Simtech

Aeros Flight Training has partnered with Dublin's Simtech Aviation to offer Multi Crew Co-operation (MCC) and Jet Orientation Course (JOC) training courses, as part of the Aeros commercial pilot modular training programmes.

The courses will be available at all of Aeros' flying centres, which include Coventry, Gloucester, Stratford-upon-Avon, Nottingham and Cardiff.

New Hangar at Lydd

London Ashford Airport at Lydd reports that its new £700,000 hangar has entered its final phase. Airport chief executive Charles Buchanan said the decision to invest in extra hangar space was driven by a rise in traffic. "This investment underlines our determination to ensure that the airport is able to meet the needs and expectations of the growing number of aviation businesses and customers who use Lydd," said Charles.

Construction of the 2,100m2 hangar, measuring 29m by 73m, is being undertaken by Kent firm Civils Contracting Ltd. The investment comes at a time when the airport is undertaking preparation work for its much-anticipated runway extension programme.

FAA medical relaxation

U.S. AOPA is working with the FAA on relaxing the requirements for third-class aviation medical requirements. There are now bills before both the Senate and House to introduce the measure, which could be added as part of the upcoming FAA reauthorization (FAA funding runs out on 30th September).

Under the proposal, no medical would be required for private pilots flying aircraft less than 6,000 pounds in gross weight, VFR and IFR, with up to five passengers, at 250 knots or less.

FASVIG is Tweeting!

You can now follow @FASVIG on Twitter. Please follow @FASVIG and see http://twitter.com/FASVIG. The FASVIG website – http://fasvig.org – is now setup to support tweeting of posts and links so do please spread the word. For the best information on the Future Airspace Strategy VFR Implementation Group you can still sign-up for email Newsletters at http://fasvig.org/subscribe. Also please see the article in June's *Aircraft Owner & Pilot*.

New Release of FliteDeck VFR

Jeppesen has released version 2.1 of its Mobile FliteDeck VFR (MFV) app. Among other enhancements, the release combines automatic flight time logging (Auto-Log function) and automatic audio warnings for potential airspace infringements. "These enhancements are designed to support your CFR flying workflow and further reduce manual interaction and head-down time," said Jeppesen.

While SkyDemon remains the most popular navigation app in the UK, Jeppesen is expanding fast and now has 4,000 users. The MFV app recently won fliegermagazin's Best Navigation App award. Charles Webster, Jeppesen UK manager, general aviation sales & service, said that the UK market has "remained tough to penetrate with SkyDemon remaining strong. [They] have enticed current subscribers with relatively cheaper renewal charges."

However he said that MFV has recorded 720 free trials, 84 'all European country' subscriptions and 13 'UK coverage only' subscriptions. The take-up rate after the trial was 13.5%. For Germany the numbers are much higher: 3,614, 1,228 and 340 respectively (with 43% take-up rate after trial). However, Webster said recently a number of AOPA members have switched to MFV from competing products based on the no-cost annual solution.

For further information on the MFV app's functionality see pp35-37 of this issue. This coincides with Jeppesen, in cooperation with AOPA, offering selected flight instructors free use of the MFV.

Air BP Scholarship

The first Air BP Sterling Pilot Scholarship has been awarded to 19-year old Alex May, an air cadet from Hartlepool.

Gaining his PPL is a pre-requisite for Alex to take up his place in September on a BSc in Professional Aviation and Pilot Practice run by Tayside Aviation. The course, which is run in conjunction with Middlesex University, concludes with a work placement at Loganair.

Alex had accrued 22 hours towards his PPL but did not have the funds to complete it. The scholarship provides a grant valued at up to £10,000 towards the cost of Alex's flying training and examination costs.

Alex said: "Having to first gain your PPL for my course ensures you have the aptitude before committing to a degree costing about £75,000. Now that you can do pilot training as a degree it has made Student Finance Loans available to cover about a third of the cost. It helps as banks are reluctant to lend the full amount. This is why scholarships are so important in bridging the funding gaps."

Air BP worked with the Honourable Company of Air Pilots (formerly known as GAPAN) to organise the scholarship.

Air BP named the scholarship after its global fuel payment card, the Sterling Card. This provides easy access to fuel for commerical and private pilots at any of Air BP's 700 locations globally (48 of these being in the UK).

CAA 60-Day Update

On 1 July the CAA issued another 60-day update saying, "Significant progress continues to be made to make regulation of the UK's General Aviation (GA) sector more proportionate and evidence-based. It said that in the last 60 days it had (among other things):

- Launched a consultation on private pilot medical requirements.
- Introduced a new alternative EASA PPL(A) and LAPL(A) syllabus.
- Issued guidance on transferring aircraft from a Certificate of Airworthiness to a Permit to Fly.
- Responded to a request from the British Hang Gliding and Paragliding Association, to allow towing of a hang glider by a type approved microlight aeroplane by issuing an exemption for this aerial work.
- Followed the new risk based approach to regulation by granting permission for Red Bull to undertake a formation aerobatic flight through an aircraft hangar.

UFO comes to Europe!

On 6th July the US-based UFO (United Flying Octogenarians) launched its European Area. UFO was founded in the USA in 1982, when the FAA confirmed that there were 6,000 pilots over the age of 80 on the US Register. To date over 1,400 have joined UFO. They meet regularly at regional fly-ins for fellowship and talks on aviation subjects.

So far there are 35 European pilot members and Charles Strasser, a vice-president of AOPA UK, has accepted the invitation of the UFO Board to take on the job of UFO European area manager. It will be his task to find and enlist age qualifying pilots. The basic rule is that at the age of 80 or later, they must have held a valid pilots licence issued by any ICAO licensing authority. Members 90+ are welcome too! You can join at http://ufopilots.org and the annual membership fee is $20 (or email strasser@propilots for further details).

BGAD on BoB Day

This year's Business Aviation Day (BGAD) will take place at London Biggin Hill Airport on Tuesday 15th September, the 75th anniversary of Battle of Britain Day. The occasion will be celebrated by an historic aircraft flying display immediately following the BGAD event. BGAD is open from 09.00 - 17.00 and during the day there will be an excellent line up of business aircraft presented for personal inspection, a free to attend seminar programme - with topics specifically designed for both operators and brokers - as well as a comprehensive exhibition area showcasing the best of UK business aviation. Entry to BGAD is free of charge, and visitor registration is now open by visiting this page on the BGAD web site - http://www.bgad.aero/register.html

Airbox offers Norway

The Airbox Thundercloud app now offers the download of the 2015 ICAO 1:500,000 scale Norway charts for £34.99.

Popham safe from windfarms

EDF Energy Renewables has confirmed that it is withdrawing its appeal against the decision of three Hampshire councils to refuse planning permission for a proposed wind farm near Bullington Cross. It would have see a 14 turbine, 28 MW wind farm being established on agricultural land to the north of the A303. The scheme faced immense opposition from the local population, users of Popham Airfield and AOPA, through the General Aviation Awareness Council (GAAC).

ASW under new ownership

Aviation South West at Exeter Airport restarted under new ownership effective 1 July and will be offering PPL, CPL, IR and multi-engine training. New owner Andrew McLaird told AO&P that it would also offer ATPL theoretical knowledge training "in a couple of months time." For further information e-mail info@aviationsouthwest.com.

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Cap 10

CarbonCub EX


Stardust Too

Photos Mark Wagner Aviation-Images.com

Can the Vulcan Fly On?

Capt. WALLY EPTON, chairman of the Historic Aircraft Association (HAA), believes Vulcan XH588 could fly on.

The HAA has come up with an innovative plan that it hopes will see the Vulcan carry on flying, now that its technical approval under the auspices of the CAA is definitely coming to an end. Thus BAE Systems, Rolls-Royce and Marshalls have given notice that they will not continue to support the aircraft and the Vulcan to the Sky Trust beyond the end of 2015.

Based on the Australian system, it could see XH588 come under a new set of rules that has now been drafted but it requires the CAA to delegate responsibility to the HAA.

"There is a lot of reticence here in the UK by people used to having an aviation authority that does everything for them… but the CAA has been introducing changes in response to Grant Shapps' GA Red Tape Challenge and our view is that the industry should continue to take more responsibility." In fact, this reflects the 'risk-based approach' favoured by the CAA and EASA, and has already led to an ongoing raft of deregulation measures for GA.

"Now they're deregulating, but in HAA we've been talking to the CAA about handing off the administrative responsibilities.

"We've drafted the documents for historic aircraft operations and oversight – we've taken the template from the system Australians adopted six years ago, which is working very well with CASA. It now has one [member of staff] for warbirds just for admin oversight!"

He gave an example of how it works under the Australian system. "[To issue] the special category certificate of airworthiness for a Mustang, for example, it needs an application from the owner, then AWAL will form a review board from among their technical and operational experts, and when the application meets all the requirements of the SMS manual, they issue a C of A. So it is by delegated authority and Australian Warbirds Limited oversees it."

Epton makes a very good point, and one that some in the three British companies apparently agree with – the logical position is to delegate authority to those that know the aircraft and its operation, know it technically, know where to get spares and how to maintain it. This has all gradually been lost at the likes of BAE and Rolls-Royce for types and engines they used to manufacture, several decades ago.

Now the Vulcan has been flying with the present team for several years, there should be no reason why they can't carry on as the aircraft is technically able to carry on given its low utilization, as long as it is well looked after and managed. What is pegging it back to only one year (should SAM be approved) at present is that "there is only enough cleared engine life left for one more flying season after 2015," says Pleming.

"I have spoken with [the CAA's] Andrew Haynes about Self-Administration and he wants to hand over delegated authority for historic aircraft to the HAA," said Epton. He reflects on the situation a few years ago: "The CAA didn't want the Vulcan to fly – but under pressure it agreed to introduce the special conditions, for what they called 'complex military aircraft'. As a complex-category ex-military aircraft, the CAA requires continued airworthiness design support to be in place from the manufacturer, or an equivalent organisation suitably approved for this purpose.

To maintain XH558's Permit to Fly, this must cover each aspect of the design and must be the subject of a formal agreement. Hence the need for support for airframe, engines and maintenance from BAE Systems, Rolls-Royce and Marshalls. They called the C of A a Permit to Fly though, and it has worked quite well.

"BAE and Rolls have come to realize they may have no in-house expertise any more. In 2013/14 they kind of went along with it – as all the technical issues had been overcome," said Epton.

Fairford landing. Photo: Dave Briiers, Airframes Imaging.

"Now, Rolls-Royce, BAE Systems and Marshalls have said that come 31st December 2015 'you're on your own'. But when technical authority support (TAS) is removed the aircraft cannot retain its Permit to Fly."

That is why, says Epton, the proposed Self-Admin system would allow the Trust Operating Company – led by CEO Dr. Robert Pleming – "to continue and accept the risk, under HAA oversight." At the time of writing, Epton had just set up a meeting with Pleming and a few other interested parties for early August. There are a few naysayers to win over, apparently, but he is hopeful that the plan can work out.

"For other ex-military aircraft the CAA actually categorises them 'intermediate' and does not require them to have technical authorisation support."

Epton believes the Vulcan Trust could accept that flying operations would be able to continue if the technical authority support was transferred to suitably approved organization like The Vulcan Operating Company who have acquired the levels of expertise and design support required for safe flight and continuing airworthiness. "The CAA has a lot of power to change things under secondary legislation," said Epton. "And this requirement for technical authority support is absolute Gold Plating [of regulation]."

Special Case

"The Vulcan has been treated as a special case because of its size and the perceived greater risks that it carries," said Epton. But he can see no logic in grounding the aircraft just because the three companies want to back away. He also says "we are already half way there…I've been working on this [kind of thing] for six years and now, in the past 18 months, its turned into SAM [Self Administration]…and we propose to present the CAA with the proposed SAM system in August.

"They'll need to review it and go out to the historic aircraft industry for a public consultation, and then deal with the comments. After that they could issue Delegated Authority approval to the HAA. It could happen early next year."

"In the meantime," Epton says, "I've alerted everyone to the fact there's no reason why the Vulcan can't carry on flying under SAM.

"It needs a managed risk approach which for all intents and purposes the Vulcan Operating Company has in place already."

In conclusion he said it would be "a tragedy and a travesty" if the Vulcan stops flying, and notes that B-17 Sally B "has been flying for 40-odd years… the B-17 in 1944 was a complex aeroplane, with four engines. The Vulcan has four engines – so if one quits it continues to fly. So it's a lot safer than a single-engined aircraft or a twin."

Epton is confident that the CAA's Andrew Haynes is "on side" and suggests that "so are many of the people in the CAA, Gerald Howarth [MP and former minister] in particular." Epton also notes that Andrew Edmondson, the Vulcan's chief engineer in effect, "is the first to say there is nothing wrong with the aircraft." And, he says, "We have all the spare parts that we need."

P68

Resurrected Renamed Rebuilt

The Vulcanair P68Vr is being aimed squarely at the general aviation market by its Italian manufacturer. **JAMES WYNBRANDT** flew the type.

At the foot of Mt. Vesuvius: Vulcanair's name reflects this location. Pictured is a P68r outside its factory in northern Naples. The company also manufactures singles; in April it launched full-scale production of its first piston-single aircraft – the high-wing V1.0. It plans to build up to 10 of the four-seat type this year. It has a Garmin G500 flightdeck and a 180hp (134kW) Lycoming IO-360-M1A engine that can run on either avgas or mogas. It is priced at €233,000 ($250,000), and a maximum cruise speed of 130kt (241km/h). See Aero Friedrichshafen show report, June issue of AO&P.

Its rise from the ashes may not be quite Phoenix-like, but the P68 line of light twins, rebranded as the Vulcanair over a decade ago after the bankruptcy of original manufacturer Partenavia, is finally poised to retake its place in the GA market. Moreover, the UK could play a large role in the comeback.

"Our presence in the UK is actually pretty good," Vulcanair sales director Remo De Feo said, noting that the National Police Air Service (NPAS) recently concluded successful trials of a utility retract version of the aircraft – the P68r - for law enforcement use in the UK. "Any day we should have confirmation of this contract," he said.

But De Feo admits the resurrection is far off the pace his family had in mind when it bought the P68 Type Certificate, design rights and trademarks out of bankruptcy in 1998. The family also purchased the original Partenavia factory near Naples, renaming the company Vulcanair in homage to the nearby volcano Vesuvius. When production resumed in 1999 with an order from the Italian State Police for 14 aircraft, the future looked promising. Then came 9/11, demand for all aircraft tanked, and Vulcanair sales slowed to the speed of cooling lava. Nonetheless, Vulcanair, based in Casoria, Italy, kept the lights on and aircraft coming off the production line, gradually building up its business.

"Even though we took a great heritage, it took us a good ten years to start getting some recognition," De Feo said. "We continued to develop the company with a more international view, in the sense that our customers are spread all over the world."

One part of the world Vulcanair looks to as a growth driver, in addition to the UK, is the U.S., where the company recently established a beachhead by naming a distributor: Vulcanair America, headquartered in Miami, Florida. This year's Sun 'n Fun International Fly-In & Expo marked the official introduction of the Vulcanair to the U.S. market, and we had an opportunity to fly a P68Vr (N610VC), the executive-configured retractable model, during the gathering. Our host and right seater for the flight was Chris Benaiges, one of Vulcanair America's three principals.

The ground picture

From the outside, the six-place high-wing designed by Luigi Pascale looks much the same as the first P68, built in 1972 – like a slightly dowdy Aero Commander. But beyond the basic airframe, not much of Partenavia's P68s remains. "All the equipment – the avionics and systems – are updated, so it would be like the Beechcraft King Air, a legacy airplane that is continuing to evolve over time, to keep it responding to the market," De Feo said, referring to the process as "industrializing" the design.

The P68's performance numbers were always impressive, and today's models deliver a 1,500-lb. useful load and cruise speed varying from about 150 to 170 kts., the 200-hp IO-360 Lycomings on the normally aspirated models burning an economical 19 gph total. Moreover, P68s can take off and land in about 800 and 700 feet respectively, and with their stout gear and high wing, even this executive retract version can operate on and off rough fields. Their performance still stands out in the (admittedly thin) light twin ranks.

Nothing on the walkaround will be new to anyone who's pre-flighted a standard single-engine high wing, except you'll need a stepladder to check the oil as well as the fuel. Vulcanairs built for export are outfitted with auxiliary fuels tanks, providing the

range for transatlantic ferrying. But where Partenavias relied on a pump to transfer fuel from aux to main tank, the Vulcanair's system is gravity fed, reducing cost, weight, complexity and chance of failure, one example of the aircraft's "industrialization."

On P68 retract models, sponson-like gear housings for the undercarriage give a little added heft to the airframe's appearance. A starboard pilot door is standard on the Vr, and eases access to the cockpit for larger pilots. (A safety switch prevents the door from opening while the prop is turning.

The retractable version of the P68.

The inside story

Once inside, signs of "industrialization" are everywhere. The panel features a Garmin G950 avionics suite, a recent upgrade now standard in all P68s, along with Garmin GFC 700 autopilot. Until recently, "Garmin wasn't willing to work with us," De Feo said. "They thought we were too small." Sagem previously provided Vulcanair's glass panelware.

A primary flight display (PFD) faces the pilot, to its right a multifunction display (MFD), with the audio panel set vertically between the screens. Circuit breakers are positioned prominently on the right side of the panel. Light switches are in front of the pilot along the panel bottom, as are the gear handle and flap selector. To the right, in the center panel, are the standby instruments above the throttle quadrant, and the autopilot, trim and additional system controls face the co-pilot's position.

The electrical panel and environmental controls are on the upper left sidewall, and an overhead panel includes the engine and power switches. Like the rest of the aeroplane, the cockpit uses LED lighting, and pilots can select blue as well as red or white for night operations.

The Vr cabin can be arranged in club configuration or rows, and the factory made seats come in a wide selection of leathers and accessory fabrics.

Every seat position has overhead LED lighting and USB charger for mobile devices, and each cabin window a sliding curtain. Bench seating is standard for the rear row, but individual seats are available as an options, and any individual seat can be removed for extra space or carrying cargo. The cargo area, accessible via full-height cargo door, or the interior, holds up to 400 lbs.

P68s can also be configured for special mission operations, with workstation and crew seating; and for medevac operations. The P68r model evaluated by the NPAS is a retract with an external pod for infrared camera, and special mission interior. The company produces six P68 models in all, representing fixed gear and retracts, normally aspirated and turbocharged, and clear-nosed Observer models. N610VC was due to be back on display for the show's opening at 9 am, in little more than an hour, and given Sun 'n Fun's proclivity for unplanned airspace closures, we were eager to get airborne.

Air time

Other than reaching overhead for the start button, engine starts (left first) are performed as in any injected Lycoming-powered single. Ground handling is excellent; With differential braking and two off-center sources of thrust, P68s can turn doughnuts on the apron. Acceleration is brisk on the takeoff roll, as expected for an aircraft that reaches its 65-70 kt rotation speed within 800 feet on pavement at sea level.

Standard procedure calls for initial climbout at 80 kts, producing a 1,300 to 1,400 fpm climb, then pitching down to 105 kts at 500 ft, yielding 800 to 900 fpm vertical. Visibility is excellent; there's no engine in front blocking the view, and the cockpit sits well forward of the wing and propellers. Once at altitude, 23 squared (2300 rpm, 23 inches manifold pressure) delivers about 80% power, and is an easy setting to remember if you're not looking for max range or economy. At 75% power, the P68Vr trues out at 160 kts at 8,000 feet, but we climbed no higher than 3,500 over the next hour.

Hand flying was a pleasure. The controls felt light, and keeping the VSI at zero in steep turns wasn't a test of skill. Manoeuvring in slow flight at 65 kts., then while simulating an engine out at 97 kts., as well as in power on and off stalls, the Vulcanair remained stable and responsive. (It yawed unambiguously to the simulated dead engine (left) when power was pulled back.) The P68 seems to prefer avoiding drama and unintended excitement. Even the retract pilot's eternal question, Is the gear really down?, is rendered largely moot; belly cams can port a live feed showing the position of the landing gear to the cockpit MFD.

The P68 is used by the Italian police. The UK's National Police Air Service (NPAS) recently concluded trials of a utility retract version of the aircraft – the P68r.

Left: Vulcanair's factory at Casoria, Naples.

Inbound back to Lakeland Linder Regional Airport, Sun 'n Fun's home base, with the show's opening hour fast approaching, we were cleared for the Warbird Arrival, bypassing the oft-clogged Lake Parker procedure prescribed for the air show's public attendees. We were five miles south of the airport when the tower announced the airspace was closed indefinitely, and we were instructed to hold, number 2 behind a Ford Trimotor in sight. No problem. This wouldn't be the first time the P68 was a little late to a launch.

The transportation application

About 500 P68s are currently in operation, according to De Feo. Most have been purchased by private companies or government agencies for utility work. But with its performance, cost of operation, and thoroughly modern appointments in the cockpit and cabin, the P68Vr may provide a vehicle to buck that trend. The company sees opportunity in the expanding light twin training environment. Additionally, the market is growing for a reliable, economical platform for owner-flown and executive transport buyers, De Feo said. "We do have some interested customers. Thre are now some transnational individuals flying from the UK to France or Germany. They also fly to Eastern Europe – Serbia, Romania…You spend 20 hours by car, or two days on the airlines, vs. three hours in this."

AOPA Members Working Group Sherburn-in-Elmet, 6 June 2015.

AOPA's Members Workng Group is just that - a forum for AOPA members to air their views and keep in touch with key issues. Usually it meets either at AOPA's HQ in London or at White Waltham airfield but at least once a year the group meets away from the London area to engage with members in the UK regions.

The MWG in action: seated clockwise from L: Nick Wilcock, John Walker, George Done (AOPA chairman), Ian Sheppard, Paul Rutherford, Pauline Vahey (MWG chair), Chris Royle, Ian Boyle and Timothy Nathan, who was good enought to give lifts from Biggin Hill in his Piper Aztec.

During the WW2 Sherburn was an RAF station. From 1940 Blackburn Aircraft built 1699 Fairey Swordfish naval torpedo aircraft at the airfield. These days it has a modern club building/control tower, and a large hangar.

The MWG is open to all members although on the 6th June the wind was unfortunately blowing hard across the UK all day, so only a couple of members braved the rotors sweeping across Runway 29 (hard) and flew in. The sensible (or better informed) ones elected for runway 24, landing on the grass.

MWG chair Pauline Vahey led a very interesting meeting which as usual touched on a range of key issues that affect AOPA members.

There was some discussion about self-handling and the fact that the right to do so is enshrined in EU law.

There followed an update on the status of various airfields such as Plymouth (might it reopen one day?), Wellesbourne Mountford (a long battle against planners has started, see page 35), Kemble (same developers as W/M) and Rochester (currently succeeding in holding off the threat). Old Sarum also has worries about limited housing being allowed leading to more local complainants.

AeroExpo at Sywell was mentioned, with its 400 visiting aircraft (out of 519 booked in). The AOPA tent was very popular as ever.

An update on the ANO review followed; the online consultation took four hours to complete but despite this the CAA had received 300 responses.

The committee expressed concern post-General Election at Grant Schapps having a new job where he might be far less able to help general aviation; it remains to be seen how helpful new aviation minister Robert Goodwill MP will be. Then the MWG discussed the proposed resurrection of the Corporate Members Committee; and the conspicuity trials (and their shortcomings). 'Project Eva' will be the subject of a future article.

After the Cessna 172 that the author arrived in wouldn't start, it was towed to the tie-downs by helpful airfield staff. Particular thanks to Alastair Breckon, FI and examiner, for getting that sorted!

Sherburn-in-Elmet was a pleasure to visit. Arriving in a C172 the night before proved sensible given the winds on the Saturday. At the MWG meeting, the Sherburn airfield manager welcomed everyone, and said the airfield was proud to be a corporate member of AOPA. He said it was "a very vibrant airfield, with around 460 flying members." Right: Looking at the sectional chart on an iPad2 using the AWARE app.

There is a large stretch of asphalt that looks like a nice runway but it is a vehicle test track now! Runway 11-29 (above) is much newer but shorter. However, you can land on the grass runway (06-24) alongside the old main runway, or on 01-19 (also grass).

Fly to the Isle of Man

just in time for TT

Every spring the Tourist Trophy (TT) motorcycle races are held on the Isle of Man. **IAN SHEPPARD** and photographer **MARK WAGNER** flew to the three-legged isle in a Cessna 172 from Thurrock, via Sherburn-in-Elmet.

The TT attracts motorcyclists and enthusiasts from all over the world, and quite a few visitors fly over in their light aircraft (plus a few business aircraft). While the main attraction is the Senior TT race on the last Friday, many go for several days or the whole two weeks.

The main airport on the island is near Castletown, in the south-east, and is still known as Ronaldsway. However smaller aircraft do have the option to fly to Andreas, which is near the town of Ramsey at the northern side of the 37.73 mile TT course. Incidentally, the course record was broken at this year's event by Senior winner John McGuinness, who managed to lap at an average speed of 132.701 mph (taking only 17 mins 3.5 seconds).

With parents in the southern town of Port Erin I have got to know the island well over the past 20 years, and having flown over in a TB10 in 2014 I wanted to fly over again but write about it this time.

When the opportunity arose to go to the AOPA Members' meeting at Sherburn-in-Elmet on 6th June I jumped at the opportunity to have a couple of nights on the island. It would also mean we could be there for the middle Sunday of the fortnight, "Mad Sunday", when enthusiast riders traditionally go out and try the mountain section for themselves, with one-way traffic between Ramsey and the capital Douglas (where the start/finish straight is located), and has no speed limit until the end of the Creg-ny-Baa straight. Riders in the races typically reach over 200mph on the mountain.

Unfortunately at Sherburn there were very strong winds on that Saturday, though with the system moving east-to-west the Isle of Man saw the wind drop first. So after the AOPA meeting we were delayed a few hours. We'd done a GAR form and flight plan on SkyDemon and I called the GAR number to let them know why it had been submitted late (in fact, it should only be for changes, but they were very understanding).

When we did get away, our C172 G-BFRS climbed happily in the headwind and we did a circuit of a deserted Sherburn to get an overhead picture, before scooting off via Halifax and Blackpool and on up to Barrow, before climbing to 3,000ft for the crossing to Ronaldsway. ATC at the island's main airport, which has regular airliner traffic including easyJet and Flybe, were very friendly, allowing us to do a circuit overhead before descending into the circuit for a left-base for runway 26, the approach for which is over the sea.

I was grateful that the wind had dropped right away – the Isle of Man is known for its blustery and unpredictable weather, and fog (though these feature mostly in the winter). The crossing over the Irish Sea was an unusual one for visitors from the southern UK to take – in 2014 we came up from between Liverpool and Anglesey – but it only took half an hour (but it was reassuring to have lifejackets and an emergency satellite beacon!)

The parking area was clear as there were already 20 or so light aircraft parked up on the south side of the main runway, along a taxiway. We were guided to our parking by handling agents Rendezvous Aviation, which has the contract for handling light aircraft. I'd arranged the handling beforehand (it is compulsory for the fortnight) but driver Chris was none too pleased we were a late arrival – 8pm, and when I confirmed from Sherburn we actually would make the crossing he'd already gone home! So I'm extremely grateful to Chris for coming back from Douglas where he was about to enjoy TT festivities in the pub!

Sadly we weren't able to stay for the whole week and see the races but I can report that when we went back on the Monday morning the handling was again excellent. We were quickly fuelled up, arranged by Rendezvous, and paid the very reasonable landing fee and handling/parking charges. Fuel was also reasonably priced – we were relieved to know that we wouldn't be ripped off, but I'd had a good experience in 2014 too.

Ronaldsway ATC were very flexible and allowed us to take off from the shorter runway, 03, before turning left and doing an orbit of the airport as we did a climbing turn to north for a circuit of the island. There is a restricted area during the races (mainly due to helicopters getting TV coverage) so we stayed outside the coastline, flying up beyond Ramsey and around the Point of Ayre lighthouse at the far north end, which is very flat, before flying back past Andreas and the island's other wartime airfield, Jurby, which is now disused. Suffice to say, the island's aviation history would take another article by itself, along with the wartime internment camp.

Handler Rendezvous Aviation believes it could cope with 200 aircraft visiting the TT.

Following the West coast down we arrived off Peel and the majestic ruins of Peel Castle. There was another Cessna buzzing around according to ATC (we were by now back in Ronaldsway's controlled airspace with a squark code) so we kept a good lookout, and another aircraft was coming up as we went south to Port Erin and the Calf of Man, where we went around the southern-most point of the island (Chicken Rock lighthouse) before circling to climb and heading off across the water. We were aiming to Woodvale to make landfall and with the iPad batteries exhausted (we'd left it in the aircraft for two days!) we used VORs to triangulate our position and make sure we didn't misidentify the Mersey estuary and stray into Liverpool's CTR. So the next stop was to be Barton, "City Airport Manchester" – incidentally owned by Peel Holdings, which has strong links with the Isle of Man but is best known for the Trafford Centre.

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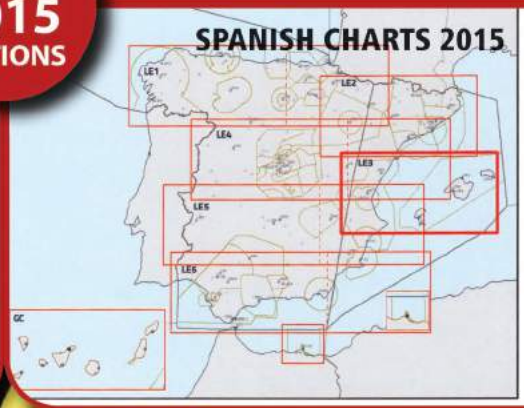

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The grass alongside taxiways on the south side of Ronaldsway's main runway (08-26) is cut ready for visitors.

Manx Rendezvous

Rendezvous General Aviation Handling is part of Platinum Holdings Limited (PHL), which has established various aviation interests in the Isle of Man since it was founded in 2008. Co-founder Brett Turner oversees the aircraft handling for GA during the TT from a portacabin base by the southern entrance (the main passenger terminal and business aviation FBO are on the north side, along with the control tower). "We have seven staff and three minibuses," said Turner, who admits that "It gets busier every year."

Turner stressed the need for people to book well ahead of flying over. For the 2016 TT the aim is to have all the booking online, and this could be up and running by September this year, he said.

"We did around 300 aircraft during the two weeks, though it felt like 600," said Turner, "though the most we had at any one time is 100-110." Some came for a couple of days while others stayed longer – Rendezvous can arrange anything that's required such as transport to hotels. The visiting aircraft consisted of "everything from flexwing microlights up to a Cessna 310 twin – we deal with anything under three tonnes." Jets all go to the FBO at the Private Jet Centre.

"The busiest time by far is the Senior race day," he continued. "We have around 60 aircraft come in for that, with a lot of day-trippers." But after that the TT is over and it can be a scramble to get away. "We advise everyone to book slots, which are compulsory on race days, and every day of the two weeks pilots need to book handling." While at other times handling is not compulsory, visitors must be accepted by an airfield tenant, said Turner.

"It's a big operation for us – we start planning about four weeks beforehand and we like people to book early so we know how much space to prepare." He admitted that they could make space for around 200 aircraft and believes that the demand is there for it to grow that much.

He also said that visitors "must book a VFR flight plan and a return one – ATC gets swamped and run out of squark coes if everyone waits to get their flightplans at once!" He said that Rendezvous "really wants to get the message through" that they can't handle everyone doing things at the last minute. But he admits that "ATC are very good" at Ronaldsway, despite sometimes being busy with airline traffic.

"People need to appreciate that they are coming at a very, very busy time for the island." For the 2016 event things will be easier with online booking meaning slots are arranged with ATC, rather than a pilot having to book a slot then arrange everything else with Rendezvous. "We're working on it at the moment. Pilots will also be able to download GAR forms through it…we'll make the whole process a lot smoother." He estimated that the system would be live in September so people could start booking for the next TT fortnight (28th May – 10th June 2016, the first week being practice week).

Turner also said "We're refurbishing the café so that's be available next year… in fact we want to finish it by mid-August in time for the Manx Grand Prix (more racing but with vintage motorbikes, taking place 22nd August – 4th September)." The café has been closed for the past year and it is several years since it was a flying club and base for Manx Flyers. "We want to make it all very GA friendly again, and have a new aircraft viewing area." In the Rendezvous office (portacabin) he also plans to improve the self-briefing desk, and offer WiFi as many people use iPads.

So where did the 300-or-so aircraft that visited the TT this year come from? Turner promised a list but said, "We had a Cirrus from the Czech Republic, a few Germans, but 90% were from the UK. Quite a few came from Ireland and Newtonards [in Northern Ireland, part of the UK], and Blackpool.

Those bringing bikes arrive at Douglas's ferry terminal. The first TT Races were held in 1907.

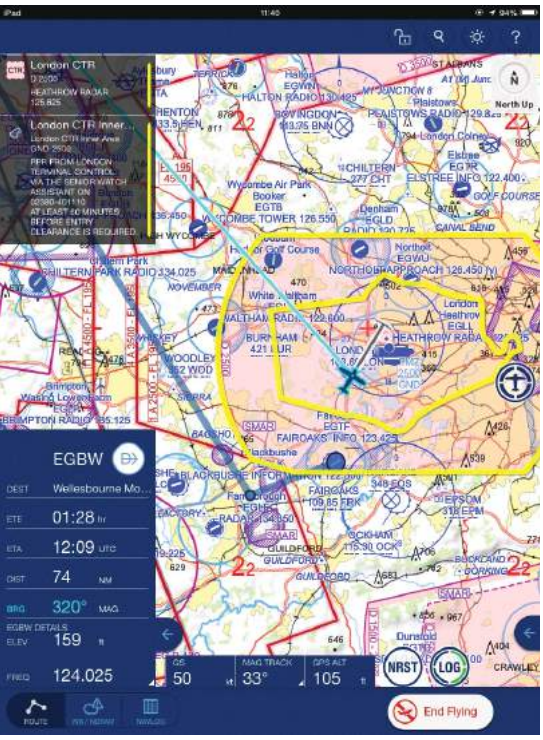
So what other advice does Brett have for visitors. Keeping in mind the likelihood of windy and possibly wet weather, he recommended bringing tie-downs. "And please understand the layout of the airfield," he added. He also recommends life jackets, a beacon, filing a flight plan and sticking to the route, and bringing a printed copy of the GAR – Rendezvous can then send it to the Isle of Man Constabulary in Douglas, in case they didn't receive it online.

When the TT is not on Rendezvous is also available to help with handling on request, although it is not compulsory. One example of recent visitors was the Mooney Club of Europe (the week before the racing), with 18 Mooneys, and the Halton Flying Club, with six aircraft. "We do group discounts," he said. "You can part all together and we can help with transport to hotels."

Turner said that Andreas was also available to visitors (with permission, as it is private) but noted that some visitors who went there last year had come to Ronaldsway this year. The runway surface is poor and it is general a microlight/gliding field, although there are some facilities and it may be ideal for those staying in Ramsey and the north.

The web booking system for the 2016 TT will be at: www.letsfly.im (site under construction until September). To be added to PHL's newsletter please request this in an e-mail to Brett at: iomft@phl-group.com

To Wellesbourne Mountford... using Jeppesen FliteDeck VFR



Below: The Vulcan at Wellesbourne is very well looked after and has regular engine runs as well as an annual 'fast taxi'. XM655 was one of the last Vulcans to be built. South Warwickshire Flying School, which like the Vulcan has been in place on the site since the 1980s, is clearly very proud of the aircraft and in face trains many cadets and students on scholarships.

These aerial pictures of Wellesbourne Mountford were taken coming back from the Isle of Man TT (via Barton Aerodrome, now renamed as City Airport Manchester - a profile of which will appear in the October issue of *Aircraft Owner & Pilot*).

With a visit planned to Wellesbourne Mountford to profile that airport for the October issue as well (following its winning of the AOPA Airfield of the Year Award), it was an ideal opportunity to test Jeppesen's Mobile FlightDeck VFR app.

AOPA is working with Jeppesen as it continues to develop its Mobile FliteDeck VFR software/app. In July selected flight schools and instructors were invited to use the app and to offer feedback, including how to introduce new PPLs to the software.

Drive Before You Fly!

As the weather looked likely to be IFR we decided to drive rather than fly, but this was probably the best way to become familiar with the app before taking it flying - as long as it is the passenger than can act as navigator rather than trying to drive and use the app. It was useful to be able to capture screen shots to illustrate the main features. It is probably the only chance for a VFR pilot to get so close to Heathrow! (see secreen shot, above left).

I'd first been introduced to the Jeppesen software in 2013 when AOPA invited members to a briefing with the Jeppesen sales team at AOPA's Cambridge Street HQ in London.

As I had an Apple iPad 2 I downloaded the app and signed up for the 30-day trial. At the time SkyDemon had become dominant in the UK already and I had that as well, so I'm afraid to say I didn't give FliteDeck VFR a fair look.

In addition, there did seem to be a range of functionality planned, but not yet part of the app.

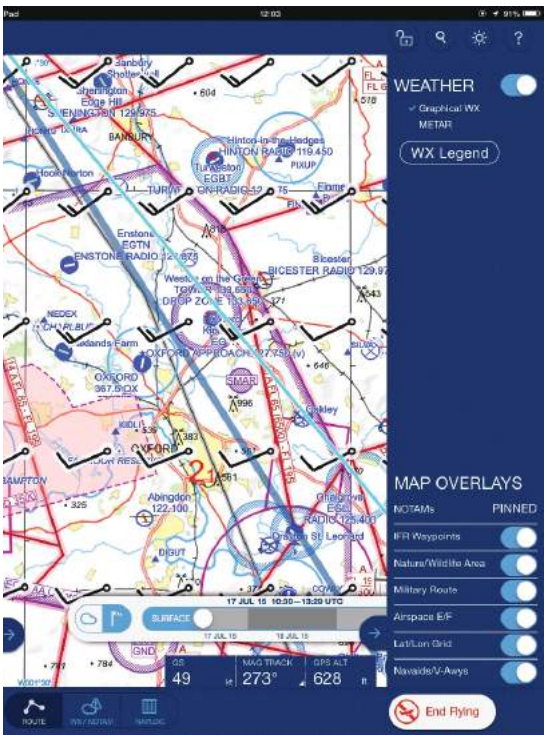
This year at Sywell the talk at the AOPA tent was of it being trialled, and the Jeppesen sales team showed us how far it had come since 2013.

However it was only when speaking with customer service specialist Markus Marth on the 'phone, and being taken through some of the functionality step-by-step, that I realised Jeppesen (which was acquired by Boeing in 2000) was creating a very useful and powerful app - both in being capable but also user-friendly in its simplicity.

Marth said there is lots of explanatory material at www.jeppesen.ning.com (their 'Ning' site) although Free Trials and subscriptions are set up at www.jeppesen.com.

He also sent some 'Tips & Tricks' documents which are useful, and these are also on the Ning site. The first step with the Jeppesen app (which I will abbreviate to MFV) is to download the maps you require. Most of Europe is now available though Ireland is only basic and only Denmark in Scandinavia has been completed. It is taking time as the new database-approach does not just display maps. Marth says the power in this is seen when zooming - more details appear the more you zoom in.

However, the first step is to try setting up a route. This is easy (see above) and once the line appears from origin to

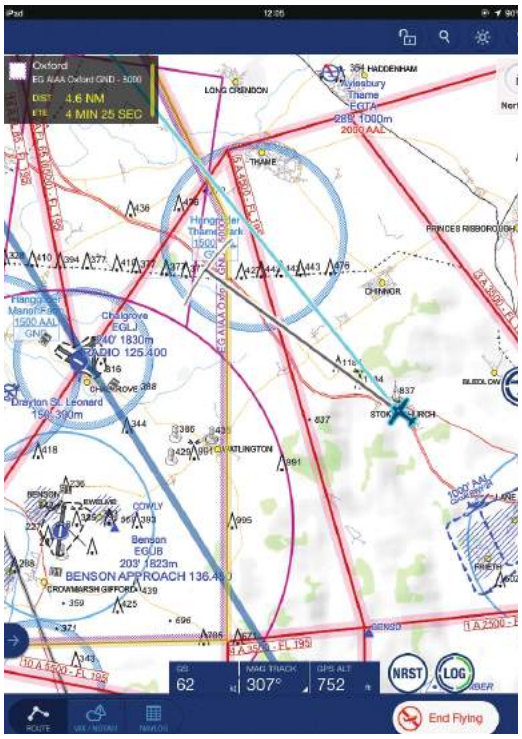


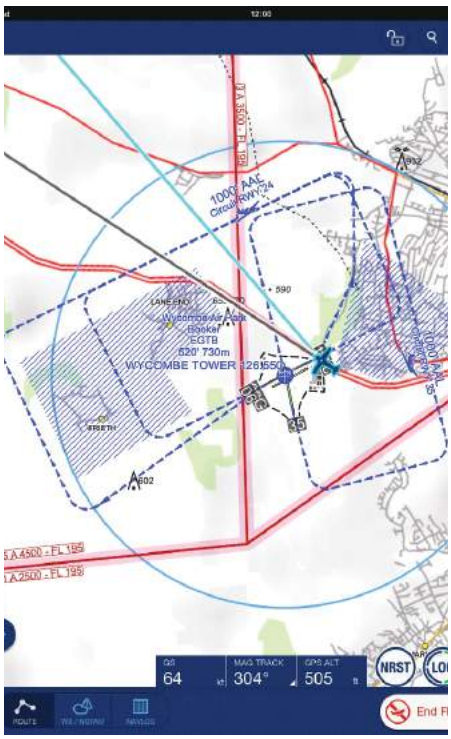
destination it is easy to 'rubber band' like in SkyDemon, for example in our case to go from Fairoaks, around the corner of the Heathrow zone, and then direct to Wellesbourne.

I pressed 'Go Flying' as we passed Fairoaks, in our simulated flight in the photographer's 1996 Audi A4 (260,000 miles on the clock!) This just served to illustrate how good German engineering is, and I was starting to find that the software to be just as good. Of course Jeppesen also provides professional apps (JeppView) so one of my man questions to Markus was whether IFR would be integrated one day with MFV. He said yes, there is a project already but it will be at least two years away.

The Nearest Airport function was very easy to use, all with Direct-Do buttons (see right). And turning on Overlays was easy too (see below left) - including weather. IFR waypoints are included as in countries such as Germany and Switzerland, they are used by ATC even when dealing with VFR traffic.

The speed vector line and direct line-to-destination were useful (top right) and as we got closer I was able to zoom in to see the field, which includes circuit patterns (where included in the AIP). Wellesbourne is (see below right), and once we were out of the rain and safely in the Touchdown Cafe (below, far right) I'd been sold - this is a useful app and even stores all your trips, is easy to reverse routes (and the N-up button is so easy!)





Optica Looks Out

For a buyer! After a surprise encounter at the 2015 Paris Air Show, **IAN SHEPPARD** visited Thruxton Airfield on 30 June to fly the Edgley Optica, which really is the ideal aerial observation platform - and the type is for sale.

At one point 30 years ago the Edgley Optica had attracted orders for 88 aircraft and the future looked bright. But fate intervened. Since the 80s, the type has garnered an almost mythical status and people often ask "Whatever happened to the Optica?"

But at the Paris Air Show in June this year it was somewhat surprising to find the Optica on the static display line. Why was it there?

While it was great news having a British-designed aircraft on display at the world's leading aerospace event (the only one, sadly), it did look a little out of place alongside airliners and serious military hardware.

The Optica gained notoriety in the 1980s following a couple of well-publicised accidents and unfortunately a factory fire wiped out several aircraft, and with them the chances of the type getting a foothold again in the market.

So before we go flying let's retrace the history of the aircraft, which is very distinct with its globular perspex cabin, fan-engine, twin booms/fins and high elevator.

Taking the controls under the expert guidance of Clive Davidson, who has been flying the Optica for several years and clearly loves the aeroplane.

The Optica attracted a great deal of interest at the 2015 Paris Air Show, Salon du Bourget.

The story starts when John Edgley was studying aeronautical engineering at Imperial College in London in the mid-1970s. He came with the idea for an aircraft that had similar visibility to a helicopter, could fly slowly but could have long endurance. Thus he came up with the EA7 Optica, a three-seat aircraft with a shrouded piston engine and fan, rather than propeller

Above: Designer Edgley and pilot Davidson in G-BOPO. The Optica is ideal for powerline inspection. Sadly a fatal accident on 15 May 1985 involving a relatively inexperienced police pilot while on an observation flight ultimately resulted in a downward spiral for the company that was building the Optica. However, the Air Accidents Investigation Branch found that "...there was no indication that either structural or mechanical failure had occurred or of flying control malfunction or jamming" and that "the final loss of control was caused by either the aircraft stalling in a turn at a high angle of bank, or the nose dropping, or inadvertant interference with the controls by the photographer alarmed by his apparent insecurity." Below right: Flight International's Hugh Field tested the Optica in 1980.

beginning in mid-1983. First production models were to be available at the end of 1983 for approximately £89,000 each while funding increased several times to around £8m total by the time of the police crash and the difficulties – or this is how Edgley remembers it (he admits it is hard to remember the exact figures now).

The first production aircraft flew 4th August 1984 and certification by the UK CAA was granted on 12th February 1985. Deliveries began to Air Foyle (which had ordered two) on 14th May 1985 and G-KATY was leased to the police (Hampshire Constabulary).

Sadly G-KATY was lost in flying accident on 15th May, the accident inquest reporting that it was possibly caused by slow flight speed into a descending turn that resulted in a stall, with a relatively low-hour PPL police pilot at the controls.

Edgley Aircraft went into receivership in October 1985, mainly as a result of loss of confidence in the market in the aircraft's safety, having built two prototypes (001 and 003) and two production aircraft (004 and 005).

John Edgley later started Edgley Aeronautics, producing the EA9 Optimist single-seat sailplane and designing a EA10 two-seater, although none were completed.

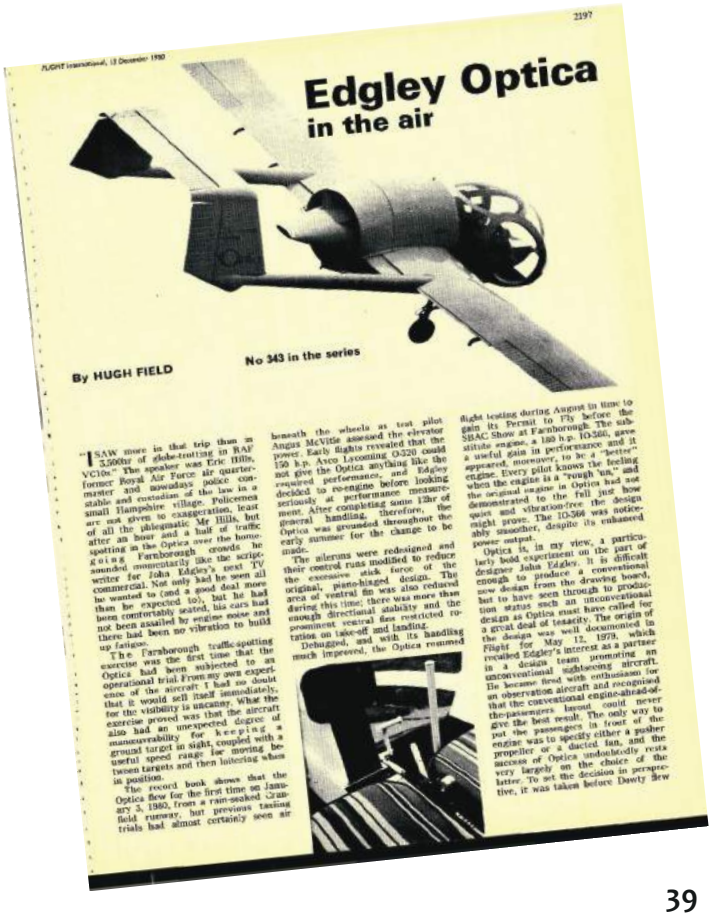
Construction of the first prototype (G-BGMW) started in 1976 in London although final assembly was carried out at the College of Aeronautics, Cranfield (now Cranfield University).

The maiden flight was made by Cranfield chief test pilot Angus McVitie on 14th December 1979. Edgley recounted: "The prototype was modded to the 200hp (134kW) Avco Lycoming IO-360 engine but initial trials indicated that there was still a risk of lack of power. The risk wasn't worth taking and a commercial decision was taken to change to the 260hp IO-540. This is what went in aircraft 003 and all subsequent 200 and 300 Series aircraft. (Serial Number 002 was the structural test airframe).

The engine drives a five-bladed fixed-pitch ducted fan, making the Optica (at the time) the world's quietest powered aircraft – electric aircraft are quieter but none as yet is anything like the all-metal Optica in size (although the 2,900lb MTOW is surprisingly low).

Appropriately, given it's appearance 34 years later, the announcement of a first production order was made at the 1981 Paris Air Show. The order was 25 aircraft for Australian distributor H. C. Sleigh Aviation Ltd.

With around £1.6 million in funding, Edgley bought Old Sarum airfield near Salisbury and set up a production line. Initial plans were for the construction of 200 aircraft,



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FLIGHT International, 13 December 1980

Edgley Optica
in the air

By HUGH FIELD

No 343 in the series

"I SAW more in that trip than a 25,000ft of globe-trotting in RAF VC10s." The speaker was Eric Hills, former Royal Air Force air quartermaster and nowadays police constable and custodian of the law in a small Hampshire village. Policemen are not given to exaggeration, least of all the phlegmatic Mr Hills, but after an hour and a half of traffic spotting at the Optica over the home-going Farnborough crowds he sounded momentarily like the script-writer for John Edgley's next TV commercial. Not only had he seen all he wanted to (and a good deal more than he expected to), but he had been comfortably seated, his ears had not been assailed by engine noise and there had been no vibration to build up fatigue.

The Farnborough traffic-spotting exercise was the first time that the Optica had been subjected to an operational trial. From my own experience of the aircraft I had no doubt that it would sell itself immediately, for the visibility is uncanny. What the exercise proved was that the aircraft also had an unexpected degree of manoeuvrability for keeping a ground target in sight, coupled with a useful speed range for moving between targets and then loitering when in position.

The record book shows that the Optica flew for the first time on January 5, 1980, from a rain-soaked Cranfield runway, but previous taxiing trials had almost certainly seen air beneath the wheels as test pilot Angus McVitie assessed the elevator power. Early flights revealed that the 150 h.p. Avco Lycoming O-320 could not give the Optica anything like the required performance, and Edgley decided to re-engine before looking seriously at performance measurement. After completing some 12hr of general handling, therefore, the Optica was grounded throughout the early summer for the change to be made.

The ailerons were redesigned and their control runs modified to reduce the excessive stick force of the original, pushrod-hinged design. The area of ventral fin was also reduced during this time; there was more than enough directional stability and the prominent ventral fins restricted rotation on take-off and landing.

Debugged, and with its handling much improved, the Optica resumed flight testing during August in time to gain its Permit to Fly before the SBAC Show at Farnborough. The sub-stitute engine, a 180 h.p. IO-360, gave a useful gain in performance and it appeared, moreover, to be a "better" engine. Every pilot knows the feeling when the engine is a "rough 'un," and the original engine in Optica had not demonstrated to the full just how spurs and vibration-free the design might prove. The IO-360 was noticeably smoother, despite its enhanced power output.

Optica is, in my view, a particularly bold experiment on the part of designer John Edgley. It is difficult enough to produce a conventional new design from the drawing board, but to have seen through to production status such an unconventional design as Optica must have called for a great deal of tenacity. The origin of the design was well documented in Flight for May 12, 1979, which recalled Edgley's interest as a partner in a design team promoting an unconventional sightseeing aircraft. He became fired with enthusiasm for an observation aircraft and recognised that the conventional engine-ahead-of-the-passengers layout could never give the best result. The only way to put the passengers in front of the engine was to specify either a pusher propeller or a ducted fan, and the success of Optica undoubtedly rests very largely on the choice of the latter. To set the decision in perspective, it was taken before Dowty Rew

The Optica is pretty benign with no adverse characteristiccs apparent even when stalling in a turn with the flaps down - it simply returns to normal flight with nose down, throttle and releasing the stick to allow it to return to wings-level flight.

However the Optica story continued as the remnants of the company were acquired by new investors with the formation of Optica Industries. By the end of 1986 fifteen aircraft had been, or were being, produced.

But the following year, on 16th January 1987, the factory was destroyed by fire with all but one of the completed Opticas being destroyed. Serial numbers 006 to 015 (ten aircraft) had been completed and all of these had been flown, apart from 0015. Following the fire, which was blamed on arson, the company was dissolved.

Showing the level of belief in the type's potential, the company was reformed again as Brooklands Aircraft and the Optica Scout was reborn as the Scoutmaster. This was a joint venture with Australia's ASTA. Brooklands built and delivered five Opticas (016 to 020), the last being the first Series 300 aircraft incorporating 46 design changes - including IFR avionics and wing fences. Upturned wing-tips were designed in and included on the original prototype but the CAA didn't like them, according to Edgley. Another five were under construction when manufacturing ceased, on 23rd March 1990, and Brooklands Aerospace (as it had been renamed in 1987) entered into receivership.

Some market studies predicted demand for up to 8,000 aircraft in a segment where the Optica would be competing with helicopters for roles such as aerial observation, and there were hopes that it could secure 5-10 percent of that market.

On 27th July 1990 the Optica programme was acquired yet again, this time by Lovaux Ltd (part of Denmark's FLS Aerospace, which owned Dan Air Engineering at nearby Lasham airfield) and production was transferred to Hurn Airport (Bournemouth).

Certification of the Series 300 was completed in December 1991 and the assembly of three inherited airframes (021 to 023) was completed, but construction of the first two Lovaux-built aircraft (024 and 025) was never completed – in fact they "simply exist as components – I'm not aware of any assembly work," said Edgley.

The ballast weight door in the starboard fin.

Inspecting the Optica's Lycoming engine is easy and being shrouded, it is safe for passengers to be around. It is also very straightforward to get in and out of the aircraft, with a large, lightweight door on each side.

So ended the history of Optica production – or so everyone thought! Edgley had continued to be active in light aviation, and he has long been the chairman of the Royal Aeronautical Society's Light Aviation Group, which has in the past held light aircraft design competitions – the first of which led to Philip Lambert's first aircraft (the Lambert Mission, which finally got LAA approval in January 2015), under JAR-VLA. Also during this period Edgley had got into farming.

In 2008 Edgley, still convinced of the potential of the Optica, formed AeroElvira Ltd. This holds the type certificated for the Optica Series 200 and 300 and the other light aircraft acquired as part of the remnants of the Lovaux operation, the Sprint 160. Edgley was

Above: The FAA mandated vortex generators.

joined in his new enterprise by three other key members of the original Optica team, Dave Lee, Fin Colson and Chris Burleigh.

One worldwide financial crisis later and, as you might imagine, little has moved on. But this year Edgley and pilot Clive Davidson took G-BOPO to Paris and found it a very rewarding and worthwhile experience. They almost didn't make it, Edgley said, and Paris ATC was all set to send them back as their transponder was not reporting altitude – but they relented luckily.

Flying down to Thruxton in a Cessna 150, well aware of the danger areas around Boscombe Down, we said goodbye to Boscombe, which was handling radar after Farnborough West, and called Thruxton Radio on 130.45 Mhz. The active runway was still the grass (Runway 12) as the wind hadn't shifted since we PPR'd from Redhill. We were sent around a narrow taxiway which led around to a series of hangars, and the Optica was sitting towards the end in 6A. John and pilot Clive were already there, sheltering from the sweltering heat outside.

In the hangar we soon started to ask questions and get more details of the aircraft and its history, and what Edgley and his co-investors intended. He said that he operates from a workshop near to his farm at Tisbury, the other side of Salisbury from Thruxton. AeroElvira owns all the jigs and tools (in storage).

Edgley said he believes that there are two Opticas still flying in Australia and two in the USA, "as far as I know." G-BOPO (S/N 021) is the demo model and he owns a second example (S/N 016) personally. AeroElvira owns the last one built (S/N 023), but it was never completed and has no engine.

The police one that crashed in the UK was S/N 004. "That didn't do us any good," said Edgley. Another aircraft, one leased for fire monitoring by the Spanish government, was also lost in an accident.

Roles for the Optica are virtually unlimited, from the obvious aerial photography and surveillance patrols to traffic reporting and power line inspection. It has the ability to perform much of a helicopter's work with fixed-wing economy, safety and range (570nm).

He said G-BOPO is built "to the FAA specification" – the US Type Certificate is based on the CAA one, but G-BOPO is now under EASA (so it is not a permit aircraft). He professed to be happy about that, "because it is meant to be a commercial aircraft – it is designed for aerial work."

But for the market, he admitted that the aircraft would likely need updating with modern avionics/panels and even a diesel engine, so it can use kerosene rather than avgas. "It would be nice to have a diesel engine," he said. "A six-cylinder diesel would be ideal." Then, it could be used anywhere in the world and is ideal for observation especially in the developing world – it was even "designed to fit in a standard shipping container" once the wings have been removed, said Edgley.

He described the technical details such as the simplicity – fixed tricycle gear, engine aft but not a pusher, easily accessible and mounted on four stators fixed to a carry-through ring which attaches the two wing spars.

Originally intended to have five seats it in fact only has three – putting it at a disadvantage if compared to a Cessna 182, which can also carry more payload. But with incredible visibility and ease of use, and a mode that allows it to loiter

for up to eight hours at only 70 knots (and 1900 rpm), with one stage of flap down, it is a niche aircraft which is hard to compare with helicopters and lighter aircraft. Each wing tank is inboard of the wing fence and can hold up to 125 litres of fuel.

The tailplane is fixed to the top of the inward-canted fins, to allow for easy engine removal and refitting. And one thing that strikes you is that it's really not a small aircraft – somewhere between a 182 and an A-10 Tankbuster.

The Lycoming IO-540 fuel-injected engine (as used in the 182 and Robinson R44, for example) has an oil cooler and there are no cowl flaps. But one great advantage is being able to see unrestricted sideways, unlike in twins such as in a Diamond twin or Partenavia P68, which are also sold for observation and surveillance use.

Edgley said the engine is "rigidly mounted in the duct to maintain fan clearance" – it has five blades and rubber mountings "take out the high frequencies." He said that there was a Dowty-Rotol aerodynamicist called Bob Bass who was able to assist with the design of the original fan. Bass had worked on Dowty-Rotol's conversion of a Britten-Norman Islander to use ducted fan engines as a test vehicle – the duct was fitted to the engine which was then fitted to the airframe in the normal way.

"I went a step further, by fitting the duct to the airframe and then fitting the engine inside the duct," said Edgley. "The fan was then developed by fitting pitot rakes in the duct so we were able to measure the actual velocity in the duct in flight. From that we were able to plot velocity contours, and from that we were able to do a second iteration of fan design which was key to developing an optimised blade shape to suit the Optica." He noted that some hovercraft also use ducted fans. "It's a good application as it gives you high power at low speed – which was idea for the hovercraft to get up the ramp at the end." With an aircraft, it is "quiet and smooth" and doesn't have the cooling issues common with pusher engines.

Loiter Time

We discussed the plan and decided that I would fly first and then we'd get some pictures from the 150 as we departed back to Redhill, with the Optica following us in "formating" around us as we held steady, straight & level. While the backdrop wasn't as exciting as the Needles (Isle of Wight), it did at least put the focus on the unusual, unique aircraft that the Optica is.

For the "flight test" portion Clive took the centre seat and let me take the left hand seat. While the centre controls can be removed, the right-hand seat has no fittings for controls and it just for the observer. So the aircraft can be used to get pilots up to speed – differences training, as it does not require a type rating, and can be flown on a PPL/CPL with current SEP class rating. I could imagine (with a CPL) flying around for eight hours while getting paid for it but wondering where the toilet was!

With the seats being ahead of the centre of gravity (empty weight is 2,090lbs) there are slots for weights in the front of the "bubble" and in each of the two fins. They may be either left behind, or carried in stowage behind the headrests, when not being used as ballast. They are put in place at the front if there is one pilot and no passenger, and in the fin if there are three in the front. This allows the aircraft to remain controllable – and so you don't forget, there is a display in the top panel in the cockpit,

Above left: the Optica's tricycle landing gear is fixed and unfaired, with maintenance-free solid suspension, and the airframe is of all-metal construction.

Left and above left: Mounting the whole cockpit assembly ahead of the fan and engine gives the pilot and passengers 270° panoramic vision, plus almost vertical downward vision; while the cockpit canopy design allows photography through the panels.

which also is where the key is placed for starting. The idea being you check, and double check thanks to the checklist.

Getting the aircraft out of the hangar was easy for the two of us – and getting in is really easy also. There are two latches on each door. At first it feels strange being so "visible" at the side, and having not flown in a Bell 47 it was a new experience I'd only got close to in a microlight, such as the Flight Design CT or a flex wing I once flew on over the Victoria Falls in Africa.

Engine Start

Starting was simple, following the checklist through and noting due to the fuel-injection there was no carb heat or prop control (the fan is fixed-pitch), just a throttle lever, mixture for leaning and a lever for the brake. The engine is primed using the electric booster pump for six seconds. Starting up, the engine was quiet and unobtrusive – we could still talk fairly easily without headsets on.

I taxied the aircraft around the hangar – one part is stony so I had to get some speed up, throttle back, and coast over it – so as to avoid blowing small stones up onto the aircraft. Steering was easy using the rudder pedals. Clive warned that you couldn't see the flaps so just had to trust the switch position, but I could see the elevators moving, but only just. We did not use flap for takeoff, which was unusual as you can see the ground rushing past so the impression is of the grass aircraft being far bumpier than it actually is.

The engine wasn't very noisy even at full power and as we turned left as we departed runway 12 and climbed to the north, we were soon throttling back and aiming to maintain 1,500 feet. At first I found that hard but within a minute or two it was much easier as I got used to the whole environment and attitude – without needing to use a reference. The absence of a nose wasn't a problem even for turning, and by the second try at a turn the altitude was fairly level. It was easy and responsive though the ailerons did need a slight "shove" to break them out into the airflow and turn the aircraft.

Manoeuvring was easy and stalls clean or from the loitering or turn-to-finals (slow, flaps down) configuration were easy as the aircraft simply lost altitude and didn't drop a wing – it actually

Taxiing the Optica was very easy though going over a gravel meant easing off power and coasting for a few yards. It takes a while for the engine to get to an acceptable oil temperature before takeoff. But then you're away! Even at full power the noise is relatively low in the cockpit, as well as outside. Once you've throttled back in the cruise, it is quite possible to hear each other speaking without headphones.

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Thruxton Aerodrome, where Optica demonstrator G-BOPO is based.

righted itself. I could only imagine the airflow on the tips didn't break away with a resultant loss of lift partly thanks to the wing fences and vortex generators, but Edgley had told me the aircraft behaved very well before it had the latter (they mods were part of FAA requirements based on the loss of police aircraft G-KATY in the 80s).

It is such a benign aircraft I found it hard to understand how you could lose control unless you either let the speed bleed far too low and banked at the same time – causing a complete and sudden stall and losing lift rapidly due to the lift vector angling over.

I read the G-KATY accident report and was surprised that there was no conclusion, though I think it seems to have been accepted that the pilot being relatively inexperienced, both overall and on type, could have been a factor.

We were soon back in the circuit and landed on Runway 12, which seemed a little bumpy again but it does have the main hard runway (07-27) cutting across it. We got a bump off that but braking soon brought the aircraft to a sensible pace for turning off and taxiing back.

It was an extremely enjoyable aircraft to fly and due to its simplicity (including fixed gear) the pilot can focus more on other tasks – working closely with the observer who would normally be providing instructions to give him the best view. G-BOPO at one time had a surveillance pod attached in its nose so this has already been a feature.

Billypix

John Edgley is confident that Opticas could one day be operating in various parts of the world.

New Investors

So if Edgley's new outfit can get investors or sell the company, and production restarts, then I can see it being a popular choice especially in Africa, South America, India and elsewhere. In fact, anywhere with a need for such a capability on a budget – Edgley estimates the aircraft would be $500,000 each.

Compared to more complex aircraft or helicopters it could well prove a good option, and be robust enough to be very successful operating out of rough strips with few maintenance facilities – places where you wouldn't necessarily want to start operating a $5 million turbine helicopter at risk. And with no outside propeller or rotor it is a safe aircraft for passengers to be around.

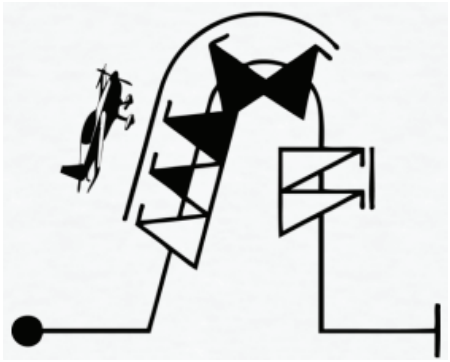
Edgley admits that he's now "moved on to other things, really – and I've got other things I want to do aviation-wise." So ideally he would like to sell the company on. "I want to see it go to someone that will really do something with it," he adds.

As an engineer he continues to take a close interest in the industry and through the RAeS Light Aviation Group, he has led an effort to encourage the CAA to develop a new experimental category, so that Britain can develop and test aircraft properly again.

The fact that the Optica, an aircraft developed in the 1980s, was the only British aircraft at Paris 2015 underlines the need to reinvigorate the industry and encourage development of new platforms, and perhaps novel ones where riskier testing is required - and new technologies such as electric power and energy recovery can be utilised to both bring down the cost of flying and make aircraft quiet with minimal emissions.

Aeros: Greek God of Aviation

"The Lomcovak"



SOTIRIOS ANTONOPOULOS traces the history of the Lomcovak and encourages everyone to experience aerobatics.

It may sound advanced to talk about gyroscopic figures (manoeuvres that take full or partial advantage of the gyroscopic precession generated by the spinning propeller), when the average pilot belongs to what the authors of aerobatic manuals often call "the brigades of straight and level," and when the average airliner pilot flew a spin only during his training, but there are times I feel like I want to give the crowd the knowledge required to evaluate differently things going on in airshows.

That was my main thought during the last Athens Flying Week, where one could see spectators gape at the Extras performing excellent circling loops (a hard figure to execute) – though they were equally excited when F-16 fighters were passing at 1,000ft without the slightest degree of bank angle. This is another reason why I love aerobatic competitions and not airshows. At such competitions qualified pilots practice figures that leave me dazed with disbelief.

The days prior to aerobatic competitions are devoted to practice flights over the airport and one can see the principles of aerodynamics refuted or redefined: aeroplanes flying sideways, going upwards and backwards, then describing consecutive somersaults at zero forward speed – something that requires a great deal of skills, plenty of flying experience and of course knowledge.

As mentioned, a rough definition of 'gyroscopic figure' would be "a manoeuvre where the pilot uses his/her engine as an additional flying control rather than a thrust vector." Those figures give the impression to the ignorant that the airplane is uncontrolled, but this is absolutely not correct. Besides, no manoeuvre would ever be included in aerobatic flying if it was uncontrolled. Maybe in stunt flying - but aerobatics is all about controlled flying.

Known gyroscopic figures are the Muller's tower, the torque roll, the Eventail and the Lomcovak. As aerobatics has unlimited possibilities, I may have forgotten one or the other figures; or someone may have unbeknown to me just invented a brand new figure.

Historically, the first report of gyroscopic figures being performed was made by Neil Williams, the famous British world aerobatics champion. He stated in his book *Aerobatics* that during a Lockheed aerobatic trophy in the fifties, Czech pilots flying Zlins demonstrated series of manoeuvres called 'Lomcovaks'. The idea of the manoeuvre was conceived by the former world champion Ladislav Bezak of Czechoslovakia and was named after a Slovak slang expression for a large, stiff drink.

Czech pilots likened the sensation of performing 'Lomcovaks' to the results of consuming too much of the drink of the same name. I understood why the first time a Lomcovak was demonstrated to me; I felt I was in a kaleidoscope. The colors of the earth, the sea and the sky were blended altogether as the Pitts

Special we were flying pitched banked and yawed quite violently. I gave it a try on my own but I could barely think coherently during my first attempt.

There are five basic Lomcovaks each with several derivatives. The main Lomcovak is entered from a vertical climb. If ones sits behind a Lycoming engine (therefore a clockwise turning propeller) one initiates an inverted snap roll with right rudder, left aileron and stick snatched forward.

Due to the propeller's gyroscopic forces, the yaw and roll resultant precesses and the airplane reaches a state where all the rotation is about the lateral axis, in a forwards direction and vertical with respect to the earth.

My German mentor asked me at that point to close my power as required with the intention to make a forward loop of 360 degrees with the lateral axis vertical to the ground (he gave it the name "Krawatte", which means 'necktie', and he compared the path drawn by the airplane to a mouse climbing to a man's neck, running the neck's perimeter and then coming down again).

My British mentor showed me to leave the throttle full open. As a result we produced two or three complete turns depending on how fast we applied the controls during the vertical climb.

The above-mentioned Lomcovaks require a firm grip and a good state of mind to execute. There are two other types, the so-called positive and negative conic Lomcovaks, which are quite easy to do well. In conic Lomcovaks the throttle is either fully closed or fully open during the whole manoeuvre, and the pilot doesn't need to 'fiddle' a lot with the power lever (as in a main Lomcovak). If one keeps power wide open as soon as rotation starts, one gets a positive 'conic', instead of the case of idling engine.

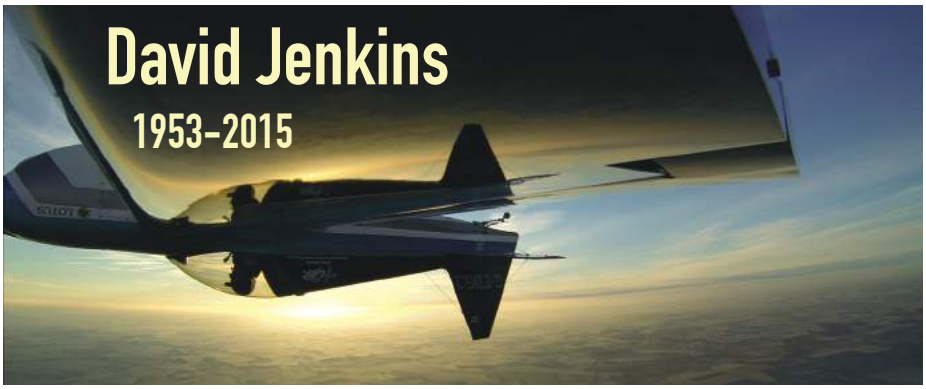
During Lomcovaks one experiences negative g-forces regardless of the type of entry while also being subjected to high rates of rotation in three planes at once. Since the pilot sits near the CG (centre of gravity), we can only wonder what is going on at the extremities of the machine. The manoeuvre can be entered from a 45-degree climb but the further the angle from the vertical, the more violent the manoeuvre.

There is a variation started from less than 45-degree climb. This 'tumble', as they called it in Scotland, is entered from inverted horizontal flight at very low speed. The aircraft goes from inverted flick roll into a horizontal inverted flat spin and it's pretty to see the tail going forward and the nose lagging behind for a short while!

Since I discovered unlimited aerobatics, and particularly gyroscopic figures, I spend every single penny I put aside and every single day of my vacation visiting places around Europe known for their solid and reputable tradition in aerobatics. I have to say it is well worth it. It's the only money I spend, and it feels like I never gave it away.

If you have a flying school or club doing aerobatics with the appropriate aircraft in your neighborhood, I urge you to go for a ride. It is not so far-fetched and rest assured, it is fun, very safe and not scary if prepared, explained and done correctly.

Importantly, it also shows you that "there is so much more to living".



GoPro photo of David practicing at dawn in his Edge. He was "Wildcat 3" in the team.

Two-time British aerobatic champion, David Jenkins, Ph.D, recently passed away following a tragic accident that occured while he was flying his Edge 360 as part of a media event to launch the Old Buckenham Airshow in Norfolk.

David with Team-GB in Hungary.

His former employer, Optical Zonu Corp., has put together a biographical memorial fund (to benefit his wife and children), which AOPA members and other readers are encouraged to contribute to: http://bit.ly/dj-memorial.

A video on what he meant to the sport (and the tribute being planned at the Old Buckenham Airshow, 1-2 August) is available at: http://www.mustardtv.co.uk/browse/organisers-determined-to-make-old-buckenham-airshow-a-perfect-tribute-to-champion-pilot-david-jenkins/

David had been a member of the Wildcat Aerobatic Team based at Old Buckenham since 2013.

He was named British Advanced Champion in 2012 and 2013 and had won more than 40 medals in aerobatic competitions. He was a member of Team-GB at the 2012 aerobatic world championships.

David began flying as a teenager living near Panshanger airfield. After graduating from the University of Oxford he obtained his private pilot's licence, while setting out on a career in fibre optics. He flew conventionally for 15 years before beginning aerobatics 10 years ago.

He bought the Edge aircraft in 2009 and joined the Wildcat team in 2013, providing an "exciting & dynamic" solo display.

David with his daughters, Alexis and Nina.

Microlight to Mallorca

PHIL JAMES recounts his New Year flight to Palma in a Flight Design CT2K microlight with fellow pilot Andrew English.

With 27 years as a flight instructor, most of my logbook consists of flying lessons at Cloudbase Aviation, my flight school at Redhill Aerodrome. In fact, a trip to Goodwood or Headcorn for a student's cross-country training was about as far as I usually ventured. This was to change when I decided to fly our beloved CT2K to Palma de Mallorca.

Soon after the Christmas celebrations, my friend Andrew and I eagerly watched the weather forecasts looking for a weather window of a few days just before New Year's Day.

We knew from past years that once we got into the first weeks of January we would probably be grounded and unable to do the trip at all. We particularly monitored the forecast winds over the Mediterranean as the winter Mistral wind can be strong; we saw forecasts for 40 to 60 knots if we managed to get the timing wrong.

On 28th December it looked like the weather we wanted would appear and last, hopefully, for the duration of the trip. While I intended to leave on Monday 29th Andrew suggested we cross the channel from Redhill Aerodrome to Le Touquet on Sunday afternoon as he believed it would be better to get an early start in France on the Monday morning.

Cloudbase owner Phil is a former BA engineer.

This worked well with us leaving Redhill on Sunday afternoon around 2 pm, after I did a flight plan, flying over Lydd at 4,500 feet and tying down the aircraft in Le Touquet 75 minutes later.

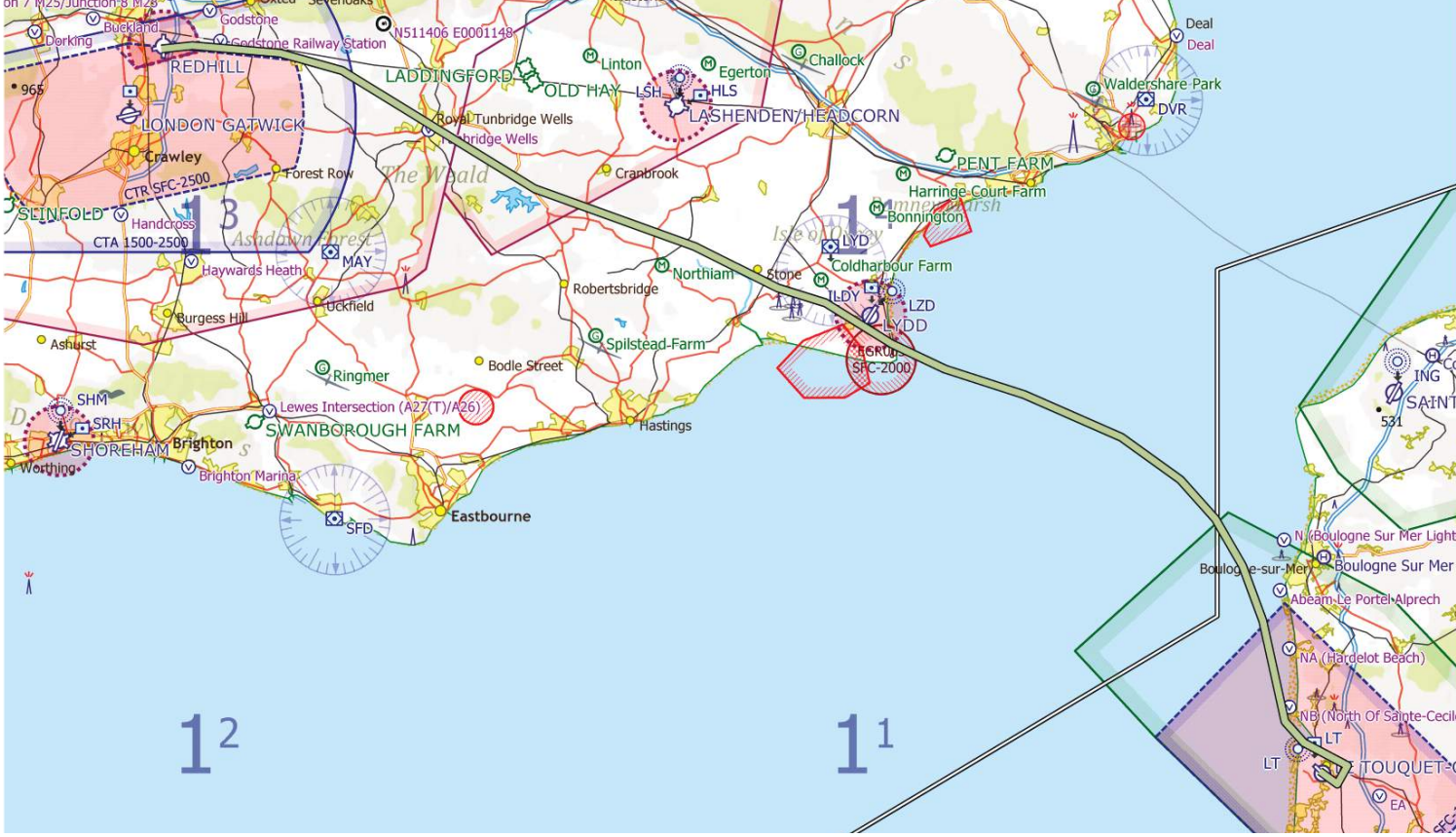
Le Touquet is a lovely, lively seaside town and we were spoilt for choice for both hotels and restaurants. We enjoyed an early evening stroll round the town admiring the Christmas decorations and lights.

Next morning we were at the airfield early. We actually arrived an hour too early as everything was closed until 0900. Happily we were let in to the reception area by a kind office worker and thus avoided a long wait in sub-zero temperatures.

We topped up the aircraft with fuel and set off shortly after 0900 on route to a friendly airfield just north of Toulouse called Albi Le Sequestre. This airfield is in a sheltered area away from the main effects of the Mistral. Being only 565 feet above sea level, it also offered the option of a relatively low route to the sea should the cloud base reduce to prevent passage over the higher ground to the east.

After taking off from Le Touquet we headed south and then south-west along the coast. At one point, our heading was toward the Penly nuclear power station and a Paris controller kindly warned us but it was on our plan using SkyDemon to turn south before the station heading toward Le Mans, with the intention of landing at Le Mans if we needed a break or else continuing on toward Albi.

Unfortunately as we had decided to go on a weekday, we had to cross the ring of French military airspace that wonderfully disappears at weekends. This was the hard bit of the route plan as it hits you twice, north and south.



SkyDemon remains the iPad App of choice for adventurous pilots in Europe and beyond. First leg, Redhill to Le Touquet, to clear customs.

The weather was perfect. We flew mostly around 3,000 feet apart from crossing the military zone where we increased our height as required and kept a nice fast (but not hammering it) speed for the CT2K of 100 knots.

The CT is a very fast comfortable aircraft with a huge cockpit and baggage bays for your belongings, so we found we could fly for 4 ½ hours effortlessly.

It was interesting to see how SkyDemon warned us of the danger areas on route, mainly power stations that day; we could see these clearly in the distance as we passed some of them with spectacular clouds of vapour rising from the cooling towers.

I thought I might not last the duration of the flight without a toilet break so I took an empty plastic milk bottle in case we needed it. I am pleased to say we didn't use it!

We were soon passing near Toulouse airspace and approaching Albi, flying over the high ground into this lovely airfield bathed in sunshine.

After landing and showing our insurance documents to Lesley the air traffic controller, and then fuelling the aircraft ready for the short flight to Son Bonet Majorca, we used an online booking service to find a hotel in the town. I took the cowlings off for a look and to top up the oil and water, though none was required. Lesley had allowed us to put G-CDJF in the hangar for the night, so once she was tucked up we set off to find our hotel.

We knew Tuesday might be the only bad weather day so it wasn't a surprise when it was not flyable. Unfortunately, we had not realised when we planned

The German Flight Design CTS Series is a light and relatively fast aircraft with a Rotax engine. It's efficient and easy to fly though landing without bouncing takes practice! Cloudbase has several pilots at Redhill Aerodrome who can conduct the new EASA 'Introductory Flights'.

Above and Left: Albi was fogged in for days but you couldn't fault the helpfulness of the airfield staff and ATC, or the hospitality of the hotel in the town. But it did mess up plans for New Year!

Right: Spectacular views climbing out of Albi.

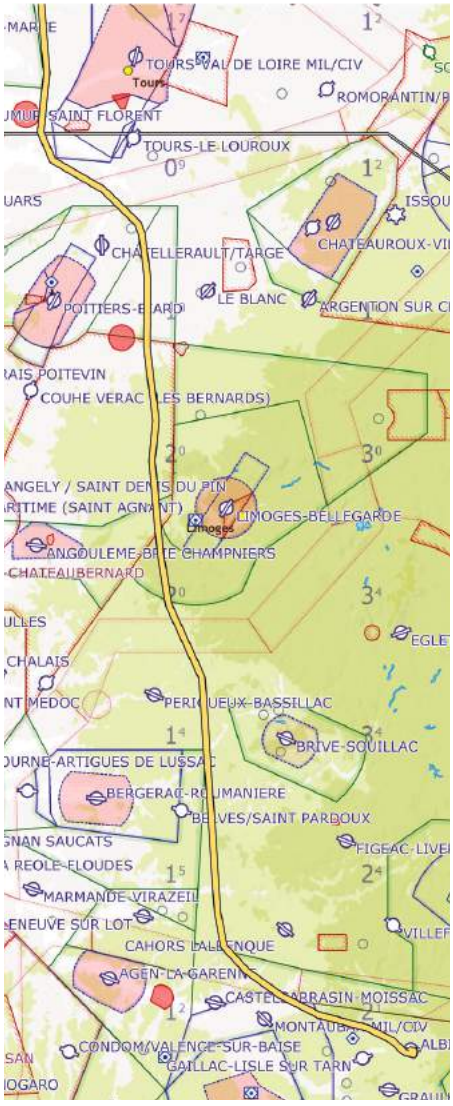
Below and Below Left: The route from Le Touquet to Albi.

our route that Albi is in a valley and has its own weather system. So Tuesday, Wednesday (New Year's Eve) and Thursday the airfield was fogged in. Andrew took some stick from me for choosing the airfield but luckily all my moans were ignored!

Every day Lesley told us that while Albi was thick with fog another airfield just 20 km down the road was bathed in sunshine, which didn't help my morale. With a perfect forecast in Barcelona, Palma and France we were not happy, to say the least. The weather was due to a high pressure system (1041hp) stuck over south/central France.

I had to cancel the New Year's Eve dinner party we planned to get to in Palma and we nearly spent New Year in McDonalds, but not quite.

The only consolation was we found a nice warm hotel, the New Orleans, in Albi. We returned each evening, much to the hotelier's surprise, to book another room for the night after spending another wasted day at the airfield gazing into fog. The temperature was below freezing most of the time, typically



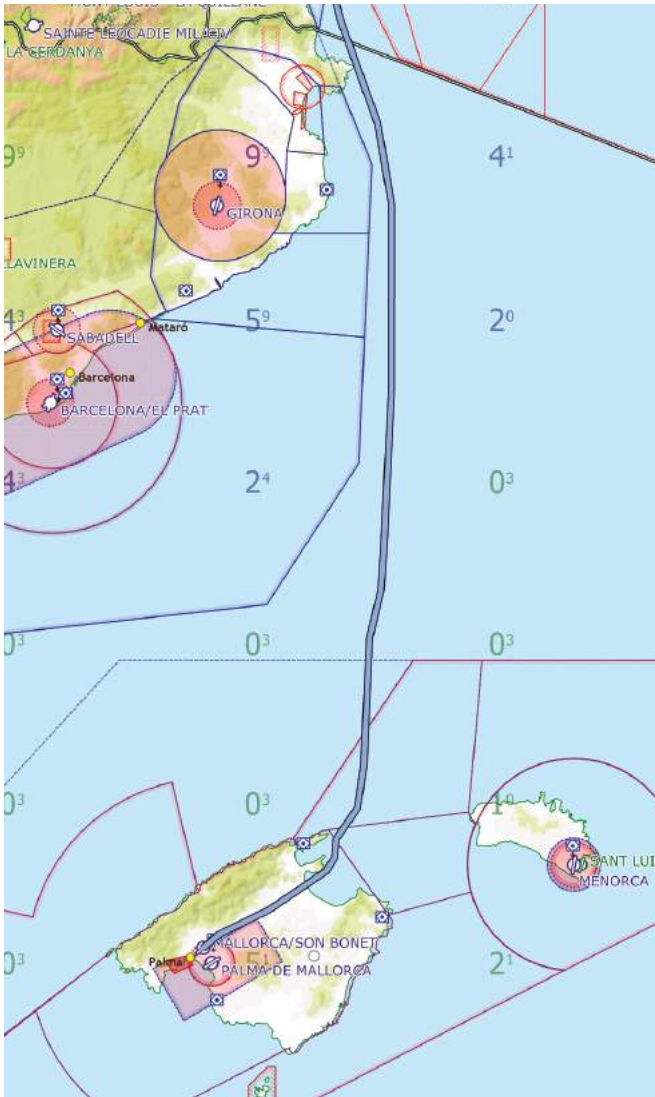
Andrew is the proud owner of a Sportscruiser based at Redhill Aerodrome. But he wasn't going to turn down an adventure in a CT having learned to fly in them at Cloudbase.

starting around -4C in the early morning and maybe just breaking zero by mid-afternoon.

Each day we got the aircraft out of the hangar, prepped it for flight, warmed it up and then put it back in the hangar after a wasted day when the fog didn't clear.

Even on New Year's Day, when the airfield wasn't manned, we were still kindly allowed to enter the facility with the coffee machine, full heating still running, and they didn't even bill us for the full hangarage charge for the week. I can see now why everyone likes flying in France, they are so helpful and can't do enough for you. From time to time we met people coming to the airfield to fly but, like us, they were being thwarted by the weather – but they usually stayed for a coffee and a friendly chat.

The final leg to Son Bonet from Albi, once the fog had lifted!



On Thursday evening the weather forecast Meteoblue told us the temperature in Albi was going to warm up Friday from -4 degrees to +9 so, with clear skies that night, I was hopeful. But the next morning I looked out of the hotel window and it was once again a pea souper!

Andrew and I walked to the airfield in the fog. Lesley didn't raise our hopes, and told us that her friend in the met office said Albi would stay at -4 degrees once again. Nevertheless, we got the aircraft out of the hangar, put out stuff in the baggage bays and warmed it up ready.

At 11:30 we could see the sun trying to break through the fog and then a small, slowly growing larger square of blue sky appeared. So we were out of there as soon as Lesley had filed our flight plan. Once again wearing our uninflated life jackets and with my Delorme Inreach emergency locator beacon around my neck, we flew through the blue and headed south-west towards the Mediterranean, climbing to almost 6,000 feet to clear the high ground. Thereafter we headed out to sea while talking to Barcelona ATC (over on our right but a long way in the distance).

There was not much to see flying over the Mediterranean at 5,000 feet following SkyDemon's magenta line,

Mallorca at last!

until I asked for permission to descend to avoid cloud near the island of Majorca.

As we approached Alcudia we turned west heading toward Son Bonet Aerodrome. We landed on runway 23 having travelled for 2 ¾ hours, Albi to Son Bonet. Four days fogged in waiting to do just 2 ¾ hours bathed in sunshine to Palma. I estimated the total flight time at 8 ½ hours start to finish.

We really did appreciate the hospitality of the staff at Albi Le Sequestre and at the Hotel New Orleans, where they kept us warm and fed. Albi does not seem to have many eating places so the fact the New Orleans had its own restaurant was perfect.

In terms of negatives there were none really, except for the fog, and the fact I only had two shirts. I did not take many clothes, thinking it would only be a 2-3 day trip. Luckily the radiators in the hotel were of the old type, red hot, and I was able to wash and dry clothes easily.

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Book Review

We Speak From the Air

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ISBN 9 780907 579939

This is a new production, combining two books of World War 2 broadcasts from the RAF: '*We Speak From The Air*' published in 1942 and '*Over To You,*' which appeared a year later.

At the time they were intended to inform other service personnel about progress in airborne warfare and to encourage the civilian public when the nation was fighting for survival. Copies could be handed in at Post Offices and sent to other people in the armed forces who were hungry to read.

This book provides eye-witness accounts in the form of human stories behind the more formal official communiqués, proving the great scope and effectiveness of our air power. It extends well beyond the fighting and bombing roles to the essential non-combatant duties such as ferry work and pilot training.

All are individual accounts, anonymous, mostly short and full of zest; they range through those that were aired frequently, such as numbers of enemy aircraft destroyed by our fighters over home territory, to equally important but little-publicised operations.

Among the latter was an interesting duel between a Lockheed Hudson of RAF Coastal Command that was protecting an Atlantic convoy and a large four-engine Focke-Wulf Condor that had come to attack it.

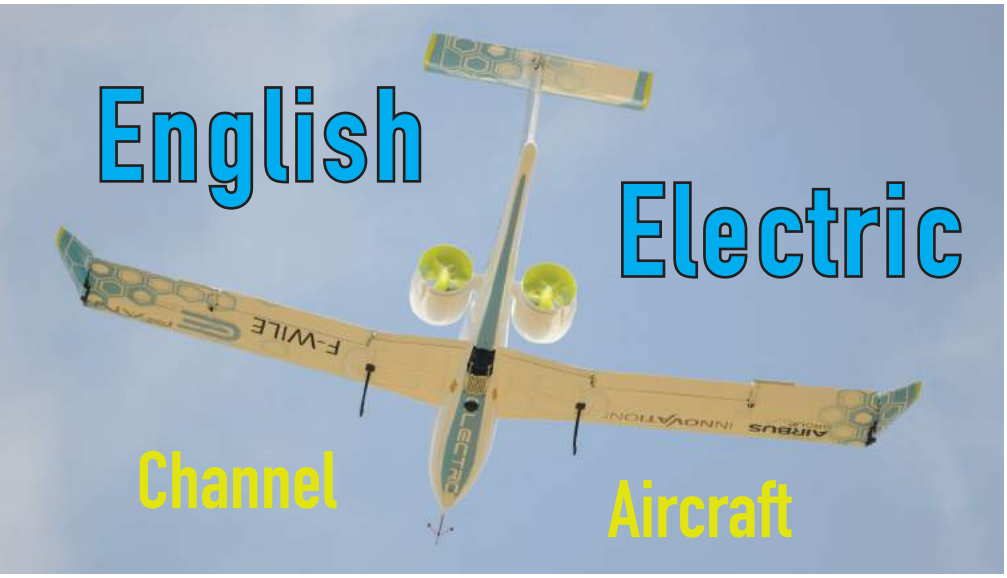
One quote reveals the difference between this and the more heralded conflicts between, say, single-seat fighters; "We got closer still – between 20 and 30 feet – when we saw a gun poked out from a window of the Focke-Wulf. A face appeared above it but it wasn't there long. The second pilot saw the face and spoiled it with a burst from one of the side guns." After the Hudson and the Condor had exchanged further fire, the latter was seen to settle on the sea; the Hudson monitored the scene and the German crew were observed in their dinghy, eventually to be picked up by a British warship. At least their active war was over.

The book is filled almost exclusively with aircrew reports: the sergeant who was awarded the Victoria Cross for climbing out onto the starboard wing of a Wellington to extinguish a fire that had been caused by enemy action; night fighters overflying enemy aerodromes to 'catch' German bombers as they returned to their home bases after raids on Britain; a reconnaissance sortie lasting more than eighteen hours checking the whereabouts and movements of the infamous battleship Bismarck, during which enemy action made about a dozen holes in the hull of the Catalina flying boat, patched up with rubber plugs before it would be safe to land on the water; dog-fighting over Dunkirk, after which pilots appreciated the glorious spring evenings whilst waiting to be stood down for the night, but with the unexpected order to prepare for a very early start to cover the army's withdrawal from France; several views on the hectic action during the Battle of Britain bring home the intensity of this unique operation; a neatly-worded warning not to concentrate exclusively on pursuing your enemy, as this provided an opportunity for his mate to get in position unnoticed and attack you first. There are many more.

'*We Speak From The Air*' has much to tell us all – even those who may have served as pilots or other aircrew in the Royal Air Force or the Fleet Air Arm. How many of us would have realised, for example, the need for entirely different methods when attacking a floating submarine or a surface vessel?

This book is especially appropriate at this 70th anniversary of the ending of World War 2. I recommend it to all readers who care about what aeroplanes and their crews can do when adversity forms the front line.

David Ogilvy



Under a near cloudless azure sky with a soft breeze from 160° magnetic, Captain Didier Esteyne accelerated down runway 21 bound for France. The time was 0915hrs on Friday 10th July 2015. He was about to make aviation history flying from Lydd to Calais in an Airbus electric-powered E-Fan 2.0 light aircraft.

With a wide sweep to starboard, well away from the Dungeness nuclear power station, he overflew the airfield and headed on this maiden flight for Calais in a historic tribute to Louis Blériot, who flew the very first maiden flight across the English Channel in 1909.

Climbing as silent and pure as a falling snowflake, E-Fan 2 rose to the heavens to touch the face of God and the flight across the water at 3,500' AGL was filmed for posterity by two accompanying helicopters, transmitting pictures and sound to both departure and arrival points. Although the distance across the water was only 22 miles, the total distance for E-Fan 2.0 was in excess of this to include circuit navigation patterns and took a total time of 36 minutes. Today's historic record was set by E-fan2.0, the infant electric child of Airbus Group, the giant European aircraft manufacturer responsible for so very many graceful airliners. I marvelled as I stood in the Lydd Airport reception area watching the helicopter pictures of E-Fan2 cruising silently across the English Channel with the giant smoke belching Mercantile Marine vessels in the background below, en route to Felixstowe, Rotterdam and all ports north-east.

This E-Fan 2.0 aircraft is produced with carbon fibre composite materials, which are strong, resistant and easy to maintain. It is 6.67 meters long, 2 meters high and enjoys a wingspan of 9.44 meters but is limited to a maximum takeoff weight of 600 kilograms. The electrically driven main wheel enables the E-Fan2.0 to taxi without thrust from the aircrafts two engines, which also contributes to its acceleration during takeoff. These noise free engines are electric motors generating 32 Kilowatts per engine, which provide all the power needed from takeoff, in-flight and to landing and taxiing to their allocated stand. Compared with their jet and propeller sisters the E-fan2.0 produces zero exhaust emissions, which is a welcome contribution to the environment.

These motors are powered by a series of Lithium-ion 18650 batteries, weighing-in at 167 kilograms providing total available energy of 29-kilowatt hours and are contained in the wing's inboard section. This unique positioning removes the power source weight from the cockpit to the main spar where ventilation and passive cooling can also be easily provided. The batteries will currently provide an endurance of approximately one hour but larger batteries are already designed for larger Mk 4.0 E-Fan's, which will increase their endurance to accommodate local and regional flights. These batteries are rechargeable in approximately one hour and may be easily replaced with a quick-change system. An on-board electrical network also supplies power to the avionics and radios via a converter with a back-up battery provided for emergency

ABOUT THE AUTHOR

Dr. John McAdam left school at 18 with a place at Manchester University to read maths & physics ("my parents' idea"). He wanted to be a newspaper reporter. Ten days after leaving school he was in the Royal Air Force for National Service (Ground Signals, 90 Group, attached to Bletchley Park). While stationed at RAF Bletchley he visited *The Bletchley & District Gazette* offering his services as a reporter on his days off. He gave the editor so many articles about camp life that he gave John his own 'Camp Column'.

Later, he couldn't get a job as a newspaper reporter but Bletchley Park offered him a civilian job and he ended up at GCHQ in Cheltenham. He then resigned to join BBC TV as a production trainee and after 2-3 years joined Associated Rediffusion TV. This lost the franchise to broadcast in 1968 and was immediately snapped up by Thames Television.

While at Thames TV John registered his own production company Adam Media Limited, which he still manages today as a producer/director/writer. While at Thames Television he joined their flying club and obtained a PPL ("and a few attachments") as the Thames Television Sports Club rather generously 'sponsored' much of the flying.

John is a founder member of the Anglo-Zulu War (1879) Historical Society and studied with the Open University to obtain a BA(Hons) degree. He recalls: "I so impressed somebody that I immediately went for my MA and after long discussions I wrote my thesis on 'The Life and time of the Prince Imperial - Napoleon III & Empress Eugene's Son & Heir to the throne of France'. "A bit of a cheat because I had already written a film script on this young lad but had to research deeper (down four generations) for my MA."

He received an MA with distinction and was then persuaded to read for a doctorate, on: 'Communications and the media, their

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The Raison d'être of the E-Fan2.0 can be placed with the Paris Air Show in 2011, as a follow-on to the initial cooperation of Airbus Group Innovations with Aerocomposites Saintonge on the Cri-Cri, the world's first fully electric four-engined aerobatic aircraft. Using the Cri-Cri as a flying laboratory, numerous performance tests allowed engineers to gain much experience with the integration of batteries and energy management, while still concentrating on energy recovery by varying the propeller pitch. This experimental work and research became the basic platform for the E-Fan2.0 project. Design for the E-Fan2.0 began in late 2011 and after a year of experiment on the technology demonstrator, the go-ahead was finally given in October 2011. The E-fan2.0 demonstrator proved such a success that it then went through an accelerated development and construction phase and allowed it's unveiling at the Paris Air Show in 2013. The following year this all electric, battery driven light aircraft made its first public flight in April 2014, and continued to prove an instant success at the Farnborough Air Show and the ILA Berlin Air Show.

"…from little acorns, mighty oak trees grow." And so it will be with AIRBUS's little aviation acorn, in the shape of the E-Fan2.0 technology demonstrator. This small single seater powered by electric motors has already been developed into a dual training aircraft to accommodate a pupil pilot and his instructor and the four seater E-Fan4.0 has just come off the drawing board. Admittedly, its battery power duration is only quoted at one hour, but that is sufficient for initial training, as history has shown in logbooks that initial lessons prior to cross-country flights very rarely extend to one-hour duration. An additional key feature with the E-Fan2.0 is the connected cockpit concept where an instructor and trainee pilot can prepare their flight plan on a tablet device in advance for uploading into the aircraft cockpit. The tablet is then plugged into the cockpit instrument panel and serves as the navigation and training display unit. Following a training lesson, all data can then be retrieved on the tablet allowing the actual flight to be compared with the pre-planned scenario. E-Fan2.0 now promises to open a new era in aviation and will take shape on a specially designed final assembly line to be located at Pau Pyrenees Airport, which is as unique as the aircraft itself.

Airbus E-Fan electric aircraft at the Paris Air Show in June. Photo: Mark Wagner, aviation-images.com.

AIRBUS Group have already budgeted millions of Euro's for evaluating similar hybrid propulsion concept studies for a full scale helicopter and indeed a regional airliner. Both of these concepts offer significantly improved fuel economy and marked reductions in both engine emissions and the noise factor.

The writer has spent most of his professional life in film and television production and has noted the great reduction in the size of cameras, microphones and batteries, while the quality and life of all three has improved significantly. AIRBUS Group research will undoubtedly develop batteries which are much smaller but with considerably greater capacity. That development must surely be on the cards – 'Watch this Space'.

Liveryman Dr. JOHN McADAM, PhD, MA, BA(Hons), FRGS.

effect and influence… on the conduct and final outcome of the Anglo-Zulu War of 1879.' With that he is now Dr. John McAdams and in some circles is considered to be a "world expert," he says.

"Added to this, many Moons ago I became a member of GAPAN (now Honorable Company of Air Pilots) and loved it, writing for their Journal, etc. At the Mansion House late May 2014, I was elevated from Freeman to Liveryman.

"And after I wrote a paper on the 'Geographical terrain confronting the British Army during their invasion of Zululand, 11th January 1879,' they made me a Fellow of the Royal Geographical Society.

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Letters

Partner Power!

Judith Niechcial's article [in June's *Aircraft Owner & Pilot*] held some fascination for my wife and I.

Back in the day, I obtained my PPL at Oxford and shortly afterwards I took Ann up in one of those tail-wagging Oxford Air Training School Tomahawks and demonstrated a few steep turns over Little Rissington. She was not amused!

However, it did lead to her taking a five hour safety pilot's course in Jersey while I was adding an IMC to my licence. She thoroughly enjoyed that.

A few years later she soloed at Longbeach, California, (and I took to a CAP 10 and flew over the Queen Mary inverted - just for fun, you understand).

We flew from Wellesbourne Mountford for quite a while (excellent friendly airfield as this year's AOPA award proves once again) and on 18-05-1995 she was with a young instructor from there when one of the cylinders on their PA28's Lycoming parted company abruptly over Redditch. After a successful 'earthing', braked by a hedge, all turned out well for the escapees if not for G-BOKK.

We went to see the wreck the following day, and I have kept a dot-

matrix snapshot on me ever since, to remind us that two aviation accidents in a lifetime are a lot more rare than one, and statistically even rarer once you've taken a CAA safety course, they said!

Ann gained her PPL at Oxford not long afterwards. Scary? Not at all, mainly thanks to excellent instruction and the calm and professional mindset that was instilled by our comrades in cockpits.

We've never had another bad piloting experience since then (oh, apart from leaving Lake Tahoe in our holiday Seminole, making a precautionary landing in a convenient airfield on the plains below and discovering that the head bolts on both engines had not been torqued properly after a comprehensive service and renewed gaskets - but that's another non-scary story).

So, once again, a wonderful magazine, and to note that our partners are often (usually?) a lot tougher and more resilient than we might otherwise assume.

Happy flying times - amicallement des Alpes Vaudoises,

Christopher Watts

Blame Politicians!

I was interested in the article on Henstridge history and future. A part of its history that is not known is that it was the venue on Friday, 13 June 1975 of the first flight of MOTE, an unmanned rotorcraft testbed (pictured below left).

The results of that pioneering flight subsequently led to the world-wide operations of the very successful, sophisticated, stealthy ML Aviation

Sprite (right hand picture) which could carry out many tasks, both civilian and military, including the detection and destruction from the air of buried landmines and IEDs. Flying at night with nav lights lit, it gave rise to many claims of UFO sightings!

I much agreed with your editorial though the British did not give up their aircraft, and other, industries. We had them wrested from us by inept politicians and greedy bankers who acquired them purely for asset stripping, especially to gain the land on which they stood. Hence our untenable national debt today which currently stands at £1.4 million x Million and is rapidly increasing.

Will we follow Greece?

Kind regards,

Prof Reg Austin, FRAeS

Self-made windshear

With more than 60 years within aviation I know of too many accidents due to steep downwind turns at low altitude. Pilots are generally advised not to turn back to the airport if they loose engine power shortly after takeoff but this is rarely explained properly. The confusion seems to be common even among professional pilots.

If an aircraft is approaching the runway [where there is a cloudburst] at first it meets a strong headwind, then a downdraft and finally a strong tailwind. The result is that the aircraft stalls short of the runway.

Less has been written about windshear that is created by the pilot, where the pilot flies directly against a headwind and then turns 180 degrees downwind. The ground speed must increase by twice the wind speed to keep the airspeed unchanged.

Flying IFR, it is considered safe to use rate-one turns, that is a turn rate of 3 degrees per second. In that case it will take one minute to make a 180 degree turn. This time is considered adequate to react and add power for reduced airspeed or loss of altitude. If the turn is steep the time to react is shorter and the acceleration created by the wind is less and the speed may drop to stall speed.

The aircraft will follow a different track for the same control inputs for zero wind and with the wind blowing. If the aircraft is flown at low altitude and the pilot watches the surface, he may feel that a turn is unneccesary tight and apply aileron to reduce the turn rate. But this further increases the risk of inboard wing stall. The other situation is where the pilot sees an increase in speed over the surface so pulls back, increasing the risk of stall. It is therefore very important when turning at low altitude to keep track of the airspeed indicator as well as the ground.

It is very good reason for restricting flight to a minimum of 500 feet except for take off and landing or absolute emergency. No steep turns should be made at low altitude. You may not know the wind direction in some cases.

Kristjan Arnason (Iceland)

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