The official magazine of the Aircraft Owner and Pilots Association www.aopa.co.uk

AOPA UK

August/September 2023

Unlimited aerobatics with speed and range

David Hirschman was invited to fly the GameBird GB1 over Arkansas skies - it was an easy invitation to accept!

FERRY FLYING FOR FUN

Mark Lapidus embarks on a trip of a lifetime, flying to Westchester and back

YOUR HERO

Steven and Jennie Bailey explain why their Robin DR401 is their favourite aircraft to fly

PT6 AT 60

Look back at how one of the world's best aircraft engines came to life


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THE PAST AND FUTURE OF AOPA

LAST WEEK the aviation community said goodbye to David Ogilvy, OBE FRAeS, who passed away peacefully at home. David was AOPA's longest serving officer and a past Chairman and President of the association. He was a co-founder of AOPA in 1967 having co-founded the Vintage Aircraft Club in 1951. He worked tirelessly for 45 years on aerodrome protection but claimed to have done every job in AOPA except the accounts. In an article for this magazine in 2012 he said: "General Aviation has gone through a revolution in my time, and my generation probably had the best of it. When I began flying there was one small piece of controlled airspace in Britain, around London airport. Many more people flew solely for fun, and there was a great number of aircraft that were engaging and challenging to fly. Regulation was far more reasonable, and training was of a much higher quality – more a matter of imparting piloting skills that making sure documents were in order."

How many of us have some empathy with those sentiments over ten years after they were written? A fuller obituary testifying to a remarkable man follows.

For those of us whose life is advancing in years, we also remember when general aviation flying seemed a lot simpler. Do we believe the recently published independent review of the CAA with its assessment, findings and recommendations will improve the situation and make general aviation more accessible whilst keeping it safe?

If you care to look it can be found at:
https://www.gov.uk/government/publications/civil-aviation-authority-public-body-review-terms-of-reference/civil-aviation-authority-review-report

The CAA has stated they will implement all the recommendations, and indeed, some are already underway. Overall, it comes out well from the review. You will note that AOPA contributed to the consultation, and I expect many of you did so on a personal basis. We would be interested to hear if you think the outcome fairly reflects the opinion you submitted.

Finally, AOPA's AGM is fast approaching. The formal notice can be found further on in the magazine and will also be posted on the AOPA website www.aopa.co.uk. This year it will be held on Wednesday 13th September at AOPA HQ in Kemsing near Sevenoaks. As always members are very welcome – if you let us know there will be a sandwich and a cup of tea available from 1.30 pm before the formal meeting starts at 2 pm. We will also need to know if you plan to arrive by car as there are limited car parking spaces. Nearby railway stations include Kemsing and Sevenoaks. In addition to the formal business, it is also a chance to hear updates on AOPA's work form CEO Martin Robinson and other members of the Board. Perhaps you might be motivated to get involved yourself. ■

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Material for consideration for the Oct/Nov issue should be received no later than September 01 2023.

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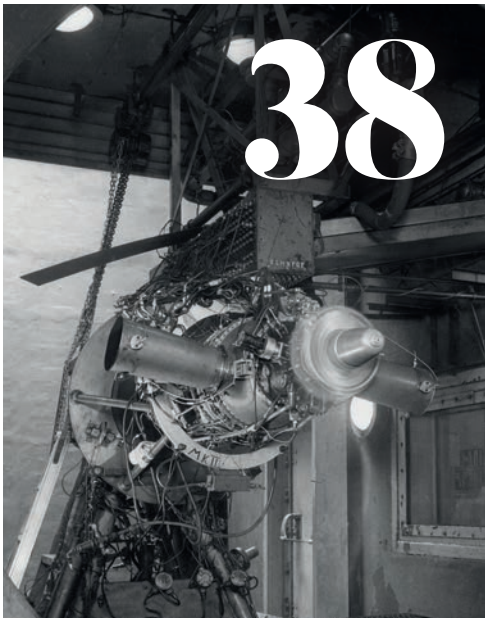

EDITOR'S COMMENT

OThis issue celebrates the many different types of aircraft and flying there is available out there.

Firstly, we have the GameBird GB1, a weapon of a machine that can quell any aerobatic lovers need to loops, Cubans and spins. We also focus on the Robin DR401 in Your Hero. A much-loved aircraft that people love flying and touring in. At the other end of the scale, we look at the epic PT6 engine that celebrates 60 years this year, more than 51,000 PT6s have been made – a stunning achievement.

But it's not all about the aircraft. We also enjoy the flying. Mark Lapidus went on an epic journey in his SR22 when he flew from Denham and Westchester across the well-trodden ferry routes. But that wasn't enough of an adventure so he turned around and flew back!

Saying that if you just enjoy flying circuits, we love that to. You do you! Blue Skies.

David Rawlings
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GROWTH, GROWTH, GROWTH... HEARD THAT ONE BEFORE

The government need to support General Aviation, or we're going to lose it

THE CLOSEST documents we can point to which represents Government policy towards GA, is the April 2021 publication "The General Aviation Road Map" and the subsequent GA Handbook. The opening sentence begins: "We want the UK to be seen as the best place in the world for aviation and this starts at the grassroots." If you follow politics then you will have heard similar phrases directed at other sectors, however the focus in aviation has been on the commercial aviation sector and perhaps some focus towards the very light recreational end. The final part of the "vision statement" says: "We want GA to be a flourishing, wealth generating and job producing sector of the economy." All, wonderful words but a 'vision statement' without a properly considered plan for delivery is just a vision. So, where is the plan?

Regulated GA is still suffering from high costs and the burden of over-regulation. Therefore if we are to see growth in GA – which is what we all want, is it not? – where should we start? Well, the Road Map refers to the "Network of Airfields" as being a national asset yet we still see aerodromes closing and nothing being done to prevent the loss of these national assets. At the same time, we hear about the development of Vertiports to support the Advanced Air Mobility (AAM) sector. Coventry is a case in point, where a Vertiport was being developed for the city, whilst the Aerodrome is set for closure. Why couldn't the city use the Aerodrome as a test site for AAM? Why can we not use existing assets (aerodromes) as flying sites for drones/logistics work? We seem to suffer from a silo mentality in the UK where we should be looking more towards integration.

The GA Road Map recognises that GA is a critical enabler of skills for the wider aviation and aerospace sectors, but little is being done to address the critical shortage of licensed aircraft engineers and the problems getting spare parts because of supply chain issues. As costs increase, the utilisation of GA aircraft suffers further affecting growth – resulting in a domino effect hitting aerodromes, fuel sales and so on. So, I ask again where is the plan for growth?

THE GA HANDBOOK

In 2023, the DfT issued a GA Handbook aimed at Stakeholders including local planning authorities and whilst it highlights GA positively there are no growth strategies. If a local authority wants to close an airfield, such as Coventry, then there is nothing stopping them. There needs to be accountability for closing an Aerodrome and the DfT should be involved in reviewing any proposal to close any flying site against the needs of the GA community, otherwise publications like these are nothing more than 'Motherhood and Apple Pie" as Americans say. This handbook is 31 pages long with some pages containing only a few lines of text, whilst the Carbon Emissions paper (a recent publication) has some 77 pages detailing the carbon impact from GA. We have seen elsewhere governments proposing bans on internal flights to reduce the impact of aviation on climate change. The 'Just Stop Oil' campaigners will tell you recreational flying is not necessary in relation to the "climate emergency". They openly attack business aviation as has been reported. All of these issues are important but understanding the value of GA to local communities is still poorly conveyed by government.

The Government' s focus and that of DfT /CAA is on Carbon NetZero, which is rightly aimed at the airline industry but the DfT commissioned a report on GA emissions where the focus was on the total emissions from the activity and not just those emitted from the exhaust system. Over the coming years we will hear more and more on this topic but if you know of aerodromes that have green initiatives in place we would like to hear from you. As a part of the NetZero campaign universities like Cranfield are looking at new propulsion systems, linked to reducing carbon but none of these new approaches are about to happen any time soon.

From a GA perspective we have been concerned about the future of 100LL and we have been pushing for greater use and availability of UL91 (see AOPA website), however there is little government support and seemingly little interest inside the CAA to encourage a wider take up of UL91. So, unless we demand that the Government takes an interest in lead reduction, we think it will take other areas of the world to take action before the UK will follow - hardly showing leadership! In the USA, places in California have stopped selling 100LL and eventually the fuel companies will stop production. AOPA USA and others have signed up to finding solutions by 2030.

JUST A CULTURE?

I am still very concerned about the CAA's application of a 'Just Culture' because so many pilots do not feel that it is very just. The CAA argues differently pointing to the many satisfied individuals who have completed the online Infringement Awareness Course. That may or may not be true, BUT when the CAA writes to you 'temporarily' suspending your licence prior to speaking with you, it comes over as being found guilty of the allegation before the trial, as is the experience of one of AOPA member. It is a basic human right to be able to earn a living and if you hold a professional licence and it is suspended it is likely to affect your income. Before taking such actions, the CAA need to be clear on what they're

"So, unless we demand that the Government takes an interest in lead reduction, we think it will take other areas of the world to take action before the UK will follow"

doing. Clearly, in the case involving the pilot who organised the Sala flight, the CAA removed the individual's licence, not unreasonably, so there are times when the CAA is right to take such action but I believe that this action cannot be part of a 'just culture' process and the CAA needs to STOP now.

If you wish to take a licence action then follow the full investigation path leading to court action if required, otherwise the CAA is in danger of mishandling safety systems like MOR reports. Pilots of non-part 21 aircraft are already saying: "If I am not legally required to fill out an MOR then I won't." There is a wider impact and whilst I do support a Just Culture process it has to be fair. If you feel strongly about this issue, please email me: martin@aopa.co.uk

The UK is committed to carbon reduction and has a number of targets. For aviation, its 2050 target is to achieve NetZero. However, for national flights that deadline is 2040. The DfT commissioned Fraser Nash Consultants to look into understanding the carbon impact coming from GA. The report can be viewed on the DfT website and covers all of GA's activities from the very light end up to the business aviation sector. It also encompasses the ground infrastructure, including aerodromes – often wrongly referred to as airfields – and flying clubs, etc, as Fraser Nash was interested in the amount of energy consumption. Based on the data available and the small number of aerodromes included I do not think their report can be used to establish a baseline set of emissions, even where they use a 25% uplift on the data. I do not understand why FN did not seek information from the Treasury in respect of fuel tax collected or ask the fuel producers what their annual production of AVGAS and Jet A1 is. The report does not take into account foreign registered aircraft visiting the UK or those that are based here, so there are plenty of variables in the numbers, however I found it an interesting read.

Whilst FN point to the emissions from business aircraft being the biggest aircraft below 5,700kgs, they do not escape scrutiny, particularly those of flying clubs and private fliers. There is a lot in the report and I recommend reading it.

STATUTORY INSTRUMENTS

At a recent meeting with the DfT there was a briefing on the ongoing work in Retained EU Law (REUL). In line with the Government's objectives, in a post-Brexit era the DfT/CAA are planning on implementing a number of Statutory Instruments (SIs). The SI is the most common form of secondary legislation, where the power to initiate such legislation resides with a minister who is able to make laws following the parliamentary process, which is set out in an Act of Parliament. Normally the SI is drafted by officials, but in aviation these will be people in the DfT. There is normally an explanatory note included in the SI detailing why it's necessary to amend the law. Of the proposed 25 SIs it will be necessary to reduce this number to 10/12 as a matter of prioritising in order to achieve a November deadline. It may not be obvious but the CAA is under strain in relation to the aviation legislative framework as resources are struggling to meet the workload demands. The focus areas are airspace, licensing and continued air worthiness, all of which have high levels of complexity and more time is needed to get the changes through the system. Officials are also aware that a general election is not that far off so getting necessary parliamentary time is also challenging. The DfT says it wants greater engagement both formal and informal but targeted in respect of the future of aviation in the UK.

One area we would welcome more engagement on is the subject of ground handling because this impacts GA in terms of higher costs and access (levelling up) to all regions in the UK.

As part of the CAA's desire to improve the CAA Finance Committee, it is set to get a new name, and will be called the CAA Finance and Services Forum. This will enable industry to look at the service, standards and performance of the CAA, alongside its finances, as we all want value for money! The two are closely linked particularly as the CAA is required to recover its costs from those it regulates. I think this is a good move and will report on future progress. ■

Martin Robinson
CEO, AOPA UK
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Welcome to the UP FRONT section of the magazine. Bringing you help, advice, and other insights from the world of AOPA, in an honest and 'up front' way to help you stay flying. Something to say? Please contact us at ***editor@aopa.co.uk***

AOPA AGM Meeting

AOPA 57th Annual General Meeting
The 57th 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 Wednesday 13th September 2023 at Lakeside Pavilion, Chaucer Business Park, Watery Lane, Kemsing, Sevenoaks TN15 6QY. Commencing at 2.00 p.m. the formal announcement and agenda of the AGM appears below.

A set of the financial accounts for the year ended 31st March 2023 will be provided in advance of the meeting on the AOPA UK website www.aopa.co.uk together with the draft minutes of the 56th AGM and brief personal details of the members offering themselves for election and re-election. The data will be available at the AGM.

Any member wishing to elect another member to the Board of Management must provide notice in writing or email to the AOPA office at least 10 days in advance.
A statement of willingness to serve will be expected from the proposed member together with appropriate personal details. Proxy voting is permitted, either by nominating in writing or by email a member who will be present at the AGM as proxy, or by nominating the Chairman as proxy.

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

Tea, coffee and sandwiches will be available for those attending from 1.30p.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 participate 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, address as above.

2023 AOPA Annual General Meeting
The 57th Annual General Meeting of the British Light Aviation Centre Ltd., trading as the Aircraft Owners and Pilots Association of the UK, will be held at AOPA Lakeside Pavilion, Chaucer Business Park, Watery Lane, Kemsing, Sevenoaks TN15 6QY and via Zoom on Wednesday 13th September 2023 at 2.00 pm.

AGENDA

- Apologies for absence
- To confirm the Minutes from the 56th Annual General Meeting
- To receive and endorse the Directors' Report and Financial Statements for the year ended 31st March 2023.
- The election of Directors to the Board of Management. The following Directors are due to retire by rotation: Martin Robinson, Pauline Vahey. Martin Robinson and offer themselves for re-election.
- To appoint as Auditors Messrs Venthams, at a fee to be fixed by the Board of Management.
- To conduct any other business that may properly be dealt with at an Annual General Meeting.

DAVID OGILVY 1929-2023

DAVID OGILVY passed away Friday 14 July 2023. David was involved with flying throughout his life. In the RAF he flew mosquitos mostly on PR operations at the end of the war. He went on to have a long career in flight training and ran the London School of Flying. He was deeply involved with Historic and Vintage aircraft, being a founder member. He was also involved with the ABAC, later BLAC, and was one of the founders of AOPA UK. Through the years Martin Robinson worked with him at AOPA he was totally dedicated to fighting for aerodromes particularly those under threat of closure. Along with Jack Wells, who passed away last month, David established the General Aviation Awareness Campaign/Council. David leaves us a legacy, including 17 books, the last of which has just gone to the publisher. Martin calls him his friend and mentor, RIP. ■

WORDS AND IMAGES Mike Powell

LOOKING AFTER YOUR TOOLS - AND USING THE RIGHT ONES!

Licenced engineer **Michael Powell** continues his series on what an owner may or may not do to their aircraft

THIS ARTICLE may be considered as something of a re-cap since some subjects have been dealt with in previous articles. Be-that-as-it-may, some items are worth repeating so I trust you will bear with me.

Firstly, you will recall that in Article Number 7, I 'went on a bit' about the danger associated with touching propellers even when the magnetos were apparently grounded (Ignition switch off). Murphy and his law has a contribution to make at this point. The 'built in' gotcha is that the magneto impulse-starter spring (Slick, BTH and Bendix mags) may be fully wound and on the point of release (firing) requiring only a small movement of the prop. Because the ignition point is before TDC, the prop will generally rotate backwards with considerable force – a good deal faster than you can remove your hand, or any other part of your fragile body!

To help reduce the possibility of such an event it is good practice before stopping the engine to check that both p-leads are functioning by turning both mags off and checking that the engine stops. The p-lead wiring is generally not of very substantial gauge and engine vibration is a possible cause of failure. You have been warned!

"Never, never use adjustable spanners. If you do not have the correct spanner for the job, go out and get one"

If it's sharp and it spins, keep your hands away from it

THE RIGHT TOOLS

On a different subject, there are one or two points that I should like to mention in connection with tools – and in particular, the care of tools.

Never, never use adjustable spanners. If you do not have the correct spanner for the job then go out and get one. The jaws of adjustable spanners are not rigid the way an open-ended spanner are and under torque the jaws of an adjustable spanner will move and fail to properly grip the nut/bolt head. This will result in the nut/bolt head becoming worn and losing its sharp corners making even the correct spanner a poor fit and making it increasingly difficult to correctly torque the nut/bolt either to tighten or loosen.

Similar remarks may be made about Phillips/cross-head screwdrivers which were developed to be used by automated assembly devices using the self-centering feature of these tools.

Plain head screwdrivers may be kept in good condition by grinding or filing but Phillips/cross-head screwdrivers may not be sharpened and when worn should be discarded and replaced. A worn screwdriver will damage the screw and eventually make it impossible to remove a screw as the

Check your seat rails to ensure they're fit for purpose

Over time, a worn screwdriver will begin to damage screws

screwdriver blade fails to lock into the screw head but skids round further damaging the screw resulting in the screw having to be drilled out.

Similar remarks apply to allen keys and hex keys. Do not try to use the wrong size or, even worse, try to use a plain screw-driver jammed into the fastening – you will almost certainly create a worse problem. Get the correct size.

SITTING COMFORTABLY?

To finish this article I remind you of the importance of checking sliding seat-rails for wear. Common in Cessna and Piper aircraft but fitted to other similar aircraft the rails have a series of holes along the rail which provide a means of locking the sliding seat in position with a locking pin fitted to the seat. The holes become worn over time and allow the pin to be forced out of the hole allowing the seat to move backwards. The pilot instinctively pulls back on the control column with most unfortunate consequences, as Cessna found to their considerable cost.

TOP TIPS FOR SUMMER

1. Check that turning off both magnetos together stops the engine. Only a brief check is required, so it is both OFF – CHECK ENGINE STARTS TO RUN DOWN -BOTH BACK ON. This tells you that both p-leads are connected and functioning.

2. Fit a CO2 detector – either simple stick-on card or more sophisticated battery powered device.

3. Check tyre pressures and condition. Low pressure damages tyres and significantly extends take-off runs – particularly on grass. ■

WORDS Martin Robinson **IMAGES** Various

KEEPING CONTROL OF UAVs

The UK Government sees UAVs as a huge boost to the economy, but we have to make sure that they don't run away with the idea

THE OTHER focus in the UK is the area of unmanned aerial vehicles. This is seen by The Government as a new and potentially important sector for the economy with reports claiming £46 billion in GDP over the next 10 years and thousands of jobs in high tech industries.

The Government is investing several billions in support of developing this new activity and I guess a £2billion outlay for a £40+ billion return would seem like a fair price to pay. So, with this in mind we need to look at and consider the evolution of airspace and its management. The end goal of the unmanned activity is for a fully autonomous environment for both air and ground systems. So, how will it be achieved? No more pilots, no more air traffic controllers and GA may be the only flying that still allows people to manually manipulate the controls of an aircraft. Hopefully if this happens it will be when I no longer breathe and I will have enjoyed the best of aviation. In the meantime, we need to consider how this will all unfold. To start with I think we will see a growth in TMZ to support BVLOS operations. Currently many of these are subject to TRAs following an ACP proposal. Why these flights cannot be contained in existing restricted areas I don't know, especially if they are effectively testing systems and controls. If in future BVLOS flights will be conducted inside a TMZ (which includes the use of EC devices), it should be remembered that the original purpose of EC was to improve situational awareness between manned aircraft. They require the pilot to make the decision on collision avoidance action where necessary. That, in my view, will be very difficult to do against drones. If there are thousands of drones operating then 'see and avoid' will be next to impossible. Therefore, the CAA should consider limiting the numbers of drones operating in any given volume of airspace in order to maintain the safety of all the operations.

New systems like SWIM (System Wide Information Management), in my view will be essential for pilots to understand what is going on in the airspace. Europe has mandated that all ANSPs (Air Navigation Service Providers) have in place by 2025 SWIM systems. The UK has neither a policy nor a SWIM strategy. However, whilst Europe has been busy developing its U-Space strategy, where it's already a requirement for manned aviation to be EC equipped when entering U Space, EASA is yet to decide which technology meets the requirements. So, it looks like GA will need to invest in new technology just to keep doing what we are doing now.

"EASA is yet to decide which technology meets the requirements. So, it looks like GA will need to invest in new technology just to keep doing what we are doing now"

There may be advantages if we can work with the technology side of UAS, the cost of new systems may be lower, given the numbers, ie. economy of scale and if planners can think of ways in which the existing aerodrome network can be integrated in to that future, as this may prolong the life of GA Aerodromes.I know that some aerodromes like Elstree are looking to the future.

There's no denying the good UAVs will be able to perform

Airspace controllers need to think ahead before it's too late

The best way to think about the future of aviation is by considering the benefits of integration – air and ground – but this will take a mind shift throughout all aviation sectors and the removal of silo mentality. This includes how we think of airspace particularly below 10,000 feet - and we should consider how we plan to use the known traffic environment which comes from the use of EC/transponders. Air traffic controllers will need to think about how they provide services to aircraft outside of controlled airspace. The current system is not good enough, that is not to say that controllers do not do a good job but the practices are probably out of date. If the ATM system is to become digital, as a step towards autonomous flight management, then what are the plans around establishing a new ATM system and where is the investment coming from? There is an EU requirement for any change to ATM to be agreed with the airlines before money is spent on new equipment. We need to have the same arrangement in the UK.

The recent Reading drone corridor, I hear, cost a "shed load" of money, exactly how much I don't know but a lot of the cost came from renting sites to locate the aerials!! So, I would like to be sure that the investments being made to support new business concepts also have solid business plans. We also want the CAA to ensure that as these plans take shape with minimal inconvenience to GA operations and that safety remains the first priority. Just because it may be possible it doesn't mean it should happen.

With all of the changes being looked at its difficult to see where growth in GA is going to come from particularly as the cost of living crisis is impacting many families. As we see less activity the same costs need to be recovered from a smaller source. It's important that the CAA understands that areas like cost-sharing play an important role in keeping pilots flying by helping to defray their costs. We have been doing some work with the CAA on their proposal to amend the rules associated with the activity. Whilst they appear to be listening, ultimately it will be the DfT who decide. The main concern relates to illegal public transport flights (which AOPA does not support) and the possible link to cost-sharing, although the CAA by its own admission has little or no data to support any change. The tragic case of the footballer Sala seems to be behind this, but that particular flight was not a cost-sharing flight, it was an illegal charter. If the rules on advertising cost-sharing flights are amended in ways that remove a degree of flexibility the potential losers will be cost sharing platforms like Wingly. AOPA have been supporting the Wingly position, who have good quality data but more importantly the flights on offer are in full view. We need more interest in GA flying and if platforms like Wingly encourage more participation, which is a good thing. As in all walks of life there will be rogues and we will never stop that but we shouldn't throw the baby out with the bath water either. Interestingly when Tony Rapson was head of GA in the CAA they were fully supportive of the activity even to the point of getting their lawyers to confirm that there were no problems with cost-sharing platforms. The fundamentals around sharing costs are , the purpose of the flight and no element of profit. These fundamentals have not changed so the case seems to be, as new CAA employees work on change, they have a different view to those of the CAA lawyers of 10 years ago. Yet there is no incident data that highlights any real safety concerns. Here, I have a problem with the way the CAA conducted the consultation.We support risk/evidence-based regulations that provide direct safety benefits and are affordable. ■

Drones will be used in countless industries in the future

WORDS & IMAGES Steven Bailey

YOUR HERO

Steven & Jennie Bailey tell their story about why they love their Robin DR401

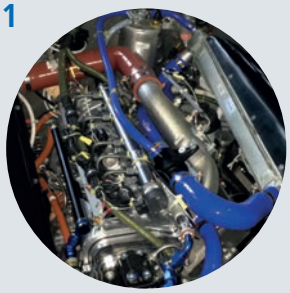
WE BOUGHT our first Robin aircraft, a 135 hp diesel, in 2008 and soon after worked with CEAPR in France on the 155 hp STC and the Garmin G500 STC.

Now with over 1500 flight hours in diesel Robins, for us nothing else matches the combination of stability, outstanding visibility, durability, short field performance, long distance touring capability and great value.

Quiet, comfortable and easy to fly, our Robins have taken us on many trips to the Balearics, Corsica, Sardinia, Croatia and lots of countries in mainland Europe.

With many Robin DR aircraft still flying after well over 50 years our DR401 is a friend on which we can depend. ■

1



ENGINE

The Continental Diesel 2·0S155hp makes it the perfect engine for many different types of flying. From training to travelling, it can handle the mission envelope.

2

INTERIOR

With plenty of room and comfy seats for you and your three passengers, it makes for a comfortable ride, even if it's a long hop over to mainland Europe.

3

ENDURANCE

You can fly for up to 6.6 hours at 75% power. 24 L/hr at 75% power (Jet-A1, automotive diesel, biodiesel, most military jet fuels, all in any mix).

4

MAINTENANCE

The reliable Robin DR401 has a 100 hour/12 month limit for both engine and airframe inspections and the engine has a . 2,100 hours Time Between Replacement.

Send Your Hero to **editor@aopa.co.uk.** It doesn't have to be your own aircraft... own it or admire a certain type from afar, either way we want to know what's Your Hero and why. Just send us around 60 main words, and your top 7 'fast facts' and we'll do the rest. ■

Are you due for an Instructor Refresher Seminar?

DON'T LOSE YOUR INSTRUCTOR CERTIFICATE

You may attend a refresher seminar at any time during the validity of your FI or CRI certificate. The AOPA Instructor Seminar is also open to aspiring flight instructors

2023 DATES FOR AOPA INSTRUCTOR SEMINARS

5/6 September 2023 - 21/22 November 2023
To be held at the AOPA HQ in Sevenoaks
The cost for two full days seminar for non-members is £325
AOPA members benefit

TOPICS COVERED INCLUDE

• New/current rules/regulations, with emphasis on knowledge of UK-part FCL •
• Teaching and learning • Instructional techniques • The role of the instructor •
• National regulations • Flight safety, incident and accident prevention •
• Teaching instrument flying • Legal aspects and enforcement procedures •
• Navigational skills, new/current radio navigation aids • Airmanship •
• Weather related topics, methods of distribution • Human factors •
• Additional topics selected by the competent authority •

AOPA

For further details contact the AOPA office on **020 7834 5631** or email **mandy@aopa.co.uk.**
You can also register for the seminar online at **www.aopa.co.uk**

Flight-sharing apps could be at risk

FLIGHT-SHARING REGS RISK CLOSING WINGLY

A potential change in regulations could mean apps like Wingly will be forced to cease operating in the near future

FLIGHT-SHARING service Wingly, which puts pilots in touch with people willing to share the costs of a flight, is in danger of being forced to close because of a proposed change to regulations.

The UK CAA is revising the regulations on cost-sharing with the aim of deterring so-called 'grey' charter operations such as the one when footballer Emiliano Sala died in 2019.

However, one proposed amendment would restrict pilots to only flying when they were already scheduled to fly. That would mean it will become illegal for private pilots to publish details of flights they regularly enjoy and indicate their availability to fly with passengers who are interested in joining them and sharing the costs.

As a result, Wingly's services, which have been available in the UK for the past eight years and used by 8,500 private pilots and 125,000 passengers, will become obsolete.

A statement from Wingly said, "The CAA has been diligently revising the cost-sharing regulations with the aim of deterring illegal grey chartering following the highly publicised Sala accident.

"While the CAA's intentions behind their proposals are commendable, they will most likely inadvertently render illegal harmless private flights and potentially force the closure of digital cost-sharing platforms like Wingly, despite the fact that such consequences are unintended by the regulator.

"Private pilots in the UK will therefore no longer have access to the same services they previoulsy enjoyed"

"Private pilots in the UK will therefore no longer have access to the same services they previously enjoyed compared to their counterparts in France, Germany, Austria, and Switzerland where Wingly is widely used."

Martin Robinson, CEO of AOPA UK, added, "Platforms such as Wingly offer positive benefits for GA and we know that many people have benefitted. The tragic event involving the footballer was an illegal public transport flight in a foreign registered aircraft. The organiser of the flight was found guilty and was given a custodial sentence following a successful investigation and prosecution by the CAA."

According to Wingly, "The CAA acknowledges the significant safety advantages associated with cost-sharing platforms and is actively engaging in discussions with Wingly and the AOPA to reach an agreeable solution.

"Wingly remains vigilant and continues to advocate for pilots' rights as the final proposals have not been published yet. The DfT is meant to be producing a Statutory Instrument by November 2023." ■

VAC TO OFFER TAILDRAGGER SCHOLARSHIPS

THE VINTAGE Aircraft Club has launched the 2023 Liz Inwood Taildragger Scholarship to help one young pilot to convert onto a tailwheel aircraft.

"We are pleased to say we have increased the scholarship to £1,000 for the recipient to use for taildragger conversion," The Vintage Aircraft Club (VAC) said in a statement.

The Club's Taildragger Scholarship, which was established in memory of the late Tiger Moth pilot and flying instructor Liz Inwood, is offered annually to a licence holder under the age of 35. The successful recipient is offered five hours of flying to assist in transitioning to tailwheel heritage types.

The club encourages young pilots to transition from nose wheel to taildragger aircraft thus providing an opportunity to fly more vintage types.

If you wish to apply visit the VAC's website and download the form.

The applicant must be the holder of a current PPL, NPPL or LAPL, with 100 hours total flying time of which at least 50 hours are as a PIC completed at the time of application. Applications are open and will close on 31 August. ■

The VAC encourages younger pilots to enter the taildragging world

AURA AERO REVEALS ELECTRIC TRAINER AIRCRAFT

TOULOUSE, FRANCE-BASED aircraft manufacturer Aura Aero revealed the all-electric version of its two-seater Integral trainer aircraft at the Paris Air Show ahead of its test programme.

The E is the third variant in the company's Integral family of aircraft and is designed for training, aerobatics, and leisure. The company is already making the Integral R, a combustion engine aircraft with taildragger landing gear, and the Integral S, a variant with tricycle landing gear that is expected to begin flight testing in the coming weeks.

The company is also developing the Electric Regional Aircraft (ERA), a hybrid electric 19-seater aircraft with a planned 300 mile (480km) range to enter into service in 2027.

Aura Aero was founded in 2018 and has more than 300 orders through Letters of Intent.

The Integral E can be charged in less than 30 minutes thanks to its supercharging capabilities and will have a maximum 60-minute flight time. First deliveries are expected to begin in 2025.

The Integral aircraft have a fuselage made from a wood-carbon hybrid material which the company says provides lightness, resistance and repairability.

Speaking at the Paris Air Show 2023, Jérémy Caussade, president and co-founder of Aura Aero said, "Testing has a focus on the structure – the airplane is designed for short trips with sometimes brutal loads. It's an evolution of the trainer aircraft type with 800V of power required."

Also announced at the Paris Air Show was that Safran will provide the powerplant for the Integral E to replace the Lycoming combustion engine used in the other versions. ■

AOPA NEWS HIGHLIGHTS

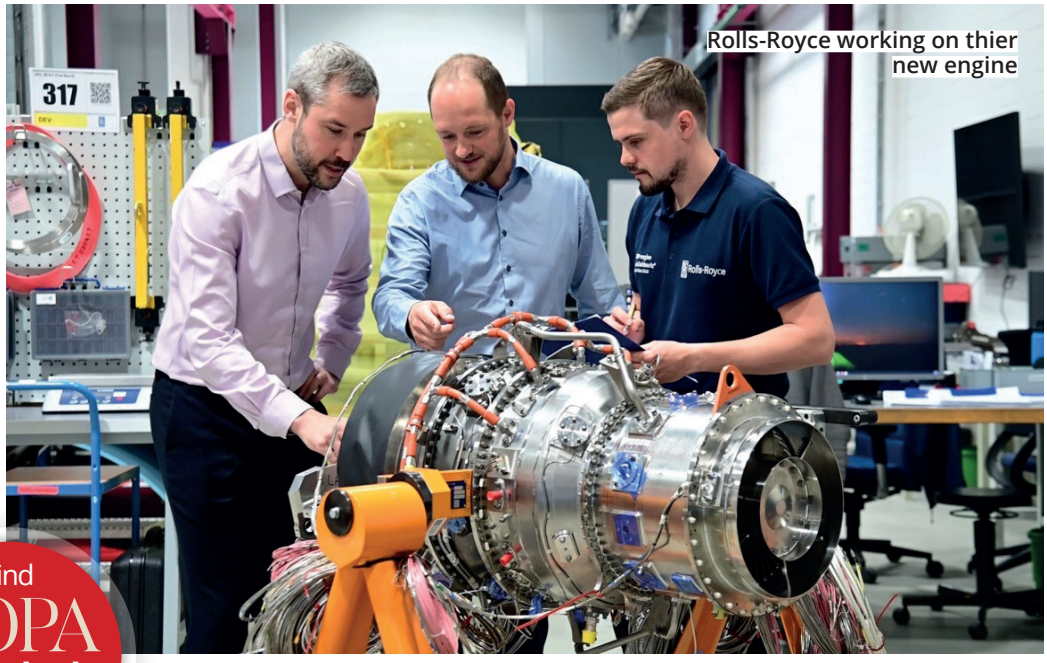
- Facebook owner Mark Zuckerberg has decided that he now wants to be a pilot and has obtained his student pilot certificate through the FAA in the US. Is this to try and catch up with Elon Musk who is quite the aviator?

- Honda has announced it will spend $56 million to build a new factory for its second business jet at Piedmont Triad International Airport in Greensboro, North Carolina, the site of its original HondaJet factory.

- NASA has announced its X-59 supersonic research aircraft has emerged from its construction facility and now sits on the flightline at Lockheed-Martin's "Skunk Works" in Palmdale, California.

ROLLS-ROYCE SET TO BEGIN ENGINE TESTS TO ADVANCE HYBRID-ELECTRIC FLIGHT

The company has announced its new small gas turbine that has been specifically developed to power hybrid-electric flight will begin testing



Rolls-Royce working on thier new engine

THE ENGINE is part of a turbogenerator system that is being developed for the Advanced Air Mobility market. This includes electrical vertical take-off and landing (eVTOL) Aircraft for Urban Air Mobility and Commuter Aircraft up to 19 seats.

The turbogenerator system will complement the Rolls-Royce Electrical propulsion portfolio by delivering an on-board power source with scalable power offerings between 500kW and 1200kW enabling extended range on sustainable aviation fuels (SAF) and later, as it becomes available, through hydrogen combustion. This will open up new, longer routes than electric battery powered aircraft can support as of today.

"Rolls-Royce will be the leading provider of all-electric and hybrid-electric power and propulsion systems for Advanced Air Mobility. The Pass-To-Test (PTT) of our brand-new small engine that will power our turbogenerator system is an important step forward. This product will enable customers to extend the routes that electric flight can support and means more passengers will be able to travel further on low to net zero emissions aircraft," said Olaf Otto, President – Electrical.

The development of the turbogenerator system is combining Rolls-Royce's electrical and gas turbine development competencies. The new combustion engine uses recent technology developments to achieve a step change in efficiency. The turbogenerator can be used in serial or parallel hybrid applications. It is well suited to recharge batteries as well as provide energy to electrical propulsion units directly. The research and development of this technology is being partially funded by the German Ministry for Economic Affairs and Climate Action.

This engine will be tested on SAF in the coming months and will be used for the commissioning of Rolls-Royce's test facility in Dahlewitz. The Rolls-Royce Power Gearbox test facility has been modified to accommodate testing of the new engine, and to confirm the engine's attributes.

Rolls-Royce is developing complete power and propulsion systems for all-electric and hybrid-electric applications. Its systems feature the latest technology, from power generation and energy storage via power electronics to electric motors. ■

Joby Aviation's prototype has been unveiled in California

JOBY ROLLS OUT EVTOL PRODUCTION PROTOTYPE

One of the leading eVTOL aircraft companies has revealed its production prototype with the aim of achieving certification

JOBY AVIATION unveiled the first electric vertical takeoff and landing production prototype to earn a special airworthiness certificate from the FAA that will enable flight testing toward certification, a milestone that reinforces the California company's apparent front-runner status in the race to bring a new generation of air taxis to market.

California Gov. Gavin Newsom recently visited Joby founder and CEO JoeBen Bevirt at the production facility in Marina, where the prototype was unveiled June 28—with FAA paperwork in place enabling certification flight testing to begin. Joby has been testing aircraft since 2017, and hopes to field the first eVTOL, though competitors are hot on the company's heels. The FAA is also preparing to grant the first eVTOL certifications, having established a basis for that certification with Joby in 2020 that was updated and revised in 2022 to comport with the FAA's decision to establish a new class of powered-lift aircraft to include eVTOLs.

"We're proud to have launched production in our home state of California. I'm incredibly grateful to the Joby team for their commitment to ensuring Joby remains the clear leader in this new sector and to Toyota for sharing their knowledge and experience with us over many years," Bevirt said in a news release. "Their support has been indispensable in helping us reach this point."

Toyota Motor North America CEO Tetsuo "Ted" Ogawa will join Joby's board July 1, the company announced, and Toyota is also the company's largest shareholder, having invested $400 million and established component supply agreements that will help Joby scale up production.

While Joby expects certification and entry into service in 2025, the prototype will head to Edwards Air Force Base in 2024 to mark Joby's first customer delivery, under a U.S. Air Force Agility Prime contract, a programme established to accelerate military eVTOL development. (Joby recently gave AOPA a peek at the S4-1 prototype for a feature published in the April issue of AOPA Pilot.)

Completion of a production prototype puts Joby a step ahead of rivals including Archer Aviation, which announced its own FAA certification basis in 2021, and Lilium, the company developing the Lilium Jet in Germany, which reported FAA validation of its certification basis June 27. The FAA plans to eventually standardise eVTOL certification but created a steppingstone to that by combining elements of existing fixed-wing and rotorcraft certification rules and procedures into aircraft-specific certification agreements. A much older (and petroleum-powered) design approval sought by AgustaWestland (now Leonardo) was also repositioned for powered-lift certification, the AW609 tiltrotor. An FAA rulemaking proposal to that effect is open for comment through July 10.

"Completion of a production prototype puts Joby a step ahead or rivals including Archer Aviation"

The agency is taking a similar approach to pilot certification as the prototypes begin to line up and test. Another rulemaking proposal published June 14 seeks to establish certification eligibility requirements for powered-lift pilots that are based on a combination of relevant rotorcraft and fixed-wing regulations. ■

ELIXIR INNOVATION COULD REVOLUTIONISE TRAINING

Elixir aircraft has announced its OneShot airframe that promises to reduce costs to own and operate. It is also the only new aircraft capable of training beginner pilots all the way to a commercial pilot certificate. On top of all this the Elixir is equipped with improved environmental and safety features. To achieve this, we have decided to create an innovative OneShot airframe produced using a composite manufacturing process, which has long been used to build professional racing sailboats, and more recently adopted by the automotive and aviation industries.

While those projects focused on single parts, Elixir Aircraft are the first to succeed in creating the entire wing of an aircraft in OneShot. Thanks to three years of intensive R&D work, including advanced software simulation, materials laboratory tests and real parts static tests, Elixir designed a unique airframe, including a wing spanning 28 feet that is manufactured in one single piece thanks to the OneShot process.

Elixir is therefore the first and only aircraft manufacturer in the world to succeed in the design and fabrication of a complex OneShot airframe, drawing on previous experiences in ocean racing, mastering the design, certification and manufacturing of OneShot aircraft parts.

From the beginning of aviation, only three generations of general aircraft have been designed: wood and canvas, aluminium, and composite airframes. Surprisingly, wood-and-canvas, developed at the turn of the twentieth century, is still produced, though it requires skilled craftsmen and is expensive by today's standards. Metallic aircraft designs that date to the 1950s now dominate the market, while 1970s composite technology (mix of traditional metallic spars and ribs) is the favourite solution for uncertified light aircraft.

All of these older technologies are complex, requiring a huge number of parts. They require a long manufacturing process, and are difficult to maintain.

Just as it did with boat building, the OneShot process will revolutionise general aviation. Aircraft will be made with far fewer parts and components. For example, a wing traditionally made of thousands of different parts (spar, ribs, stringers, rivets, etc.) can now be produced as a single piece. Overall, our aeroplane is made with fewer than 1,000 parts references, (excluding engine), compared with tens of thousands for other light aircraft. This reduction in complexity is a huge achievement, producing numerous benefits for both manufacturer and operators. Operators will see a cost reduction of up to 70 percent compared to legacy aircraft used today. ■

MAGAZINE CORRECTION

IT CAME to our attention after AOPA UK's June/July Issue had gone to print that in the obituary celebrating Jack Wells' life, there was a spelling mistake with his name.

The Editor and whole editorial team would like to apologise for the mistake and for any upset it may have caused. ■

AOPA NEWS HIGHLIGHTS

- Three years after receiving EASA Certification Airbus Helicopters' H-160 twin-engine helicopter has gained FAA certification. It currently has orders for more than 12 H-160s in the US and over 100 globally.

- Flying car manufacturer Alef Aeronautics has received special airworthiness certification for the prototype of its unusual design. The certification has some pretty tight restrictions, including research and test hops only.

- Hybrid Air Vehicles has entered into a five-year corporate partnership with the Royal International Air Tattoo by which the company's Airlander-10 hybrid airship will appear at RAIT's 2027 iteration.

Jon Hunt

The Flying Reporter on how he became fascinated with flying

***Jon Hunt** is a former BBC journalist, and he has always been fascinated with flight. When he left the BBC after a 30 year career at the corporation he took on a new career as the Flying Reporter*

What first attracted you to flying and how did you become a pilot?
Aviation had always fascinated me and I have old school friends who fly passenger jets for a living. In the past, whenever we'd meet up, I'd always ask them questions about their flying, the aircraft systems and the techniques. In contrast to me, they were very clever, excelled at maths and studied aeronautical engineering at university. For my A level maths I got an ungraded result and decided to become a radio DJ rather than do a degree.
During my 20 years in broadcasting, my fascination with the subject grew and grew and I ended up reporting for BBC News on three Space Shuttle missions to the International Space Station. I remember filling my evenings studying the mission flight plans, the NASA acronyms and Orbiter and Space Station systems. I became quite friendly with former NASA astronaut and British Citizen, Piers Sellers. Sadly Piers died in 2016, but between 2002 and 2010, before and after his three missions to the Space Station, we'd talk about his flights, his space walks, the issues, the mishaps and also about what it really felt like to blast into space. Piers had learnt to fly when he was much younger, and it got me thinking if it was something I could do. I started watching YouTube videos of pilots flying Cessnas and Pipers and set myself up a home simulator to replicate the experience. I'd sometimes fly 747s for 8 hours at a time, simulating real-world flights and even using VATSIM to talk to virtual controllers. I loved the attention to detail, the precision, the pure escapism. At the time, I was working for BBC Watchdog and Rogue Traders as a Producer/Director alongside Anne Robinson and Matt Allwright. My fellow producers and researchers knew I had this strange hobby of flying virtual airlines on my makeshift home simulator and so when I came to leave that position, they bought me a trial flight as a leaving gift. After that I was hooked, realised that my academic shortcomings were not a barrier, and took up lessons.

How did you originally have the idea for the Flying Reporter?
I was inspired by other YouTubers, I began filming my flights and posting them on YouTube for my own enjoyment and to share with my friends. Before long, my in-flight mistakes and adventures attracted a wider audience. I then thought I could combine my television production skills, journalism background and my passion for flying to create inspirational yet authentic flying videos.

Since starting the channel, what's been your biggest highlight?
Gosh, I've had so many adventures and opportunities now, it's difficult to pick just one. I think learning to fly the Harvard at Anglian War Birds and starting my seaplane training in the Lochs of Scotland are right up there with my best adventures... so far. I think there's plenty more highlights to come.

Do you have an ultimate goal with the channel?
Yes. So, the aim was to work on it full time, which I am now doing more or less. The long term goal is to have a team of researchers, camera operators and picture editors working with me, to create some truly dynamic and fascinating general aviation content.

When travelling around the country and out and about flying, do you get recognised at airfields now?
All the time. My son and husband think it's hilarious. I used to be on BBC TV every weekday evening, reporting the news and watched by millions, yet I'd rarely be noticed in the street. As The Flying Reporter, I'm recognised at airfields, at the railway station and on holidays abroad. It is a pleasure to meet up with fans of the channel - it's such a friendly community.

How can people get in touch and suggest places you should visit or things you should try in the world of aviation?
The website is the best way. There's a contact page on there. Regrettably I had to turn off messaging on Facebook, Instagram and all the other social media channels, because I just couldn't cope with the phone pinging day and night with questions and queries from people. It's lovely to get feedback and questions, but I prefer them to come by email where I can turn them off during time with the family and see to them during working hours. ■

*If you want so find out more about Jon and his adventures as The Flying Reporter - or maybe even suggest an airfield for him to visit, head to **johnhunt.net** where you'll be able to find a contact form.*

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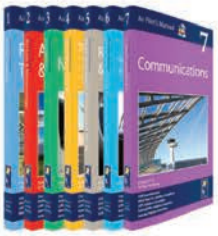

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WORDS & IMAGES Mark Lapidus

DENHAM TO WESTCHESTER – AND BACK!

After flying from the US with a ferry pilot, **Mark Lapidus** had always wanted to do it again. So he did, only this time he doubled the trip by returning home

FERRY PILOTS fly North Atlantic in a single engine piston routinely. I flew from the USA with a ferry pilot five years ago and always intended to return to the route by myself. These are my notes, fresh from the trip just completed, all legs IFR.

Saturday June 24, 09:30Z, EGLD Denham – EGPC Wick, 12:15Z, 448 NM, 2:45 flight time, FL120. Pick up an immersion survival suit at Far North Aviation, a proper FBO, the refuelling truck pulls up as you switch of the engine. I always carry my own emergency raft. Wick now has no tower on the weekends, Far North will organise permission to land out of hours, Scottish will stay with you until visual. At FL120 the routing will meander too much west to remain in controlled airspace. Ask for deconfliction or traffic service and fly direct, saves about 20 minutes. To be weary of regional ATC services offering you a new squawk, don't accept it easily, without confirming that you are IFR and they will hand you over IFR to the next capable controller.

12:45Z, EGPC Wick – 16:20 BIRK Reykjavik, 674 nm, 3:30 flight time, FL200. Routing: BAMRA DEVBI RATSU PODAR ALDAN ASRUN EL. Foreflight used throughout to file IFR flight plans. By DEVBI you need a Reykjavik Oceanic clearance to enter. Scottish will give you a frequency to temporarily switch to obtain this and return to them before handing you over to Reykjavik ATC near Vagar in Azores, which sees you on the radar. This station covers up to 012W, and I was in touch until about 013W, then 20 minutes with no radio contact, then Reykjavik ATC from 014W could hear me and I them. Probably depends on the weather. It helps to think of oceanic clearances and interactions with Reykjavik Oceanic or Gander Oceanic as talking to Eurocontrol, not normal ATC as they do not see you on radar and require position reporting to ensure the planes do not fly head on into each other. North Atlantic Operations and Airspace Manual explains.

In addition to the inflatable boat, I had a lifejacket with its own ELT transmitter. Also, a bag with water bottles and some snacks to throw into the boat. I also started thinking to grab the little emergency hammer that sits in the console, in case when floating I would come across a polar bear. First time five years ago going east with this aircraft my ferry pilot was half wearing his immersion suit on all water legs. I did not then, nor now. I felt it would slow me down executing emergency deplaning. Cirrus, in moderate swells, has about 21 seconds floating after parachute splashing down; and a reasonable amount of time to mentally prepare for what to do while gliding down from 20,000 feet. In no cases not surviving an engine failure was a plausible option, in my mind.

There was little icing on the route, although I ended up using about 8kg of de-icing fluid in rainy decent to BIRK-LOC Z 13 (there is also RNP available). De-icing tanks were full to start with, plus I brought 40kgs to top up for the trip. I find that a soft sponge soaked with de-icing fluid lightly brushed along the leading edges is the best way to have the system work without any gaps. Even a 20cm section on the wings, if not properly working, can slow you down by 10 to 15 knots with little accumulation.

Refuelling with AVGAS at BIRK is a problem, you need to pull up to the station, easy to find, but it only dispenses max 30,000 kronur (or 60 littres of AVGAS at roughly £2.90 per litre), I had to repeat the credit card process five times, while getting soaked by rain. Reykjavik Airport seems to have absconded with AVGAS to the local flight school and they do not care about anyone else – in addition to the limitation on the amount that can be dispensed, the station only speaks in Icelandic. The school also parks their aircraft partly blocking access, expect to have to block marked vehicle access road to reach. ACE FBO will drive you 200 metres to Customs, a container-like structure for GA on the side, efficient, just one minute of formalities.

"In addition to the inflatable boat, I had a lifejacket with its own ELT transmitter. Also a bag with water bottles and some snacks to throw into the boat"

I had some business on Sunday in Reykjavik, a few dinners with friends, and a trip inside a spent volcano – Prihnukagigur – amazing raw and powerful nature. Greenland airports will oblige but will charge extra to arrive on Sunday. Monday was going to be a long day, to reach all the way to KNPH – Westchester White Planes airport.

Monday June 26 08:10Z, BIRK – BGBH Nuuk, 12:10Z, 769 NM, 4:00 flight time FL200. Routing: SORIR SOSIT SABAG 6500N04000W BAMAM. Foreflight gives a slightly different routing, and if you are used to never fiddling with a Eurocontrol approved flight plan, adapt. I lost 20 minutes not getting that Oceanic Reykjavik ATC calls back ACE and gives them the routing they want you to fly, and to re-file yourself, and not keep on telling the tower that you know the right routing and can we not please get going. Different from departure from Wick, where you get that Oceanic clearance on route.

My previous insurance covered Europe up to Greenland, but they would not cover me for the crossing without a ferry pilot with five crossings experience in a single engine piston aircraft. And the price was hefty. I looked around for an insurance company that would, and Visicover (Allianz) a) provided much cheaper European coverage, and b) after asking for relevant experience (how many crossings have you made

– one – do you fly long legs – all the time, extended the cover for the crossing and flying in the USA for a reasonable price.

My plan was to fly to BGBW Narsarsuaq, 100 NM shorter, but the morning weather at BGBW looked uncertain and likely cloudy to below 1,500-foot approach minima, and they do not publish a TAF until about 09:00Z, but Nuuk does have an overnight TAF, and other weather checks favoured Nuuk. Both airfields require a Customs PPR during opening hours the day before. I had it for Narsarsuaq but not Nuuk, but it was no problem, I emailed both to say I now headed to Nuuk and was welcomed on arrival.

Radio contact with Reykjavik and then Nuuk FIR was throughout. No icing encountered high up, but over Greenland I was in high cloud layer and wanting to see the sights below asked and received a permission to descend to FL180, below controlled airspace at FL195. No luck, there were low clouds covering the ice shelf until about 100 NM out, but then I did get the amazing views of the West Coast. Nuuk ATC warned of ATRs on commercial departures in different directions, and arriving at FL180 I was treated as VFR so headed straight for ADMIP for a 3NM Visual 04, in between coastal peaks which were completely hiding the airfield. And as you start wondering where it is, a sharp descending 90-degree right turn reveals a perched up concrete flattening where the 930-metre runway lies. Together with the ocean, the peaks, it is a thing of beauty, kind of Manhattan-like.

Refuelling was fast, in DKK it is about £3.30 per litre, but it pays to make it clear you want it to the brim. I did, but when checking afterwards it was an inch short in both wings, say 90 gallons, vs. full 92, slightly annoying. The Tower at Nuuk was very cheerful, you pay landing fees, and they help you to file a direct route to CYYR Goose Bay that Oceanic Gander control will be happy with. Foreflight accepts as correct coordinates if entered like this into a flight plan: 6500N/04000W. Customs entry into Canada was easy, I called CANPASS, it took three minutes to tell what you are and the ETA for Goose Bay.

"Customs entry into Canada was easy, I called CANPASS, it took three minutes to tell what you are and the ETA for Goose Bay"

12:50Z, BGGH – CYYR Goose Bay 16:25Z, 712NM, 3:35 flight time, FL240. Both legs, to Nuuk and then to CYYR, had anticyclonic low pressure cross winds, adding about 15 to 20 knots on the tail. Routing: 6200N05342W 5900N05600W PORGY YYR – after a climbing left U-turn, a straight line heading 206. Nuuk FIR kept me at FL180 (uncontrolled) for about 230 miles, initially on account of incoming traffic from CYYR that was soon to be descending; and we were in good contact. Before entering Gander airspace, I requested FL240 again, and it was finally approved. The next Oceanic Gander frequency I could not hear at all, and in fact

1. N139LC lives most of the winter in Annecy, unusual, but when snow comes it can stick
2. Cannulas, constant flow for me, are very effective to keep the brain working at altitude
3. Departing Reykjavik Runway 13, 180 turn to Nuuk

More sticky snow on the wing at the aircraft's home airport

I never ended up speaking with them going west. Nuuk could still hear me reporting at 6200N05342W, and Delta 43 kindly relayed on 123.450, aircraft to aircraft listening frequency, my message: "Oceanic Traffic, N139LC position report, normal, passed 5900N05600W at 14:14 Zulu heading PORGY." About 45 minutes later, an SAS flight called for me to switch to another frequency, Gander Domestic, readability was 5. About 100NM before Goose Bay, broken ice flows covered the ocean, reminding me of how cold the water would be if deplaning in an emergency. GANDER requires you to have an VHF radio if below FL250. Not practical for a Cirrus to unfurl a trailing antenna with no windows.

Goose Bay had sunny warm weather, airfield was busy, RNP 26 was interrupted with: "Can you accept vectors for visual 26?", which resulted in practically straight in, slotting behind a Medivac landing. CanPass call produced two customs officers, who pulled up to the aircraft and checked my passport, two minutes.

One thing that worried me before taking off from Denham was having the Jeppesen's NAV data for North America and Greenland. I bought the USA coverage for Foreflight so all charts were handy. Getting into Garmin the Nav Data, however, required Jeppesen Updater to have that coverage added to copy to the SD card to upload into the SR22. I explained what I needed by email to Jeppesen in Germany and got a quote that I tried to process on Friday before the Saturday departure. I left it a bit late. The quote listed coverage areas in unclear lingo, but what was clear that it included charts that I already had. Furthermore, when I tried to pay for it online, the system did not work and by the time I was dealing with it in the afternoon Garmin Germany (Europe) stopped taking phone calls, at 16:00 Paris time. I logged in an emergency support request, and that reverted with a Jeppesen US number to call. Gerry answered, quickly found my account and the quote, but we then discovered that the quote was for charts only and not Nav Data I asked for. 10 minutes later I paid half of what Jeppesen Germany quoted for the wrong thing and in another half hour the additional coverage showed up in the Jeppesen Updater.

"One thing that worried me before taking off from Denham was having the Jeppesen's NAV data for North America and Greenland"

18:15Z, CYYR Goose Bay – KBGR Bangor, 21:55Z, 615NM, 3:35 flight time, FL180. Woodwards in Goose Bay, despite being super busy, managed to refuel me in 30 minutes. I then filed an eAPIS for US Customs, which requires just one hour notice but also an expectation that you land within 10 minutes of your stated ETA, so I delayed filing until I knew when I could depart, but that is not how it works. A response confirming my filing came back by email, saying to now contact the airport of arrival field office

The views were spectacular throughout the trip

by phone, so I did. "When do you expect to depart?". "10 minutes," I said. "That does not work like that, I need more then 10 minutes to process you," said the officer. "Wait until you receive an email associated with your APIS account either granting an approval to land or refusing it.". "Yes Sir." 40 minutes later approval to land arrived. It also required a quick call back to confirm the ETA. Five minutes later I was off to rainy and cloudy Bangor for vectored ILS 15. A swarm of A10 Warthogs were exercising above, how they and ATC manage to cope with splitting up into different groups, heading to different Nav points, and then recombining was symphonic. Tower advised a PC12 landing just before me that his next destination, as was mine, Westchester White Plains KHPN had a Ground Stop, with the next update at 20:00 local.

20:00 became 21:00 and I headed for Residence Inn and a dinner at the Tavern. While Connext satellite weather on the MFD gives me a good sense of the trouble spots with colours going from green to yellow to purple on the MFD, it does not tell the hight of cells and flying at night through that thunderstorm floating up north I did not fancy, even if you can turn on with a frequency toggle the runway lights at KHPN after 23:00 local, when ATC had gone home.

Tuesday June 27, 11:50Z, KBGR Bangor – KHPN Westchester County, 14:10Z, 349 NM, 2:20 flight time, at "One Twelve Thousand" reflecting US and Canada transition altitude at 18,000 feet. The six legs combined distance from London Denham to Westchester worked out to be 3,567 NM flown in 19 and a half hours. This was a lot of fun. Flying in the USA is a pleasure, airfields are everywhere, all with approaches, FBOs are amazing, welcoming, and inexpensive or free with fuel, and AVGAS at $7.80 per gallon or about $2 per litre.

"Flying in the USA is a pleasure, airfieds are everywhere, all with approaches, FBOs are amazing, welcoming and inexpensive"

Performance Flight at KHPN changed oil for me and topped up the oxygen.

July 5th, 16:55Z, KHPN – KBGR, 18:55Z, 320 NM, 2:00 flight time, FL"120".

Returning trip flipped US Customs and CANPAS complexities. Filing an eAPIS a few days in advance granted a direct departure from KHPN to CYYR without any check, only for the wind to change against me making this 912 NM not possible. I refiled to depart from Bangor to Goose Bay the morning of, the same result, no formalities. CANPAS call, however, put me on hold at Bangor, and after a while I departed asking my US based daughter Gabriella to call them while I was enroute.

19:20Z, KBGR – CYYR, 23:10Z, 615NM, 3:50 flight time, FL210.

These two legs, Iceland to Greenland to Canada and back, are the loneliest, and most exposed. If the wind is 60 kts on the nose, SR22 does not have the range. And a few weeks before they were. Windy

1. Refuelling at Narsarsuaq, one quickly appreciates the need for face nets, probably 50 mosquitoes in a square metre
2. Departing Goose Bay Runway 08
3. Packing the de-icing fluid for departure from Denham

will give you winds at FL180 and 240 accurately a few days in advance. I find Skydemon to be the most acute predictor of flight times, and in the weather tab there is a manual input for wind. You can also change direction, shortest crossing to Canada is to Iqaluit CYBF, a mere 445 NM from Nuuk.

July 6th, 09:25Z, CYYR – GBGW Narsarsuaq, 13:05Z, 674NM, 3:40 flight time. FL230. Routing: YYR 5930N0500W 6104N04539W. Tower asked if I had a HF radio. "Negative, but I can fly at 250," I said. No problem, it is ok, was the reply.

First 100 miles was with Gander Domestic ATC, then that Gander Oceanic frequency. Unlike on the trip westwardly, we were in radio contact throughout until Nuuk just before reaching Narsarsuaq, for RNP Y 06.

Unlike Nuuk, not much new is being built here that I could see, but the process was quick and cheerful. You really appreciate why the minimums are at 1,500 feet here when you run the approach. There is no way you clear the rocks by more then 20 metres, and the "terrain, terrain, pull up pull up" warning came on at about 1,400 feet, just before you clear the cliffs and now over the water for the short final. The METAR and TAF were clear for Narsarsuaq on my departure from CYYR, but arriving the haze gave no forward visibility until about 5,000. Airfield will be closed below minimums. If you then do arrive, there is no alternate to reach with the remaining 1.5 hour fuel, and if it is not clearing one could descend low over the ocean, find the right fjord to follow in, and a safe landing can be had.

13:50Z, BGBW – BIRK, 17:35Z, 681NM, 3:45 flight time. FL210. Routing: NA 6200N04000W 6300N03000W EPENI ELDIS EL.

Departing 06 to the east the ground rises rapidly and beautifully.

July 7th, 08:20Z, BIRK – Wick, 12:05 660NM, 3:45 flight time, FL 210 to 230.

"Airfield will be closed below minimums. If you then do arrive, there is no alternate to reach with the remaining 1.5 hour fuel"

Routing: LUTER MOXAL 6200N01000W NALAN BAMRA.

Reykjavik ATC cleared direct to 62N and 10W shortly after a right turn from runway 01, beautiful views of the city. I listened to all the podcasts I downloaded, In Our Time with Melvyn Bragg and Desert Island Discs with Kirsty Young, the one with Keith Richards was notable for discovering blues, jazz and country early performers you never knew of, and these were most suitable in a way they keep your attention and are kind to the ATC interruptions. Mensun Bound's The Ship Beneath, about finding the Endurance, I would have to read, it felt too intense to audio book it on the way. In radio contact throughout, and hour into the flight there was a little whiteness covering the leading edges, so I requested FL230 to clear clouds.

10:05Z, EGPC – EGLD Denham, 16:00Z, 442NM, 2:55 flight time. A great trip. I plan to repeat it next year. It was good to be back home. ■

1. Approach to Reykjavik Runway 13
2. Descending along the western Greenland peaks to Nuuk
3. Tower at Nuuk

A very lonely landing at Nukk Airport

WORDS David Hirschman, courtesy of AOPA US
IMAGES Courtesy of Game Composites

Unlimited aerobatics with speed and range

David Hirschman was invited to fly the GameBird GB1 over Arkansas skies - it was an easy invitation to accept!

HTHE GAMEBIRD'S oversized control stick seems made for mischief. A sharp tug on the goose-neck column yanks me against the semi-reclined seat as the airplane vaults skyward. Symmetrical wings with distinctive swept-back tips pivot 90 degrees from level flight as the GB1 climbs like a missile into a cloudless blue sky.

The MT propeller digs into the cool, dense air, and the blades flatten and pull like a sled dog team as the aeroplane shifts into low gear. Finally, after going straight up for 10 seconds (and gaining about 2,000 feet), forward progress comes to a halt, and a kick of left rudder points the nose down at the hills of northwest Arkansas below. Full aileron deflection turns the autumnal colours into an orange/brown blur as the airplane rolls in excess of 400 degrees per second.

A series of aerobatic manoeuvres which, in most aeroplanes, would quickly consume airspeed and altitude doesn't slow the GB1, which actually gains altitude. The G meter registers plus six and minus two, a workout for me – but this aircraft, built for plus or minus 10 Gs, is loafing.

"The pilot is always the weak link in this aeroplane," says Philipp Steinbach, the wiry German aircraft designer, hardcore aerobatic pilot, and motivating force behind the GB1 and Game Composites, Ltd., the company founded to manufacture it. "The aeroplane's much tougher than any human."

This green and black model, serial number one, finished certification tests for European regulators in mid-2016. Both the aircraft and the Game Composites factory underwent FAA inspections in early 2017 for certification in the Acrobatic category—and the GB1 will become a showpiece for the durable, lightweight aerospace materials that Game Composites plans to produce for other clients.

The company has built 50 so far. It will compete with Extra Aircraft in Germany and Aviat in Wyoming in the tiny, highly specialised market of certified aircraft capable of unlimited aerobatics. Steinbach says the GB1 can win at aerobatic competitions, and it has cross-country speed, range, and endurance that no other aircraft can match.

"You can go out there and dominate the skies, or you can cover some serious distance," said Rob Holland, US aerobatic champion and airshow performer, who has flown the GB1. "There's nothing else quite like it."

The panel includes an angle-of-attack indicator atop the glareshield and a cutout for holding an iPad. The 30-degree reclined seats and throttle mounted low on the left are meant to enhance G tolerance.

FAST FACTS

10G
PLUS AND MINUS

981
TAKE OFF DISTANCE (FT)

2,600
CLIMB RATE (FPM)

240
KIAS VNE

205
MAX LEVEL SPEED (KT)

FULLY BAKED

Each GB1 is assembled from 330 carbon fibre parts, and then the entire airframe is baked at more than 200 degrees Fahrenheit so all the components cure together. The wings are made in top and bottom halves, and the fuel tanks are sealed when the wings are bonded together. The fuselage is built in a jig with seats and torque tubes already in place.

Unlike other specialty aircraft, all GB1 parts are interchangeable between airframes. If a wing is damaged in a landing mishap, for example, it can be replaced in the field. With other models, a damaged wing requires the entire aircraft be

The GB1 is an extremely versatile aerobatic aircraft

sent away for repairs.

Game Composites has a 40,000-square-foot factory at the Bentonville Municipal Airport. Wal-Mart heir Steuart Walton is chief executive of Game Composites and financially backing the GB1, but Steinbach takes pride in doing things on the cheap. When a bead-blasting quote comes in too high, Steinbach vows to do the job himself.

"I don't mind getting my hands dirty," said Steinbach, 42, an independent, mostly self-educated entrepreneur who left school at 16 and has founded three aviation companies. "And I refuse to be taken advantage of."

Steinbach has designed and built three aircraft: the Impulse, an Experimental kit airplane; the Xtreme Air, an EASA-certified aerobat made in Germany; and now the GB1. He also worked as an employee at Extra Aircraft in Germany. "I'd never advise my career path to anyone," he said. "I've been lucky. Things could have gone wrong so many times, and so many places along the way."

Steinbach started flying gliders at age 14 and quickly moved to powered aircraft. He has competed in aerobatic competitions all over the world, and he lived in England for four years before moving to Bentonville in 2016.

He said the United States was an obvious manufacturing location because the general aviation market here is bigger than anywhere else, and because Bentonville is Walton's hometown—and it's becoming a centre for flight training and sport flying. "We've got the right product, the right experience, and resources," he said. "This will work."

Steinbach's efficiency goal is to produce 50 aeroplanes per year, but he says he's not in a hurry. "We need to grow slow," he said. "Our product is extremely quality sensitive. We can never fail to keep the highest quality standards."

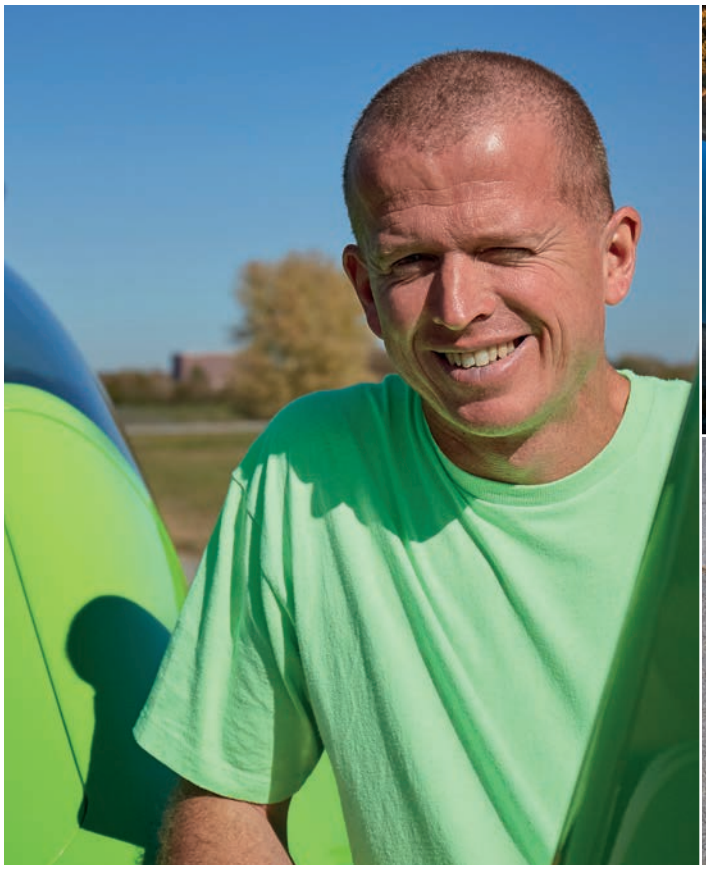
"The four-blade prop reduces noise and provides more ground clearance than two- or three-blade models"

CURVACEOUS CONTOURS

The GB1's curves set it apart from other aerobatic aeroplanes, which typically have hard edges that are easier for contest judges to see and grade. The GB1's rakish wing tips and tail, as well as its tall canopy, are made for aesthetics.

The full-span ailerons are purposely devoid of spades – common accessories on aerobatic aircraft that provide an aerodynamic boost, like power steering. Steinbach says the GB1 has plenty of roll rate without spades, and they would needlessly add drag and complicate rigging.

The four-blade prop reduces noise and provides more ground clearance than two- or three-blade models. Wing tanks hold up to 28 gallons of avgas each, and a fuselage "acro" tank has room for an additional 25 gallons. On aerobatic flights, the wing tanks must be empty, with all the fuel in the acro tank. The baggage compartment



1. Aerobatic legend Philipp Steinbach is the brains behind the GameBird GB1
2. Despite being built for action, the GB1 is also a comfortable cruiser with a roomy cockpit
3. The GB1 has surpisingly good visiblity on the ground despite it being a tailwheel

The MT four-blade propeller reduces noise and offers better ground clearance

holds 33 pounds.

There's a side-hinged canopy that allows easy cockpit entry. The seat back is reclined 30 degrees, and the cockpit is roomy. Seats are fixed and the rudder pedals adjust.

The aeroplane sits at a 9-degree deck angle, and visibility on the ground is surprisingly good for a tailwheel. A ratchet on the padded lap belt secures the four-point harness. Engine start is normal for a fuel-injected engine, and an Electronics International MVP-50 engine monitor displays temperatures and pressures as well as rpm and manifold pressure.

PRECISION AND ERGONOMICS

Take-off acceleration is worthy of a drag racer. With elevator neutral, the tailwheel comes off the ground about three seconds into the take-off roll, and left-turning tendency is easily counteracted by the authoritative rudder. The aeroplane comes off the pavement in about six seconds after a ground roll of about 800 feet. A 15-degree nose-up attitude results in a 110-knot climb with two aboard, and I level off at a few hundred feet.

The ailerons have a definite centre and light breakout forces, and the tall, Sukhoi-style stick exaggerates even minor control inputs. The elevator is light, so I add full nose-down trim to give me something to pull against; rudder pressures are moderate.

In the practice area, I set power to 25 inches and 2,500 rpm, and go through a series of positive-G manoeuvres (barrel roll, half-Cuban, revers half-Cuban, loops, hammerhead, Immelmann, spin) that highlight the aeroplane's grace, obedience, and control harmony. Then I hand the controls over to Steinbach, who reveals its aggression.

"Watch your head," he warns, before a jarring set of full-deflection point rolls, square corners, and snap rolls that send my hat and sunglasses to opposite corners of the cockpit.

Returning to the airport, Steinbach recommends an approach speed of 85 knots. A curving approach keeps the runway in sight, and the aeroplane responds instantly to pitch and power changes. I carry a smidge of power into ground effect and pitch for a three-point attitude, but I add too much back-pressure. The nose comes up and the airplane balloons, so I neutralise the elevator and let the aeroplane settle.

"The GB1 is capable, versatile, and visually appealing with the flexibility to accommodate many personal tastes"

We touch down at about 70 KIAS in a three-point attitude and the aeroplane rolls out smoothly with almost no rudder input and light braking.

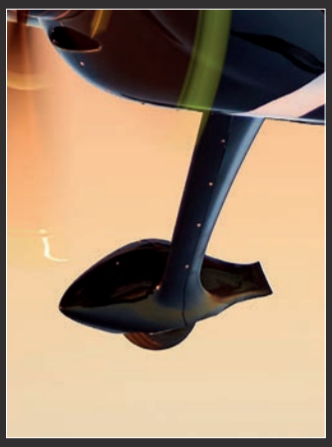
The GB1 is capable, versatile, and visually appealing with the flexibility to accommodate many personal tastes. It can be graceful and smooth; forceful and rough; or it can span time zones traveling in a straight line. All the while, the GB1 conveys an exacting sense of precision and ergonomic thoughtfulness in every aspect of the way it looks, feels, and flies. The GB1 can take you where you want to go, any way you want to get there. ■

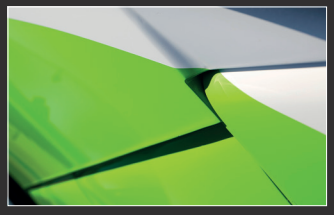
TECH SPEC GameBird GB1

BASE PRICE: $400,000

SPECIFICATIONS
Powerplant: Lycoming AEIO-580 B1A
Propeller: MT 4-blade, constant speed
Length: 23 ft
Height: 8ft 5in
Wingspan: 25ft 3in
Wing Area: 122 sqft
Wing Loading: 18 lb/sqft
Max Gross Weight: 2,200 lbs
Empty Weight: 1,300 lbs
Useful Load: 900 lbs
Seats: 2
Baggage Capacity: 33 lbs

PERFORMANCE
Take Off Distance: 981ft
Take Off 50ft obstacle: 1,378 ft
Rate Of Climb: 2,600 fpm
Service Ceiling: 15,500 ft
Cruise Speed (75% power): 205 kt
Landing Distance: 1,486 ft
Landing 50ft obstacle: 2,231ft
G Limits: +10G/-10G
VNO: 200 KIAS
VNE: 240 KIAS





The oversized control stick is made for mischief

WORDS David Rawlings **IMAGES** Courtesy of Pratt and Whitney

THE PT6 IS CELEBRATING ITS DIAMOND JUBILEE

The legendary PT6 is arguably the most successful aviation engine in history, and has powered a variety of aircraft for 60 years!

FEW engineers can ever truly be certain that what they create will be a success. And fewer still can know it will change an entire industry. So, imagine being on the team that created the Pratt & Whitney Canada PT6 turbine, back in 1963 – a testament to getting it right first time.

The engine they created to replace the noisy and thirsty piston radial engines of the era went on to become arguably the ultimate aviation workhorse and the benchmark for all turboprop applications. From a first notion to power de Havilland Beavers, it now powers 130 aircraft types from turboprops to helicopters to tilt-rotors, in a range that stretches from 500shp all the way up to 2000shp.

Aircraft that use it are equally wide-ranged, from military trainers to crop sprayers and from heavy load-luggers to hand-crafted executive transporters. And it shows no sign of stopping its domination.

FAMILIAR FIRST USE

The first PT6 engine off the line went to Beech Aircraft in December 1963 for a model initially called the Beech 87; you know it now as the King Air, and more PT6s have been fitted in the legendary twin than any other model type.

So far over 51,000 PT6 engines have been built, with total runtime figures nudging 390 million hours with an average speed of 270kt – that's 250,000 roundtrips to the moon!

The first PT6 design brief outlined a light and compact turbine, from around 500shp to 2000shp which would be suitable for a wide array of machines and easy to service. Engineers then sketched out a design that would remain at the root of every PT6 model to this day.

Gordon Hardy, one of the development team of 12 young engineers, still has his very first hand-drawn sketches, and he said: "We saw that in the power range of 400hp to 2000hp, there weren't many engines available. We thought the DHC Beaver needed a good turbine engine of about 4-500hp... why not do one for that? It turned out to be ideal for the market, and had wide applications."

Another member of the team, Hugh Langshur, said: "We were quite a disparate group, all quite young and just starting families, but what held us all together was that we realised we had a tremendous opportunity, and that we were on a very promising path as innovators and engineers. It was a very exciting time to go to work."

> *"What held us all together was that we realised we had a tremendous opportunity, and that we were on a very promising path"*

A STROKE OF GENIUS

Key to the PT6's early success was a decision by the team to separate its power and gas sections onto split and free-contrarotating shafts. The tradition was to fit both on to a single connected shaft, but the decision to create a break between the gas and power sections had many benefits.

For pilots, it meant they could idle and feather the propeller free of turbine rpm, which can aid ground loading with the engine running, and make flying easier. It also allowed a far lighter starter motor, as it only had to drive half the engine. Crucially, on-wing maintenance and inspections were significantly easier, and the reverse flow – where the air is inducted at the rear, and passes towards the propeller – helped cut foreign object damage too.

Hardy says: "The driving force was to achieve something in the aviation business that people would sit up and take notice of.

"It was 'building a better

Beechcraft use The Pratt and Whitney PT6 in their King Air

mousetrap'... we would show them how to do it.

"The split shaft means hot section inspects on the wing. You could break the engine in two, get at it, and easily bolt it up. Its flexibility was fantastic, and we made sure it was good and reliable.

"The reverse flow at first appeared to be a negative, but in actual application it turned out to be very positive. It made it much quieter, and also helped protect the engine from foreign object damage like birds, rock, and hailstones... we developed a system that bypassed all the rubbish and just let the air go into the engine."

Testing was punishing, designed from the outset to be tougher than would ever be experienced in service. Hardy says: "The first flight was uneventful. We bolted the engine to the nose of a Beech 18, put on a Hamilton Standard propeller on the nose, and said 'Start her up!', and it took off no problem.

"By that point it had a lot of hours in the test cell on the ground, which was much harder than being on an aeroplane. The test cells were designed in such a way that the prop would shake the engine like a terrier shaking a bone, and so you bust the engine up in the test cell. If you can get it to work in the test cell, it was duck soup to get it to work on an aircraft."

The team were so convinced the engine was such a leap forward, that they sold the first two for the princely sum of $1 to Beech, certain that it would perform faultlessly and advertise its potential to both military and civilian customers.

Hardy remembers: "We thought what we'd do was to put two engines on a Beechcraft, and they could demonstrate to the army how good it was. The army loved it! And once everyone else saw how good the aircraft was, they thought 'We want some of that!', and it built up from there."

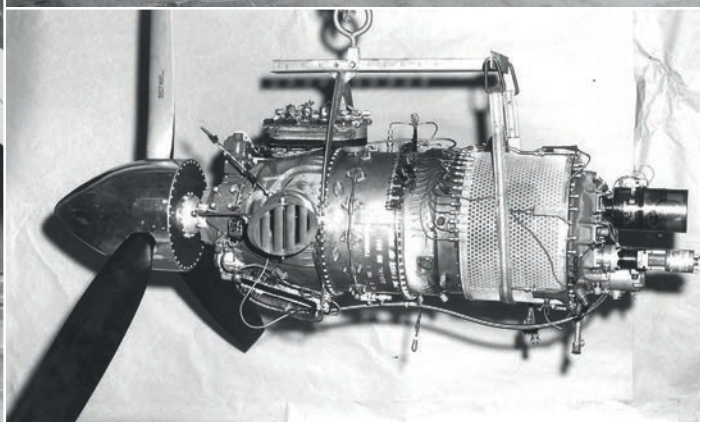
"We knew it was good because we beat the hell out of it to make it good"

CHANGING THE WORLD

The early success of the engine, with 5000 made in 12 years after launch and 5000 more in just the next four, left the team knowing they had created a true game changer.

Hardy, whose son now works at PWC, says: "It makes me very proud to see it continue as a cornerstone in the aviation industry. We knew it was good because we beat the hell out of it to make it good. Reliability is No.1 in this game... it just keeps going. It had to be a winner. It's a good looking, reliable engine. It sells itself."

Langhsur continues: "After we started to see PT6 at airports around the world, we realised that it enabled the design of aircraft which contributed a great deal to opening up of many areas of the world. Things that would not have been possible now became possible and affordable. I would say that the PT6 is among the dozen or so items which have shaped the world that we know today and take for granted." ■



1. The young team working on the PT6 in the early 1960s
2. The first PT6A made its first flight on May 30, 1961 in a three-engine RCAF Beech 18 Expeditor 3T
3. The first production model of the PT6

More than 3,000 King Airs have been built since its introduction to the market

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