

AOPAUK

The long journey to perfection

It's been a long and winding road for the PS-28 'Sportcruiser' – but it's here to stay...



TECH AND BOOKS

The latest products and offerings, plus ways to treat yourself this Christmas

RAF AT 100

Henry Simpson reviews the RAF's historic celebrations along The Mall this year

MOTORGLIDER RULES

Can you fly a motorglider on an SEP licence? Nick Wilcock explains all



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WE'RE ALWAYS WORKING FOR YOU, THE PILOT

THE ARTICLE (p14-15) entitled 'Maintenance Time' is a good prompt to add something further about the AOPA Maintenance Working Group. It came into being in 2009 when owners and maintainers began to appreciate just how burdensome it was to comply with the 2003 EASA Part M for Continuing Airworthiness Requirements. The additional administration thrust upon maintainers led to extra cost, ultimately paid for by aircraft owners. The group initially consisted of aircraft owners and maintainers attending on a voluntary basis. The National Aviation Authority, namely the CAA in our case, was responsible for ensuring compliance and it soon became obvious that their involvement was necessary and so representatives from the CAA were invited to join, forming the current tri-partite group.

The Working Group provides another valuable function, in that members' serious engineering problems that have been raised with AOPA can be reviewed in identified form by professional maintainers. Many such problems are unique, in that nothing similar has previously been drawn to AOPA's attention. However, a noticeable proportion fall into two categories.

Firstly, when an owner buys a second-hand aircraft, the new owner's maintainer may discover that a lot of unexpected remedial and costly work is necessary to restore the aircraft back to full airworthiness. To avoid this issue, AOPA recommends that a pre-purchase inspection is carried out before money changes hands. This was the subject of an article in the August 2018 issue of the magazine – the same information can be found on the AOPA website. Secondly, there may be a falling out between owner and maintainer over costs, which might have been avoided had there been adequate liaison between both parties. The Working Group established a Code of Practice for Maintenance and Repair specifically to address this issue. It consists of a list of sensible actions that provide a workable arrangement, which ensures prior discussion of potential large costs. Maintainers do not have to be AOPA members to sign up to the Code, but any aircraft owner may find it beneficial in their future dealings to draw their maintainer's attention to some of the specific clauses.

Individual engineering problems forms only a small part of the group's deliberations, most of which concern more general issues. Many have implications for the wider GA community. In this regard, a brief update of the WG's work is reported to the General Aviation Partnership meeting, held under the auspices of the General Aviation Department of the CAA. The partnership meeting takes place three times a year and is attended by representatives of all major GA sectors and associations. Thus, the benefits of the group's focus on reducing disproportionate and unduly burdensome regulation, as well as work on initiatives that improve safety (eg 'Aviation Safety Reporting' in the article mentioned above), reach out beyond the immediate AOPA membership. That contributes to AOPA's key objective to maintain and improve the future viability of general aviation in the UK and beyond. Finally, I wish Happy Christmas to all AOPA members, and safe and enjoyable flying in 2019. ■



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EDITOR'S MOMENT

Well here we are again, another year almost gone and 2019 just around the corner.

Did you achieve all you wanted to this year? Are you setting up plans for your flying life for next year? Now is the time for both quiet reflection, and looking ahead.

AOPA UK magazine in 2019 will be full of features, news, tech and reviews – all aimed at the GA, everyday pilot. We hope it will inspire you to go out, get in an aircraft and go flying.

With so much uncertainty still surrounding Brexit and its implications, there may well be bumps ahead for us all. For the aviation community especially, there is still a lot of concern. With so much yet to be ironed out, rest assured that AOPA will continue to fight your corner, always with your best interests at heart.

Let me finish by wishing you a happy Christmas, Season's Greetings, and here's to a productive 2019.

David Rawlings

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HAYWARD AVIATION

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HOPING FOR THE BEST, PREPARING FOR THE WORST

BREXIT briefings seem to be on the agenda of most meetings we attend, and not without reason. The DfT and CAA have stated that the UK wishes to remain within the EASA system – however, this will be a political decision. Having said that, the UK will adopt the existing rules and regulations into the UK legal system, which in effect, mirrors the existing EASA/EU requirements. Logical, if we want to retain a frictionless aviation system. If we end up with a ‘no-deal’ BREXIT and the UK becomes a third country operation, similar to Canada/USA, it is highly unlikely, in my honest opinion, that the DfT/CAA will retain a seat at the rule-making table, nor will we have a vote. Therefore the notion of ‘cut and paste’ with regards to future EASA rules may be the worst of all possible outcomes.

I have seen first-hand the stress this is causing industry colleagues – they have no clear political guidance, so they end up planning for the worst possible outcome. The UK has embarked on bi-lateral discussions with the USA, Canada and Brazil. In the future there may be a bilateral agreement with EASA or with each of the individual EU states.

During the round-table discussion with aviation minister Baroness Sugg I made the point about the ability of GA business being able to plan ahead. Other than a ‘nod’ of understanding it’s clear that there is no guidance. I would add that Baroness Sugg has been well briefed about GA and it’s clear that she takes on board the concerns of the GA industry.

During the same meeting we discussed the government’s plan to develop its aviation strategy. Towards the end of 2018 the DfT plans to issue an aviation Green Paper, which will include a chapter on the development of GA. By the middle of 2019 there is a plan to turn the Green Paper to a White (policy) Paper. On several occasions AOPA has had input to the DfT’s consultation.

At the same time the CAA has been

"We should have an open debate with the CAA on this topic and look for improvements..."

developing a future airspace strategy. AOPA’s input to the strategy, which is looking beyond 2024, is to make it clear that in return for investment in new/future technology we want greater airspace/airport access. We also want to see better integration for airspace users, especially when you factor in drone operations. Therefore there will be a greater need for sharing airspace with less segregation.

Future airspace will become more about knowing where the traffic is, and in some areas, the intent of the aircraft too. The government is predicting that by 2030 there will be 70,000 drone operations in UK airspace and they will want to operate beyond the current rule of ‘within visual line of sight’. The growth of this activity will force changes around the way airspace is organised and AOPA, in recognising some of the societal benefits from drone operations, wants future solutions that are proportionate and risk based that enables our continued freedom to fly. This involves a great deal of effort in terms of participation and representation at meetings.

Through project GAINS, AOPA is planning flight trials that include airborne and ground-based surveillance systems as we aim to improve the situational awareness for GA, particularly near to GA aerodromes, and we also want to have a positive impact on reducing airspace infringements which, sadly, is still a major concern.

Many of the airspace topics are discussed through forums like NATMAC (National Air Traffic Management Advisory Committee) where all of aviation, from heavy airlines to light GA, has an opportunity to provide advice to the CAA on all airspace matters.

The CAA has also been consulting,

amongst a limited circulation, on developing Class E Airspace as a way of improving integration of airspace. On this subject I think the CAA is trying to be helpful. With Class E, VFR flights do not need a clearance to enter whereas IFR aircraft do need ATC clearances.

Currently you do not need a radio in Class E below 10,000ft, but the CAA is suggesting that in some Class E airspace there would be the requirement for the carriage of an electronic conspicuity device above 10,000ft. A radio is required, as is too, a clearance to enter the airspace.

Where we have Class D around a number of airports I would be keen to see some of these parts of the system moved to Class E. I am sure this would have an impact on reducing infringements and reduce ATC workload. We should have an open debate with the CAA on this topic and look for improvements on how the airspace is managed whilst benefitting safety.

The EASA Annual Safety Conference this year centred on GA. It’s been some years since the last EASA conference focused on us and the plan is to make it a four year cycle. Generally the conference was positive and forward looking, with a lot of presentations around new technology – especially electric engines and how GA needs to adapt if it wants to remain socially acceptable.

At the end of the conference Patrick Ky committed himself, and EASA, to better, simpler rules and to making General Aviation more affordable.

Finally, the CAA spokesman for BREXIT said that whatever changes are required in respect of exiting the EU, the CAA will use a ‘light touch’ approach. ■



M Robinson

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HELPING YOU STAY FLYING

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



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Aerodromes in danger



WORDS Pauline Vahey IMAGES various

WHAT HAS THE MWG BEEN DOING FOR YOU?

Pauline Vahey has been chairing the Members Working Group meetings and explains what they've been discussing

AFTER one of the best summers for flying for many years, the Members Working Group (MWG) returned to White Waltham for its Autumn meeting on Saturday 29 September.

AOPA Director and member of the All Party Parliamentary Group for General Aviation (APPG GA) Airfield Working Group, John Walker, started the meeting off with an update on the status of several of the UK Airfields under threat from closure. There was some good news from Kemble – now named Cotswold Airport – with the Local Plan continuing to endorse the continued use of Kemble for aviation. Also, good news from Manston,

which was now starting a three-month timescale for pre-examination as a nationally significant project. There was also interest in the purchase of Colerne, due for disposal from the MoD estate in 2018. Concerns were raised about Scampton and Linton-on-Ouse, also on the MoD disposal list. Bourne had gone for 3,000 homes and the Local Plan was being reassessed at Chalgrove. Read more about other airfields under threat on page 15.

AIRSPACE

Most of the discussion around airspace centred around the slow progress in the implementation of

"The point was raised that the production of a noise study, required before implementation, was an expensive exercise"

LPV (localiser performance with vertical guidance) approaches. It was resolved to ask the APPG GA Airspace Working Group to bring it to ministerial attention. It was also suggested that comparisons should be drawn as to how the French and the Americans were rolling them out, to ascertain if there were any lessons for the UK. The point was raised that the production of a noise study, required before implementation, was an expensive exercise for many airfields.

The GAAC was also working to get all the other GA organisations on the case too. It seemed a nonsense that environmental factors



Taxation of trainee pilots was another point of discussion at the Members Working Group meeting.



There has been some good news emerging from of Cotswold Airport about its future

were controlling the obvious improvement in safety that LPV approaches would deliver to GA.

TAX ON TRAINING

It was thought that taxation on training pilots and flight instructors was a contributory factor to the current shortage of pilots and instructors. The situation was compared with boating where maritime training schools, for example at Greenwich, get government funding. A question was also asked about the difference from training train drivers.

EASA'S EFFORTS

Nick Wilcock, also an AOPA Director, reported back on his tireless work at EASA, the results of which are regularly sent round to all AOPA members who have asked to subscribe. The excellence of his work was marked by the award of the IAOPA Service Award for outstanding service and dedication to the members of IAOPA Europe and AOPA UK. Well done to Nick; we're lucky to have someone with Nick's skills and understanding on our side, working for the UK GA community.

INCIDENT REPORTING

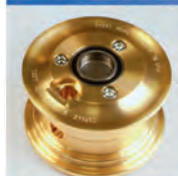
Malcolm Bird, recently appointed to the Board of AOPA, had circulated a proposed MOR document, worked on by both AOPA

and the CAA for occurrence reporting, prior to the meeting. This prompted an interesting discussion on what constitutes an incident that requires reporting. There were some surprises as to what should be reported as an incident.

The perennial topic of how to increase AOPA membership was discussed and it was suggested that specific examples of what AOPA does for its members should go in the magazine. It was also suggested that pilot students at universities such as High Wycombe and the University of West London should be approached and encouraged to take up student membership.

The dates of 2019 Members Working Group meetings will be announced very soon and any AOPA member is very welcome to attend. Coffee and tea are available at every meeting, which generally starts at 10.30 am. There is a free cold lunch and it finishes in the early afternoon. If you fly in to the meeting, there is usually a discount on landing fees and fuel uptakes. It's a fantastic opportunity for any member to bring ideas and issues to AOPA or just come along to hear what AOPA is currently working on from the top, since Martin Robinson regularly attends to give us his CEO's update.

Any questions just get in touch: pauline@aopa.co.uk. ■



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WORDS & IMAGES Adam Winter, Commercial Pilot and Instructor

RUNWAYS AND DECLARED DISTANCES

Adam Winter takes you on a guided tour of runways and what their dimensions mean to the private pilot. Make sure you never get caught short again

IF YOU fly from a licensed aerodrome or are planning to visit one, you can look up the dimensions of the runways in the NATS website under IAIP (International Aeronautical Information Publication).

It is quite user friendly. There are also published guides such as Pooley's or AFE flight guides. These guides list the TORA, TODA, ASDA and LDA.

In this article we are going to look at the physical dimensions of runways and what the measurements mean for a light aircraft pilot. The above abbreviations stand for: Take-off Run Available (TORA), Take-off Distance Available (TODA), Accelerated Stopping Distance Available (ASDA) and Landing Distance Available (LDA).

TORA, the take-off run available, is the length of runway that is suitable for an aircraft to use as a run-up to getting airborne. It does not include Stopway or Clearway. The distances are given in metres.

Stopway is an area at the end of the runway that can support an aircraft and allows it to come to a safe stop without damage. Stopways are usually at the end of a runway that is used for commercial air transport jets. It allows them to take more passengers or freight because it gives them more distance to stop in the event of an emergency than the take-off run alone would have, and so is not part of the TORA (or LDA). Stopways are marked by yellow chevrons, but don't concern us... except don't land on yellow chevrons!

ASDA is the length of the take-off run plus the length of

"Stopways are marked by yellow chevrons, but don't concern us..."

the Stopway. It is sometimes referred to as the Emergency Distance Available.

Clearway is at the end of a take off runway, and is an area 'under the control of the airport authorities' where there are no obstacles and over which an aircraft can make a portion of its initial climb where there will be no terrain or fixed obstacles.

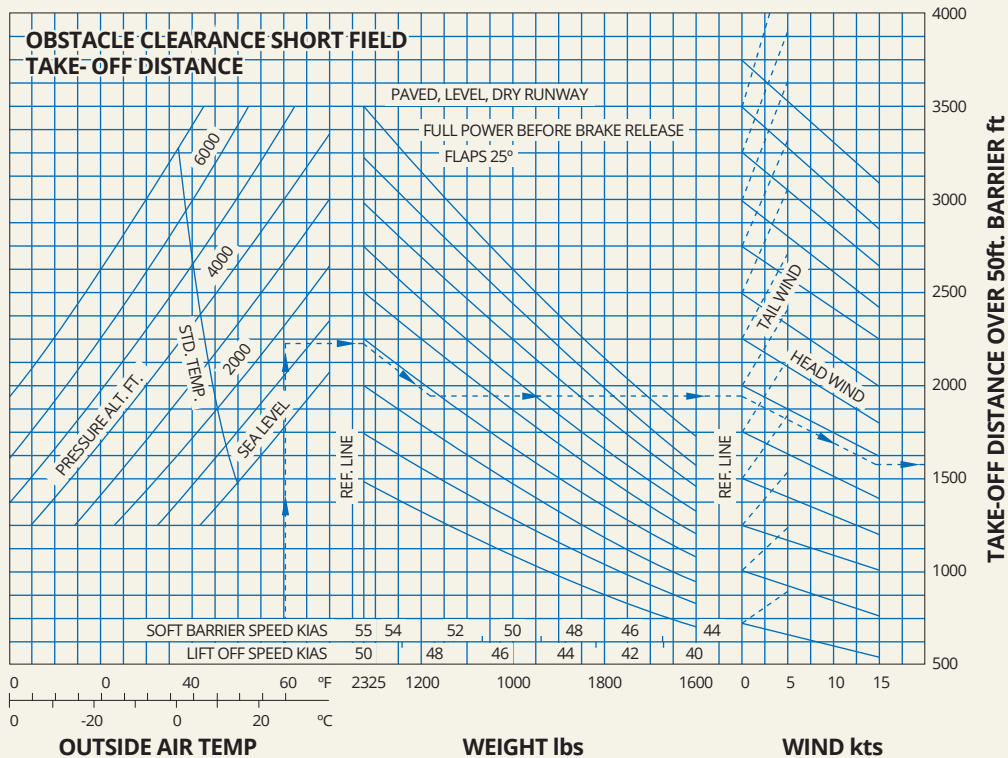
TODA is the take-off distance available. It is the distance available for an aircraft to make its take-off run and is defined as the TORA plus any Clearway. When taking off, the distance from where you release your brakes to the point at which you reach a defined height (called your screen height – 50ft for

light aircraft). If there is no clearway, then the TODA and the TORA will be equal.

At Elstree, where I do most of my flying from, the TORA, TODA, ASDA and LDA are all 651m.

These lengths are fixed distances, and as mentioned earlier, can be looked up quite easily. What you need to know, in addition to what is available, is of course what you require. These distances you get from your aircraft manual, and are a very important part of your pre-flight calculations. You also need to understand what factors change the required distances. When you refer to a take-off distance required or take-off

PA-28-161



run graph in the aircraft manual, you should look at the factors that are taken into account. They are, as per the take-off distance required graph from a PA28 shown (graph below left); the temperature and elevation of the airfield, the weight of the aircraft and wind speed and direction. Note also the distance given is in feet – don't mix the units or you might not land on Mars safely!

The distances you get from these graphs should not be the distance you use for planning. These distances from the manufacturer are for a new aircraft with new engine, flown in ideal conditions by a test pilot. You need to consider your currency, accuracy where it comes to speeds and techniques, the general state of wear and tear of the plane, and the actual conditions. With this consideration and the fact that the CAA does not test every aircraft, a safety factor of 33% should be added to these figures (factors are compulsory for commercial aviation). Before adding the 33%, you should also look at the table below. It is from

the CAA's 'SafetySense Leaflet, Aeroplane Performance 7c', and has factors for grass and slope. For landing distances the CAA recommends a 43% increase. Now it should go without saying that if you require more than you've got you need to disappoint someone. Or refuel. Or get a bigger plane. I flew in and out of remote camps in Botswana's Kalahari Desert and Okavango Delta during the '80s. The delta is over 3,000ft above sea level, and we flew well-used Cessna 206s with baggage belly pods. Often we would be taking six people and their baggage in and out of dirt strips in the heat of the day. The calculations all said we could do it, and certainly while I was there, there were no accidents, but there were a few topiary departures! Most of the pilots flying around in England are doing so occasionally and for fun. It is not fun flying an aircraft close to or at its limit of weight and performance unless you are current and absolutely know your aircraft. So please use the safety factors and don't get close to the limits. ■

SAFETY FACTORS

FACTORS MUST BE MULTIPLIED (i.e 1.20 x 1.35)

CONDITION	TAKE-OFF		LANDING	
	INCREASE IN TAKE-OFF DISTANCE TO HEIGHT 50 FEET	FACTOR	INCREASE IN LANDING DISTANCE FROM 50 FEET	FACTOR
A 10% increase in aeroplane weight e.g another passenger	20%	1.20	10%	1.10
An increase of 1,000 ft in aerodrome elevation	10%	1.10	5%	1.05
A 10% increase per 10°C in ambient temperature	10%	1.10	5%	1.05
Dry grass - up to 20cm (8in) on firm soil	20%	1.20	15%	1.15
Wet grass - up to 20cm (8in) on firm soil	30%	1.30	* 35%	* 1.35
Wet paved surface	-	-	15%	1.15
A 2% slope	Uphill 10%	1.10	Downhill 10%	1.10
A tailwind component of 10% of lift-off speed	20%	1.20	20%	1.20
Soft ground or snow	25% or more	1.25+	25% or more	1.25+
Now use additional safety factors (if data is unfactored)	-	1.33	-	1.43

* VERY SHORT GRASS MAY BE SLIPPERY. DISTANCES MAY INCREASE BY UP TO 60%

PPL SUNDAY GROUND SCHOOL

Following the popularity of the first series of courses, AOPA is pleased to advise that it is running more Ground School courses for ab initio pilots.

The PPL Ground School takes place at the AOPA offices at 50a Cambridge Street, on the dates shown below. The AOPA office is only five minutes' walk from Victoria Station – check the AOPA website for the latest dates.

All nine subjects required for the PPL (Aeroplanes) are taught over a period of approximately 70 hours.

The lecturer is Adam Winter, a highly qualified and experienced flying instructor who works for the Flyers Flying School at Elstree.

You can read more about the training and subject matter at WWW.FLIGHTGROUNDSCHOOL.CO.UK

DEC 18-FEB 19

AIR LAW	6 JAN
OPERATIONS AND PROCEDURES	6 JAN
HUMAN PERFORMANCE AND LIMITATIONS	16 DEC
NAVIGATION	13 JAN
METEOROLOGY	27 JAN
AIRCRAFT GENERAL KNOWLEDGE	9 DEC/10 FEB
PRINCIPLES OF FLIGHT	2 DEC/3 FEB
PERFORMANCE & PLANNING	20 JAN
COMMUNICATIONS	16 DEC/17 FEB



It is not necessary to attend the full course and candidates can select the individual subjects they wish to study from the published dates. You do not have to be a member of AOPA to participate. Further details can be obtained from Adam Winter on 07985 969018

WORDS Malcom Bird

WHICH ANNEX DO YOU LIVE IN

If you own an aircraft that is not regulated by EASA, you probably worked out that the aircraft was an Annex II aircraft. You might even have had the type listed in Annex II. As a result it has become common practice to refer to aircraft that were not regulated by EASA as Annex II aircraft... well think again!

The new Basic Regulation (2018/1193) has been reworked and, as EASA now believe it knows all the aircraft it is regulating, it has stopped listing those it does not regulate but refers to the rules that exclude them in Annex I.

So basically, those aircraft under national regulation which used to be listed in Annex II are now Annex I aircraft! Please don't ask us who thought this was a good idea!

AVIATION SAFETY REPORTING

As owners and pilots, we have an obligation to report certain incidents, but unfortunately not many of us do so. The process of reporting is not as daunting as it is often feared, and AOPA will soon be launching some guidance, on this Please watch out for it. In the meantime consider that in 2017 27,000 reports were submitted in Europe, of which 3,000 were from aircraft below 5,700kg.

The vast majority of the light aircraft reports that were made

were to do with infringements. And yet we are also supposed to submit reports on incidents such as:

- airframe failures
- engine failures
- prop strikes
- injuries caused by aircraft operation
- any event that posed a safety risk.

If pilots, owners and maintainers actually submitted reports as expected there would be a wealth of data to mine. The aim is to be able to spot issues and trends so that steps can be taken to improve safety. Without the data, analysis is flawed if not impossible.

It is hoped that by providing encouragement and guidance AOPA will be able to help improve the number of occurrence reports. In the future we hope to demonstrate progress but here is the starting level – see the table below.

As you can see, we have a long way to go. Look out for further information and updates.

"There have been concerns about the open and public nature of the G-INFO database"

OPEN ACCESS G-INFO

There have been many concerns about the open and public nature of the G-INFO database. There are worries that this free access to information has been a contributory factor to the spate of break-ins and engine thefts.

The CAA has taken this very seriously and carried out various checks to identify any links between database searches and the thefts. They have found no link. It is also pointed out that the database only contains information about the owner – there is no direction as to which airfield may be the home of the aircraft. On the flip side, the database is used and found useful by many people and organisations.

The situation will continue to be monitored but in the meantime if you, since an owner, feel strongly that you do not want your address to be visible on the database then please contact AOPA as we can act as the registered address. ■

OCCURRENCE REPORTING

SUBMITTED GA REPORT NUMBERS	TOTAL FIXED WING	OF WHICH MAINTENANCE	TOTAL ROTARY	OF WHICH MAINTENANCE
April 2018	131	1	12	0
May 2018	232	5	10	0
June 2018	231	12	14	0
July 2018	292	3	28	3
August 2018	239	7	20	0
September 2018	212	3	19	2

WORDS John Walker

THE LATEST NEWS ON UK AIRFIELDS

THERE are airfields across the UK currently under the threat. Here are the latest developments, updated 5 November 2018.

AYLESBURY/THAME (HADDENHAM)

Resident Upward Bound Trust Gliding Club given notice to quit by 20 December 2018; technical site adjoining landing/take-off area earmarked in Aylesbury Vale District Council definitive Local Plan for development.

WELLESBOURNE

Gladman Developments in conjunction with the site owner have proposed a development of 1,600 homes on the site, although the Stratford-on-Avon District Council Local Plan adopted Core Strategy has earmarked Long Marston aerodrome as a preferred housing development site. A Core Strategy stated policy is to "retain and support the enhancement of the established flying functions and aviation-related facilities at Wellesbourne Airfield." Tenants notified by owner that flying activities would cease in December 2016 but action deferred pending tenant's legal action to obtain new leases. The Court judgement handed

down on 25 June 2018 ruled against the tenants who have subsequently been given leave to appeal the decision. The Council has formally rescinded the owner's permitted development rights to prevent building demolition work and has initiated proceedings to negotiate an agreed purchase of the site or, failing that, to acquire the site by a CPO.

CHALGROVE

Aerodrome has been transferred from the MoD to Homes England (HE) and is occupied/operated by Martin-Baker Aircraft (MBA). Site included in South Oxfordshire District Council initial 2033 Local Plan for a 3,000-home development with a new runway for MBA operations but plan being reassessed as concerns raised over infrastructure issues and availability of site within the plan period. HE has stated that it will use its CPO powers if current negotiations about the development with MBA, who wish to protect and expand their on-site operations, are unsuccessful.

LANGAR

Put up for sale with expected completion in December – currently operated by British Parachute Schools. ■

AOPA FLYING INSTRUCTORS REFRESHER SEMINARS

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

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

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

NEXT DATES

The next dates for the seminars are

8-9 JANUARY, 14-15 MAY and 3-4 DECEMBER 2019.

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



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

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



Langar airfield, home of British parachuting

AOPA NEWS

General Aviation news from around the world

UK PILOTS PREPARED TO PAY TO BE SEEN

A recent CAA survey claims that 90% of PPL holders are willing to pay for ADS-B

by Robert Care

After a year-long report the CAA announced that its survey on electronic conspicuity showed that 90% of pilots are willing to pay for ADS-B – but it depends on how much.

In September 2017 the UK Civil Aviation Authority (CAA) conducted a short and focused survey, asking GA pilots for their views on electronic conspicuity – technology in the aircraft that broadcasts its position. The survey attracted almost 1,600 responses with pilots of single engine, fixed-wing aeroplanes making up three-quarters of the total submissions. Glider pilots represented 12 per cent, with hot air balloon, microlight and helicopter pilots making up the rest.

Pilots were quizzed on their use – or not – of electronic conspicuity devices. The survey also explored the key drivers that may affect widespread take-up of the technology. The answers will help develop the CAA's strategy for encouraging the use of devices across the GA fleet. ADS-B is the CAA's preferred technology standard for achieving airborne situational awareness for pilots and air traffic controllers. Interoperability is the overriding factor in the selection of any system – devices simply have to be compatible to achieve any safety gains.

Only one in six fixed-wing aeroplane pilots reported using ADS-B already, mostly



UK pilots are willing to pay to be seen in the sky

integrated with a Mode S transponder. A further third of pilots fly aeroplanes that are Mode S equipped, but have not been adapted to use ADS-B. Meanwhile, almost 90 per cent of glider pilots who responded use FLARM – the anti-collision system designed specifically for gliders.

Asked if they believed that full electronic conspicuity across the GA fleet would benefit safety, nearly nine-tenths of all those who responded thought it would indeed improve flight safety as a whole. Looking at the specific advantages of conspicuity, 83 per cent of aeroplane pilots identified collision avoidance and improved cockpit/ground-based situational awareness as

the principal safety benefits.

The survey also looked at the factors that would encourage pilots to use a low-powered ADS-B device. Equipment purchase cost came out on top for two-thirds of aeroplane pilots, while compatibility with Mode S was important to six out of 10. For more than half of respondents, the ability to receive flight information or weather data via ADS-B was a significant attraction.

When it comes to cost, nine out of 10 pilots are willing to spend more than £100 on new ADS-B kit. 40 per cent of respondents said they were prepared to pay between £100-£250 for a device, while a further 50 per cent were willing to invest £250-£500.

The survey results indicate that the GA community recognises the need for the expansion of electronic conspicuity use within the UK. The CAA believes that the take-up of devices will improve overall safety levels, as well as increasing airspace access for GA pilots. Enhanced equipage may also help the future challenges such as access to airspace and incorporating the enhanced future use of drones.

While the survey helps to affirm the CAA's ambitions for widescale deployment of ADS-B across the GA fleet, significant work still needs to be done with the GA community to ensure the necessary technological and system standards are achieved in partnership. ■

GEMSTONE IS NOW DIAMOND

by **Robert Care**

Gemstone Aviation has been announced as Diamond's sole distributor for the United Kingdom and Republic of Ireland. The directors of Gemstone Aviation, Chris Dawes and Henrik Burkal, have worked with Diamond since 2004 and were chosen for their vast experience of the aircraft and their reputation in the industry for exceptional customer service.

Burkal commented: "We are very excited for our customers in the UK and Ireland who will have access to the full Diamond Aircraft range. We are all about matching the right aircraft to each owner based on their usage needs. This partnership allows us to deliver that better than ever before."

Dawes added: "Gemstone Aviation focuses on great customer service. We can broker the sales of your existing aircraft to maximise your capital return and then help you buy the right aircraft based on your needs. We can manage your new aircraft for you and provide independent advice about registration paperwork, insurance, management and maintenance. As owners, instructors and operators we understand your issues, risks and opportunities



Gemstone Aviation is now the UK's Diamond distributor

for fun with your aircraft. We will give you unbiased advice at every stage.

"The UK-Ireland market represents an important General Aviation market in Europe and we are more than excited and happy to have found the right partner with Gemstone Aviation, who is representing our values and goals. We are convinced that existing and future potential customers in this region will significantly benefit from the great experience and customer-oriented service provided by our new partner. Gemstone Aviation is soon receiving their DA62 demonstrator and will boost our sales performance in the UK and Ireland," says Amila Spiegel, Diamond Industries GmbH Sales & Marketing

Director.

Henrik Burkal is Director of Sales and Demonstrations. He has had 10 years with Diamond Aircraft UK and previously worked with Diamond Aircraft at Air Alpha in 1996/97. Henrik has more than 40 years of aviation experience in GA and Business Aviation.

Chris Dawes is Director of Operations and Marketing. He was co-founder of DEA Aviation Ltd 10 years ago which is an AOC operator, and has Part 145 maintenance of Diamond Aircraft. He has supplied microlights, hanggliders, paragliders and equipment through Airways Airports to the sports aviation sector for over 25 years. Chris has been an owner and pilot of a Diamond Aircraft since 1995. ■

LOOK BACK... THIS MONTH 27 YEARS AGO



BRANSON CROSSED THE PACIFIC

Richard Branson and Per Lindstrand crossed the Pacific in the Virgin Otsuka Pacific Flyer from the southern tip of Japan to Lac la Matre, Yukon, north-western Canada on 15-17 January 1991 in a 73,600m², 2.6 million balloon (the largest ever flown) to set FAI records for duration (46hrs 15mins) and distance (great circle 7,671.9km, 4,768miles). It also recorded the highest ground speed for a manned balloon at 245mph, 394kmh. The Virgin Pacific Flyer still remains the largest hot air balloon ever built and the crossing records include:

- The first hot air balloon across the Pacific
- The fastest manned balloon flight
- The longest manned balloon flight
- Peak speed — 239.62mph (208 knots, 385.4 km/hr)
- Mean Cruise Altitude — 27,000 feet (8.23 km)
- Max. Altitude — 36,000 feet (10.97 km)
- Fuel burnt — 2,526 kg
- Consumption — 54.80 kg/hr
- Take-off — Miyakonojo, Japan. Time: 15 Jan 1991 – 18.47 UTC (16 Jan 1991 – 03.47 Local)
- Flight duration — 46hrs, 06mins.

ARMSTRONG STUFF SOLD

by **David Rawlings**

An ID plate from Apollo 11's lunar module 'Eagle' sold for \$468,500 (£359,423) at an auction of 2,000 items of memorabilia owned by the first man on the moon Saturday 3 November.

The auction raised more than \$7.4 million and was held on behalf of Neil Armstrong's family. A piece of the propeller and wing

from the Wright Flyer, which Armstrong took with him to the moon, sold for \$275,000 (£211,000) each. The flight suit Armstrong wore aboard Gemini 8 sold for \$109,375 (£84,000). Armstrong died in 2012 and had never specified what should be done with the treasure trove of mementoes from the first decade of manned space exploration.

Also under the hammer

was a gold naval aviator's helmet once owned by John Glenn, the first American to orbit Earth, which sold for \$46,250. Glenn wore the helmet on a record-setting transcontinental flight in 1957 called Project Bullet. It was actually offered for sale by Matt Carpenter, the son of Glenn's fellow Mercury 7 astronaut Scott Carpenter, who received it as a gift from Glenn decades ago. ■

**AOPA NEWS
HIGHLIGHTS****EASYJET GOES ELECTRIC**

easyJet has partnered with US-based Wright Electric to develop a small electric-powered aircraft that could serve on short-haul routes. The airline confirmed the project is progressing—Wright Electric has applied for a patent on “a novel motor design” for “an easyJet-sized aircraft” that could fly from London to Amsterdam. Wright Electric partner Axter Aerospace has a nine-seat aircraft that is expected to start flying next year.

KITBUILT TERRORISM

Canadian Normand Dubé came close to shutting down Quebec’s entire power grid by using his homebuilt kit aircraft, an Aerocruiser. He cut power to 180,000 customers, including a large Montreal hospital, but he could have potentially shut off the power for eight million customers. Although the precise details have been kept confidential, Dubé did drop something on power lines, and if found guilty, could face up to 10 years in prison.

SUPER FAST DRONE

The FAI has added drag racing to its popular World Drone Racing Championships, and the new record holder got his specialised quadcopter to 114.2382kmh in a 100metre straight-line course. The drones rise vertically from boxes below the lighted course and then accelerate to the finish line. “When you get a good start you can just go full throttle all the way to the end,” said new record holder Timothy Trowbridge, of Switzerland.

Some of
the Carlisle
team



CARLISLE VOTED BEST GA AIRPORT

Carlisle Lake District Airport has won the Best General Aviation Airport Award at the Airport Operators Association (AOA) annual conference

by **David Rawlings**

The award recognises GA airports that demonstrate passion and show their dedication to providing an accessible and favourite general aviation airfield over the past 12 months.

Carlisle Lake District Airport has had a busy year, with the construction of a new terminal, the opening of a new runway and the preparations for commencing commercial flights from Spring 2019.

With so much activity on site, Carlisle Lake District Airport made a concerted effort to meet with and listen to the GA community. Following those conversations, the airport reduced its fuel pricing, has introduced out-of-hours flying and offered discounted landing fees for GA planes.

Paul Martland, general manager of Carlisle Lake District Airport, said, “The GA

community is an essential part of this airport. We know there is more to do to improve this airport for GA flyers, but I am delighted with the progress we have made so far, and I’m extremely proud of our team’s hard work, which this award recognises.”

Kate Willard of Stobart Group, which owns the airport, said, “This is an incredible achievement for the airport. It has not been an easy year but the teams at Stobart Rail & Civils and the airport have worked together to make brilliant progress in getting us up and running.

“We look forward to the commencement of commercial services next spring but will always remember the really key role that the GA community play in our day to day activities and the commitment we have to them.”

Martin Robinson, CEO of AOPA said, “We were pleased



Carlisle. Best GA Airport

to make the award to Carlisle Lake District Airport because of its strategic importance for GA by location. Also the investment that’s been put in place and the development of the airport. Without airports, we cannot fly. Carlisle has also shown it’s interested in attracting GA – we also know that times have been tough, so the award is well deserved. Always be GA friendly and you will attract business.” ■

HELICOPTER SCHOLARSHIP FUND DOUBLED TO £150,000

by **AOPA News Team**

Helicentre Aviation Academy has allocated a further £75,000 in part-funded scholarship awards to its already generous 2018 Professional Helicopter Pilot Scholarship Programme.

The awards have provided individuals with full or part funding to obtain a professional licence with immediate work opportunities and the chance to gain valuable experience. For many the scholarship has provided career opportunities leading to quick progression into industry roles such as utility and HEMS.

At the end of last year's

selection process, Janine Lythe from Northampton was awarded the prestigious fully-funded Commercial Pilot Scholarship which paid for around 120 flying hours in the Cabri G2, including the CPL course. This was the first year the company also awarded part-funded scholarships to applicants who demonstrated extreme talent and motivation. However this year even more money is being invested.

With the 2018 selection process already underway, the 25 applicants, who are all newly qualified private pilots, will have a chance to secure a share of £75,000 in addition



Janine Lythe, one of the recipients of the scholarship

to competing for a fully-funded CPL(H) scholarship worth up to £55,000, and a Flight Instructor scholarship worth £20,000. The £75,000 of part-funded awards will be allocated as one scholarship of £10,000, two scholarships of £7,500 each, and ten scholarships of £5,000 each.

Managing Director and Head of Training, Captain Sarah Bowen said: "It has been so rewarding to see previous scholarship winners go from trainee pilot to industry professional in such a short space of time. The quality of the applicants we have interviewed so far this year has

been exceptionally high and with the additional scholarships being offered, we can reward more pilots with much-needed funding which will help them get into employment quickly."

Applicants who wish to be considered for the Helicentre Aviation 2019 Professional Helicopter Pilot Scholarship Programme must submit their application form by 31 December 2018. No flying experience is necessary at the time of application but the PPL(H) course must be completed at Helicentre Aviation Academy by 30 September 2019 to qualify for selection. ■



Don't miss out on your chance to become a helicopter pilot

GA FUTURE OF BLACKPOOL AIRPORT

by **Lucy Field**

Aviation industry experts have produced a comprehensive report setting out the best opportunities to revive and secure the future of Blackpool Airport.

The report, produced by leading airport and aviation consultant York Aviation, makes a number of recommendations for investment in infrastructure, operations, and management of the airport to ensure it remains a key transport asset for the North West.

Based on York's recommendations, two wholly-owned council companies, Squires Gate Airport Operations Ltd (SGAOL), which looks after airport operations, and Blackpool Airport Properties Ltd (BAPL), which looks after the airport's land and property on the 400-acre site, will be responsible for preparing and implementing a detailed business plan that will help to map out the long-term future for the airport.

York Aviation also identified the main opportunities for future growth potential as:

growth of existing areas of core business, particularly General Aviation activity and flying tuition; creation of further opportunities for corporate and executive aviation activity, providing additional revenue for the airport; opportunities to attract substantial aircraft maintenance repair and operational activity, with the main focus on smaller executive-jet-type aircraft, bringing rent, movement and fuel income; replacing old hangars with new-build hangars located closer to the

runway to increase capacity and income. Cllr Mark Smith, Cabinet Member for Regeneration, Enterprise and Economic Development for Blackpool Council said:

"The York Aviation report provides clear guidance for future marketing opportunities and identifies priorities for investment. It gives an invaluable steer on management roles and responsibilities to enable a long-term, sustainable, operational airport and the successful delivery of the overall Enterprise Zone." ■



There is a lack
of statistical
data on GA
across Europe

YOUR CHANCE TO HELP MAKE GA SAFER

Fill out a survey to help make Europe's GA safer for all

by **David Rawlings**

There is agreement that Europe has no statistical data about the General Aviation (GA) fleet that would allow profound safety and economic analyses. So far most analyses in GA depend on estimates and expert judgement, which is far from being ideal and one of the main reasons for a

high level of overregulation in the GA industry. In the USA such data exists, generated by both the FAA and the GA User Associations – consequently the NALL report as well as other Safety Analyses and Economic Impact Assessments can be based on statistical facts.

This survey was created in order to collect meaningful

statistical Data for European GA. IAOPA made a first attempt in 2014 with good success. About 1500 operators and 3500 pilots replied, but this data is now a bit outdated, and geographically it covered mainly the European Core Area, so it's time for a new initiative.

It will take you 10-15 minutes to fill out the survey. If you don't have the precise figures to hand, your estimates are sufficient. For operators flying a fleet of different aircraft types, we recommended running the survey for each aircraft type. If more than one aircraft of similar type is operated, the survey can be executed with average data for these aircraft in order to save time. For questions you can contact us at info@aopa.de.

Your data will be protected

and only be shared with other GA Associations, European and National European Authorities, which will adhere to the requirements of the European General Data Protection Regulation (GDPR), and your data will be used solely for Safety and Economic Analyses. Your data will not be given to other third parties.

We intend to create a representative sample of aircraft operators in order to do a continuous trend-monitoring. If you intend to participate in this project, please give us your contact data at the end of the survey. Thank you very much for your time and effort. With your support, you are helping to make General Aviation safer and more economical. Visit AOPA.co.uk to fill out the survey. ■



Fill out the survey and do your part for GA

NEW VICE CHAIRMAN AT AOPA, AND AWARDS

by **George Done**

Following the retirement of Geoffrey Boot from the Board, Pauline Vahey is now Vice Chairman of AOPA. Pauline's involvement in General Aviation started as a glider pilot in 1981, converting to a PPL in 1987, and she still flies today. She is a former Chairman of the British Women Pilots' Association, and has been a Director of AOPA for over eight years, chairing both the Members Working Group and Corporate Members Committee. She is also a Liveryman of the Honourable Company of Air Pilots. She has worked in business development roles in the general and private aviation sectors. Latterly, she is also a member of the Airfields Working Group of

the All Party Parliamentary Group for General Aviation. Pauline speaks publicly and has appeared on BBC local radio, Radio 4 and BBC television.

• At the recent 139th Regional Meeting, hosted by AOPA Italy and Switzerland, Nick Wilcock, Board Director and IAOPA FCL Representative at EASA, was awarded the

IAOPA Service Award for outstanding service and dedication to the members and staff of IAOPA Europe and AOPA UK. The award was handed to him by Craig Spence (AOPA HQ). "I was very surprised to receive the award, I thought I was just doing the usual stuff for IAOPA. It's a stunning award," said Wilcock after receiving the trophy. ■



Pauline Vahey is now AOPA's Vice Chairperson

OCTOBER UPDATE

by **AOPA News Team**

CORRECTION. In the AOPA UK October 2018 issue of the magazine, we featured the Magnus Aircraft Ultralight as our cover story. There was a slight mistake on page 34, where it was written in the tech spec box that the Ultralight Maximum Take Off Weight (MTOW) was 772.5kg. This was clearly incorrect and should have read that the MTOW was 472.5kg.

We are sorry for any confusion caused. ■



The Magnus Aircraft Ultralight



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Contact: sales@magnus-aircraft.com

*The offer is valid until 31st Januar 2019.

The C-17A and BAe 146 fly in formation over The Mall



IMAGE: Crown Copyright, 2018

WORDS Henry Simpson IMAGES Various

100 YEARS OF EXHILARATING HISTORY

Henry Simpson has followed the year-long celebration of the 100 years of RAF history. Here in this first part of two he looks at the events on The Mall and RAF 100 Aircraft Tour



HENRY SIMPSON AOPA SHOP EMPLOYEE PPL HOLDER FOR FOUR YEARS 21 YEARS OLD FULL TIME STUDENT

TO MARK the RAF 100th, several events of varying sizes have been held across the country. The pinnacle of the RAF 100 events was the national and international celebrations held in July.

The 'national' celebration was held on The Mall whilst the 'international' celebration took place the following weekend at The Royal International Air Tattoo held at RAF Fairford in Gloucestershire.

In the run-up to the RAF 100, the 'National Aircraft Tour' visited Horse Guards Parade. The tour features a collection of RAF types displayed free of charge for the public to view. The London instalment of the tour featured nine aircraft, covering the history of the RAF.

The aircraft were on display in an RAF 100 area on Horse Guards; each aircraft had representatives from either the RAF, RAF museum, or a living history group around them, who could answer questions about

the aircraft or the operations they served in.

Representing the RFC (Royal Flying Corps) origins of the RAF was the BE2e provided by the Yorkshire Aircraft Museum. The Second World War was represented unsurprisingly by a Supermarine Spitfire Mk XVI. It was good to see the DC3 there showcasing a lesser known chapter in the RAF's history, that of the Berlin Airlift. This was brought to life by the Tail End Charlies (an RAF living history group), with the RAF Gatow set up to provide an interactive way for the public to learn about the RAF's role in the airlift. Indeed at its height the RAF delivered 13,000 tonnes of supplies per day, well above the initial target of 4,000! "So many people don't know it even existed," Connor Keightly from the group said. "It's a much-forgotten part of RAF history, but it's one of the biggest humanitarian missions in history." The DC3 was also the subject of the day's most asked question: "How did you get it here?" Indeed it had required

the aircraft to be dismantled and brought in by low-loader in the early hours before being reassembled on site.

The success of the event was also felt by Squadron Leaders Jez Cap of No. 9 (Bomber) Squadron and Tom Benson of No. 31 Squadron who were engaging with the public by the Tornado GR4. "Today has been really successful. We are trying to commemorate, celebrate and inspire, so today was a great way of doing all these things. It's been great to meet veterans and young school groups who had some really interesting questions."

It was good to see the Tornado play such a role in the RAF's centenary celebrations as it approaches its controversial out of service date of April 2019. Also on show was the Meteor Mk 4 EE549 – the aircraft that was the world airspeed record holder in 1946. Mike Odd and Jo Dickinson from RAF Museum Hendon were with the aircraft and stated that: "It's been a really positive event, lots of people asking questions

and interest has been shown in the whole spectrum of aircraft old and new."

The Mall parade and fly-past marked the official 'national' celebration of the RAF 100 and was, for many, a once-in-a-lifetime event.

An ambitious plan to send 100 aircraft down The Mall was drawn up. In the ten years since the RAF's 90th anniversary, the number of aircraft in service has dropped drastically and many held doubts that 100 aircraft could be mustered whilst many assets remain committed to operations overseas. The plan required lengthy preparations with NATS and significant airspace closures were needed to allow for a join-up area off the Norfolk coast, an air corridor stretching down into London and dispersal areas to the west. This constituted the largest zone of restricted airspace in recent history. The biggest issue of the fly-past though, was the dispersal. While the different elements travelling at different speeds could be staggered in

their approaches, with slower types to the front and faster ones to the rear, once they passed over the palace the sections would rapidly converge resulting in a very busy patch of airspace! To address this issue different exit routes were planned for aircraft of different speeds. This included closing Heathrow Airport for 20 minutes whilst the fighter sections of the fly-past routed overhead. Despite careful airspace planning some problems still arose with some sections having to zig-zag and at least one section having to divert due to low fuel.

Wing Commander Kevin Gatland, who organised the fly-past, made alternative plans encompassing varying weather conditions which could have seen a reduction in aircraft numbers and types. However, despite some low cloud the full flypast was able to go ahead and it certainly made a tremendous sight. The event began in the late morning with a parade of 1000 personnel who marched up The Mall, which was lined with the RAF ensigns, and into

the gates of Buckingham Palace. 70,000 people lined The Mall to watch the fly-past. With the Royal Family present on the balcony, the first element of the fly-past approached, consisting of three Puma and six Chinook helicopters. The heavy beat of the rotors alerted the crowd that the fly-past had begun.

They were quickly followed by the three of the RAF's new training helicopters, an H145 and two H135s and then the Battle of Britain Memorial Flight's DC3 Dakota. The rest of the BBMF contingent followed with the Lancaster flanked by two Hurricanes and three Spitfires, the sound of the Merlins and single Griffon engines echoing across London.

Then came three of the RAF's new Grob Prefect T1 trainers making their first appearance over London. Behind them was the first of the big fixed-wing formations – a diamond nine of Shorts Tucanos.

Next in the fly-past were two examples of perhaps the RAF's most secretive aircraft, the Shadow R1, Beechcraft King Airs

"An ambitious plan to send 100 aircraft down The Mall was drawn up"

converted for ISTAR (Intelligence, Surveillance, Target Acquisition and Reconnaissance) operations. These aircraft rarely make public outings and so they were a welcome sight as part of the celebration. They were followed by two of a much more familiar type, the C-130J Hercules, with examples of both the longer C4 and shorter C5 variants making for an impressive start to the sections of 'heavies' to pass down The Mall. They were succeeded by the RAF's newest transport aircraft, the A400M Atlas, deliveries of which are now almost complete. The larger C-17 Globemaster came next, in formation with the smaller BAE 146, used for VIP transport duties, mirroring its platform.

Following these was another ISTAR platform, a Sentinel R1 modified from a Bombardier Global Express. It performs a complementary role to the Shadow R1, and despite attempts to retire the aircraft it, alongside other ISTAR assets, remains highly valuable and reflects the increasing role of electronics in warfare.

BELOW: The Red Arrows flying over 70,000 spectators and the static display on Horse Guards Parade and



The RAF's largest aircraft, the Voyager KC1 tanker followed, and then came the RC-135 Rivet Joint, yet another ISTAR asset, used for signals intelligence and purchased from the US after the retirement of the Nimrod R1 in 2011 left a capability gap in the field. An aircraft that always attracts wonder from the crowds, the E3D Sentry 'AWACS' (Airborne Warning and Control System) flew over with its characteristic black and white ray dome rotating.

The faster jet formations then commenced in sections that really made up the numbers of the fly-past. First came nine of the older Hawk T1s, still used for providing a range of training, most notably aggressor sorties in air combat training. Nine of the newer Hawk T2s then followed in a diamond nine. Behind them though was the impressive sight of nine Tornado GR4s. The Cold War-era strike jet is still serving well on the front line today and the variable-sweep wing design carries a lot of presence. Only seven of the type had been planned to attend, then about

two hours before they took off the decision was made to add in two extra aircraft at the rear, and what a welcome addition it was. Sadly this looks to be the last time the venerable Tornado appears over the capital before its retirement date. They were appropriately rapidly followed by the RAF's newest aircraft the F-35B Lightning II. These jets were the first to arrive at their new base at RAF Marham a month beforehand and at the time of the fly-past there were only four based in the country, three of which took part in the fly-past. The aircraft's sight and sound contrasted notably to that of the older Tornado and was their first public appearance over London.

But if they impressed the crowd their time on the podium was short lived, for the absolute highlight of the day's events followed. 22 Typhoon FGR4s in a '100' formation rose up above the skyline inducing the largest collective gasp of amazement. The cheers that followed were soon drowned out by the immense sound emanating from the aircraft as the '100'

"Sadly this looks to be the last time the venerable Tornado appears over the capital before its retirement date"

passed overhead. It had taken considerable effort to orchestrate that section of the fly-past and it stands out as the most impressive segment of the day and an excellent tribute to the RAF. As the sound of the Typhoons died away, and the crowd's fixated gaze turned east again, the cheers were stoked to a crescendo by the appearance of the Red Arrows' nine Hawk T1s that brought up the rear of the fly-past, casting a trail of patriotic red, white and blue across the capital. The National Anthem and a gun salute then followed before the parade departed. In total 103 aircraft had taken part in the fly-pas; it was a sight that we are unlikely to see again any time soon. The crowds were impressive and The Mall was crammed with people.

The 'national' celebration in London was a great success and was swiftly followed by the 'international' celebration held at the RIAT at RAF Fairford. It is this event that will be covered in part two of AOPA's RAF's centenary review. ■

CLOCKWISE FROM RIGHT: 22 Typhoons spelling out '100'; a Spitfire at the static display; and the new Lightnings over The Mall



IMAGE: Crown Copyright, 2018

IMAGE: Henry Simpson

IMAGE: Crown Copyright, 2018

The PS-28 has
apron presence
and stands out
from the crowd



WORDS David Rawlings IMAGES Czech Sport Aircraft

A long journey to perfection

The PS-28 has been on a long and winding road to get to where it is today, but it's here to stay



YOU'RE probably well aware of the PS-28 Cruiser, or SportCruiser as it's known in the US market. It first came out in 2006 to a great fanfare and was going to be the answer for schools and owner-pilots alike. This two-seat all-metal aircraft was popular from the start, but there was a bumpy road along the way to where it is now.

To find out more about the PS-28 I went along to Damyns Hall, on the edge of London in Essex to meet Sergei Gratchev and Deepak Mahajan, who head up the company that imports the PS-28 to the UK.

HISTORY

The PS-28 began life as the SportCruiser, available as a complete aircraft or homebuild. The original aircraft is an all-aluminium low-wing aircraft, with the 100hp Rotax 912 engine.

In 2010, with the Special Light-sport aircraft market growing in the US, Piper came to the conclusion that it had a ready-to-go aircraft in the SportCruiser, and licensed a derivative of the aircraft called the PiperSport.

The PiperSport is a minimally modified version of the existing SportCruiser. The plan was that it would continue to be manufactured by Czech Sport Works, with Piper's manufacturing operation playing no part in the construction, although Piper was distributing parts. The changes made to the aircraft were stronger nosegear, a BRS parachute and leather interior both as standard equipment, a cockpit sunshade and modified pitch controls, plus a custom paint scheme.

After just one year of working together, the relationship between Piper and Czech Sport Works was not working in a way

"After selling a total of 45 aircraft, Piper announced that the PiperSport would be discontinued"

that either company had envisaged. So in early January 2011, after selling a total of 45 aircraft, Piper announced that the PiperSport would be discontinued. Geoffrey Berger, Piper CEO, stated at the time: "After a year working with Czech Sport Aircraft, Piper determined that it is in our company's best long-term interests to discontinue the business relationship which distributed a Light Sport Aircraft manufactured by the Czech company and distributed under Piper's brand by a separate distributor network. Clearly, the company has a different business perspective and approach to the market than Czech Sport Works."

Although the press speculated at the time that it was a huge behind-the-scenes 'blow up', Sergei Gratchev says otherwise. "The relationship wasn't working and the two companies went their



The company has said that it believes the PS-28 is perfect for schools, due to its robustness

The PS-28 is relatively spacious and comfortable, as well as steady in the sky



It's a big
comfortable
cabin, with
plenty of space



separate ways," Gratchev said, quick to point out that there was no big dramatic falling out. "They just parted ways because the Americans wanted the US market and it seemed to move away from light aviation for Piper. But the condition was that Czech Sport Works could still build an aeroplane."

Currently there are two very similar aircraft on the market – the PS-28 certified under EASA, and the US SportCruiser, certified under FAA's regulations.

BACK ON TRACK

2011 was a turbulent time for financial markets across the globe, and like many of its counterparts, Czech Sport Works experienced repercussions as a result of this crisis. "The company managed to find a local investor in the Czech Republic, who was able to give the company a boost," explained Gratchev. The company was renamed

"With changes made to the aircraft, pilots all said it was a great improvement"

Czech Sport Aircraft and due to the new investment, cut production down to just two types of aircraft – the US version, which includes more gear on it, and the EASA-certified version. Production on the kit version was halted.

Not wanting to leave the home-built owners high and dry, and wanting to improve the certified versions, Czech Sport Aircraft got to work. "Throughout that process the company had a bit of a headache trying to get every aircraft that was already flying either on a permit, which was quite an exercise that deserves praise, but they also made a few alterations and improvements to the certified models," said Gratchev. "This was the group I wanted to join. With the changes made to the aircraft, pilots all said it was a great improvement, it was less twitchy in the handling and it was a better

aeroplane – this was from pilots flying the old version for seven years."

The improvements included modifications to the landing gear such as:

- Bigger diameter of the vertical spindle, including use of the stronger material
- Bigger dimension of the leg tube
- Stronger fork, added third layer on the fork, including use of the stronger material
- Reinforcement of the nose landing gear leg attachment to the firewall.

The PS-28 has now been certified for two years. In the UK there are eight EASA-certified PS-28s flying, and more than 65 experimental and kit-built versions too.

THE AIRCRAFT

The PS-28 is a double-seat all-metal aircraft, arranged as a low-wing monoplane with cantilevered wings and conventional empennage. The aircraft has a tricycle fixed landing gear of nose



The PS-28 has now been on the market, in one form or another, for more than 10 years

type. The aircraft is type certified by EASA according to CS-LSA regulation and is approved for operation within Europe and other countries in the LSA category.

The wings are of all-metal main spar structure with a rear spar. Each of the two wings is attached to the centre section fuselage by means of six shear bolts. The fuel tank is located in each wing with a capacity of 57 litres, and a unique lockable storage compartment is located in each wing, with a load capacity of 10kg each. The wing tips are made from carbon-glass composite, with both wings equipped with electrically controlled flaps. The right aileron is also fitted with electrical trim.

The aircraft tail unit consists of the vertical fin, the rudder, the horizontal stabiliser and the elevator with trim tabs. The elevator is well balanced by the electrically controlled trim,

"The PS-28 is a 'traditional' aircraft in terms of its structure, styling and handling"

and utilises a balance tab for better control and balance of the control forces.

The fuselage is designed as a semi-monocoque conventional all-metal structure. Both the cockpit fixed frame, and the movable frame are made from a composite, with the main undercarriage attached directly to the bottom part of the fuselage. And if you were wondering, the nose-landing gear is fixed to the firewall.

The PS-28 Cruiser boasts a spacious and ergonomic cockpit for the Light Sport Aircraft category. The cockpit has front-up-opened cover and two side-sliding windows, with all windows on the aircraft made from plexiglass. Located to the rear of the pilot seats is a spacious baggage compartment.

The cockpit is equipped with an instrument panel holding all instruments in three separate panels.

Individual control sticks and pedals provide the flight controls for both seats. The throttle is positioned on the centre console and the wheel brakes are located on the pedals.

WHO FLIES IT?

The PS-28 is a 'traditional' aircraft in terms of its structure, styling and handling – perfect for a certain kind of pilot – the 'conservative British pilot', as Deepak Mahajan explains. "Most owners are conservative. I mean 'conservative' in terms of flying – the PS-28 has an old-school metal structure; it's a traditional aircraft that is beautifully designed with a glass cockpit. It's also perfect for flying schools that need robust aircraft that are easy to fly."

As it is a traditional aircraft, the importers have witnessed customers asking if they can keep it more traditional. "One of our

TECH SPEC PS-28/SPORTCRUISER

EQUIPMENT

Powerplant: Rotax 912 ULS 2

Fuel: Mogas RON 95, Avgas 100 LL

Propeller: Sensenich Fixed 3-blade

PERFORMANCE

Power: 100hp

Cruise speed: 93KIAS (172 km/h)

VNE: 138 KIAS (255 km/h)

Stall speed VS0: 31KIAS (55 km/h)

Climb rate: 825ft/m (4.2m/s)

Endurance: 5 hours 25 min

Ave Consumption: 17.5 l/h

DIMENSIONS

Length: 21.72ft (6.62m)

Height: 7.60ft (2.315m)

Wingspan: 28.22 ft (8.6 m)

Cabin Width: 7.60ft (2.315m)

Seats: 2

Wing surface: 132.4sqft (12.3m²)

WEIGHT

MTOM: 1,320lbs (600kg)

Empty Weight: 855.4lbs (388 kg)

Baggage allowance: 84 lbs (38 kg)

Max. Usable Fuel Capacity: 114l



customers, who owns a share in the demonstration model, asked me if they could have an old six-pack installed – that's how traditional they are. We told him, no, just learn how to use this!" Gratchev joked.

In terms of flying the PS-28, hints about its handling and performance can be found in its name. "It's a cruiser, it's a *good* cruiser. However, schools all tend to stay away from the carbon monocoque structures. They seem to be worried that a carbon undercarriage will break with heavy-handed students. So the PS-28 Cruiser is a solid, traditional plane and on landing, it just behaves like the old faithful PA-28," explained Mahajan.

When I asked what its handling was like, Gratchev said: "I keep our demonstrator at my little strip, which is 450m. It will take off in zero wind at about 200m – that's not by the POH, it's a rule of thumb.

"With many improvements over the years, particularly the landing gear, the newer version is very stable"

It will climb at 800ft/m comfortably. On landing, it's heavy enough to stop at 350m. We wouldn't advise the schools to do that. It's a different game, but the landing is good enough that students at a school will be absolutely safe at a 600m strip."

With the improvements over the years, particularly the landing gear, the newer version is very stable in the sky, and compared to the original it's more pitch stable. "I've flown the kit-built version but the certified version is more stable in roll as well. There is additional stability in the controls. It's heavier on purpose because our customers prefer less sensitivity and more stability," said Gratchev.

There are conventional steam gauges, as well as a glass cockpit, supplied by Dynon. Running costs are 18 litres per hour, very frugal in terms of oil, and for schools it'll be a very profitable

aircraft compared with others on the market.

THE FUTURE

There are no plans to change the current PS-28, as any changes will mean a lengthy and expensive EASA certification process.

The 'Quattro' – a four-seat version based on the PS-28 – is currently undergoing test flights and EASA-certification. It is expected to roll off the production line in around two years' time.

The Quattro does, however, have a much lighter structure. It's not just a four-seat version of the PS-28 but the platform is the same, with plenty of legroom and headroom for the extra seats, and ample luggage space.

"It's going to be quite a big beast. We don't know yet if it's aimed at the American or European market, but as the US is the biggest it will probably be released there first," concluded Mahajan. ■



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WORDS Nick Wilcock IMAGES Various

MOTORGLIDING - THE RULES

Nick Wilcock once again unravels the CAA's red tape



NICK WILCOCK BOARD DIRECTOR IAOPA FCL REPRESENTATIVE AT EASA FORMER RAF PILOT



S THOSE of you who have read CAA Safety Notice SN-2018/007 will have noted, the CAA is concerned that some pilots may be flying motorgliders without having the relevant training, experience and qualifications. It is important to realise that a motorglider is not just a variant of an SEP class aeroplane which happens to have rather long wings and a small engine – it is rather different.

Although FCL.205.A(a) states that 'The privileges of the holder of a PPL(A) are to act without remuneration as PIC or co-pilot on aeroplanes or TMGs engaged

in non-commercial operations', and FCL.105.A(a) states that 'The privileges of the holder of an LAPL for aeroplanes are to act as PIC on single-engine piston aeroplanes-land or TMG with a maximum certificated take-off mass of 2 000 kg or less, carrying a maximum of 3 passengers, such that there are never more than 4 persons on board of the aircraft', this does not mean to imply that licence holders with SEP privileges may fly as PIC on TMGs without any further requirements. To do so would be





What are the rules on
flying motorgliders? Nick
Wilcock explains all...

potentially dangerous, never mind contravening the law. To deal safely with a motorglider's performance, handling and approach and landing techniques requires rather more than just FCL.710 variant familiarisation or differences training, because although they may still be flown on aeroplane licences, motorgliders are not SEP class aeroplanes and have characteristics all of their own. They may also be flown by LAPL(S) or SPL holders with the relevant privilege extension, but this article considers only aeroplane licences.

Some may think that a motorglider is neither fish nor fowl. Neither a particularly useful powered aeroplane nor an efficient sailplane. While that might have been true of many earlier designs, many modern day motorgliders have an attraction all of their own. Relatively cheap to operate and to maintain, they offer a lower-cost means of learning to fly for power pilots and a convenient way for pure sailplane pilots to practise many aspects of

gliding. Many motorgliders are tailwheel aircraft and all have high aspect ratio wings, which require the development of significant pilot handling skills, particularly in windy conditions. Apart from a couple of trips in an ASK-21 in the early 1980s, the only gliding experience I've had has been in Mr Slingsby's wooden wonders at the end of the '60s, but I certainly recall being taught about the dangers of low level steep turns in aircraft with high aspect ratio wings in a wind gradient; sadly some pilots have become accident statistics as a result of such activity.

But what exactly is a motorglider? They are more properly termed 'Self-Launching Motor Gliders' (SLMG) or 'Touring Motor Gliders' (TMG); although in the UK for licensing purposes there is no distinction between SLMG and TMG aircraft, the precise definitions are different: 'SELF-LAUNCHING MOTOR GLIDER' (SLMG) means an aircraft with the characteristics of a non-power-driven glider

"Motorgliders are not SEP class aeroplanes and have characteristics all of their own"

and which is fitted with one or more power units which is designed or intended to take off under its own power.

'TOURING MOTOR GLIDER' (TMG) means a specific class of powered sailplane having an integrally mounted, non-retractable engine and a non-retractable propeller. It shall be capable of taking off and climbing under its own power according to its flight manual.

I have always been rather perplexed by the concept of an aeroplane which is only 'intended' to take off under its own power – does that mean that there's no guarantee that it will actually do so?

These days, ab initio motorglider training will probably lead to a PPL(A) with TMG class rating or a LAPL(A) with TMG privileges. However, training for the PPL(A) or LAPL(A) can also be achieved on a mix of SEP class and TMG class aeroplanes, although the licence itself will be issued with privileges only for the class in which the skill test was taken. To gain PIC privileges for the

BELOW: The Stemme S6, one of the most popular motorgliders in Europe





other class requires additional training and another skill test; once this has been completed, experience on either class will validate PIC privileges for both, which can substantially reduce the cost of flying. In theory a pilot with TMG and SEP privileges could fly for years on one class, yet still have PIC privileges for the other. This isn't really an issue though; no one in their right mind would let you fly something you hadn't flown for years without some form of check out first.

So what do you need to do if you wish to add TMG privileges to your licence with SEP privileges, or vice versa? The requirements for achieving this are as follows:

LAPL(A): The requirements are laid down in FCL.135.A and require at least 3 hours of flight instruction in the new Class, including 10 dual take-offs and landings, 10 supervised solo take-offs and landings, and a skill test. During the latter, the examiner will confirm that the pilot has an adequate level of theoretical knowledge in

the subjects of operational procedures, flight performance and planning, and aircraft general knowledge.

PPL(A), CPL(A) and ATPL(A): No specific training requirements are laid down, but the pilot needs to receive sufficient training to be recommended for a skill test in the new Class. FCL.725(c) requires that this skill test is passed within a period of six months after starting the training course and that application for issue of the class rating is made within six months of passing the test. If you've flown both SEP and TMG class aircraft during your PPL course, this doesn't mean that the six-month-clock starts ticking from the moment you first set foot in whichever class you didn't fly for the PPL skill test, it just means that whatever top up training you later received has to have begun within six months of passing the second skill test.

NPPL: Unlike holders of other pilot licences, NPPL holders with valid SSEA class ratings, who wish to obtain an SLMG

ABOVE: motorgliding is fun and adds skills you might not have used in the past

class rating, merely need to produce log-book evidence of having satisfactorily completed conversion training with an SLMG instructor on self-launching motorgliders before making an application. Revalidation requirements for the NPPL differ from those for other pilot licences; consolidated revalidation experience in the 24-month-validity period is permitted, but this additionally requires at least one hour of flight time in each class included in the licence.

Gaining TMG privileges is quite straightforward really, and from what I've been told, is actually rather fun and improves your piloting skills in general. Neither the IR(R) nor Sailplane Cloud Flying Rating are valid on TMGs – they are strictly VMC-only aircraft, so why not consider TMG training when next year's decent weather returns? But please don't try flying a TMG as PIC unless you have been properly trained to do so, and have the relevant privileges included in your pilot licence. ■

"To gain PIC privileges for the other class requires additional training and another skill test"

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The GFC 500 autopilot uniquely integrates with the G5 electronic flight instrument, as well as combining both the G5 and G500 TXi flight display to provide pilots with an economical and modern autopilot solution. The autopilot mode controller contains large dedicated keys and knobs, a control wheel that allows for easy adjustments to aircraft pitch, airspeed and vertical speed, and a level button that returns the aircraft to straight-and-level flight. As a standard feature, pilots receive Garmin ESP with the GFC 500 autopilot, which works to assist the pilot in maintaining the aircraft in a stable flight condition. ESP functions independently of the

autopilot and works in the background to help pilots avoid inadvertent flight attitudes or bank angles, and provides airspeed protection while the pilot is hand-flying the aircraft.

In addition to traditional autopilot capabilities such as altitude hold, vertical speed and heading modes, the GFC 500 also includes premium functions and advanced capabilities such as altitude pre-select and indicated airspeed hold mode. Pilots can fly fully-coupled descent Vertical Navigation (VNAV) profiles throughout the en route and terminal phases of flight with a GTN 750/650 navigator. They can select, couple and fly various instrument approaches, including GPS, ILS, VOR, LOC and back course approaches.

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navigation tracking when installed with a compatible navigator. Level Mode, which automatically engages the autopilot, restores the aircraft to straight and level flight.

Underspeed protection helps prevent the pilot from stalling the aircraft. Overspeed protection helps prevent the pilot from exceeding VNE. With the addition of an optional yaw damper servo, Yaw Damping mode minimises yawing oscillations while also helping to maintain coordinated flight by keeping the slip/skid indicator centred.

For customers who already have a G5 electronic flight instrument, the GFC 500 starts at a suggested retail price of \$6,995 for a 2-axis autopilot. The GFC 500 can be purchased with the G5 for less than \$10,000. ■

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EVERYTHING ON THE SPIRIT OF ST LOUIS

Haynes turns its attention to the famous monoplane

Book Spirit of St Louis
Author Leo Marriott

TECHNICAL manual series specialists, Haynes, has added another vehicle to the ever-expanding list of machines that you can learn about. This time attention is turned to the Spirit of St Louis.

More than 90 years after pioneer American aviator Charles Lindbergh became the first person to fly solo across the Atlantic Ocean, Haynes has released the Spirit of St Louis Owners' Workshop Manual to celebrate the intrepid pilot, his aircraft, and their epic flight.

In May 1927, Lindbergh took off from New York City on a gruelling flight that was set to become a watershed achievement in aviation history. The journey caught the attention of the public like no other, with crowds of 100,000 gathering to meet Lindbergh when he touched down in Paris 34 hours later.

The Spirit of St Louis Owners' Workshop Manual chronicles the personal story of Charles Lindbergh, the background to his adventure, the transatlantic flight itself and its aftermath. The book also provides an insight into the design and construction of the Ryan monoplane, supported with a rich selection of archive and contemporary photographs and technical drawings.

Commenting on the book's release, author and

experienced pilot Leo Marriott said: "Today we think nothing of crossing the Atlantic Ocean in only a few hours, and in comfort and safety, but in the 1920s the very thought of an aeroplane crossing the Atlantic provoked excitement and interest, especially as so many had tried and tragically failed. However it was because of Lindbergh and other pioneers that ninety years later aviation connects the people of the world and is in the forefront of technological progress".

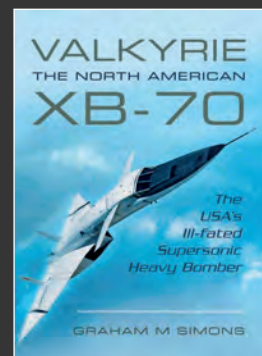
"Lindbergh epitomises the cult of the hero pilot,

a determined individual pushing the boundaries of what was technically possible at the time. It's been a privilege to tell his unique story."

As well as covering the history, the book looks to the future. Leo continued: "I was privileged to have special access to the team building a replica aircraft in California. The Spirit of St Louis 2 is due to attempt an Atlantic crossing in 2019 and the book contains exclusive photography from the build." ■

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Book Valkyrie XB-70
Author Graham Simons

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In September 1964 the first Valkyrie, now re-coded AVV-1, took to the air for the first time and in October went supersonic.

This book includes a detailed description of the design, engineering and research that went into this aircraft. It is full of previously unpublished details, photographs and first-hand accounts from those closely associated with the project. Although never put into full production, this giant six-engined aircraft became famous for its breakthrough technology, and the spectacular images captured on a fatal air-to-air photo shoot when an observing Starfighter collided with Valkyrie AVV-2, which crashed into the Mojave Desert.

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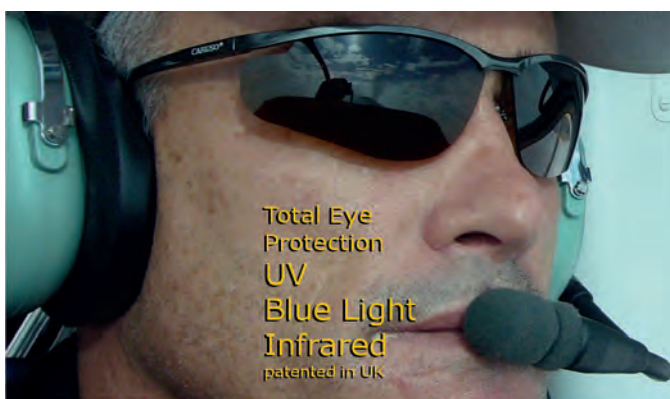
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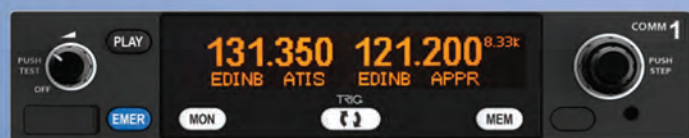
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