



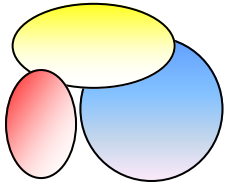
bristolstrut.uk



Brissle Strutter

Newsletter of the LAA Bristol Strut

November 2019



Next Meeting —

Our next meeting will be held on **Tuesday 5th November** at 7.45 in Room 4



This month we are fortunate to have retired RAF Group Captain Laurie Hilditch. Laurie is a graduate of the US Naval Test Pilot School at Patuxent River, a former Commandant of the UK Empire Test Pilot School, Head of Future Capability for Eurofighter and a Shuttleworth Trust pilot.

He will be giving us a "Logbook Lucky Dip" into his experiences.

Directions to BAWA are available on our website: bristolstrut.uk

Forthcoming Meetings:

23 Nov: - Rob Hart - SkyDemon Tips & Tricks; bring your SD device for interactive participation. To be held at Aerospace Bristol, details on 4.

3 Dec: - Christmas Quiz

7th January - Review of the year 2019

4th February - GASCo Safety Evening

Last Month's Meeting

Strut member Neville Parton talked to us about the problems of weapon and store release from combat aircraft, drawn from his time as a Weapon Trials Officer at Boscombe Down.

Weapon plumes ingested by engines, released weapons striking the launch aircraft, released stores which seem to have an attraction for each other - you can see examples at:

https://www.youtube.com/watch?v=fPTnmZ_HPA5 .

Wind tunnel testing and computer modelling have their place, but so do trial....and error!



Inside this issue:

Next Meeting Laurie Hilditch	1
Picture Quiz	2
Where to Go?	2
FAA Safety Briefing	2
Free Magazine offer	3
CAA updates	3
LAA courses	3
Sky Demon Tips and Tricks	4
Pilot X	5
Pete Hicks	6
LAA AGM notes	6
Wellsbourne Airfield	6
Bristol Aero Talks	6
Paris Postscript	7
Ethanol Free Petrol Stations	8

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Picture Quiz

Last month's picture quiz which Alan supplied really hit the mark with our readers! He said: *This aircraft was seen at Oshkosh in 2018*

We had two replies who were both very pleased to be able to identify the aircraft:

David Chambers said:

I'm pretty sure this is the new SubSonix Jet JSX-2, a single seater personal Jet aircraft in the US Experimental category.

This particular model is N465JC, serial number JSX-0006, owned by John M Corneal of Petersburg, PA, and first flew in April 2017.

The builder/owner even recorded a short video about his project

https://www.youtube.com/watch?v=Yh1SZFvW_30

Also **Pat Harrison** said:

The aircraft is a Subsonex from Sonex Aircraft.

This month is one from Trevor:



"Following on from the discussion at last month's Strut presentation by Neville Parton, here's this month's Picture Quiz.

Yes, we're sure you know it's a B-36 but **what is unique about this particular aircraft?**"

FAA SAFETY BRIEFING

Strut member John Secker has drawn our attention to this compendium of safety articles from the FAA:

https://www.faa.gov/news/safety_briefing/2019/media/SepOct2019.pdf

Where to go...

Free Landings November 2019 in:

Flyer: Bagby, Bourne Park, Castle Kennedy, Stoke Golding, Sutton Bank, Yatesbury (microlights only)

Light Aviation: High Wycombe (free tea and cake), Lee-on-Solent ½ price, Shobdon ½ price, Spanhoe – free landing

MAGAZINE OFFER

We have received the following from Strut Member Geoff Roe:

I need to dispose of a very large (c 500!) collection of flying magazines. These are mainly Pilot and Flyer and date from the 80s, although with nothing much beyond 2000. There are also some Kitplanes and Today's Pilot and other titles. I also have popular Flying and Light Aviation (some from the 60s) and The Aeroplane from the 50s but I'm keeping these.

It would be good to see my collection go to a decent home so I'm wondering if the Strut would be interested? I can't believe that Alan who keeps the Strut library would welcome 500 mags but if they could be sold on eBay by someone with the time to do this they may raise a useful sum for Strut funds. On eBay individual copies from this era are advertised at several pounds each, plus postage. You can't of course tell what prices the sellers may actually get but there seems a good chance the total yield would be quite useful.

Is there a taker for either the magazines themselves or to take on the task of selling them? If so please contact Mary and she'll put you in touch with Geoff direct. Thank you in anticipation.

SAFETY EVENING

Here is a date for your diary:

LAA Bristol Strut and Bristol Aero Club will be hosting a **GASCo SAFETY EVENING** in our usual Room 4 at BAWA on **TUESDAY 4 TH FEBRUARY 2020** at 19.30 hrs.

The topic will be *Perception verses Reality*

Please keep this date free and do invite all your aviation friends and pilots to come along to this very interesting and informative FREE evening.

Posters and flyers will be available after the New Year for display in your local airfield, club room, flying school etc.

CAA UPDATES

ORS4 No.1321: *Standardised European Rules of the Air* - Special VFR Flights within the Brooklands, Denham, Fair Oaks and White Waltham Local Flying Areas

Authorisation related to Special VFR Flights within the Brooklands, Denham, Fair Oaks and White Waltham Local Flying Areas

<http://publicapps.caa.co.uk/docs/33/ORS4No1321.pdf>

Consultation: Opting out of EASA regulation for 450-600 kg light aircraft

We have opened a 6-week long consultation to seek views on the UK moving new designs of light aircraft 450-600 kg from pan-European EASA certification to national regulations.

Stakeholders are invited to submit their views and respond to questions set out in the consultation document online: <https://consultations.caa.co.uk/ga/450-600kg-regulation/>

The closing date is 29 November 2019.

LAA COURSES

We are pleased to announce that Dudley Pattison will be running his popular **Woodwork course** again in 2020 on the following dates : **Wednesday 15th January, Wednesday 12th February & Wednesday 11th March.**

The cost of the one day course is £110 for members which includes lunch, for further details please click [here](#)

The LAA runs courses regularly throughout the year on subject such as:

Working in Aluminium; Wooden Aircraft Structures; Air to Ground Radio Operators; Electrics (Basic), Electrics (Advanced); and Rotax Engines. Do check the LAA Website regularly for dates and details as they are all popular fill up quickly. <http://www.lightaircraftassociation.co.uk/Courses/courses.html>

SKY DEMON TIPS AND TRICKS by Rob Hart.



Aerospace Bristol,

Saturday 23rd November 2019, 11 am

A tips and tricks seminar for existing users of the SkyDemon app for planning and navigation - Rob Hart from SkyDemon will discuss the intended workflow of the system, and will highlight some useful features which are perhaps less well known."

Seminar starts at 11 am, and will be in the lecture theatre in the Concorde building. The museum opens at 10 am, and refreshments/lunch can be purchased in the museum café.

There is no cost to attend the seminar, but all those attending will have to purchase a museum admission ticket, either a group ticket for the day at £12, or an annual ticket at £16.50 for adults or £14.50 for over 65s, unless of course you already have a valid annual ticket. (The Annual ticket allows unlimited access for 12 months from first use)

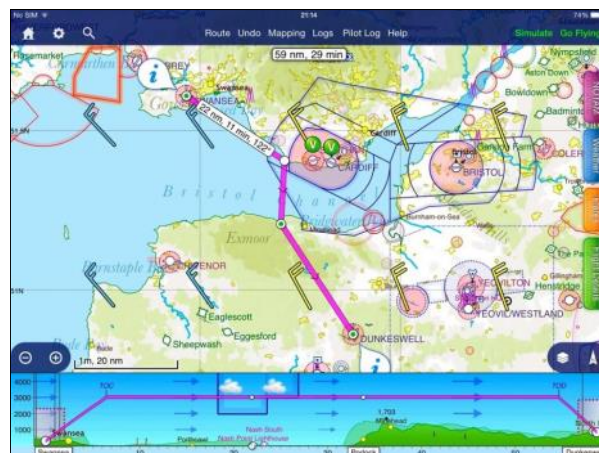
Attendees are encouraged to bring their tablets with Sky Demon loaded.

In the afternoon Concorde tours will be arranged for anybody who is interested.

<http://aerospacebristol.org/>



A sample of a Sky Demon screen.



FALSE ECONOMY by Graham Clark

Continuing our series of articles from which we all hope to learn something useful. Many thanks to Graham for these thoughtful insights. They are reprinted with very kind permission from Flyer Magazine

Pilot X was indeed a frugal sort, but if there was spare cash the best way to spend it was — of course — to go flying. What else? After having got his licence and become bored with flying around the local area, he decided that he needed a 'go-places' machine; one that had space for two and enough baggage for a short holiday.

So he embarked upon a search for a suitable aircraft, but rapidly found that those that would meet his requirement and were available for sale, were North of his financial threshold of pain. Imagine then his joy when he tumbled across a homebuilt aircraft that had been originally designed to carry three persons, but in this case was built to carry two adults and baggage a good distance and at speed. He had found himself a COZY III, and best of all, it had a two-stroke WAM-120 Wilksch diesel engine. All, at a price he could afford.

Now Pilot X was a firm believer in Rudolf Diesel's invention, and the Wilksch was designed to burn Diesel or Jet fuel, which Pilot X knew to generally be much less expensive than Avgas. Also, with the increasing difficulty of obtaining Avgas in some places, he was moving with the times and theoretically saving a wad of cash each time he went flying: "heads I win, tails you lose!" The Diesel-powered Cozy enabled Pilot X to halve one major cost of his flying fun.

Pilot X based the aircraft at his local flying club airfield. The site was not overly dimensioned for a composite canard design with a cruise speed of 156 kt. An accurate approach speed was critical, and the wheel brakes had to be top notch for an airfield at 1,716 ft amsl with a hard runway only 610 metres long. Not a lot of space, especially on a hot day, but okay when everything was burning, turning and braking as it should.

On the day in question, Pilot X had decided he just had to get some air under the Cozy's wheels; he had only flown it for a couple of hours during the last 90 days, due to a combination of time shortage and weather. He had by then acquired nearly 300 hours on the aircraft, so was well confident about the prospects of a solo morning zoom around the local region. He hauled the sleek beast out of the hanger for the usual pre-flight inspection. The Cozy had two wing tanks both marked Jet A-1 and although they were not full, there was plenty of juice on board for the one-hour trip he had in mind for himself.

Satisfied that all was in order, he fired up the diesel and the mid-wing plastic bird was soon taxiing to the hold for a warm-up. There was a gentle 3 - 6 kt westerly crosswind with visibility about five miles, but nothing to cause concern. Cleared for departure 'at your discretion', he aligned the nose with Runway 16 and selected full power.

Brakes off, the canard Cozy with pusher engine and prop accelerated up the runway, fairly soon with light under the wheels, aided by the cushion of air under the mid-wing design. The Cozy did not climb quite as fast as he would have expected, but it was already too late to abort because the end of the 610-metre runway was already passing below. Pilot X continued to climb ahead, but recognised all was not well, and the best thing he could do was to get the bird back on the runway. To minimise drag and improve the rate of climb, he retracted the nose gear and then began a long, gentle low-level teardrop turn that would bring him straight back to Runway 34.

During the ensuing less than ten-minute flight it was plainly a struggle for the Cozy to maintain altitude when straight and level, but with each degree turn of the compass, it was losing height. Somehow, Pilot X managed to manoeuvre the aircraft into position for an approach to Runway 34, even though the engine was plainly not developing full power. But he was steadily losing the struggle for power and altitude, and half a mile short of the threshold to 34 the Cozy brushed 100 ft tall trees and crashed into the undergrowth. There was no fire, but X was seriously injured.

Both wings were broken, one fuel tank ruptured, and fuel flowed out. The nose landing gear was still retracted and all three propeller blades were broken. A large amount of fuel had been lost from the damaged tank.

Of course, there was an investigation in which the VFR weather played no part in this CFIT scenario. The investigators took a routine fuel sample and sent it for analysis. The subsequent report stated that the tank contained heating oil EL DIN 51 603-1. The test record stated that the red dye and the yellow marker matched the customs specifications for pure heating oil EL.

The engine was also removed for inspection, which found that one of the three cylinders showed a jammed outflow valve. Kerosene jet fuel is ideal for jet turbines, but it lacks the lubricity of Diesel fuel. Accordingly, Diesel aero-engines that use jet fuel must have sufficient lubrication to compensate. Heating oil is cheap as chips, but not necessarily cheerful.

- 1—What was Pilot X' first mistake?
- 2—What was his second mistake?
- 3—What was his third mistake?

Answers on last page

Peter Hicks—Rest in Peace

We were sad to hear about the death last week of Peter Hicks, engine rebuilder extraordinaire and a font of engineering knowledge and application. Quite a number of aircraft are flying about behind one of his immaculate rebuilds. He will be very much missed.

We send our sincere condolences to his son Ed, past Bristol Strut Coordinator, who also lost his mother very recently.



Some notes from the LAA AGM, 20 October

- Tim Hardy and David Mole were re-elected as Board members.
- The vote to further investigate merger with the BMAA was overwhelmingly carried at 292 for, 43 against and 6 abstentions. Sadly, though, less than 6% of the membership voted.
- David Cockburn has been appointed as the new Head of Training for the Pilot Coaching Scheme. You may remember David from previous GA Safety Evenings.
- LAA are producing a series of training videos on Permit aircraft ownership, fronted by Arthur Williams. Membership has grown by around 100 over the past year, at a time when other organisations seem to be showing a decrease.
- There was an excellent presentation from Wg Cdr Chris Pote on his 2018 flight by Eurofox from UK to New Zealand to commemorate 100 years of the RAF.
- In the LAA Service Awards, our Graham Clark received the Pete Clarke Trophy for his contribution to flight safety with his Pilot X articles in Flyer magazine, and former Strut coordinator Ed Hicks, together with Steve Evers, received an award for the best RV as well as an additional commendation. Harry Hopkins of neighbouring Gloster Strut was made an LAA Life Member.

Protect Wellesbourne Airfield from Housing Development

Can you chip in £3 to get this petition on the agenda?

Within an hour, this petition could have thousands more supporters if everyone chipped in the price of a coffee. Can you help reach this petition's signature goal?

<https://www.change.org/p/stratford-district-council-protect-wellesbourne-airfield-from-housing-development>

BRISTOL AERO TALKS

We are pleased to announce the third "season" of talks under the overall banner of "Bristol Aero Talks". More information on the talks currently scheduled may be found below.

On **Friday 8th November** Ian Whittle (the son of Sir Frank Whittle) will give a talk on "*The Genesis of the Jet*". Information on this talk is attached to this e-mail.

Looking further ahead:

On **Friday 6th December** Professor Mike Bagshaw will give a talk "*Hunter Heavy Breathing - Tales of XL563 and the IAM Centrifuge*". The Hunter in question, a T.7 XL563, earlier acted as the chase plane for the Bristol 188

In January (date to be confirmed) Terry Ransome will give a talk that will look at the different orbits and trajectories that allow spacecraft to do what they do well

More information on these talks will be provided in due course.

The talks will be held, as usual, at BAWA and will normally be organised at 7:15 pm on a Friday evening. There will be no charge for entry to these talks. However, as these talks are being run independently, we will ask for a voluntary contribution of one pound per person to cover the room rental and associated costs. In the event there is an accrued surplus at the end of the season of talks it will be donated to a good cause such as the Air Ambulance.

PARIS POSTSCRIPT *by Graham Clark*

Following on from Blériot in the last Strut Newsletter, spare a thought for Clément Ader who is not so well known in the UK. He built the steam-powered 'Avion No 3', which has been restored for display at the Musée des Arts et Métiers' (Museum of Arts and Crafts) in Paris. It was originally financed by the French military, which wisely discontinued development.

The design was obviously inspired by our flying mouse friend the Bat. But even if the shape was a theoretical flyer, the power to weight numbers simply did not add up to lift, though some observers might have disputed that.

Did it fly, or was it pushed? It did manage to advance over the ground and witnesses said the wheels left the ground (from the crest of a bump?)

However, anyone who has ever built a model aeroplane would have very serious doubts that it could ever leave the ground for sustainable flight under its own power.

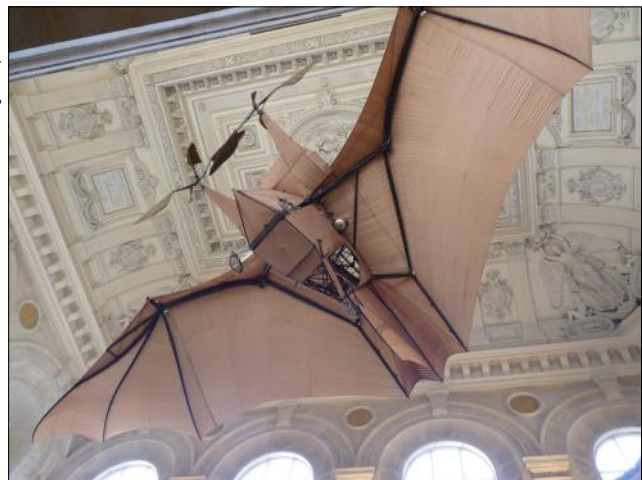
It was nevertheless a contribution to the development of aeronautical thought, at a very minimum showing how not to build an aeroplane.

The fact that Clément Ader's creation is exhibited in the Museum of Arts and Crafts seems quite appropriate, given that the machine obviously incorporates a range of materials and fabrication techniques dating from the late 19th Century: woodwork, textiles, fire and water, blacksmith, tin bashing, basket weaver and much more. All assembled more with the eye of an artist than that of an engineer or aerodynamicist.

Nevertheless, it offers a fascinating insight into the craftsmanship that immediately preceded the likes of Brazilian Santos Dumont and Frenchman Louis Blériot. Definitely more Art, than Métier.



*Clément Ader's
Bat-like Avion 3*



Clément Ader may have built the first taildragger, but the top-mounted radiator would have produced plenty of drag. The 'feathers' protruding left and right from the front were his idea of a propeller. I wonder what Hercules Props would say to that. I'll ask Rupert next time I see him...



Glass cockpit and sailcloth. Pre-flight check to include steam Ts & Ps.....

ETHANOL FREE PETROL STATIONS IN THE UK

Geoff Roe has been investigating the situation with Ethanol Free Petrol and has been in direct contact with Exxonmobil with the following enquiry: "I use only Esso Synergy Supreme plus petrol, primarily because I understand it contains no ethanol (unless you buy it in Devon or Cornwall). Filling stations around here (Bristol and Bath) are now showing E5 stickers on Supreme pumps. Is this in error or does all Supreme fuel now contain ethanol?"

Here is the response regarding Esso 83333 fuel which he has received:

Dear Mr Roe,

Thank you for contacting Esso Customer Care and for your interest in our ethanol free Esso Synergy Supreme+ petrol.

The majority of Synergy unleaded 95 Octane petrol sold in the UK contains 5% ethanol as required under the Government's Renewable Transport Fuels Obligation (RTFO).

There is currently no requirement for renewable fuel (such as ethanol) to be present in Synergy Supreme + unleaded (97 grade petrol).

Esso Synergy Supreme+ is ethanol free (except in Devon, Cornwall, the Teesside area and Scotland) and we have no current intention to add ethanol to Synergy Supreme+ in other areas of the UK.

We would therefore advise anyone who has concerns about the presence of ethanol in petrol to use Synergy Supreme+ – providing they do not fill up in Devon or Cornwall, the Teesside area or Scotland.

The E5 sticker on the Synergy Supreme+ petrol pumps was introduced to ensure Esso complies with the Government's standards on labelling of fuel labelling – see <https://knowyourfuel.campaign.gov.uk/>. The E5 label means the fuel could contain up to 5% renewables such as ethanol.

Esso does not currently have any plans to introduce ethanol into the Supreme+ fuel brand in the area.

They then attached a complete list of Tesco Express Service Stations with their full address where the Synergy Supreme+ Unleaded (97 grade petrol) is ethanol free. That Excel document is 146 rows long and too large to include within this newsletter so here below are the stations in the Bath and Bristol area. If anyone is interested in other areas please contact the editor who will forward on whole spreadsheet direct.

TESCO COMBE DOWN (RT) FUELS	BA2 5RU	BATH	MIDFORD ROAD
TESCO HENLEAZE EXPRESS (RT) FUEL	BS9 4NB	BRISTOL	142 HENLEAZE ROAD
TESCO WARMLEY EXPRESS (RT) FUEL	BS15 9JB	BRISTOL	DEANERY ROAD, KINGSWOOD
TESCO BRISTOL SOUNDWELL EX (RT) FUELS	BS15 1PN	BRISTOL	SOUNDWELL ROAD
TESCO WINTERBOURNE EXPR (RT) FUELS	BS36 1RB	BRISTOL	HIGH STREET
TESCO Bristol Filton Express (RT) FUELS	BS34 7PL	BRISTOL	73-75 GLOUCESTER ROAD NORTH

Many thanks to Geoff for getting this information which is very useful to those who can use Mogas.

Please note that there are petrol stations other than TESCO EXPRESS which also sell Esso Ethanol free petrol.

PILOT X ANSWERS

- 1—His first mistake was to disregard the engine manufacturer's instructions about the grade of fuel to be used.
- 2—His second mistake was a failure to do a full-power check prior to take-off.
- 3—His third mistake was to attempt a return to the airfield, instead of seeking a landing site straight ahead.