



A BRANCH OF THE LIGHT AIRCRAFT ASSOCIATION PROMOTING RECREATIONAL AVIATION IN THE
SOUTHWEST
www.devonstrut.co.uk

The Devon Strut is twinned with RAA Toronto Region, EAA Chapter 14 San Diego and Chapter 20 SAAA Australia

DEVON STRUT NEWS – December 2017

Chairman's Chat

by David Millin

The meeting room at the Ley Arms on the evening of 9th November was once again packed in anticipation of learning the meaning of Gone Bush! Paul Catanach's presentation, akin to a Gentleman's club after dinner speech, not only vividly illustrated the adventures of flying in Australia's Northern Territory but considerably enriched our vocabulary! Paul's hilarious rendition of his experiences, together with his collection of antipodean artefacts, will go down as one of the best Strut evenings we have ever had. Paul will be back with us again



in the New Year in a different guise. Watch this space.



More later about our Christmas meal on 8th December but looking ahead to the New Year, our next Strut evening talk will be started off by Dylan Bristow who will remind us of Project Pegasus and how we can contribute to its success. Dylan's short presentation will be followed by a GASCo Safety Evening entitled 'Think Today, Here Tomorrow,' presented once again by GASCo's regional coach, Michael

Benson.

GASCo is this year's Devon Strut supported charity and has had another productive year, continuing the trend established in recent years by taking on even more safety evenings for the CAA and assisting the Armed Forces in holding Military Civil Air Safety Days. At the same time, it is increasing its participation in meetings whilst maintaining attendances at the Regional Airspace User Working Groups and at military establishments across the country. GASCo is poised to deliver the first Airspace Infringements Awareness Course on behalf of the CAA and join the CAA's internal Safety Review Panel, initially with observer status. GASCo's plans for the next 12 months include studying methods for the prevention of accidents due to loss of control in flight and for increasing the reach of GASCo safety promotional material. In this respect, its free monthly newsletter, Flight Safety Extra, now has a readership in excess of 6,500 people. For more information, please visit: <http://www.gasco.org.uk>

Still on the subject of safety, I came across this <https://www.youtube.com/watch?v=8UA3WvH9GL8> on decision-making. How many of us have been there? How many of us are going to be there?

The Devon Strut response to the Exeter Airspace Change Proposal is now posted on our website for your perusal. I'd like to take this opportunity to thank all those who contributed their thoughts and ideas which were used in discussions and amalgamated into the contents of our report. It is heartening to know, through the correspondence I have received, that the views of our collective membership clearly encompass a wise and pragmatic understanding that should form the basis of a common sense outcome to Exeter's proposed excessive airspace grab.

As some of you may be aware, FASVIG have been working to protect VFR Significant Areas by recording them through a nationwide survey. All around the country, groups have worked together to define areas extensively used by GA and although this is a work in progress, it clearly sets out our well-trodden paths and records our current 'rights of way.' The Devon Strut made its contribution with a couple of us working on the Devon area with Pete White covering Cornwall. You can see the resulting document at <http://fasvig.org/reports/mas-1-vfr-significant-areas>

The CAA has announced temporary exemptions for 8.33 kHz radios due to the lack of workload capacity by radio engineers to fit new radios into the UK GA fleet. See details later in this newsletter at <https://www.caa.co.uk/General-aviation/Aircraft-ownership-and-maintenance/8-33-kHz-radios>

I have had a lay off from flying for the best part of two months mainly due to work which has impinged upon several consecutive weekends. However, last weekend I took advantage of the calm weather and took a leisurely drive to Dunkeswell. As we all know, we should not just fly off willy-nilly without a plan and with that in mind, and given the short winter day, I mentally generated a few modest alternatives. As I approached the old PFA hangar, headset in hand, I have to say I did not favour any particular idea other than to firstly ascertain whether or not Charlie Golf was still speaking to me (it turned out that he was). In front of the hangar I met Richard Reeves who came up with a good suggestion so after rousing my flying machine from its hibernation, I proceeded to Henstridge to join Richard and Cindy for lunch. The café was full and Geoff Jarvis was working wonders over his hot stove. My short flight back to Dunkeswell was equally as pleasant as my outward journey and at the end of the day, as I drew the hangar doors shut, I was once again filled with enthusiasm for my next flight.

I am not sure when I will fly again but I am definitely working on the weather/work/flying life balance. If I don't get back into the air soon, at least I have the Strut Christmas dinner to look forward to on Friday 8th of December when I will have the pleasure of the company of some of you... in fact, more than 50 of you! If I don't see you at the dinner, on behalf of the members of the Devon Strut committee, I wish you all a very merry Christmas.

Until then, clear skies.

David.

Inspector Matters

Poly-Fiber, electrics, more ethanol problems and "don't try this at home"

by Trevor Reed

Hi folks

I have moved, "downsizing" to a larger house and this has taken up a bit of my time, hence my absence from the newsletter for a couple of months. But I am happy to tell you that I am back in action now, bending your delicate ears with my waffling about matters to do with inspections and inspectors.



This month I have a mixed bag with something for everyone. I am going to start with telling you about a visit to Aircraft Coverings at Henstridge, then move on to a bit about the new Technical Leaflet on Electrical Systems, touch on another problem caused by ethanol and finish off with a salutary tale.



The trip to Henstridge was organized by our LAA Chief Inspector Ken Craigie as a course for inspectors as part of our continued professional development. The day was oversubscribed many times, and will be repeated, but I was lucky and gained a place on the first course. In company with 11 inspectors and Ken, I had a great day out, generously hosted by father and son team of Chris and Alex Allen. They took over the European distribution of the Poly-Fiber products a year or so ago and are now well established in Hangar 3 on

Henstridge airfield <http://www.aircraftcoverings.co.uk/main.htm>. The course involved detailed information and hands on practical demonstrations of the covering process (above). It is not for me

here to describe the work involved in covering an aircraft with Poly-Fiber, except to say that it is a complete process with all the products that you would need available from one source. It is a complex procedure but one that can be mastered with practice. I certainly would recommend that anyone intending to use Poly-Fiber, should attend one of the courses run by Aircraft Coverings, before you start. Towards the end of the day we had a look at some interesting aircraft that had been covered in Poly-Fiber, in particular a Travel Air 4000 which was stunning!



I have always been a fan of Bob Nuckolls' book "The AeroElectric Connection", which is free to download at <http://www.aeroelectric.com>, and have used it as my main reference. If you read TL3.26 in conjunction with Bob's book, you should be able to make a good stab at creating a sound electrical system. You should be able to design your system and make your wiring loom. Your final system will need approval so it is a good plan to get your inspector involved from the start.

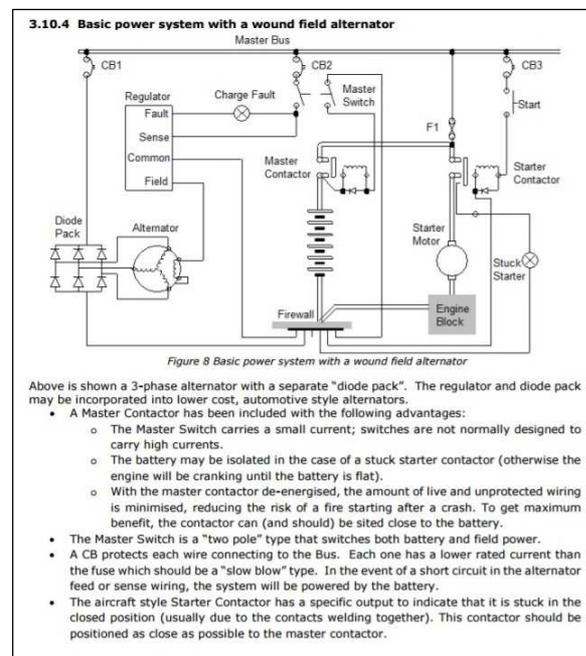
<http://www.lightaircraftassociation.co.uk/engineering/TechnicalLeaflets/Mods%20and%20Repairs/TL%203.26%20Electrical%20systems.pdf>



other types with composite fuel tanks used for Mogas. The Alert, which draws attention to LAA AIL MOD/206/007, Fuel Tank Inspection, follows on from an engine failure on a CFM Streak Shadow in Ireland in May last year. The AAU investigation concluded that the engine failure was caused by the fuel system being blocked by composite debris from within the tanks, perhaps as a consequence of using Mogas containing ethanol. Inspection in accordance MOD/206/007 is mandatory and is required initially within 5 hours or 28 days after 9th November 2017, and thereafter every three years to be coincident with the annual permit revalidation inspection. The alert can be found here: <http://www.lightaircraftassociation.co.uk/engineering/cfm2017.pdf>, and the AAU's investigation report, http://www.aaui.ie/sites/default/files/report-attachments/REPORT%202017-009_0.pdf is also worth a read.

And finally, we are all aware of the significance of the mass and centre of gravity limits for our aircraft. Not only are we illegal if we fly outside these limits, we are going into untested "territory". We are flying "outside the box" in a dangerous way. Imagine how surprised I was to read in October's Light Aviation

The LAA website is a fine source of technical information. You have to search a bit to find what you want but generally it is there somewhere. The new Technical Leaflet, TL 3.26 Electrical Systems, is a real gem. It leads us gently through the intricacies of aircraft electrical systems so that even those of us who are electrically dyslexic have a chance of understanding our electrics.



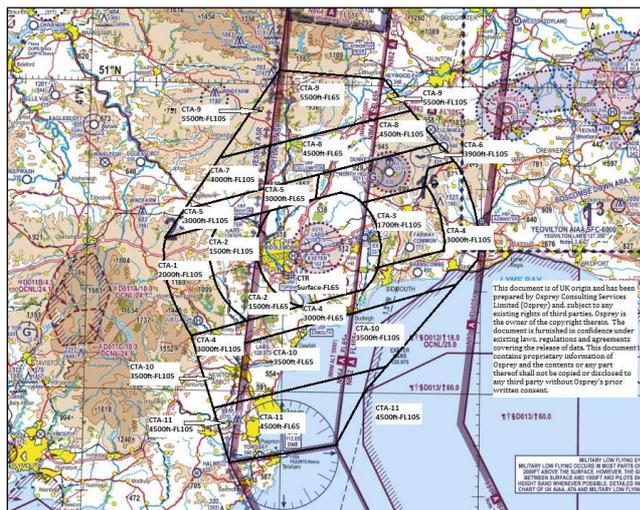
Now, the dreaded ethanol shows its destructive side yet again, this time destroying fibreglass fuel tanks. The LAA has just published an Airworthiness Alert (LAA/AWA17 08) which, although specifically applying CFM Shadows (*left*), is relevant to

magazine of an adventurous trip from the UK to Oshkosh where the limits we not only exceeded but apparently done so with little concern for the rules. The pilot got away with it but the consequences could have been fatal. In November's magazine the LAA's Chief Engineer, Francis Donaldson, suggested that it might be possible to extend the limitations to enable special trips. So, should you be considering flight outside your aircraft's envelope, do not do it without first consulting with LAA HQ. The call may save your life.

That's all for now. Cheers, *Trevor*.

Exeter ACP Responses

by Mike Mold



The Strut, DSFT, DSGC and the BGA have all strongly objected to the revised class D airspace design that was developed following the formal consultation which closed in June 2017. Links to our collective comments are available on the Strut's website Safety Page.

<http://www.devonstrut.co.uk/safety/4539777984>

Notwithstanding the copyright statement by Osprey on the chart, the Strut has been given permission to circulate the above chart by Dave Burrows, Exeter's Air Traffic Services Manager, (Osprey's client) and has also taken legal advice on its circulation.

FASVIG has recently published an interesting paper on the need for the modernisation of UK airspace, identifying aspects (in comparison with other European states), that require a fundamental rethink and improvement. I refer members to Appendix A, sections 3 & 4 in relation to recommendations we have made in response to Exeter's ACP <http://fasvig.org/reports/uk-airspace-modernisation>

FASVIG has also published the 2nd version of its Register of VFR Significant Areas, to which the Strut was pleased to have been able to contribute. <http://fasvig.org/reports/mas-1-vfr-significant-areas> Annex A of this report gives a link to a Google Earth Layer Map, many elements of which can be turned on or off to see how local areas of VFR interest relate to the national scene.

British Aerobatics Association Lottery

The British Aerobatic Association has just created a lottery to raise funds for the training and support of the British team, mainly for world championship events. The Russians and French, who win everything, have state sponsorship so this British initiative might help to level the playing field. The prize is a 40 minute flight in a 2 seat Spitfire together with dinner and BnB for two at one of the four Boulton bases. Total value £4,000. The tickets are £20 each with a 1 in 1,000 chance of winning. The draw is on 14th March 2018 and tickets are available to anyone in the Strut from the BAA's Patrick Caruth, caruthp36@aol.com or 07985 033 596

Electronic conspicuity (ADS-B), a flight safety aid or a spy in the sky? by Ian Fraser

At the Wessex Strut's September evening meeting, a presentation was made which suggested that Henstridge airfield's opponents were likely to use internet flight tracker tools and reports to support forensic analysis of aircraft positions in respect to the Henstridge noise avoidance zones, which are depicted on the maps published for visiting pilots <https://henstridgeairfield.com/forpilots>. Flightradar24 was mentioned as one such tool and it was intimated that it could do so with remarkable accuracy. However, I have some observations to make on that.

Flightradar24 is a US website displaying a radar-like display of all the air traffic it can detect in a particular area. It was initially developed for spotters and tracking airliners but is rapidly expanding through selling its aircraft position data to other parties. It gathers data through air traffic radar services (LARS etc) or through its own receiver network detecting ADSB transmissions. They gather aircraft identity, track and position data and display it in a radar-like format on their website. <https://www.flightradar24.com/> (Click the link and it should take you straight to their radar picture). Place your cursor over any aircraft icon on the display and it will identify its registration. Click on a specific aircraft and it will provide more data in the pane to the lower left. In addition to this “live” service (which seems to be free) you are able to search for (any) specific aircraft and, depending on how much you have paid them, access all its past flight history, tracks and data for up to the last year. That should be of significant concern to us.

How good is it?

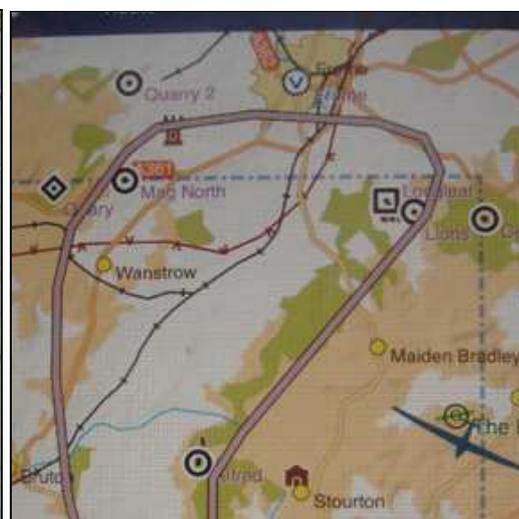
- For those without transponders you remain anonymous and need not concern yourselves.
- For those with a basic transponder it displays your position identified as a “no call sign aircraft” once you are visible to radar. It is only of limited concern as you are not identified with your track.
- For those with mode S, it adds your registration (your identity), and something called “calibrated altitude.”
- If you have ADSB “out”, then FR24 seems to display much more frequent updates.

When using tracks from ATC radar sources, FR24’s performance and precision are quite crude. It is great for watching commercial flights or locating an aircraft but not much else. In the Blackmore Vale area, we are invisible to the local radars below 1500ft so tracks derived from Yeovilton, Bournemouth or Bristol radars vanish below that height. However, companies like FR24 are filling these gaps with simple receivers gathering ADSB data to add to that gathered from ATC sources. These receivers are normally hosted by local enthusiasts who connect them to their Internet port for onward transmission to FR24. The hosts have no control over any data transmitted. Recently FR24 have been aggressively filling in the gaps (like Henstridge) by giving free full subscriptions to people living in their visibility gaps who in turn must mount an antenna on their building and plug a flight radar receiver box into the Internet. They particularly favour people near an airfield for this service and there is at least one such box close to Henstridge.

So what is wrong with FR24? Nothing if the data is accurate enough for what it is used for and is not used for purposes other than that for which it is generated (which we are all told is flight safety). I looked at some tracks for the Wessex Strut’s Scout experience flights on Saturday 16th September. My Vans RV6, G-EYOR has mode S but not ADSB so I also looked at the tracks of an aircraft with a fully IFR certified augmented ADSB conducting similar flights at a similar time. First of all, EYOR’s tracks didn’t start until well clear of Henstridge and vanished as we returned, confirming the local blind spot. What surprised me was that one FR24 track (*below left*) for EYOR was so different from the SkyDemon track (*below right*) recorded on my aircraft. In places it was more than a mile out and at one point reported us well below the minimum altitude over Frome (a congested area).



FR24



SkyDemon

What appears to have happened is that real radar derived track updates seem to be infrequent (and / or delayed) but the FR24 display links them, showing them as a continuous track. What it completely missed were the manoeuvres I conducted between its updates. It also reports the same height for a whole “leg”. Some of the “points” are also quite inaccurate. This misleading data contained errors of over a mile from my GPS track as well as significant height errors. In the wrong hands this data could be devastating. FR24 seems totally incapable of accurately reporting a low and slow manoeuvring aircraft based on ATC data.

But do ADSB position transmissions change this? Sometimes, maybe, but it depends on several aspects of the “system” components. It crucially depends on the accuracy of the GPS inputs to the aircraft ADSB unit, which in turn is determined (or not) by the standard applicable to its installation. Last year the CAA published their proposals for a low cost electronic conspicuity system (see and be seen traffic awareness) for GA in CAP1931. In this document, it declared that it would accept any commercial GPS as input for both position and altitude reporting by ADSB. Unlike IFR fits, CAP 1931 GPS fits are not controlled and could under some circumstances have **errors of up to 300m**.

There may also be significant **loss of data accuracy** after transmission from the aircraft to the spotter box. To the right is a FR24 track of the fully IFR equipped aircraft side by side with one of G-EYOR’s Scout sorties. Compare the two tracks, they should look similar, in form if not position! That a full track to the airfield was detected implies FR24 gathered its data from one of their spotter receivers rather than the ATIS radar systems, so the gap has been filled. The aircraft’s IFR certification suggests its position reports should be very accurate (within 7m). What is immediately noticeable, compared with G-EYOR, is just how ragged the other flight appears. It also seems to over-fly one of Henstridge’s avoidance areas.



So, do we cry “erratic flying” or “infringement” as would the protestors, or do we wonder if in fact **the reported track is in error**? I prefer to think the latter. Bearing in mind this track came from an aircraft equipped to the highest standard available and was flown by a good, experienced pilot we should seriously worry about the accuracy of the data gathering and processing within FR24.

Also of concern (from another flight) is that FR24 seems to apply a data smoothing algorithm which may be the cause of sudden steps (doglegs) in a track, presumably when a cumulative error gets too big. This can mean that in some circumstances it reports your position as **where it thinks you could be, not where you are** and then once the data input error is too big, corrects it (but not retrospectively). What is their tolerance? For a flight I made recently with autopilot engaged, I saw 250m doglegs in a track they published as a straight flight. G-EYOR just does not fly like that! I think they are catering for what they suspect to be unstable inputs and preventing them making their displays unreadable. This is a perfectly reasonable thing to do but renders it totally unsuitable for a forensic analysis of an aircraft’s position.

My conclusion. Low cost low power conspicuity to a fixed standard is a good thing and we must applaud the CAA for finally sorting it out. However, if people are to use tools like FR24 for a forensic analysis of a flight position, then they must consider the potential inaccuracy of the reported positions and heights. I have demonstrated ATC or Mode S data reported on FR24 as having errors in excess of 1 mile. ADSB data is dependant on the accuracy of the data input to the aircraft’s ADSB system and that is unknown for most aircraft, but could have as much as 300m error. There also seems to be positional corruption occurring due to FR24’s own data gathering and display processing system which could be as much as an additional 250m. Even with my analysis, I have illustrated error or reported position uncertainty greater than the size of the some of the noise avoidance areas around Henstridge that we try to avoid. Should anyone be in the unfortunate position of being challenged with FR24 (or similar) data, bear this in mind in your response.

Also be aware that you also have the option of having your aircraft's identity blocked from the FR24 display (and presumably the Open Glider Network or other similar flight tracking applications). But be aware and be cautious. Data about you is out there in the public domain and it may be inaccurate!

GAA Invokes 8.33 Exemptions by Philip Whiteman, Editor - *Pilot Magazine*

Thank you to Chris Howell for bringing this to our attention:

Noting that aircraft maintenance organisations and avionics fitters have been overwhelmed by demand, the CAA has agreed to invoke a number of exemptions that will run until 31st December 2018, confirming that until then, 25kHz radios may continue to be used when communicating exclusively with 25kHz ground stations.

“UK adoption of 8.33 kHz VCS capable equipment is increasing and feedback shows that over 50% of the UK GA fleet is already equipped, many successfully applying for funding,” said the authority in a statement issued last week. But the CAA has recently become aware of aircraft equipage issues regarding the limited availability of installers. Hence the Authority has agreed to invoke a number of limited time exemptions to provide flexibility for users and to help with the capacity issues that have been identified. The exemptions will run to 31st December 2018 and are listed in CAP 1606 which may be viewed at <http://publicapps.caa.co.uk/docs/33/CAP%201606%20833%20Limited%20Time%20Exemptions.pdf>.

Please note that 8.33kHz compatible radios are backwards compatible, so will retain the capability to communicate with existing 25 kHz ground stations before those ground stations have been converted. Also, existing 25kHz radios can be left installed provided that they are only used for exempted frequencies.

In response to a request from Amarjit Singh Bamrah of Falcon Flying Services/Bigginair Ltd for confirmation that operators of aircraft transmitting on 25kHz after December 2017 will not automatically be prosecuted, CAA GA ANO Project Manager Bob Liddiard made it clear that 25kHz units would remain legal in specific circumstances:

1. If an aircraft is only communicating to ground services on 25kHz frequencies, then it is permitted that they continue to use a 25kHz radio until the end of 2018. However, if their flight means that they communicate to any ground service that has transitioned to an 8.33kHz channel, then they must also be using an 8.33kHz capable radio. This applies to all aircraft and also overrides part 2 of this list below.
2. Some specific frequencies have been granted a 12 month exemption to the end of 2018 and are listed in CAP1606. These frequencies cover “sporting frequencies” and the intent is that gliders, balloons, microlights etc., where they mostly communicate air-to-air, can continue on the 25kHz frequencies. It is felt that within the next 12 months that equipage of 8.33kHz radios in those areas will have improved.

During 2018, ground services will be transitioning to 8.33 kHz channels and so part 1 above will have more impact on where an aircraft that has not transitioned can fly. We believe that the timing of their transition will be driven by the renewal dates of their annual radio licences which are spread across the year.

There are other frequency options that the CAA applied for with EuroControl. These are ground service frequencies and allow the CAA, if requested by the ground service, to grant a temporary exemption to stay on that 25 kHz frequency. It should be noted that the CAA does not expect to have many of these exemptions requested because there is a financial saving in radio licence fee to any ground service that changes to an 8.33 kHz channel. Note that the cost of an 8.33 kHz ground licence is predominantly just one third the cost of the 25 kHz licence...

It is important that we dispel any incorrect interpretations so that the GA community flies safely and within the law.”

Devon Strut member Chris Howell picked up on the CAA's note about the cost incentive to ground service providers to change to 8.33kHz frequencies. Chris comments: “Having noted that Old Sarum have taken up an 8.33 frequency for their ground station, I gave them a ring. My first question was “If I fly in to OS and talk to you on your new frequency on my 25kHz radio, will it work?” “Absolutely, it will be no problem at all!” They went on to explain that the reason they have taken up the frequency was

that their license was due for renewal and they had previously paid £1,200 for the ground station on 25kHz but the new price now for 8.33 was £400 so they bought a new radio for £750, thereby saving £50! They did also say they thought the whole thing is a shambles.

Chris then wondered how the CAA is going to make up the vast difference in charges in these times of austerity, until he came across the CAA's published charges on their website and it looks, on the face of it, as if the CAA plans to impose a massive hike in charges after the first year discount.
<http://www.caa.co.uk/Commercial-industry/Airspace/Communication-navigation-and-surveillance/Radio-licensing/Radio-licensing>

Licence class	Channel	2015/2016	2016 onwards
Aeronautical station (Air/Ground, AFIS and Tower)	8.33 kHz	£600	£3300
	25 kHz	£1900	£9900

Chris christopherhowell@gmx.co.uk

Members' News

Congratulations to **Simon Wilson and Lauren Richardson** (*right*) who were married on 14th November.



As reported last month, **Robin Charles** has sold two shares in his Dunkeswell based RV9A (*above left*), one to **Barry Flicker** and the other to Gary Badham, who lives at Weston-Super-Mare.

Nigel and Robert Nicholson have recently purchased Sportcruiser G-CGWH (*above centre*) to be based at Farway Common.

Russ Marshall has recently had some aluminium welding done by Mike Stephens and recommends him. Mike is a coded welder (i.e. skills demonstrated by examination) who was taught by Neil Howe, a legend of the torch! Mike runs his own welding business, All Metal Welding Ltd in Woodbury Salterton, East Devon and besides supplying a welding service can also provide training in welding.
<http://www.amwelding.co.uk> 01395-233361 / 07968-348825

Welcome to New Members

Brian Allchin of Ashburton introduces himself:

"All my aviation has been in the RAF, which I joined in 1956 having spent my early years watching Spitfires at Biggin Hill. I was lucky to fly Piston Provosts and Vampires in training and achieved my ambition of going on to fighters (DF/GA). The Hunter was a dream to fly, especially formation aerobatics, and the role was great.

*After conversion with 92 Squadron to the Lightning, I went to 56 and again into formation aeros, some with 111 Sqn, then to 5 Sqn for a very short tour on the Mk6 before drawing the short straw and winning a year unaccompanied at Riyah in Yemen. I came back from that to 29 Sqn for a very short time, followed by another dream achieved by getting an exchange posting to 425 Sqn RCAF on Voodoos (*right*). That was a superb tour and then onto 19 Sqn in Germany. After that it was all down hill with staff jobs all the way to an early departure, although 3 years in Norway were rather good!"*



Adverts

Various Items for Sale by Graham Clark

Spot Satellite GPS Messenger In original packing complete with instructions and Lithium batteries. See: findmeSPOT.com £55. Contact details: cgraham978@aol.com

Clarity Aloft (CA) Aviation Headset in case. Qty. 2. Almost new condition, with case. Each with 24 new standard sized spare earbud tips (retail \$24 per pair). Noise cancelling microphone; stereo/mono switch, music input. £350 + postage. cgraham978@aol.com

Also: Qty. 2 Clarity Aloft (CA) Lapel Clip with adjustment band; Qty. 4 CA Black ear tips; £5 + postage. Unused: David Clark Microphone Protector M-1; £2+ postage. David Clark Microphone Protector M-4. £2 + postage. cgraham978@aol.com

GPS Airbox 2 Aware Unit. In imitation leather case. Car charger cable and connector. With UK and France charts on SanDisk. www.airspaceaware.com £99 + postage. cgraham978@aol.com

Pilot Aware. See: www.PilotAware.com

Unit for the small cockpit. Update needed. Complete with GPS Dongle and WiFi connection to 3" x 4" Kobo LCD Mini-reader pre-loaded with XC-Soar. With Anker PowerCore 20100 battery + cable + Medion USB Charger and cable. Combined Price £200 + postage. cgraham978@aol.com

ICOM IC-A6E Airband Transceiver. 8.33 kHz With: antenna; three rechargeable batteries; mains charger; car socket charger unit. £250 + postage. cgraham978@aol.com

SoftComm Intercom. ATC-4 Four-place battery-powered intercom. £ 30 + p&p cgraham978@aol.com

Cockpit Ventilation: A-2-100 Snap Vents. Qty. two; 2-inch diameter. Retro-fit to canopy. Unused. In original box. £10. + postage. Graham Clark: cgraham978@aol.com

Wanted C90 engine, preferably complete with mags etc. Nigel Ramsay techauthor1@gmail.com

1/8th share in Piel Emeraude CP301 G-BKFR (*right*) based at Eggesford. Share cost £1,500 and monthly sub of £45. 100 plus hours and tail wheel experience preferred, however a coach is available if tail wheel conversion is required. Please contact Mel Gale at percycp301@gmail.com or phone 01805-804575 and leave a message.



G-BBKZ - Cessna 172M – Hangared at Exeter. Non-Equity share available. Engine and propeller (approx. 400hrs) – Excellent performer. 2 Com/Nav, ADF, Transponder A/C, Life jackets, lightweight life raft, McMurdo GPS locator. Monthly standing charge: £105.00 per month £72.00 per hour wet. Commitment deposit: £495.00 (fully refundable with 6 months' notice). For further info contact: john@tiptonuk.eu – 07591-588226.

Calendar of Evening Meetings

Second Thursday of the month, October - April, at The Ley Arms, Kenn, Exeter starting at 7.30 pm
<http://www.theleyarmskenn.co.uk> (For evening meals, please make table bookings on 01392 832 341)

8th December (Friday)	Christmas Meal
11th January 2018	Dylan Bristow on "Project Pegasus" followed by GASCo Safety Evening
8th February	AGM & guest speaker Alan James "Izaacs Spitfire"
8th March	Dave White "Going Foreign"
12th April	Mark Batin FRIN "Navigation - Visual & GPS Techniques"

Strut events for 2018 will be updated on our website <http://www.devonstrut.co.uk/events/4536727634>

Tailpiece



DEVON STRUT COMMITTEE 2017

	<p>Chairman: David Millin, 6 Farm Close, Kingskerswell, Newton Abbot, TQ12 5BT 01803-875601 david.millin@sea-sea.com</p>
	<p>Newsletter & Web Editor: Mike Mold, 38 Catalina Close, Dunkeswell, Honiton, EX14 4QD 01404-891587 mike@mikemold.plus.com (n.b. new email address)</p>
	<p>Safety Officer: Steve Robson, 14 Pencross View, Hemyock, EX15 3XH 01823-680784 sb.robson@tiscali.co.uk</p>
	<p>Membership Secretary: John Hope, 6 North Avenue, Exeter, EX1 2DU 01392-271932 john@exeflyer.eclipse.co.uk</p>
	<p>Treasurer: Tony Gibson tony_gibson1@hotmail.com</p>
	<p>LAA Rep: David Mole david.mole@blueyonder.co.uk</p>
	<p>Brian Lyford brian.lyford@gmail.com</p>
	<p>Events & Social Media Organiser: Chris Jackson thechristopherjackson@googlemail.com</p>