

LET'S GO RACING!

On what turned out to be one of the better weekends in August last year, Neil Wilson and I turned up at Popham as the guests of the 3Rs, the Records, Racing and Rally Association which is part of the Royal Aero Club, to learn a bit about the handicap air racing scene in the UK. To be honest, I'd always thought it was a bit 'Hooray Henry' but then most of us can be guilty of preconceived judgements based on complete ignorance, in all senses of the word.

It always helps when you know somebody and fortunately, after a warm welcome from Dan Pangbourne and Mike Pearson, members of the club's committee, I bumped into Bob Ellis who races his Van's RV8, who I knew as a trophy winner from the LAA Rally. Having previously dabbled, Bob had decided to have a full season of racing in 2015 and a serious crack at the British Air Racing Championship, and subsequently finished the season winning

both that and the European Air Racing Championship.

Through Bob, Mike and Dan, Neil and I learned something about how handicap racing works, and I must say it is considerably more involved than I ever thought it was. I understood the principle of handicapping of course, I was a grass track rider in a previous life, hard to believe I know, and the sidecars used to have handicap races. The basic theory is that you send the slower riders off first, based on their previous lap times, and the fastest guy goes off last. If the handicapper has worked out his times properly, come the last lap all the riders finish pretty well together. It makes for close racing because it evens out machine performance and it is the riders' skill levels that become the predominant factor.

Well with air racing it is pretty much the same, which means that you can race a Condor against an RV and each has an equal chance of winning. It all depends on accurately

assessing their relative airspeeds though and here came surprise number one – they all fly at wide open throttle (WOT) for the duration of the race. That means your aircraft must be propped not to overspeed at WOT, and you may have to fit a slightly coarser prop to make sure that doesn't happen - Bob has to remove his spats to add a little extra drag on his RV8 to keep his engine within the max permissible 2,700rpm limit.

Once the airspeed is calculated at WOT (the aircraft is flown around a left hand octagon with eight 30 second straights and eight rate one turns), a clever piece of software developed by Mark Turner, one of the racers, works out the exact handicap times for each aircraft, taking in wind speed and direction and how it affects each leg of the course.

I was impressed at such accuracy, and the upside is that provided you fly a perfect race, you really are in with a good chance of a win, regardless of what aircraft you are flying.

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Air racing with the Royal Aero Club, that is. Brian Hope and Neil Wilson report from Popham and there's a great competition prize.

Photos: Neil Wilson



Therein lies the rub of course, you have to fly absolutely accurately on every leg and turn of each of four or five laps of the approx 20/25 mile course, and that's where the real skill comes into it. That means holding a perfect track and height between the turns, and positioning to bank into the turn, hit the apex and roll out exactly on track for the next leg of the course.

Every error in judgement will mean the aircraft is flying farther than it needs to, or slower than optimum speed, and races are literally won or lost by fractions of a second. Each aircraft has a GPS datalogger which is downloaded to confirm the race results, and racers carefully study the practice and race profiles to see where they are not accurate enough and how they can shave a second off here and there, it really does come down to that level of accuracy if you want to be on the podium.

You can't just turn up and race of course; notwithstanding the fact that your aircraft

needs to be assessed for its WOT airspeed, you as a pilot have also to be checked out to make sure you are safe to fly at a minimum 500ft, steeply banked around the pylons and in close proximity to other aircraft. You must maintain plus or minus 40ft on the turns and 20ft on the straights, and if you are confident you can fly that accurately, an approved 3Rs pilot can fly with you in your own aircraft to check you out, free of charge.

If you'd like some training, Skysport UK at Kemble offers air race training in Beagle Pups so you can practice race flying in safety with an

Aircraft line up in order, slowest to fastest from front to back, ready for the start marshal to flag them off in turn. It is not unusual for a slower aircraft to have completed a full lap before the fastest aircraft take-off.

instructor and receive your pilot accreditation that way. In association with this article, the 3Rs are running a competition that includes a training day with Skysport UK, membership of the 3Rs, and entry to your first race, a total value of almost £1,000. See end of article for details.

As ever in aviation, the race flyers were from various backgrounds and ages. A few, like Bob, were ex-military, most were typical PPLs. Some race solo, but most have a crew member – a useful extra set of eyes for spotting other competitors and the pylons.

The eldest team at Popham were Alan Turner and his navigator Rex Levi who have been racing for more than 30 years in their Grumman. One of the youngest was Roger Scholes (pilot) and his friend (navigator) Dominic Crossan who were flying a hired Slingsby (yes the owner did know they raced, in fact it was one of very few aircraft that they could hire and race). >



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A FLYING LAP BY NEIL WILSON

Dan Pangbourne invited me to join him in his Grumman Tiger to see what is involved in completing a lap of the Popham race circuit; I took his Dad David's place in the right hand seat.

We took off heading west, with Dan climbing steadily at speed, as this gains time. The course is marked out on the map, and has four turning points, marked by orange pyramids on the ground. I hoped the near perfect weather would make spotting them fairly easy.

As Dan had already done a few practice laps, he had a good idea of what to look out for, but I still wanted to see if I was up to the job. The Ordnance Survey map helps as it isn't just about looking for the marker. If you spot a wood that is nearby, or a house or a crossroads, these all help to guide you

towards the target.

The first marker was on a corner of a road, with fields either side and a track running off to one side. As we approached, Dan spotted the marker before me and moved the Grumman into position and pulled a hard left turn. This was quite a bit steeper than I am used to (I bumble with friends mostly) so it was all rather exciting. He then levelled out and set off straight for the next turn point marker.

Along our way, we noted farm buildings, and some train tracks, so that he would know the right side of them to be in the race, when in the heat of the moment checking the map isn't always possible.

Making a turn, as with a racing car, you try to hit the apex of the bend, but misjudge it and you will need to level out your turn. That means

you will then have to go wider and therefore add distance and possibly lose speed. There's much more to this air racing lark than first meets the eye!

The next marker was soon with us, this time with a few trees nearby, but now knowing how big (or should that be small) it looks from the air, I saw this one in time. Dan again flew the turn well, with me ready this time for the tight turn, eyeing the marker and making sure we stayed outside of it.

As practice was now drawing to a close, we crossed the finishing line and landed. Having handed in the datalogger we would soon be able to see how well, or badly, our practice had been, and perhaps Dan could modify his technique for the race. It's all very professional and state of the art!



To the winner the spoils. John Bate recorded his first ever race win, picking up the British Constructors' Trophy and the Navigator's Trophy in his RV8 when he won the Sunday Race.



Dan Pangbourne cranks his Grumman AA5 around a corner marker, note how close to it he is to minimise distance flown.

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Winners of the Saturday race were Gordon Dellerby and David Lee in their DR401 diesel engined Robin – the first time a diesel had won a 3Rs event.



Coming up to the finish, the handicapper has done a good job as the bulk of the field arrive together.

Both Roger and Dominic wanted to be pilots in the RAF, but were thwarted by minor health issues at the selection stage. Nonetheless they eventually got their PPLs and decided to go racing, starting in 2013 and they have made great progress – they came third in the Schneider Trophy and last year won The Kings Cup Air at Shobdon.

Precisely because it is The Kings Cup, Her Majesty the Queen was sent a message informing her of their triumph, and they in turn received a letter of congratulation back. Roger and Dominic will officially receive the award at the Royal Aero Club awards presentation later this year, with the cup being presented by the Duke of York.

Both Roger and Dominic are members of

the Southern Strut and subsequent to the Popham race meeting, have gone 50/50 and bought an RV-6 for the 2016 season. RVs are fast becoming the most popular aircraft for handicap air racing but as the label implies, you really don't have to have a super-fast aeroplane, as long as it will run at 100 mph WOT you can race it and be in with as good a chance of winning as anybody else.

So, with some background information, and having met and chatted to some of the racers, my preconceptions of the racing scene were well and truly blown out of the water. These guys are ordinary enthusiastic flyers with a desire to hone their skills and share their knowledge, no different to any other group of pilots who get together to enjoy their hobby.

The general atmosphere was of having a fun weekend, with some serious but friendly racing thrown in.

A typical race weekend will have practice on the Saturday, with a race in the afternoon; a communal meal in the evening and a second race on the Sunday, followed by the presentation of the awards early enough for everyone to head off home with plenty of daylight left.

Pilot briefings are given on both days, and if you don't attend the briefing, you don't race. Details about the course, any Notam, entry into the course after take-off (the 'scatter point') and into the circuit after crossing the finish line, CAA exemptions (such as letting you overtake on the left or the right) and

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weather, etc, are covered and safety is always paramount.

Pilots receive a 1:50,000 map of the course which makes spotting the locations of the turning points, marked on the ground by large orange pyramids, somewhat easier. It also helps with identifying your line into and out of the turn to maximise speed and minimise distance flown. If you cut a corner you will be disqualified, if you run wide you are flying too far. Practice lasts for an hour and a half, and pilots must fly a minimum three laps to learn the course.

So, the question I expect you all want to know the answer to is "how much does it cost?" Well, membership of the 3Rs is £175, which also includes your £45.00 FAI licence and your first race weekend entry, ie practice and two races.

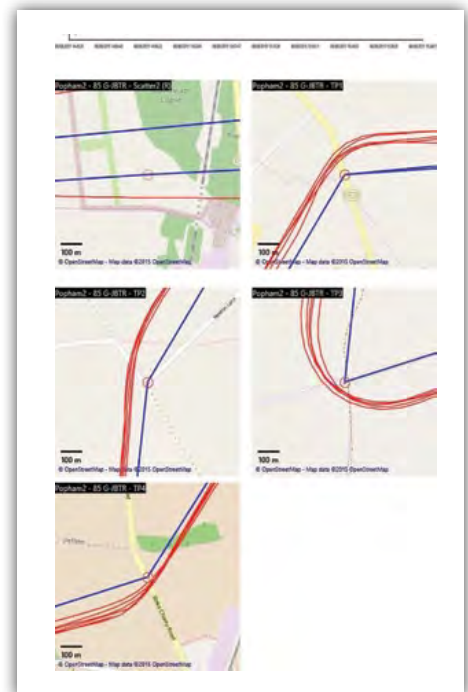
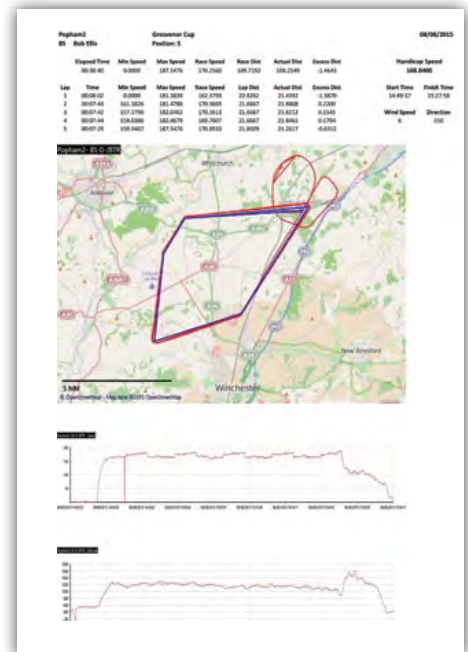
Race entry then costs £255 per weekend but if you enter all eight race weekends held during the season, the fee is reduced to £1,175, which means you effectively get two weekends free.

Then you have accommodation, fuel, etc, to add on top, so it's not exactly cheap, but have you ever added up the cost of that weekend jaunt to Paris or the RSA Rally? It is friendly and it is fun, and it stretches your flying abilities as you try to fly the shortest possible track in the fastest possible time. If taking part is anything like my misspent youth racing motorbikes, it is certainly an addictive adrenalin rush!

Whether you want to race or simply get involved in the racing scene as a helper with marshalling and other ground based activities, contact the club at www.royalaeroclubrrra.co.uk or secretary@royalaeroclubrrra.co.uk

Look out for a new BBC TV aviation series which filmed the 2015 Alderney air racing weekend, hopefully it will make the final cut and will be screened later this year.

Our thanks to everybody from the 3Rs who made our weekend at the races a thoroughly enjoyable experience. Have a great series for 2016. ■



The all-important print-out which shows how well you have flown the course. It provides height, speed and track information and shows where you have lost time and need to sharpen up your act.



A family affair. Roger Scholes and his friend Dominic Crossan with wife and baby, and the hired Slingsby Firefly they campaigned in 2015. This year they will be racing their own RV6.

WIN A FREE OPPORTUNITY TO GO AIR RACING

Skysport UK, one of only a handful of organisations in the UK endorsed by the CAA for its PROUD scheme in respect of its 'Elite' Advanced Training Programme, and the Royal Aero Club are offering a lucky LAA member with a PPL an incredible opportunity to train and compete in a handicap air race during the 2016 season. The prize includes:

- * A full one day course with air racing specialists Skysport UK. This includes two hours' flying in a Beagle Pup 150 and ground school to bring you
- to 'Safe to Race' standard. Value £560
- * Free membership of the RAeC Racing Association, including your FAI Competition Licence. Value £175
- * Free entry fee to your first race weekend. Value £255.

To enter answer this question:
Where did Roger Scholes and Dominic Crossan win the Kings Cup Air Race in 2015?
 Answers by email please to neil.wilson@laa.uk.com