

F1 AIR RACING



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Des moves past one of the Busards as he heads for victory in the Silver Race
(Photo: Jan Peters)

In true F1 style the champagne flows on the rostrum with Gold winner Christian Guilie.



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Des Hart competes in the first race of a new venture to bring F1 Air Racing back to prominence in Europe – and acquits himself very favourably, despite having to fly his Cassutt Racer to Spain and back

Des on the top step of the rostrum after winning the Silver Race. Frenchman Guy Chereau was second and Stanislas Damiron third, both in Busards.

It's certainly not every day that you check your emails to find one waiting with an invite to take part in a new Formula 1 Air Racing series, but back in January that's exactly what happened. I was initially quite sceptical as, just the year before, I had been contacted by Martin Luton of UK's Formula Air Racing Association (FARA) who was looking to try to put a race together, but that had come to nought when insurance for such an event in the UK could not be placed.

This time Martin was back in touch on behalf of Jeff Zaltman, CEO of newly-formed AirRaceF1. He was looking to recruit pilots with F1 aircraft for a new event to be held in Spain. Jeff already had a strong track record of making events happen, having previously masterminded and run the AeroGP series, and it sounded like he was already quite far down the line with the planning process. By the end of February all the challenges were indeed

resolved and I'd decided it was too much of an opportunity to miss, so I took the plunge.

The Air Race F1 series was to be based on the long-running Formula 1 class and would see up to eight aircraft racing wing tip to wing tip around an oval-shaped course marked out by six pylons, flying as low as 50ft and reaching speeds well in excess of 250mph. The F1 rules restrict the aircraft to such things as using a normally-aspirated 100hp O-200 engine, a minimum wing area of 66sq.ft and minimum aircraft weight of 500lb, a fixed-pitch propeller and fixed undercarriage.

Now I had some serious work to do, as my Cassutt Racer, G-BOMB, was a pretty stock machine and needed some serious upgrades if I wanted to be competitive. The best person to undertake this task was Richard Grace, who, apart from being an exceptionally talented display pilot, has built, owned and test flown several Cassutts over the last few years. A

plan was quickly devised consisting mainly of weight reduction by replacing the existing cowls and panels with carbon fibre versions, and ensuring a much closer fit to reduce drag.

Richard also managed to source some rather clever wing tips designed by Reno race pilot Jay Jones who claimed they dramatically reduced the speed lost in the turns over the standard Cassutt 'slab' wing. This would be a great interim solution given the lack of time to build and certify a full race wing.

Next on my list was a race propeller and, after doing a lot of research, it seemed that our engine should be safe to run around 3,500rpm without any ill effects, given it had already been fully balanced during its last zero time overhaul. Hopefully the result would be to increase the output power to nearer 125hp, although that is still some way off the power generated by the fastest Reno aircraft turning 4,300rpm. Within five minutes

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Des Jarvis' nicely turned out Cassutt was capable of around 220mph but was well down on the 260mph+ of the fastest racers. (Photo: Anthony Quayle)



Gold winner Christian Guilie's own design *Arletty II* in the foreground, third placed Thom Richard's Cassutt *Margaret June* and second placed Jay Jones' *Quadnickle*

of speaking to Rupert Wasey, of Hercules Propellers, I was sold on the enthusiasm and the pride he takes in his products, and ordered a custom-designed propeller with the promise of a very quick turnaround time.

With the aircraft improvements well in hand, I next had to decide how to get it down to Spain. The US aircraft were all being shipped over and would be reassembled on site, and the sensible option for me would be to trailer BOMB down and do the same. However, the idea of flying it down and back, and having a good old fashioned aviation adventure, wouldn't leave my mind and after studying the charts it looked perfectly feasible, if challenging, in such a small unstable aircraft.

The Cassutt will cover ground pretty quickly with a fast cruise of 160-180mph, depending on how much fuel you want to burn, but the endurance is pretty limited at just over two hours. Eventually I settled on a route that would take me from Bentwaters to Le Harve to clear Customs, then on to La Rochelle, San

Sebastian just over the Spanish border, and then Lleida, possibly achievable in one day if everything went well.

ADVENTURE TIME

On the morning of Sunday 25 May I set off knowing I had quite an adventure ahead and that arriving in Spain would merely be just the first part, with a headwind all the way and getting stronger as I progressed further south. The weather was looking marginal and with little in the way of instrumentation on board I took the safe option to await an improvement in La Rochelle. The following lunchtime it was indeed improving and I was back on my way; I eventually made it to Lleida late on Monday afternoon.

During the last 15 minutes or so I'd noticed some unusual vibrations and when we took the cowl off in Lleida we were rather alarmed to find a large crack on the spinner backplate. Rodrigo, a Spanish aircraft engineer for BAE and race mechanic for the N A Rush team, kindly took it to a vintage aircraft restoration

specialist he knew of in Reus to have an exact replacement manufactured. To be on the safe side, Bob Winsper and Steve Alexander (both veterans of the UK Air Racing scene) were on hand and Steve kindly offered to have the spinner backplate from his Cassutt project shipped out to us from the UK as quickly as possible.

With a solution in hand I ran the existing cruise prop without a spinner in the meantime to allow me to get some practice on the course to allow me to get some practice on the course to ready myself for my IF1 qualification flight. This consisted of demonstrating a normal take-off while maintaining the runway centreline, followed by a climb into the overhead to demonstrate a roll in each direction without any deviation from course, and then a half roll to inverted followed by rolling back out the same way to simulate an upset from hitting another aircraft's wake. Next I had to enter the course and fly a number of laps at race speed and a height of around 50-100ft, demonstrating this could be done safely avoiding any ballooning in turns.



Des celebrates with wife Lynn and children Helena and Sofia complete with Scottish flags (Photo: Fernando Olmeda)



Fellow Brit Trevor Jarvis who finished fifth in the Silver race in his Taylor Titch, and also flew down from the UK

Once the officials are happy with this, they will call for a simulated engine failure, usually at the worst point possible, and the technique is to zoom climb as high as you can get on to the downwind – in my case about 800ft – before carrying out a glide approach and landing. Finally a simulated engine failure on take-off with the tail raised needs to be demonstrated to ensure you can keep the aircraft straight, given that during a race you could have aircraft on either side of you on the grid. I'm pleased to report I passed on the Wednesday without a hitch and was issued my IF1 race licence.

On Thursday our replacement backplate arrived and was fitted; it was time to try out our new race propeller from Hercules. The first session consisted of practising formation on another aircraft around the course, rising in the turns so you remain visible when passing. I was pleased to be doing this with fellow Brit racer Trevor Jarvis in his Taylor Titch. It was then time to practise passing and to see what the new prop could do. I was impressed to see that Hercules had got it bang on the money with the figures we'd asked for and it resulted in a 15mph gain over our cruise propeller.

The second session of the day was to post our qualifying lap times and I would be out on the course with Jay Jones flying the much faster *Quadnickel*. Just as I got started with my first fast lap, Jay had called a mayday so I pulled off the course to give him some room, because of the low cloud base, before being called back to finish my qualifying laps. It turned out that Jay had suffered a minor electrical cockpit fire but managed to put it out with his glove and got the aircraft back on the ground safely.

ON THE GRID

Friday was to be my first multi-aircraft race and I found myself lined up on the grid with an odd mix of eight of the fastest and slowest aircraft. As it turned out we all arrived at the first turn at pretty much the same time, which made for a few very interesting moments trying to tip-toe my way around the turn while keeping away from any other aircraft. Thankfully we soon thinned out as the faster aircraft pulled away and I was able to catch and pass one of the slower French Busard aircraft, albeit,

unfortunately, cutting a pylon in the process.

On Saturday the film crews and VIPs appeared and it was noticeable that things were starting to build up ahead of the main event on Sunday. The plan for today was to run race Heats 1A and 1B, followed by the Silver class semi-final. Starting grid positions would be determined by our qualifying times, with Heat 1A for the slower 'Silver' aircraft and 1B for the fastest 'Gold' aircraft. I had 'pole position' for Heat 1A, but when it came time to start up I had no oil pressure indication and had to pull out to investigate the problem. Thankfully we traced the problem to a bad connection on to the back of the gauge and it was fixed in time for the Silver semi, but the failure to start would mean last pick of grid position.

As it happened I was surprised to find slot three on the right-hand side of the front row of the grid was left open and I suspect Guy in his Cassutt #31, who had taken slot four on the inside of the second row, was hoping to beat me to the first pylon with the inside line forcing me wide. I knew from the previous races they had no chance of catching the French Busards off the line with their superior acceleration, but as long as I could beat #31 to the first turn I figured I'd have a chance of catching and passing at least one of the Busards a few laps later. As it happened our cunning race engineers knew a few clever tricks learned from Reno and increased our tyre pressures significantly to reduce the rolling resistance and give me a better chance of beating #31 to the first turn. It worked and I just scraped ahead into the turn and was soon pulling away from him. I quickly caught and passed the first of the French Busards, Bernard in #25, and a few laps later managed to take the lead by passing Stan in the #19 Busard, going on to win the Silver semi-final.

Sunday morning came and the day of the final races. The gates were opened and the public started to flood in; it was great to see so much interest. The Gold semi-final was the first of our events and was won by the #6 Christian Guille who'd caught and passed Jay Jones in #45 *Quadnickel* after just a couple of laps. Next it was our turn, the Silver Final race with the fastest three aircraft going on to race in the Gold Final later in the afternoon.

We started our brief as we did before every race and begun by picking our grid positions followed by discussing emergencies, frequencies, flags and other operational matters before working out the taxi order for the grid line-up. As we lined up on the grid I could feel considerably more pressure than in the days before, with several thousand people watching us and the Silver Trophy now at stake.

THEY'RE OFF...

The green flag was raised and I ran the power up as much as I dared against the brakes, made a quick check of the Ts & Ps to confirm all was well, glanced at the windsock to confirm the by-now usual crosswind from the left, then shifted my attention back to the flag. It felt like forever before it finally dropped. As it did I instantly pushed the throttle fully open, brought the stick fully forward to raise the tail as quickly as possible and frantically worked the rudder to hold straight in the crosswind.

The Busards took off like rockets yet again but my aim was purely to beat the #31 Cassutt to the first corner. The tail came up quickly followed by the wheels coming off at around 80mph and I held it as low as I dared in ground effect while being buffeted by the wake of the aircraft ahead. I started my turn into the first pylon looking for #31 inside of me. There was no sign of him – I'd done it! Now I fixed my focus ahead to Bernard in the Red Busard #25. I knew it would take me some time to build up to full speed so I concentrated on flying as smoothly as possible while I reeled him in. As I started my turn into pylon four I looked ahead for pylons five and six and could see Stan in the #19 Busard well out of position with far too much bank on. It looked like he'd cut pylon five and then forced himself wide at pylon six. I smiled to myself as I'd done exactly the same thing earlier in the week and knew he'd have bled a lot of speed pulling hard not to run too wide around six, which should make it easier for me to catch him.

As we headed down the home straight I could see I was likely to catch Bernard as we turned into pylon one so started my climb to remain in formation with him. I managed to scrape past him in the turn and then dived off the extra height gained in the

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Fortunately shelter was provided for maintenance in the form of a large marquee. Useful when Des had problems with his spinner backplate.

turn to give me a boost down the straight. Next I could see Stan not far ahead, and as we rounded pylon four I started my climb to stay in formation with him. He was still too far ahead though so I used a technique called 'stacking' and instead of diving the height back off I merely kept high and 'stacked it' instead of having to climb again for the next turn. About three-quarters of a lap later I was wing tip to wing tip with Stan in the turn and as we rolled out on to the home straight I started my dive passing him and took the lead right in front of the crowd. There was no time to relax though and Stan was right on me around pylon one but I still had some height in hand and used it to stretch my lead down the back straight.

Now free to fly my own racing line I was able to pick up the pace a bit and settle into a rhythm around the course. A lap or two later I came across the first of the backmarkers, Patrick in #55, and by now I was seeing 210-215mph down the straights, which made it easy to pass him with a 40-50mph overtake. A lap or so later I lapped fellow Brit Trevor Jarvis and with the backmarkers out of the way and the Ts and Ps looking steady, it was just a case of holding on for the white flag to signify one lap remaining. As I passed the home pylon I could see the white flag waving and knew I only had around 60 seconds left to go to win the Silver. I didn't dare back off the throttle, it was just a case of flying the last turn smoothly without cutting any pylons and I'd done it. A few seconds later I passed the chequered flag and starting my pull up and climb into the 'cool down' with a big smile on my face and a huge sense of relief.

The 'cool down' is basically a wide circuit flown at 1,500ft after the race to let the engine Ts and Ps stabilise and also to give the pilot a chance to settle down after the adrenaline of racing so close to the ground. This is my favourite part and I lingered a little longer than the others to enjoy the views of the crowd below and the snow-capped Pyrenees in the distance. I was the last to land and as I taxied in was directed to a spot right in front of the crowd where I shut down. On opening the canopy it was a rather odd feeling to be

greeted by a cheering and applauding crowd, so I showed my appreciation as best as I could and took a minute for a few photos with the aircraft and my family before heading for the race debrief. As I suspected, Stan did cut the pylon and received a time penalty, which bumped him into third place, although this was still good enough for a place on the podium, which he very much deserved.

I was then grabbed by the TV production crew for a post race interview followed by more photos before shifting my focus to running in the Gold Final, which I knew would be extremely challenging, with eight aircraft instead of six, and the fastest hitting 260-270mph down the straights.

THEY'RE OFF... AGAIN!

We lined up on the grid again, this time with me on the back row with the fastest aircraft all ahead, other than Steve Temple in #87 *Madness* who was on the back row after having to pull out of the earlier heat due to a technical problem. The flag dropped and we were off, the faster Gold aircraft already pulling away, as were the two French *Busards*, leaving me in last place as we rounded the first corner. I then settled down and started concentrating on reeling in Bernard first and, hopefully, Stan again a few laps later, once I was up to speed. I managed to pass Bernard after a couple of laps and then concentrated on Stan when something white flashed past me. It was Christian Guilie in his incredibly fast #6 *Arletty II* lapping me already. A lap later I managed to stack some height and was alongside Stan as we rolled out on to the home straight; I started my dive to overtake him and just as I did Jay Jones in #45 *Quadnickel* passed me on my right-hand side, right in front of the crowd, which make for a spectacle. Another lap or so in and Thom Richard flying #99 *Margaret June* passed me before I was lapped yet again by Christian in #6, this time far too close for comfort as it felt like his wing tip barely missed my canopy. At that point I was rather glad to see the chequered flag was out and was relieved when I started my pull up to climb into the cool down.

As I taxied in I noticed #87 *Madness* parked just off the runway, which is odd as I didn't recall hearing any Mayday call. Unfortunately for Steve Temple, a repaired section of his cowling had failed during the race, exposing his wiring loom to a 270mph blast of air that, in his words, "turned it to spaghetti", cutting all the electrics and stopping his engine. Steve had done extremely well to get it back on to the runway and it had clearly shaken him. This had, however, bumped me up into fifth place overall out of 11 and the highest placing aircraft that was actually flown to the event: a fantastic result for my first attempt at racing.

The presentation of trophies was memorable but it was soon back to earth with a bump as less than an hour later I was back in the pits covered in oil getting BOMB ready for the long flight back to the UK. The return flight was yet another adventure in itself – I'll never forget flying along the snow-capped Pyrenees mountains in clear blue skies at 9,000ft in my tiny *Cassutt*.

So what's next for Formula 1 air racing in Europe? AirRaceF1 is already planning three events next year and is working on editing the hours of footage it has to produce a one-hour TV programme that will be aired later this year.

I intend to be back next year but BOMB will need some serious work to remain competitive, including a new race wing and a race engine capable of competing with the US 'Ly-con' engines running over 4,000rpm. It would be great to see a few more British pilots flying the flag and hopefully there will be sponsors who can see the benefit in supporting us all in return for the publicity this event can provide. I was very proud to work with Hercules as a British company and it produced a propeller for us that was not only admired by everyone at the event – and photographed thousands of times – but also did the business in the race.

Critical to all of this will be the continued support of the LAA to see F1 racing reborn in Europe and hopefully one day even in the UK. I have to share a personal thanks to Francis, Ken and all at the LAA for their help in pulling out the stops to ensure BOMB was signed off and ready to race in a very tight schedule. Thank you all very much for your help. ■