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“The IR allows private pilots to fly in the cloud, in any class of airspace”



Climbing the ratings

An uncomfortable flight from France persuaded **Robbie Garrett** to upgrade from a restricted Instrument Rating to a full-blown Competency-Based IR

My goal has always been to become a fully fledged airline pilot. Unfortunately, I don't have £120k, plus many obstacles have got in the way in the last few years. With the impact of Covid-19, this dream now seems even

harder to achieve.

In 2015, some four years after I got my Private Pilot Licence, I added the IMC Rating. It is a very useful alternative to the full Instrument Rating (IR). However, it is not normally recognised outside the UK, but a lot simpler to obtain than the 'full' IR.

The course consists of a minimum of 15 hours, all dual instruction, with a written examination and a skill test.

The privileges of the IMC Rating allow you to fly a UK-registered aircraft in UK airspace Classes D, E, F, and G, in IMC, out of sight of the surface. You may also carry out Instrument Approach Procedures to published Decision Height or Minimum Descent Height, and to undertake missed approach procedures, with a minimum take-off and landing visibility of 1,800m. The rating is valid for a period of 25 months, after which it is renewed or revalidated by flight test.

Ever since a challenging flight back from France in 2018, I've really wanted to get the full IR. Not only would my flight back have taken place the day before, thus saving me a further night stranded in France, but it would have meant a much more pleasant experience for everyone on board.

The IR allows private pilots to fly in the cloud, in

any class of airspace, including airways, and enables you to fly a Category I ILS descent to a decision height of 200ft and RVR of 550m (two crew) or 800m (single pilot). Because of my history of instrument flying, I could take the competency-based modular CBIR route, which is designed to get me up to the standard required to pass the initial IR flight test.

I had to undertake some groundschool at an approved ATO (Approved Training Organisation), and pass theoretical knowledge exams in Air Law, Aircraft General Knowledge – Instrumentation, Flight Planning and Monitoring, Human Performance, Meteorology, Radio Navigation & Communications. After many recommendations, I decided to complete the ATO theory with Caledonian Advanced Pilot Training (CAPT), which would take place at White Waltham or Prestwick during summer in 2019.

The total cost for the course including the ground school and electronic materials cost £595. In order to complete the examinations with the Civil Aviation Authority, you must complete the required time in the classroom, the progress tests and then the mock exams, which are suitably provided by CAPT.

The training materials provided are PDF books, which requires many hundreds of hours of detailed reading. With a full-time job, it's not an easy feat. Sadly, as there were no suitable dates down in the south of the UK, and I wanted to complete the classroom-based phase before moving to a new job in the autumn, I went ahead and booked the face-to-face tuition up in Scotland.

I booked a coach with National Express costing a total of £32.20, this was versus a total of £200 for a



Above Panel of the Diamond DA40 with the original 'steam' gauge instruments

Below Real IMC! Learning to trust what the instruments are saying is key

flight with easyJet or a direct train journey. Additionally I needed one night's stay in a hotel, this cost a further £100 in central Glasgow.

I arrived back in London with good news – I would be starting a new job. However, training for the new job meant I couldn't find the time to take the exams at Gatwick. This delayed my progress by some five months and, at this point, I was becoming very frustrated. I started the examinations in late February 2020, first passing Human Performance, quickly followed by Air Law. Surprisingly I had a very difficult exam with Aircraft General Knowledge and failed, but I have to blame my lack of preparation for that.

However, to no surprise, I passed IFR Communications and re-took Instrumentation a week



“Little did any of us know what was brewing before our very eyes around the world...”

later and gained a pass. I spoke to the examination team and based on its comments, the rumours on Twitter, and the front page of most newspapers I didn't make any more exam bookings. Little did any of us know what was brewing before our very eyes around the world...

I originally hoped that in summer 2020 I would complete the practical elements and the IR skills test. Adding to the delays of lockdowns and the closure of examination centres, the aircraft I was going to use was having a complete avionics overhaul in Belgium. With the aircraft's ARC expiring and Covid ravaging the world, things didn't look like they'd be progressing any time soon.

Once exams restarted, I got back to studying. Unfortunately, I misunderstood how demanding the final exams were – and for some reason I just couldn't pass them. It was very embarrassing having stormed through all the exams earlier on in 2020 without any major hiccup, bar one exam. Being extremely keen, I rebooked the exams later in August and yet again missed out on a Pass. I was becoming extremely anxious about the whole thing, which didn't help.

I turned to the training school before my final attempts. They provided me with someone who could provide additional tuition. This additional tuition set me back a fair amount in costs but provided me with the knowledge to get some of the highest pass marks of all the exams I had taken.

Then came Tier 4 restrictions for England, and the rest is history. Covid really prolonged an already deferred start to my IR and the whole situation made me feel as if I'd never get there. Lockdown 3 came along and my nan, who was in hospital, sadly got Covid and passed away. It really was one thing after another. I knew, based on the first national lockdown, that it wouldn't be until at least April that I would be flying again.

The aircraft I would use for my training was the aircraft that I currently have a non-equity share in, which returned from Belgium in summer 2020 with a significant upgrade to its avionics suite. The aircraft



now sported an impressive IFR spec with twin Garmin GTN 650 Xi and Aspen EFX 2000 PRO Max units. During the quieter winter months of reduced working schedule and lockdowns, I downloaded the Garmin GTN Xi Trainer. This explores the features, options, and fundamental operational aspects of the Garmin avionics. When used with the GTN Xi Series Pilot's Guide, it's an effective way to improve avionics familiarity and proficiency.

Additionally, I spent many hours reading the Aspen manuals. EFIS requires training with an instructor and, at first, is very daunting before you actually get used to the systems.

It was now April 2021 and my official IR training kicked off with VOR tracking, a key area I struggled with in the examinations. The first flight was a fairly short sortie via BRAIN tracking LAM VOR and then towards CLN, which are the first three

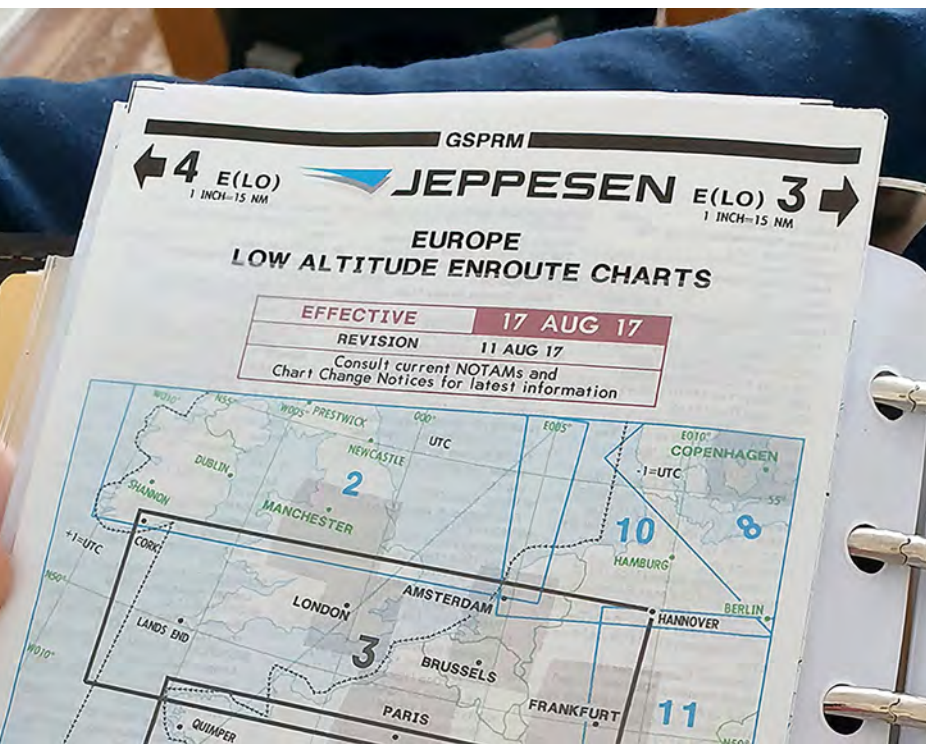


Top Panel upgraded with Aspen primary and multi-function displays, centre, and Garmin GTN 650 Xi navcomms

Above The ground's down there somewhere... an early sortie with new avionics

Below IR training kicked off with VOR tracking, which Robbie says is not his strongest point





waypoints of the routing for the IR training. After fogging my brain and confusing me while my workload was still relatively low, I successfully navigated to and from CLN via BRAIN using the VORs. I was then given vectors away by the IRI (instructor) and told to identify where we were position-wise. This was the basics but with new instrumentation, it wasn't hard to forget how things work. A short 1hr 10min in the air ensued a safe return to Stapleford.

The very next day we went to the nearest NDB station and completed an hour's worth of NDB tracking and holding. We left the NDB to hold various times and I was told to identify what entry we would need to re-enter the hold... it really started to challenge my brain. The weather provided an interesting perspective, with lots of challenging turbulence to add into the mix, and at the low levels we were flying, it wasn't fun, especially as I hadn't flown much IFR at the time.

In April, we flew again – more holding at the local NDB. I had 135kt ground speed on the outbound leg and 90kt on the inbound leg, due to the upper winds being very strong. This was super hard work and it wasn't really ideal training conditions being such a newbie. This was a long flight and didn't just cover instrument basics. It was the dreaded stalls, unusual attitudes, and partial panel training. It's this sort of stuff I don't really like, but I think it trains you to avoid these 'killers' and, in my case, never go near them...

To start, we flew as slow as we could with power off and tried to maintain the altitude to induce a full stall. We went all the way to the buffet and then recovered. The IR training only requires stalls to the first sign of a stall (stall warner), but as you'll see in my YouTube videos, the DA40 stall warner chirps off very early and way before any stall could be entered, let alone a



Top Flight training was from Stapleford and across the south-east
Above It's a good look... under the hood
Below Typical English summer weather, not ideal even for IR training





full stall. The difference with this training was that I was wearing the hood to blank off vision outside, meaning I had to concentrate on the instrument panel. We did a stall in the turn under the hood and then went to a partial panel for the rest of the sortie.

For partial panel exercises in a glass cockpit aircraft like this, the brightness of the panel is turned all the way down to zero, so you cannot see any information on the screens. It's important to remember how to turn this back on – as I discovered in a later lesson.

We climbed up towards the coast and the IRI commented on the perfect amount of right rudder I had for this climb. I could see a little through my peripheral vision and detected that we were in IMC, which I believe was the game-changer for what happened next.

I kept turning left, and despite the IRI asking why I was turning left, I looked down at my instruments and I still thought I was straight and level. Oh my God... it's the leans. I've never experienced anything like it. WOW! It was a good job that I had a qualified professional sitting in the right-hand seat, rather than by myself with a few passengers.

Some more VOR tracking back to Stapleford and after 1hr 45min of rollercoaster fun, we finished... for April.

Ready for an IFR sortie

We were now into May and I was hoping to start making some serious progress. However, the weather was unseasonably bad. Upper winds were 45kt across the Southend hold, and forecast to get worse as the day went on, with heavy driving rain within the fronts. Anyone would think it was a Bank Holiday Monday. Oh, it was...

A few days later we had two flights booked, so I was happy that we would be catching up with lost training time. The first was a short flight to recap on stalls and unusual attitudes. The second as another sub-airway routing and tracking the VOR to BRAIN. Once we reached BRAIN I would track CLN VOR and it wasn't auto identifying. This was clearly an issue as I

Above Getting to grips with the new Aspen EFIS. Robbie videos much of his flying for his YouTube channel

Below The Diamond DA40 Robbie flies as part of a no-equity group

obviously hadn't checked the Notams to see if it was unserviceable or not. I then proceeded with GPS instead of tracking the VOR. It was at this point I went climbing without asking Southend ATC (I was on a traffic service – and this requires you to request the altitude change from ATC). The IRI was quick to remind me and put an abrupt stop to climb.

We requested to route CLN direct GEGMU then SND as per the PLOG. However, tracking towards GEGMU, I was told to route direct SND, cleared through controlled airspace at 3,000ft. I decided to continue to GEGMU. But this was what confused me. We were asked about our intentions, and I assumed we'd follow them. To then get a clearance that was different to the request was what really confused me. But it was an instruction and I should have followed it, or at the very least queried it.



“I thought I was straight and level... it's the leans. I've never experienced anything like it”



As we were en route to SND the IRI queried what hold entry I would fly. I was already getting flustered so it was a perfect time for the IRI to check my knowledge. If only I had done a better job of the pre-flight preparation I would have given a reasonable answer.

We flew our entry and flew back to the NDB to start holding. I think at this point I was getting tired, and I kept forgetting to set the timer when abeam the NDB on the outbound track. This is an important part of the holding procedure as it allows you to stay within the protected area of the hold and gives you a fighting chance of turning to intercept the inbound heading without being too wide or too narrow.

It was now time to fly the ILS. We flew away from the beacon as per the procedure and I quickly dropped to 2,000ft, which is the minimum altitude you should be at until you capture the glide path successfully. This would be an instant fail. The reason? Trim. As with PPL flying, trimming is critical to reduce workload especially in IMC (or mock IMC), and would have been my friend in this situation, especially where I lowered power to ensure I wasn't too fast.

Above The day of the Instrument Rating Test (IRT) arrives... scorchio!

Below left Hey! I'm Robbie, Instrument Rated pilot!

Below right A post-IR flight with a mate and it's all going to plan

Bottom At last, the Instrument Rating

The approach was riddled with errors including being outside of limits and carrying too much speed. I've flown better and I was disappointed in myself. I hadn't flown many ILS approaches over the last few months, so I was fairly rusty. The go-around was poor, I didn't kick the ball in the middle during the climb, which meant with the winds we had, I was drifting away from the runway heading. We flew the missed approach instructions given to us by Director and were re-vectored for another ILS. This again was outside of limits and too fast compared to what I should have flown. Maybe it really was time to call it a day today as I was getting exhausted, so we flew back to LAM and landed at Stapleford after a very busy and difficult day of flying.

More flying followed, gradually improving, including two IFR airways flights with multiple handovers, descents, holds, approaches and weather that included turbulence, low cloud, mist, embedded CBs – a typical English summer! There was even a controller shortage...

ATO assessment

The day of the ATO assessment came around to check that I could achieve test standards in the 10 hours prescribed, with a flight to Lydd. Of course, there was a weather front sitting on the route between ourselves and Lydd. The rainfall looked heavy but not outrageous. We continued our flight towards Lydd and entered very thick IMC, with rain completely reducing visibility to zero. The weather was just sitting on the Downs.

We continued our routing towards intercepting the DME ARC. I completed all my checks and set the



“I got the news I'd dreamed of – I had passed – and released a weight of my shoulders”



aircraft up in a timely but efficient manner. With a 25kt tailwind, we quickly flew the ARC and had a 142kt ground speed readout as we established on the ILS. I had to use far less power than I've ever done before to maintain my 90kt IAS and an increased descent rate towards the decision altitude because of the higher than usual ground speed.

This ILS was as good as the ones I had done almost a month ago and it was well within the prescribed limits. I was happy, and the senior instructor seemed to be as well. We flew the missed approach and then flew back to Stapleford again through the weather we'd just flown through and back via the Southend CTA for a visual approach into Stapleford. He gave me a few pointers, but these were relatively minor. I was on my way to the concentrated ATO phase which would end with the 170A sign-off, saying I was ready for the Instrument Rating Test (IRT).

During the week with the ATO, I was contacted by the course coordinator and we booked the IRT – the only day in the next couple of weeks when the aircraft and I were both free. It only required the weather to play ball, and so far the forecast was looking like a scorcher. So, a morning slot it was – far less bumpy, I hoped. And that'll be £826 for the test, please...

The weather forecast was incredible. I'd done most of my training in IMC, apart from two or three flights, and the forecast was for nil wind and clear skies. You couldn't make it up!

The night before the IRT, I just about managed to get everything done before the time I wanted to sleep. I had booked my approaches as soon as I found out the date of the skill test, simply because getting a slot lately had been difficult.

I checked the Notams, the weather, and did my weight and balance along with the final performance calculations, albeit based on the forecast temperature and wind. I filed the flight plan and placed all the documentation into my flight bag. It was a very early start, and I had to be at the airfield at 0700. Rather frustratingly, I woke at 0430 which was one hour before my scheduled alarm. This was really frustrating ... so I added my final wind calculations for the flight which had been released by the Met Office overnight.

Misty morning for the IRT...

I arrived at a misty Stapleford aerodrome with dew on the ground and a soggy cover on the aircraft. This meant I needed to clean and wipe the canopy down. Luckily I had a spare cloth to wipe it before applying the spray. I did my walk-around checks and checked the fuel.

Everything was going smoothly and I taxied the aircraft over to the flying school ready for the briefing and test. At this point, I was becoming very nervous but once I had been briefed and the plan came together, I was much more relaxed and started to feel more confident. I couldn't help thinking of the financial outlay – this was going to be a £1,200 flight

(test fees plus aircraft usage). I had one shot at it and the next 2hr 30min would decide on either more training or an Instrument Rating for my licence.

Thankfully, despite the weather, the immense humidity and heat, and probably the fatigue from lack of sleep, an airways flight, an NDB hold and entry from a direction I'd never flown before, a procedural ILS after flying for only the second time the complex process from hold to ILS on Runway 05, and a further cross-country to Lydd for the RNP along with many unusual attitudes, stalls and partial panel flying, and a greased landing into Stapleford – I received the news I'd been dreaming about – I had passed!

Not only had I passed, but I also suddenly released a ton of pressure from my shoulders.

The IR was finally something attained – I had started to wonder if it would ever happen. It was a year later than I had anticipated, but what a journey!

The pressure of the theory exams themselves, the added pressure of the pandemic, and wearing a mask while sweating it out in the CAA exam centre, to the weather conditions on the practical element of the training.

The weather in particular was something I didn't think was possible during the summer months but made the whole experience rewarding (even if I didn't think so at the time!).

Footnote: If you want to follow Robbie's progress in his quest to explore the European Airways, follow his YouTube channel, [The Flying VLOG](#)

The stumbling block: cost

The only downside from this experience is the cost of attaining an IR. A total of £11,713.52 was spent on the IR – and that doesn't include Ubers to and from the airfield and coffee, something of which you'll drink plenty of...

While I hope this stumbling block doesn't put people off, of course, it's a significant investment but a worthwhile one that many people, myself included, believed was far from possible.

I completed a huge bulk of the training between April and July 2021, and this was beneficial as it probably meant I'd pass the Instrument Rating test the first time.

Depending on your abilities, you can probably budget for between £10,000 and £14,000 over the course of 18 months (if you have a full-time job) to get to the required standard and pass the strenuous test at the end.

PRE-ATO Completed		ATO Completed		TOTAL Completed	
#	#	Completed	#	#	#
Total Cost	£5,680.78	Total Cost	£3,396.14	Total Cost	£11,713.52
Hours Flown	24hrs 05min	Hours Flown	11 hours 5 min	ATC THEORY	£995.00
HOURS FLOWN Cost	£3,978.50	HOURS FLOWN Cost	£1,545.60	CAA EXAMS	£1,022.00
Approach Flown	17	Approach Flown	12	PRE-ATO	£5,680.78
EGMD Cost	£72.00	EGMD Cost	£96.00	ATO	£3,301.14
EGMC Cost	£270.60	EGMC Cost	£172.20	SUBGRAET	£5,524.10
EGSC Cost	£49.68	EGSC Cost	£24.84	APPROACHES	£685.32
Instructor Fee	£1,310.00	Instructor Fee	£1,462.50	INSTRUCTOR FEE	£2,772.50
Other		Other	£95.00	IR Test Fee	£829.00
				Application Fee	£142.00
				Other	£95.00
				Other Additional	£48.60