

Instrument Pilot

The PPL/IR Europe Magazine

No. 79

May-June 2010

Getting an IR on my own aircraft

By Daniel Foster

Part 1 of 2



Daniel Foster's Rockwell Commander 114A G-NATT, used for gaining his JAR instrument rating

Photo © Ian Chantler, 2008, Used with permission, all rights reserved

CONTENTS

IR on my own aircraft, part 1	1
Aero Expo 2010	2
Use of infrared satellite imagery in determining cloud tops	4
IR baby steps - flying to Austria	6
Conversion of an FAA to JAR IR	8
Filton visit report	10
Chairman's corner	12
Pilots' talk	13
IA protection areas	15
Corsicily '09, part 2	18

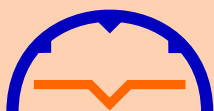
In late March 2006, I was lucky enough to be part of a small group of aviators in three light aircraft whom Timothy Nathan persuaded to fly to Spitsbergen. At the time I was a PPL holder with about 100 hours; 50 spent on the regular *Cessna* training fleet, and the next 50 spent flying a taildragging, aerobatic Citabria around the UK. One of the activities that had been organised was a day out husky sledding and it was in this fantastic setting that Timothy and I discussed what I would do next with my flying. I mentioned that I'd been considering the IMC rating and Timothy asked if I'd considered the full instrument rating. In short I hadn't, thanks to the reputation of the overly complex groundschool and long flying course involved. As was correctly pointed out to me, I was in no hurry and doing this all for the fun of it. As readers will know, the IR also brings greater flexibility for European touring and, as that was something I

aspired to, it seemed logical to go ahead. Decision taken. It was to be the full JAR IR.

First hurdle, ground school

The first hurdle was groundschool. Seven exam passes are required for the IR, as discussed in depth by Vasa Babic in *Instrument Pilot No 73*. Sucker that I am, I ended up falling for an offer that was available at the time (Autumn 2006) to do the course for all fourteen ATPL exams for the same price as the seven IR exams. This was exclusive of CAA and exam fees, but did mean the exams could be taken at centres other than Gatwick. I don't regret this decision – the content matter was mostly interesting even if the 737's FMS isn't something I'm likely to encounter flying light singles! After looking through the short list of available schools I settled on CATS at Cranfield as the three module course they offered with a single P 3 ►





PPL/IR Europe is open to any pilot interested in the operation of light aircraft under IFR in Europe. The annual subscription is GBP60 and more details are available from the Membership Secretary.

Instrument Pilot is the magazine of **PPL/IR Europe** — a company limited by guarantee registered in England at Hamlet House, 366-368 London Road, Westcliff-on-Sea, Essex SS0 7HZ, No. 4379059. The views expressed in this magazine are not necessarily those of **PPL/IR Europe**. Readers should be aware that the magazine is written mainly by amateurs. While reasonable efforts are taken to check the accuracy of statements in the magazine, no confidence should be placed in them unless independently checked and confirmed by an appropriate authority. Contributors to the magazine possess no greater expertise than that of their readers. Therefore, no advice, guidance, recommendation or factual statement should be relied upon until checked against a more dependable source. Neither the officers nor the contributors nor **PPL/IR Europe** accept responsibility for facts or opinions stated in this magazine.

Editorial e-mail:
theeditor@pplir.org

Website:
www.pplir.org

Art direction & production
Paul Turner
paul@exec-flight.co.uk

Printing and distribution
The Oceans Group

Instrument Pilot
(Print) ISSN 1747-0382
(Online) ISSN 1747-0390

Directors of PPL/IR Europe

Anthony Bowles
Chairman
☎ +44 1644 440229
✉ chairman@pplir.org

Jim Thorpe
Deputy Chairman
☎ +44 1989 770355
☎ +44 1989 770511
✉ deputychairman@pplir.org

Ian Chandler
Secretary & Treasurer
☎ +44 1702 200 353
☎ +44 1702 354 488
✉ treasurer@pplir.org

Steve Dunnett
Meetings Secretary
☎ +44 2920 875 188
☎ +44 2920 876 749
✉ meetings@pplir.org

Anthony Mollison
Pilot Training Specialist & BBGA Representative
☎ +44 1202 593366
☎ +44 1202 574020
✉ anthony.mollison@fsmail.net

Members of the Executive

Vasa Babic
DfT EASA Forum Representative
☎ +44 777 557 0000
✉ vasa_babic@hotmail.com

Peter Bondar
☎ +44 1845 501 062
☎ +44 7775 883122
✉ peter@bondar.co.uk

Dirk DeJonghe
Belgium Representative
☎ +32 5635 0710
☎ +32 5635 0780
✉ dirk@color-by-dejonghe.com

Paul Draper
☎ +44 1962 850775
✉ pauld.pace@btclick.com

David Earle
Instrument Pilot Editor
☎ +44 7802 685642
✉ theeditor@pplir.org

Derek Fage
Web Master
☎ +44 1534 861372
☎ +44 1534 752301
✉ webmaster@pplir.org

Jean-Michel Kerr
Switzerland Representative
☎ +41 76 308 00 69
✉ ecoflight@mac.com

Andrew Lambert
Membership Secretary
☎ +44 7836 793266
☎ +44 1428 751654
✉ andrew.lambert@ems-uk.com

Timothy Nathan
Web Site Editor
☎ +44 1372 812 469
☎ +44 7785 503543
✉ Timothy_Nathan@webeditor@pplir.org

Alan South
DfT SES Forum Representative
☎ +44 1763 838465
☎ +44 1763 838465
✉ alan@littleswissett.eclipse.co.uk

Press Officer

Position vacant
✉ pressoffice@pplir.org

Membership Administrator

Sali Gray
☎ +44 1452 618899
✉ memsec@pplir.org

Annual accounts for the company are available on the website. See www.pplir.org – About Us
For reports on meetings, conferences and other activities attended in the last 12 months by directors and members of the executive on behalf of PPL/IR Europe members, see www.pplir.org – Lobbying



VOLUNTEERS STILL WANTED

Aero Expo, 25-27th June 2010

Wycombe Air Park (EGTB) – Come and join in!

Following our great success in 2009, **PPL/IR Europe** will be returning for AeroExpo 2010 where we will again have a stand and be running the full seminar programme.

AeroExpo is a fantastic opportunity to raise the profile of **PPL/IR Europe** in the wider aviation community and to:

- ☞ meet with current IR/IMCr pilots who are not members and encourage them to join
- ☞ meet with PPLs and encourage them to consider an instrument qualification

We would also like to hear from our current members. Come along to our stand and think of it as your clubhouse. Let us know what we are doing well and also your ideas for improving services to members or attracting greater membership, especially from continental Europe.

Help please!

We are looking for volunteers. Those who have helped in the past really enjoyed the sense of involvement with **PPL/IR Europe** and the wider aviation community. This year we are STILL looking for the following:

- ☞ **A Chairman** for the seminars to keep things on track and on topic. The chairman does not have to be the same person for each of the three days or even for the full day
- ☞ **Volunteers** to man the stand – the commitment is only for a two-hour slot on one of the days

Don't hold back!

Please don't hold back if you can spare just a couple of hours - please contact Sali Gray (memsec@pplir.org) with any offers of help. As in previous years Sali is helping with booking accommodation and arranging the social dinner.

And don't forget to register on the *AeroExpo 2010* website (www.expo.aero/london/) to obtain a discounted entrance to the event and book your landing slot if you plan to arrive by air.

Alan South and Andrew Lambert



week brushup for each module suited my requirements better than the two module, two week brushup courses on offer elsewhere. Money paid, I received my first set of course folders in September 2006 and was booked on a brushup course in December.

I didn't actually spend very long reading the notes – certainly nothing like the three hours per day timetable that had been included in the study pack. This was partly down to being very busy, but also I found the material was sinking in without too much effort. Visiting *CATS* in December was excellent. The staff are very knowledgeable and capable of explaining things in about 20 different ways until one sinks in! It also confirmed that, personally, I didn't really need to spend three hours per day reading the material.

I was due to take the first set of exams in January but through work and, ahem, skiing holidays that didn't happen. Work continued to get in the way and I eventually took my first set of exams in Glasgow in September 2007, worried that it had been so long since the course at *CATS* that I would have forgotten most of the material. I needn't have been so concerned. The three days of exams were not a problem after cramming the night before in a cheap city hotel and the results a couple of weeks later confirmed passes all round.

This got me back into the swing of things, with brushups in October 2007 and February 2008, and exams in November 2007 and March 2008. All passed on the first attempt, it was time to go flying! Just one little problem...

We went for a flight and I was hooked

The Citabria is strictly a daytime VFR machine, so the hunt was on for something new. I had spent the last five years flying from Manchester Barton (which did have an NDB when I started...). There was a group flying a 1999 *Cessna* 182 from there with an arrangement to base at Liverpool during the winters when Barton can get a little boggy. I made contact and had a look around the aircraft while it was in bits in the maintenance hangar. At the time, the group was uncertain of the engine's status under the *Lycoming* IO-540 crankshaft AD and to their credit didn't want me to join the group and in short order be faced with a large bill for a new one. As it happened, one of the members also had a share in a, just-refurbished inside and out, 1979 *Rockwell* Commander 114A which was permanently based at Liverpool and he was looking to sell. Talking to a few more experienced friends, I was assured that the HSI in the Commander's panel would make for easier IFR flight than the simpler DI in the C182. We went for a flight and I was hooked. Money changed hands and the keys arrived the next day in the post, along with a copy of the handbook and manuals for various other systems. This had all taken a few months, so it was now September 2008, two and a half years into the process!

I also had to find someone to teach me how to fly without being able to see outside! The school where I did my PPL, *LAC* at Manchester Barton, were unable to help and so I contacted *Ravenair* at Liverpool. As I would be flying from there anyway, this seemed to make some sense. They had instructors but a particular one that came recommended had since moved on. In the end I went with *JD Aviation*, at the time based at Manchester but whose operations have now moved to Liverpool which is very convenient for me! Their CFI is one of our group's 'friendly instructors' who are used to do checkouts on the Commander, so I had already flown with him and knew what I was letting myself in for.

After a few months of flying the Commander to become familiar

with the aircraft's performance and handling characteristics, a luxury not available to those who undertake their flying in a school aircraft, a date was booked in January 2009 for the lessons to begin.

Nothing more complicated than straight and level...

This started out as any would expect, with an introduction to instrument flight using the full panel. Nothing more complicated than straight and level, climbing, descending and turns. We returned to Liverpool and flew a radar vectored ILS - it is a luxury having such aids at one's home base! - and ended the lesson with being told that if I could do all that then that's all there really was to it! The second lesson took what was to become a familiar format. We would meet at the airport in the morning, brief the flight, fly to somewhere for lunch, eat, de- and re-brief for the return, and then make our way back to Liverpool. All very civilised and exactly what I was looking for as a part time pilot doing this all for fun.

I'm very lucky to be in a position where I can take extra time off work to allow for this particular variety of fun - taking specific days off rather than blocks of holiday suited my plans perfectly. I aimed for and booked a session per week, with full knowledge remembered from my PPL training years that plenty of sessions would be cancelled due to weather, aircraft tech, instructor/my own availability etc. This proved for me to be a good strategy.

Early on we got into partial panel and unusual attitude recovery. Being used to unusual attitudes from casual aerobatics in the Citabria may have helped out here, but following the simple rules of power on/off as applicable to airspeed change, level the wings, attitude level seemed to do the trick each time. We progressed quickly to the part that I had expected to comprise most of the course - tracking radio aids. As readers will know, there's a lot more to this than the one hour of radio nav work in the PPL syllabus.

After a few hours we came to the dreaded hold and I quickly gained a reputation for being lucky with the wind. It always seemed to work out as almost directly along the hold! After giving me some trickier axes to hold along, and joins to make, I had to admit defeat with the realisation that the whole triple drift thing and joining procedures were not fully cemented in my head. We went over it in the classroom and I spent a few sessions sat in front of the simulator at home, complete with questions from my girlfriend about what on earth I was up to, sat in front of three dials on the screen and my kneeboard out! I've never been much of a simulator fan, but it definitely helped in this case. I also enlisted the help of the *PPL/IR Europe* forum to review my performance - and sparked another round of the age old debate about how important the hold is. As a student heading towards my initial IR test, my thought was that it had to be right, as it was simply another excuse for the examiner to fail me if it wasn't!

My first full IFR flight

As lessons went on, more and more was introduced. SIDs were being flown, instructor's tolerances were becoming tighter and my performance was getting better. This instrument flying lark must be sinking in after all. In mid-May, I undertook my first full IFR flight. The flight plan was filed, SID flown, arrival and approach flown at Shoreham all behind the screens and to minima. Alright I'd had my instructor along for the ride, but it was that same feeling of achievement I remembered from similar milestones like your first landaway. Fantastic! After a sandwich in the wonderful

Use of infrared satellite imagery in determining cloud tops

By Peter Holy

As the owner of an aircraft with a reasonable operating ceiling (20,000ft) but which is not comprehensively de-iced, I nearly always scrap a planned IFR/airways flight unless it is virtually assured that the enroute section can be flown in VMC. In the context of Eurocontrol routings this invariably means VMC on top. This leads to a need to determine the cloud tops altitude - or at least whether they are likely to exceed the operating ceiling.

Clouds can form anywhere where the relative humidity is at or near 100%; that is simple enough. The publicly-accessible US GFS weather model has generally been used for this purpose and the UK Met Office treats its 3D model with commercial secrecy. In recent years a number of websites have appeared which provide various graphical interfaces to the raw data, ranging from the traditional tephigram/skew-t presentation to whole-route cross-sections. The oldest one is probably that of Air Resources Laboratory (part of NOAA) at www.arl.noaa.gov/ready/cmet.html and a more recent one Meteoblue (which claims to do some additional processing on the data) at <http://my.meteoblue.com/my/>. (Ed. See Peter's notes on this subject at www.peter2000.co.uk/aviation/tops, also his article in *Instrument Pilot* No 65).

So, what we need is a 'cloud tops METAR'...

Unfortunately, forecasting of the 3D profile of humidity is notoriously unreliable, especially in frontal (convective) weather. It is therefore difficult to make the go/no-go decision on the basis of this data.

However, one rarely makes that decision until the morning of the flight anyway! This is because all types of forecasts tend to be pessimistic and nothing beats seeing the actual conditions. An exception to this rule is when somebody must, for example, be back at work on a specific day and dispatch risk cannot be tolerated; such flights have to be cancelled some days ahead.

So, what we need is a 'cloud tops METAR'...

There is just one source

In the absence of US-style PIREPs, there is just one source: satellite imagery showing cloud tops temperatures. This has been around for a while. Most coverage of Europe comes from the *EUMETSAT* organisation. Some of the data has been made available to the public in a usable form, via the *EUMETSAT* website at www.eumetsat.int and also via some European weather websites. I use the UK Met Office site: www.metoffice.gov.uk/satpics/latest_IR.html.

This shows an infrared image of most of Europe, updated every hour. It is a monochrome image, with a lighter colour indicating a lower temperature and thus a higher altitude. No temperature scale is provided so one has to guess from experience, but in the GA IFR context it isn't that critical. There are other websites which present the data in false colour and with a temperature chart but all those I have so far found carry data delayed by anything up to six hours.

It is always interesting to overlay these satellite images with the mean sea level pressure (MSLP) chart.

Even though the map views differ, the correspondence is obvious on the frontal areas. In the example shown on page 5 one can also see patches of high cloud (presumably strong convective activity) associated with the trough depicted for central Spain, with a much bigger version over northern Morocco. The strong white colour represents cloud tops of at least FL300 and this provides a coarse 'calibration' of the infrared image.

Now, on the image, imagine a flight from Bournemouth to Toulouse (track about 170°). Just past halfway, there is some cloud. The cloud tops are likely to be around FL150. For me, this would be a GO.

However, on a flight from Norwich to the east (track 090°) the tops are obviously higher. How much higher is a good question but, given the correspondence with the cold front, they are

P 5 ►

◀ P 3

art deco terminal building, the return was flown along similar lines; I was doing this and was expected to plan the flight home and execute it from start to finish. Taxying in after a radar vectored ILS to Liverpool's runway 27 I had a moment to realise what I had done, and what I was doing this for. I couldn't wait! Just the small matter of another 30 or so hours to fly before I could even be entered for the test.

The lessons and trips continued along similar lines for the next few months until the test was starting to loom large. After

an October morning flight to Carlisle to fly around their hold until I got it right (we went round a good 5 or 6 times) and then execute the NDB approach (once missed and once to land) to runway 25, the weather was just too glorious after lunch to sit behind the screens for the return flight, so we took a short break to fly down the valleys of the Lake District at low level. There are some flights that just can't be done on airways.

Daniel's report concludes in the next edition of Instrument Pilot



◀ P 4

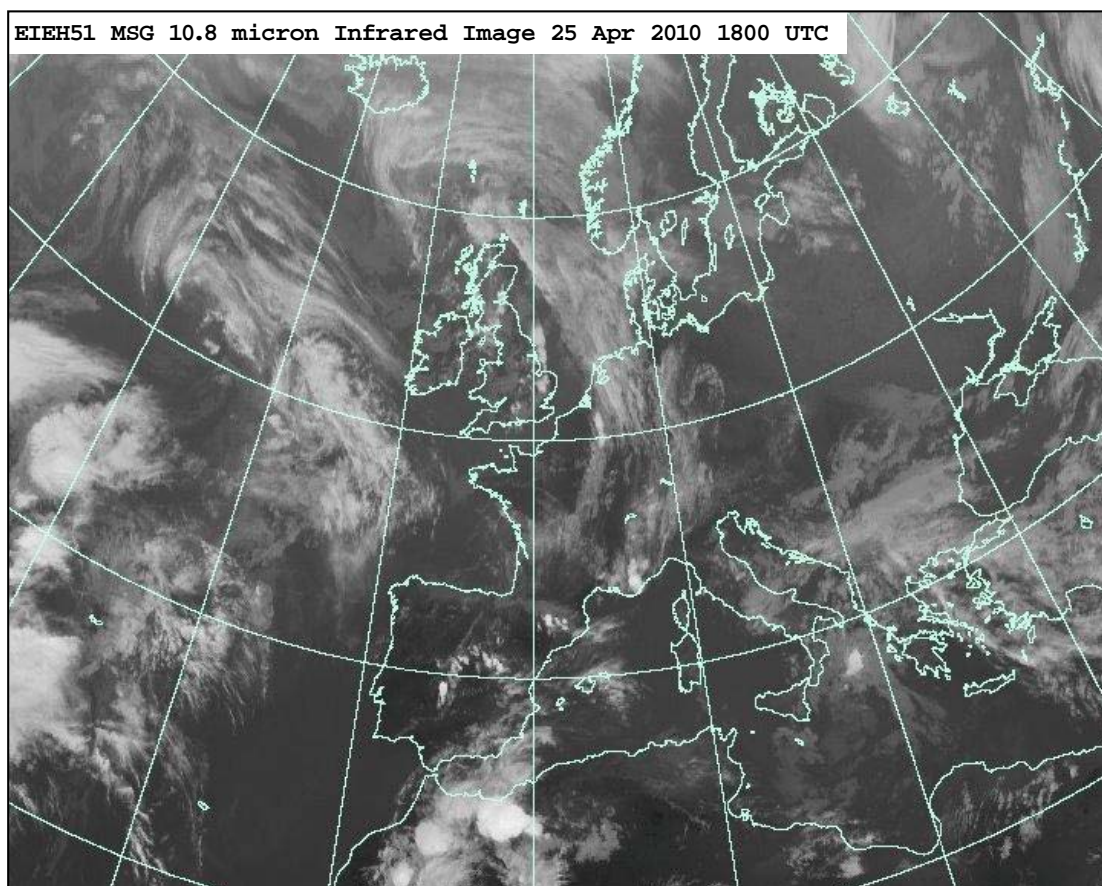
probably above FL200. I would consider scrapping that flight. In many areas, the conditions are very clear. In northern France, and in most of Spain, any cloud will have tops below FL100.

The above method is only approximate - not least because we have no temperature scale. However, higher altitude temperatures are less variable than surface temperatures. I have not yet encountered IMC enroute which I could not outclimb.

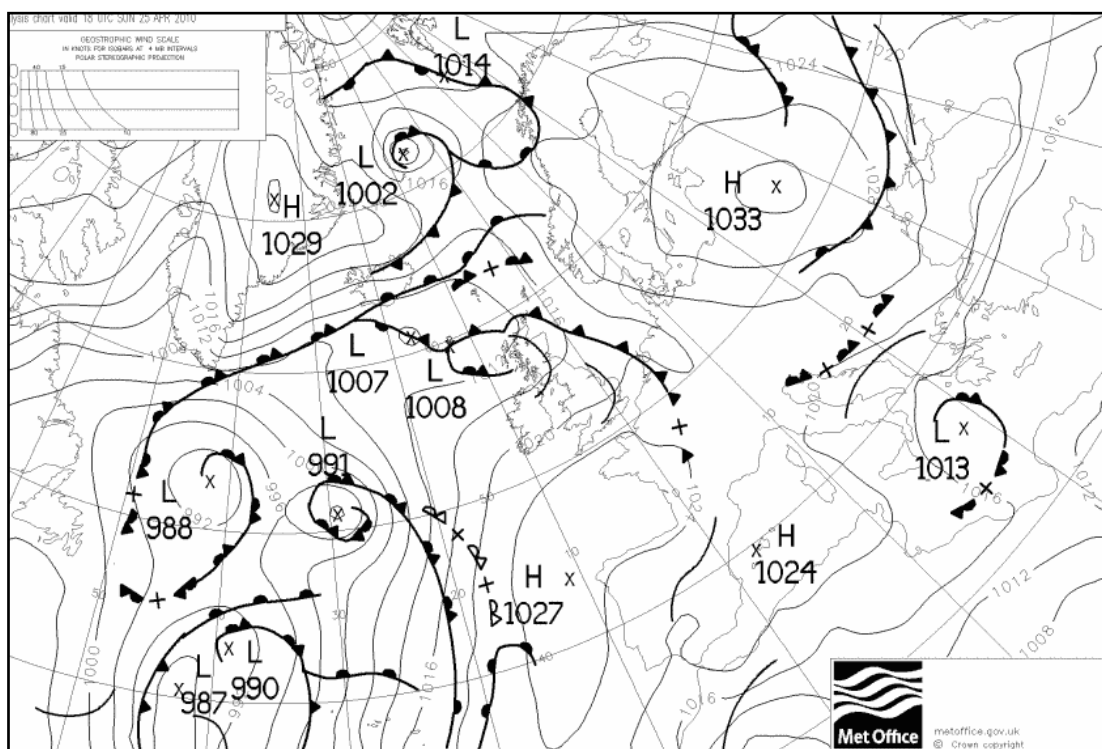
The real value of these images

One could make the observation that if one cancels a flight on the basis of a front depicted on the MSLP chart - a very conservative strategy - there is little need to look at the infrared image, and that is probably true. Most non-turbocharged airplanes cannot outclimb most frontal weather and if the pilot is averse to penetrating the front in IMC (structural icing and turbulence) then he has to cancel. The real value of these images is in indicating the situation where there are no fronts.

One downside of using these images is that thin, high altitude cloud will show up as very high cloud tops; but in reality one would either happily fly underneath it, or accept flight within it on the grounds that there won't be icing because the temperatures are too low and there won't be significant turbulence. Fortunately, such cloud tends to show up as patchy on the IR image.



Infrared image for Europe; brighter colours are cooler and therefore indicate higher cloud tops



Synoptic chart for a similar period to the infrared image above for comparison

IR BABY STEPS - FLYING TO AUSTRIA

By Graham Duffill

The part of flying I find the most difficult to deal with is the fretful days and hours before embarking on a flight which will significantly stretch the envelope. A year after returning freshly instrument-qualified from the US, I was now about to embark on a long-term plan to take the plane on our annual summer holiday to Austria.

Not so difficult many of you will say, but this story is intended to remind the accomplished of the real and imagined difficulties we IR newcomers face so that you can, if so inclined, help out. For newcomers, or would-be IR students, it is hopefully an encouragement or perhaps a deterrent to your studies. I will let you judge.

First, let me tell you about The Austrian. She hates flying. Officially she still does not know that I have a share in a *Piper Comanche PA24*. If she did she would either leave me or imprison me in the cellar and throw away the key. Secondly, even if I did have a free share in an airplane that runs on grass clippings she would not, under any circumstances, come with me.

The planning, the endless planning

The biggest hurdle for the newcomer is the planning, the endless planning. I have no desire to spend my children's debt on Mr Jeppensen's wonderful machines to make one or two trips a year. My first gold award for services to aviation goes to Mike Flynn for his online route planner *FlightPlanPro*. My second goes to the nice guys at *Homebriefing* in Vienna who helped 'trick' the system into accepting my final leg. And my third medal goes to *PPL/IR Europe* member Matthew Stibbe who let me join him on an IFR day-trip to Amsterdam. I was impressed by his meticulous flight planning and timetabling and learned a

hugely valuable lesson from Matthew on how proper planning can take pressure off the pilot on the day of the flight.

One simple trick he uses - which would never have occurred to me - is to write a timetable for the day. Without a list I continually re-check the schedule in my head to see if I have made a mistake... Which I have because mentally made plans are always over ambitious and pretend I do things like leave home on time, which never ever happens, and cuts out the boring bits, so I'll take off ten minutes after arriving at the airfield. So I am constantly way behind schedule and rushing to catch up.

I prepared a series of envelopes with departure and arrival plates: White Waltham to Liege with divert charts to Maastricht, then Lienz and finally Klagenfurt in Austria, with diversions to Salzburg and Graz. Matthew kindly printed off the plates I needed from his *Jeppview*.

Two days before the flight I filed all the outbound flight plans with *Homebriefing* and finalised my timetable. I tried to leave the day before the flight to do packing and normal things. All that was left to worry about then was The Austrian and the weather.

She had gone very silent in the last 48 hours and stopped trying to book Eurotunnel crossings and discovering last minute cheap flights. She had to take the two girls to Stansted that morning and, provided their flight left on time, we would make it to White Waltham to enable us to get away just ahead of a front coming in from the west and threatening several days of bad weather. I had filed for a 4:30pm departure but by the time I had the plane checked and loaded the sky to the west was a solid wall of black.

Leaving the darkness behind

We parted company with Waltham's grass as the first drops of rain started splattering on the canopy, leaving the darkness behind as we turned at Ockham. We were flying on a squawk issued by London Control to Waltham as we departed but stayed at 2,400 feet as we approached Biggin Hill. London had previously told me not to expect airways clearance before Detling, but that the notification from Waltham that we were on our way, and the ability to track us on the squawk, should ease our entry. Traffic seemed to be streaming out of Biggin towards Sevenoaks and travelling much slower than our 150 knots. 'I have four contacts ahead same height,' said the Farnborough controller. 'I'll try to get your climb into controlled airspace approved.' A minute later he came back: 'N7832P climb to 4,000 feet and contact London Control.' It was a huge relief to get out of the clutter and into the privileged airspace. That moment of switching to London Control, the non-stop stream of fast, precise messages still amazes me but when I finally got in we were given immediate clearance to climb again and hit Dover at our en-route altitude of FL100.

The first signs of life from The Austrian came as a jet from City Airport undertook underneath us and rose in front. As we flew past Ghent we saw passenger jets descending into Brussels. It was a perfect sunny afternoon, the skies were gin clear and we could see the Belgian capital as it passed to our left. The Brussels controllers began our descent for Liège and we were vectored onto the centre line to complete a VFR landing. I was amused and relieved to get a 'Follow Me' car to park in the middle of acres of empty concrete. The airport staff were extremely friendly and the girl on the

Klagenfurt airport,
photo Motorflieger Club Kärnten



information desk helped us book a hotel in the town centre. That evening the beer sank quickly to our legs and I could tell that The Austrian was quietly enjoying herself.

Langan controllers - tight tolerances and a sense of humour

The next morning we found only two aircraft on the apron, the Comanche and a huge Airbus just behind it. We laughed and waved at the pilot's towering above us. We taxied for fuel but the refuellers suddenly got very excited, dropped everything and ran off towards the runway. Two Belgian airforce strike jets descended to about 10 foot above the runway before accelerating away and climbed vertically in a ground-trembling roar. After a couple of further displays they and the Airbus had left leaving us seemingly with Liège Airport to ourselves.

The departure was straightforward and we were soon back at FL100 over Germany and en route to Lienz in Austria. It was a three hour leg on a perfect sunny day and we were way above the few fluffy clouds. The Comanche has a Century 1 autopilot capable of holding a heading but with no altitude hold. I discovered that if trimmed out it would hold altitude reasonably with some slight correction needed every five minutes but Langan controllers have tight tolerances.

'N7832P, report your altitude'

'9,900 feet'

'N7832P, maintain FL100.'

They also have a quiet sense of humour, as when I mixed up feet and flight levels on my requested level: *'N7832P, Flight level 10,000 is unavailable.'*

The Austrian was kept busy tracking our course on the VFR charts. Hand flying

the plane to precise altitudes to keep our controllers happy also meant it was useful to have a second pair of eyes to scan the IFR chart when the controller cleared us 'direct to' a waypoint we had never heard of. The Austrian was overjoyed to watch us overfly her national border.

Two shocks on arriving in Austria

There are two shocks on arriving in Austria. The cost of Avgas suddenly leapt up to a uniform rate of 2.30 euro per litre. Then there are the Alps. On this hot August afternoon the peaks wore a solid line towering cumulus. I had absolutely no idea what power lay in those clouds and what they would do to our little aircraft. Better fasten your seat-belt tight I told The Austrian.

The little Comanche made a valiant attempt to climb to FL130 as we left Lienz, but it was clear the cloud tops rose to at least 20,000 feet. I told the Graz controllers we would like to vary track slightly to avoid the worst of the build-ups and for a time it was possible. When we could no longer dodge them I went into instrument mode and asked The Austrian to tell me when she could see something again. 'It's all grey, it's getting darker, it's raining,' ran the commentary. Thankfully the altimeter was remaining constant, we were not being sucked up and the turbulence was not too bad.

Klagenfurt sits in a bowl and as we flew away from the rim of the mountains which surround it on all sides the towering clouds gave way to a peaceful blue sky and we started our descent. I was grateful for the vectors. Although it would have been perfectly possible to fly in VFR, it was strange adjusting to a landscape where 7,000

feet was only just above some of the ground and below a lot of what surrounded us. Having somebody else doing the steering and altitude adjustments let me concentrate on other jobs like tuning in the localiser, getting established, lowering the gear and the speeds right. The last thing I would have needed at that point was some VFR church tower reporting points. The Austrian was in her element all the way down pointing out all her favourite relatives' farms.

Truly golf ball sized hailstones

Klagenfurt is a very nice airport, built for commercial traffic but so quiet it is luxurious for GA aircraft. We unpacked, climbed into the hire car and headed off to the nearest lake for a couple of beers in the sunset to calm my frayed nerves. On the third day I was playing golf with a friend, a farmer's wife who subscribed to an SMS hail alert service. That summer's hailstorms had been so severe it had destroyed many of the crops in the area and could wreck cars left in the open. *'Is your car in the garage, because there is a big hailstorm coming,'* she warned me. I probably turned white. *'The car is but the plane is outside!'*

We raced off towards the airport and were bombarded by truly golf-ball sized hailstones with such intensity that we were forced to park under a bridge until it passed. I had images of finding pock-marked wings but found the apron deserted and the Comanche sharing a bedroom with some large jet-engined cousins under whose wings it was tucked like a chick, the fire service guys having had the consideration to tow it in.

Exit VFR with towering cumulus

I returned a week later to seek some local advice on how best to exit with

P 8 ►

Conversion of an FAA to JAR IR

Part 2 of 2

In the first part of this article Derek changed his mind and eventually decided to convert his FAA SE IR not to a JAR SE IR but to a JAR ME IR instead. In the second part he succeeds, eventually!



Due to my late decision to change track, and some prior commitments for both myself and my instructor, we were not able to co-ordinate the ME class rating training immediately and I looked to do this in a long weekend (Friday to Monday). The training was done in a BE76 *Beech* Duchess. The transition to this from the BE24 was quite straightforward, and it really is a nice aircraft to fly (and learn in). It was an intense weekend, but we managed to finish this and I went home in May with a new ME class rating. I was then able to do a conversion onto my new *Cessna* 310R when I got back to Jersey plus some flying with another qualified pilot (requirement for a minimum of 25 hours of twin flying imposed by our insurers).

Completion of ME IR training

I'd discussed with *Professional Air Training (PAT)* (www.pat.uk.com) how we should do this as I could do some of the required additional training in the simulator. However, we decided that as I was low on twin hours it would make sense to concentrate on flying in the aircraft.

June found me back at *PAT* to complete the conversion on the Duchess. The actual procedures and instrument work were all straightforward as I was up to speed after the single training - what changed was doing this in a twin with some slightly different checks, and then doing this asymmetrically!

After the first flight my instructor and I both felt it would be worth spending an hour in the simulator where we were able to concentrate on engine failure after take-off and ensure that we had this drilled in. The simulator was really beneficial for this with the facility to be able to do the failures at a much lower level and with more 'surprise' in the failure. You don't have the instructor hiding his hand on the throttles with a map as a good indication that you're about to have an engine failure!

I ended up taking a bit more than the minimum required five hours over the next two weekends to get me to the stage where I was ready for my 170A competence check and the IR skills test itself. I think this was mainly due to my getting used to flying the twin with very low hours; however after nine hours I did the 170A flight and was ready. P 9 ►

◀ P 7

the towering cumulus. The answer to the first was to fly VFR through the valleys to Salzburg and flying instructor Walter Koch who had given me some local mountain-flying experience a couple of years before very kindly gave me copies of his local VFR routes together with headings to fly. The Austrian Alps also have a super aviation weather service with both computerised information on the status of VFR routes showing the flying conditions from closed, to difficult, moderate and easy. One can also pick up a direct line to a forecaster and talk through the conditions with a local expert. Very reassuring.

I spent half a day planning the return via Luxembourg for its allegedly cheap fuel. The forecaster assured me that we would have clear skies and no build-ups in the morning so we departed IFR to Luxembourg via Salzburg. It was a stunning flight although I found staring down into the deep valleys gave me a feeling like vertigo. The most beautiful part was after turning west overhead Salzburg and flying with the Alps on the left and the Chiemsee on the right.

Landing on Luxembourg's enormous runway nearly saw me knock the undercarriage off after flaring 20 feet too high deceived by the width of runway wrapped around me. The next nastier shock was the mandatory 50 euro handling charge (100 euro if we left the GA terminal for food) payable for self-fuelling at their

credit card machine. Asked to justify this ridiculous practice the snotty reply was 'This is Luxembourg International Airport.'

Boycott please and spread the word.

The most dangerous part of our entire trip

I tried to persuade The Austrian to have an un-hurried VFR flight back via an overnight on the French coast but get home-it is had set in. We were gradually descended down from FL100 as we reached Dover and plonked back with the VFR traffic under the TMA at Detling. Flying into the sun in and out of cloud at 2,000 feet unable to see any oncoming traffic with only a basic service from Farnborough was the most dangerous part of our entire trip.

If I had to fly the entire journey like this navigating around airspace and VFR reporting points it would have been much more difficult. Go where you are told flying was definitely the easier option and I had enjoyed the free services of all the air traffic controllers and IFR separation throughout. The Comanche is a reasonable performer but I still felt that I could easily become a nuisance.

Which raises one selfish concern: if an en-route IR does become easily accessible to all is it not likely that light aircraft will be forced to pay, perhaps at levels high enough to make sure we don't come back?



The instrument rating test (IRT)

Having done the 170A early in the morning I had an appointment with a CAA examiner in the afternoon to do the IRT. Bournemouth is lucky enough to have the CAA examiners' office on the airfield so I ensured that I had all of the paperwork for the aircraft, that it was up to date, and that I had all of the things I needed to prepare for and execute the IRT flight. I then taxied the Duchess over to the CAA office and met the examiner who would be conducting my test.

There seems to be a lot of folk lore and rumour about this test however I feel that the biggest issue is the pressure you put on yourself. The examiners do their absolute best to try to reassure you and put you at ease and ensure that they explain exactly what's going to happen. You get the opportunity to ask any questions and make sure you're clear on what's expected. Notes for the guidance of applicants taking the initial IRT can be found on the CAA website (at www.caa.co.uk/docs/33/srg_fcl_01.pdf).

I was then told what I was expected to do so that I could create a plog and do all the weight and balance, and performance, calculations. The route I was given to plan was from Bournemouth to THRED, to join the R41 airway, down to ORTAC with an approach at Alderney, then back up the airway to THRED and back to Bournemouth. It was explained that I was expected to take up the hold at Alderney, do an NDB approach, go missed and expect an engine failure on the missed approach. Once I had everything back under control and was en route to ORTAC, I would be given the failed engine back for the cruise and we would go back outside of the airway so we could do some handling and unusual attitude work before having the engine taken away again for a radar vectored asymmetric ILS to go around to a low level bad weather circuit to land.

Where were my Alderney plates?!

This was quite good news as it's the route I'd done that morning for my 170A so I started my planning. This was when the first problem happened – where were my Alderney plates?! I just couldn't seem to find them despite having used them that morning. With me feeling the pressure now rising I explained the situation to my examiner who let me call PAT who dropped around another copy of the plates whilst I finished the planning.

The plates duly arrived and, having finished my planning for an easterly



On final approach to Blackpool

departure, I put all of the plates and the plog together and briefed the examiner on my preparations so he could check all of the paperwork and it was then off to the aircraft.

Listening to the ATIS gave me another surprise – they'd switched runways... So a quick shuffle of the paperwork and plates had everything ready and we taxied out to the hold for a 26 departure. This should be fairly straightforward; however I was certainly feeling some pressure at doing the test with a CAA examiner – and not really helped by both losing my approach plates and having a last minute runway switch – but I was ready to go.

After takeoff the small window in the main screen was shut so I was effectively in instrument conditions for the remainder of the flight. I cleaned the aircraft up in the climb and ATC asked me to take up a heading of 180 degrees. I turned thinking that was really useful as that's what I'd wanted and written on my plog, to fly whilst I waited for the ADF needle to come in as it had that morning in order to track out to THRED.

I suddenly realised what I'd done

I was completely focussed on waiting for the needle to come in, but it looked a bit odd. However I knew it had worked that morning. ATC then gave me 'own nav direct THRED'. That's no problem, I thought, I'll stick on this heading and any minute now the needle will come in. I was starting to get a bit concerned now and then ATC warned me I was about to leave controlled airspace and everything suddenly fell into place. I'd been so focussed on doing what I done that morning I'd forgotten I'd taken off on runway 26 not 08 and that's why nothing was working with me heading south. I suddenly realised what I'd done and could see on the RMI what I was doing wrong

– how could I have ignored the indications and not just done what the RMI told me to do: turn left towards THRED. I finally turned left to correctly intercept the track from BIA to THRED and join R41 to go down to ORTAC.

At this stage I really could not believe what I'd done. I'd read about fixation and ignoring other indications and that was exactly what I'd done. I knew I'd failed that part of it and that the IRT allowed for one part to be failed to still get a partial pass as opposed to a fail, so that was what I now had to do. This also added to the pressure knowing that I'd already failed one part so could not afford any more errors.

I'd earned a partial pass

The rest of the flight went fine and we flew it exactly as briefed. After landing back at Bournemouth we were taxiing back to park at the CAA offices and I was just praying that I'd managed to do the rest OK and that I'd earned a partial pass. Once we parked and shut the engine down the examiner asked me what had happened after departure on the way to THRED. I explained and he could see that I knew what had happened and why it had happened. He then spent some time explaining again how I should have been able to see what the RMI was telling me and that he was amazed at what I'd done as the rest of the flight had been flown very well. He then said that he had no option but to give me a partial pass as I'd failed the en-route IFR section in terms of my navigation and not following ATC instructions (I didn't go to THRED even though I thought I was on the way).

I was kicking myself for the stupid mistake, but relieved that I'd got the rest done and had a partial pass as opposed to a failure. We then went into the office and completed the paperwork and he

Visit to *Airbus*, at Filton – 18th March 2010

By Jeffrey Pearce



Following a series of beautiful days with wall to wall sunshine and not a cloud in the sky, true to form the forecast for the day of our visit was for low cloud, heavy rain and strong winds! The reality, however, was much better than forecast with VFR conditions and a six knot wind, although conditions did deteriorate later in the day. As a result of the poor forecast the night before, only 25 of the planned 30 participants managed to make it to Filton for what proved to be a very interesting visit. Our hosts for the day were Alec Dent, of their Procurement Section, and Max Bailey, of the Fuel Systems Management Department, who both proved to be very knowledgeable, despite the fact that Alec had only been in the job for six months.

P 11 ►

◀ P 9

suggested I might want to do some more training with the RMI, although this was not compulsory, before doing the partial re-take.

As I had to go back to Jersey I agreed with *PAT* that I'd come back the next weekend and do some further preparation followed by another IRT.

This time, both the departure and en-route sections

The following weekend I returned and we reviewed the RMI and did a departure to THRED routing up to SAM and then back to BIA and Bournemouth – all went well as I just made sure I followed what the RMI was telling me!

That afternoon saw me taxiing around to the *CAA* offices again where I met up with a different examiner who would be conducting my test. He discussed what had happened in the last test and explained how this test was going to progress so I could do my planning.

We were going to depart Bournemouth and track out from the BIA to THRED. We'd track up towards SAM then on to PEPIS after which I should plan to fly west for five miles then go back to Bournemouth.

I was told that although I'd failed the en-route section, I would be examined this time on both the departure and en-route sections.

At some time after setting course back towards Bournemouth the examiner would offer to take over the flying and he suggested that I should let him do that as he explained that if anything happened on the way back or during the approach then I would be marked on that even though I would have completed what I had to do – sounded good to me. I was also told that I could use the GPS if I wanted to for navigation after we'd established inbound to SAM but I needed to demonstrate the single needle work first.

The flight went absolutely fine and I used the GPS as soon as I was allowed to. Sure enough, when I was en-route back to Southampton the examiner said he would take over if I wanted and said that I'd passed but if I wanted to fly back he would examine me on further flying. I happily passed control over to him and sat back and relaxed on the flight back.

I'd passed – what a fantastic feeling!!!

Looking back and reflections

After getting my updated JAR licence I then updated my FAA licence (issued under part 61.75 on the back of my JAR licence) as the irony of it all is that my shared *Cessna* 310R is on the N register. However it was definitely worth getting the JAR IR as I'm no longer restricted to N-registered aircraft. I've been flying the *Cessna* 310R quite a bit and still fly our Cherokee Six as my wife and

I share the flying in that.

Whilst the whole JAR IR process is not as simple as the FAA IR process in terms of the theoretical knowledge and required training at an FTO, it's definitely not as difficult or unattainable as a lot of people would have you believe.

With regard to converting from an ICAO IR (FAA IR in my case) the flying training can be done in the minimum hours in a relatively short timescale; however you need to be current in your instrument flying before doing this. You should be treating this as a way of learning what *CAA* examiners are looking to see and flying some of the routes you're likely to be given on the test as opposed simply to learning instrument flying.

From my own experience I think if you're going to convert an ICAO SE IR to a JAR ME IR then I'd suggest doing the ME class rating first, do a bit of twin flying, then take Option 2 or 3 (discussed in Part 1 of *IP78*). This means that you do all of the conversion training in a twin so you have as many twin hours as you can before your IRT.

Finally, the test is not difficult. Just fly it and try not to put too much pressure on yourself. Pay attention to the instruments as opposed to sitting there expecting something to happen!



A bit of Airbus history

The visit started with a short and interesting presentation on the history and current situation with regards to *Airbus* and as might be expected, quite a few passing references to *Boeing* who of course are their main competitor.

I will probably show my ignorance by admitting that I didn't know that *Airbus* were part of *EADS* who, as a group, have a finger in all sorts of aviation pies from *Eurocopter*, and *Airbus* right though to satellite construction.



Formed in 1970, *Airbus* production figures have followed an exponential curve with the 6,000th aircraft to be produced this year and despite all the gloom and doom being banded about with regards to air transport, their forecasts are for continuing growth unabated in the coming years, largely due to anticipated large volumes of passenger and freight aircraft from the emerging markets in the Far East. It is estimated that an *Airbus* aircraft takes off or lands somewhere in the world every four seconds throughout the day and night! Their 'bread and butter' aircraft has undoubtedly been the A320 with 6,528 orders to date, currently they turn out 36 a month which is set to rise to 40 a month. We learnt that the A380, featured heavily in the press as the world's largest aircraft, already has an order book of 202 aircraft. The maximum carrying capacity is 823 passengers, but most are to be configured with lower capacity.

Mind blowing!

They explained that although many of the *Airbus* components are 'shipped' to Toulouse or other final construction sites by use of the *Airbus* Baluga - even that was not big enough to carry the main components of the A380. They therefore had to develop a complete transportation system using specialist ships and road transport to move the larger components. We were shown an interesting video of a typical road transport convoy carrying a number of A380 components. One has to say that, given the value of the components being carried and the extreme proximity to passing buildings when negotiating some of the smaller towns on route, one would not envy the lorry drivers their task!

Many of the statistics for the A380 are simply mind blowing. We learnt, for example, that the paint for the exterior, dependent on the scheme, could be anything between five and seven tonnes in weight. The fuel in one wing is more than the amount of water that a human being will drink in their entire lifetime and the tail plane dimensions are identical to the wingspan of the first *Airbus*. It was pointed out that *Boeing* with their 787 were following where *Airbus* had led and are also now looking towards a multi-national construction

programme. They also expressed surprise that *Boeing* had gone for a one piece, spun construction on the carbon fibre skin, as opposed to the panel construction that *Airbus* use. Their logic in using a panel construction is that, should the aircraft skin be damaged by an airside vehicle running into it, it is relatively easy to replace a composite panel and exceedingly difficult to repair a complete fuselage section. I guess time alone will tell whether *Boeing's* bold move gives them an edge or *Airbus's* more conservative approach proves to be the wiser move.

Following the presentation we then split into two groups to visit the wing production plant for the military A400M, and the flight management system and undercarriage test facility for the A380. We learnt that the rear wheel on the main undercarriage bogey on the A380 is made in cast titanium due to the excessive load that it takes on landing. We also learnt that the only place in the world that can produce titanium casting of that size is in Russia... and you thought it was a joint European venture.

The military A400M – first of a whole range?

The A400M is a major departure for *Airbus* being a high wing, prop aircraft and aimed squarely at military applications. It was explained that the flight envelope of the aircraft had to be designed to cope with refuelling of fast jets at one end of the spectrum, but also able to fly slowly enough to be capable of refuelling helicopters. It was also designed to be able to operate from short sandy and gravel covered surfaces. Basically it has been designed to meet a niche market seen by *Airbus* positioning the aircraft between the smaller Hercules type transport aircraft and the large Lockheed C-141 Starlifter. In answer to a direct question, Alec admitted that the A400M would not be their sole foray into military aircraft but rather it was intended to be the first of a whole range of an aircraft developed by *Airbus* for military applications: you heard it here first.

For those of you who think they've got an aircraft with everything, we learnt that *Airbus* are fitting a system on the A380 which will apply the brakes in such a way as to slow down the aircraft in the most cost efficient manner to achieve the required turn off, known as 'braking to vacate'. There have been a few times I would have found that useful, but they didn't explain at what point the aircraft decides there is too much speed and not enough distance and also whether at that point the aircraft tells the pilot to forget the whole idea and try again!



I am sure I speak for everybody who attended in saying that this was a quite fascinating visit to see what goes into the construction of aircraft at the other end of the spectrum to the puddle jumpers that we typically fly.



Chairman's corner



Anthony Bowles

For the second year in succession our spring meeting and AGM took place in fine and sunny weather and it was good to see so many members attending the event. It was held this year at Cambridge Airport where we were well looked after by *Marshalls*, particularly as the venue had to be rearranged at short notice because of the unavailability of Coventry Airport.

Spring meeting and AGM

The meeting kicked off with a presentation and demonstration of various items of safety equipment by Del Hall of *Survival Equipment Services*. One of our members looked somewhat apprehensive as he was volunteered to demonstrate a life jacket and later rather happier when the inflation toggle was pulled with no obvious ill effects. Most of us who fly over water will already have some basic survival equipment but I certainly found it interesting to see the latest offerings and plan a visit to *SES* soon. Next Nick Gribble of *gCap Ltd* gave a fascinating insight into the design of instrument approaches with special reference to GPS approaches of which there are still too few in the UK. Following a break for lunch, Anthony Mollison of *Professional Air Training* talked us through the practical side of GPS approaches with a 15 minute video of one of his students doing the RNAV approach to runway 26 at Exeter. As it happened the following weekend saw me approaching VFR for runway 08 at Exeter, with the airport in very quiet mode as that was the weekend of the volcanic ash airspace shutdown over much of Europe. *Avis Car Hire* was surprised and delighted to see me. Meanwhile the volcanic ash has returned to parts of the UK as I write this and looks like remaining a potential hazard for some time to come.

Following Anthony's presentation the formal AGM took place at the end of which, on behalf of *PPL/IR Europe*, I was delighted to present Paul Draper with a silver goblet and some suitable beverages to put into it as a token of appreciation to Paul for all his work on our behalf over the years.

On the previous evening, there had been a meeting of the Executive Committee. Some

time was devoted to discussing our activities at AeroExpo 2010 (25th - 27th June at Wycombe airfield). I hope to see many of you there at our stand on the Friday and Saturday. Sali Gray (memsec@pplir.org) would still like to hear from anyone prepared to put in a couple of hours manning our stand over the three day event. I am also pleased to announce that Jean-Michel Karr, a Swiss member and one of three helping to organise the September meeting at Les Eplatures in the Swiss Jura, has agreed to join the Executive Committee.

Enroute charges – who pays?

Members may be aware of the *CAA's* views on the proposals of *NERL (NATS (En Route) Ltd)* to charge GA VFR traffic for providing en route services. An extract from the *CAA* response is on our website but in a nutshell it states that the provision of controlled airspace and air traffic control services is primarily for the benefit of commercial air transport and their passengers and thus CAT should bear the associated costs. These should include the costs of services such as Farnborough LARS and the like which, although there for GA's benefit, should be seen as part of the overall provision for protecting controlled airspace from infringers.

A number of airlines have replied to the *CAA* response stating that they should not be required to pay for the costs of keeping infringers out of controlled airspace, particularly when the measures adopted do not prevent such infringements (see *CAA* website www.caa.co.uk under ERG News 15 April 2010). Jim Thorpe, our deputy chairman, is a member of the Airspace Infringement Group, and reports over 1,000 infringements in the last calendar year alone, many of which involve the London TMA (fortunately very few involve GA IFR movements). It is a topic that regularly comes up at the GASCo meetings that I attend. It is difficult not to feel some sympathy with what the airlines say on these costs and some think that it is only a matter of time before there is a serious incident which will lead to severe restrictions on GA movements near busy controlled airspace.

What can be done to avoid this and defuse the airlines arguments? Pilot education and training is one obvious answer which would be helped by the *CAA* being much more proactive in making practical use of GPS part of the initial training requirement for a PPL particularly as GPS moving map systems become more widely available in light aircraft. Traditional navigation methods would remain part of the syllabus but it is naïve to think that these give sufficiently accurate navigation guidance over much of the southern part of the UK today where conurbation follows conurbation with few distinctive features in between. Another answer is to make mode C or even mode S transponders mandatory in what effectively would be a large extension of the present transponder mandatory zone in the London area. As aerial gadgetry goes, transponders are relatively inexpensive and can be fitted to all but a small minority of aircraft and have the advantage of giving instant infringement warnings to controllers so enabling mitigation of what otherwise could become dangerous. While there will be some who would argue that this would be an infringement of a long held right to fly around in Class G airspace VFR without talking to anyone, it may be necessary to embrace a solution such as this to head off claims from CAT that GA must contribute to the costs of providing en route traffic services outside controlled airspace.

Insurance discount for an IR

Lastly an item of news that I hope will benefit some of our members. I have been discussing with Tim Proctor of *Haywards Aviation* for a while the question of some insurance benefit for our members. He has recently told me that *Haywards Aviation* in conjunction with *QBE Underwriting* are able to offer up to a 10% discount off on the standard rates of their light aircraft policies subject to all pilots on the policy holding a current instrument rating at the time the policy is taken out. This benefit is available for aircraft based in the UK and EC countries only.



Pilots' talk

Compiled By Sahib Bleher

Dates for your diary

Weather weekend rescheduled

The previously advertised weather weekend has had to be rescheduled due to lack of availability - further information in due course.

Icarus Expo rescheduled

The Icarus Expo, at Tatoi airfield in Athens - mentioned in *Pilots' Talk* in IP78 - has been cancelled due to the current economic crisis in Greece. However, organisers say the Expo will be rescheduled for 2011.

SES ditching days, South Cerney

Following the Cambridge presentation by Del Hall of *SES* on survival equipment, we propose a block booking for one day which can then be specifically oriented to the needs of *PPL/IR Europe* members. Potential dates include 12 June, 10 July, 7 August, 11 Sept and 2 October. Expressions of interest with preferred dates please to Steve Dunnett (dunnett@cf.ac.uk), also see website (www.pplir.org/ under Events).

10th to 12th September 2010, social weekend, Les Eplatures, Switzerland (LSGC)

Les Eplatures in the Swiss Jura is the highest IFR airfield in Europe. Close by hotel *Les Endroits* is proposed for the stay. Various possible tours are being explored with weekend hosted by local members Sker de Salis and Jean-Michel Karr. See website (www.pplir.org/ under Events) - expressions of interest please to Steve Dunnett (dunnett@cf.ac.uk).

12th October 2010, guided visit to AAIB, Farnborough - WAITING LIST ONLY NOW

There will be an organised tour for *PPL/IR Europe* members to the *AAIB* at Farnborough. See website (www.pplir.org/ under Events).

Head-up displays to prevent accidents?



If pilots had head-up displays in the cockpit, hundreds of accidents over the last 13 years could have been prevented, or at least mitigated, according to a recent study. The *Flight Safety Foundation* analysed 983 accidents between 1995 and 2007 involving large multi-engine aircraft. The study found that overall the technology could have affected the outcome in about one-third of the accidents. About 69% of takeoff and landing accidents could likely have been prevented, the study found. Another study by *American Airlines* has found that pilots using head-up displays in Boeing 737s tend to land further down the runway than recommended. That study is ongoing and the airline has not drawn any conclusions from that data.

NTSB finds no evidence that glass cockpits improve safety

An *NTSB* study shows glass cockpit technology has not significantly improved the safety of small light aircraft. The Board recommended changes, from training to maintenance reporting, to improve the statistics. While data collected between 2002 and 2008 showed fewer total accidents for those aircraft equipped with glass panels, that came with a higher fatal accident rate and higher total fatal accidents. But the Board's study also found the mission profile for each type of equipment package and the characteristics of the pilot were different between the two platforms. Generally

speaking, higher-time pilots were flying longer flights with glass. That said, the *NTSB* was able to use the data to offer six recommendations, five of which were related to equipment-specific training and one to testing requirements.

The study found that glass equipped cockpit accidents were more likely to involve single pilot operations, with an older pilot who was more likely to be instrument rated and flying with a higher number of total flight hours. That also corresponded with a higher number of terrain and weather related accidents attributed to glass panel aircraft. Weather-related accidents made up 4% of conventionally equipped aircraft accidents in the study but 9% for glass-panel-equipped aircraft. Conventionally equipped aircraft seemed more dominant in the training segment as accidents of those aircraft involved younger pilots, more students and pilots with fewer total hours.

The *NTSB* recommends that airman knowledge tests be revised to include general knowledge regarding glass panels, that information in aircraft manuals include abnormal and failure modes of the panels, that training elements be introduced to improve pilot knowledge of glass-panel system functionality, that specific training elements be introduced to address variations in equipment design and operation of such displays, that alternate training methods (such as PC vs. flight simulator) be approved to support proficiency, and that a system be created to better report and track problems with the units (see *NTSB* website at www.ntsb.gov/).



SID and STAR procedures and phraseology

The CAA has re-emphasised UK procedures and guidance for IFR flights regarding SID and STAR climb and descent procedures and phraseology. In November 2007 ICAO introduced revised procedures and phraseology but the UK retained differences. **In summary, in the UK, for all stages of flight, instructions to climb or descend cancel any previous restrictions, unless they are reiterated as part of that instruction.**

When in the UK an aircraft is on a SID and is required to climb directly to the cleared level, ignoring the vertical profile of the SID, controllers will include the word 'now'. When an instruction is issued that amends a SID route the level restrictions associated with that SID are no longer applicable. Therefore, in such circumstances, controllers will reiterate the level profile to be followed as part of such an instruction.

In the UK, levels to be flown on STARs are as directed by ATC, although the relevant charts contain level information for planning purposes.

Outside of UK airspace, under the revised ICAO procedures, when receiving subsequent climb/descent instructions, aircraft following a SID/STAR shall continue to follow the published vertical profile of the SID/STAR, unless the procedure is explicitly cancelled by ATC. However, the ICAO changes do not affect level clearances provided to aircraft in other phases of flight where, unless reiterated, any new clearance cancels a previously issued level restriction.

A number of States have implemented the revised ICAO procedures, whilst others have not. Outside UK airspace, crews should assume that ICAO-compliant procedures and phraseology are in use unless a notification of a difference is filed in an individual State's AIP or where the operator has determined that the revised PANS-ATM procedure has not been adopted. If doubt arises when airborne, the safest course of action will always be to follow the SID/STAR profile while seeking clarification.

As a result of safety concerns regarding the revised ICAO procedures, ICAO initiated a review to determine the extent and severity of difficulties being encountered. From the State responses, ICAO has identified that their current provisions have not provided the intended simplicity, efficiency, and global standardisation to ensure flight safety. Consequently ICAO has reported that they will be working expeditiously to determine

the optimum solution. When the proposed solution is promulgated, a UK review will be undertaken to establish if the current ICAO difference can be removed (see CAA website at www.caa.co.uk/atsdocuments).

EASA flight crew licensing consultation: no more 'leisure pilots'

EASA has published the Comment Response Document which contains replies to comments by stakeholders, together with the revised text for flight crew licensing and related Acceptable Means of Compliance and Guidance Material (see EASA website, CRD table www.easa.eu.int/ws_prod/r/r_crd.php). The Notice of Proposed Amendment NPA 2008-17(b) detailing proposals for FCL was open for public consultation between June 2008 and February 2009. 'We are convinced that solutions were found that are proportionate and focused on safety', said the Agency's Rulemaking Director, Jules Kneepkens. 'We have gone a long way to meet the different concerns of pilots, industry and the Member States'. Some of the main changes include:

Light Aircraft Pilot Licence

- ☞ The name is changed from Leisure Pilot Licence to Light Aircraft Pilot Licence (LAPL).
- ☞ Basic LAPL for Helicopters is deleted.
- ☞ Rules for the Basic LAPL for aeroplanes were redrafted to exclude the possibility of carrying passengers (as distinct from the LAPL itself which permits up to 3 passengers).
- ☞ Crediting of flight hours on Annex II aeroplanes (those excluded from EASA's scope of responsibilities) aeroplanes will be based on a pre-entry flight test which the approved training organisation will use to evaluate the competencies and skill of the pilot.
- ☞ The initial limitation that pilots could only hold one licence is changed so that pilots can now hold one licence per category of aircraft. All such licences are to be issued by the same competent authority.

Instructors for pilot training outside EU Member States

- ☞ Flight instructors will have to hold at least a licence issued in accordance with ICAO Annex 1 and will have to comply with the requirements for the relevant category of instructor qualification.

Language proficiency

- ☞ Balloons and sailplane pilots are excluded from the language proficiency rule.

EASA dislikes consultation!

EASA is proposing to the EC that it be allowed to abandon its system of consultation with industry because it is finding it impossible to deal with the number of critical responses to its rulemaking plans. The move was revealed at a meeting of the EASA Advisory Body in March, and was met with a unanimously negative response from all sectors of the aviation industry, airlines and GA alike. EASA wants to get rid of the Comment Response Document which accompanies its rulemaking proposals. It has been overwhelmed by responses from industry, with more than 10,000 submissions on some of its plans, and says it doesn't have the resources to deal with them. Instead it believes it should listen to the advice of its working groups and then present its proposals to the EC.

PowerFLARM launched

PowerFLARM

is a new portable device that aims to bring together several different traffic sensors in one unit. In

addition to being a *Flarm* device (*Flarm* is a system used in the gliding community) it offers ADS-B sensors and will also display traffic with a Mode S transponder. Mode C will also be picked up, although the unit will only be able to display altitude and distance and not relative bearing. It is lightweight and will run either from an auxiliary power socket or batteries. It should be available shortly, retailing for somewhere between £1,000 and £1,500.



Leaded Avgas issue given new urgency

An EPA notice concerning the future of 100LL is expected soon with publication in the Federal Register as the next step. According to their website, the notice's regulatory review has been concluded and publication is projected for sometime this month. 'This action will describe the lead inventory related to use of leaded Avgas, air quality and exposure information, additional information the Agency is collecting related to the impact of lead emissions from piston-engine aircraft on air quality and will request comments on this information,' according to the site. The notice will likely seek input to develop a transition plan so the fuel can be phased out.

UK likely to delay aviation security standards rule

Final agreement over the way the new 'common basic standards for aviation security' are implemented in the UK have not been achieved by the existing 29th April deadline and could well be delayed at least until late June. Steve Marshall-Camm, the *DfT* assistant director for aviation security, told the *BBGA* that the consultation process was taking longer than expected. He also indicated that, subject to detailed risk assessment, UK officials will exercise the latitude they have to allow some groups of operators to use more flexible alternate security measures (ASMs) rather than the full EU requirements. The EC has relaxed the requirement to comply with the full standards so that it will apply only to aircraft with a MTOW of more than 15 tonnes. National authorities are permitted to allow ASMs to apply to aircraft in appropriate categories up to a weight limit of 45.5 tonnes, a figure that includes all purpose-built business jets. The threshold for the full new security rules had been set at 10 tonnes and 19 or more passenger seats.

Shoreham to close two of its three grass runways



In order to significantly reduce costs, Shoreham airport is withdrawing grass runways 02/20 and 13/31 from use, leaving 25/07 as the only grass runway available. The hard runway, also 02/20, is unaffected.

FAA kills 'taxi to' for takeoff

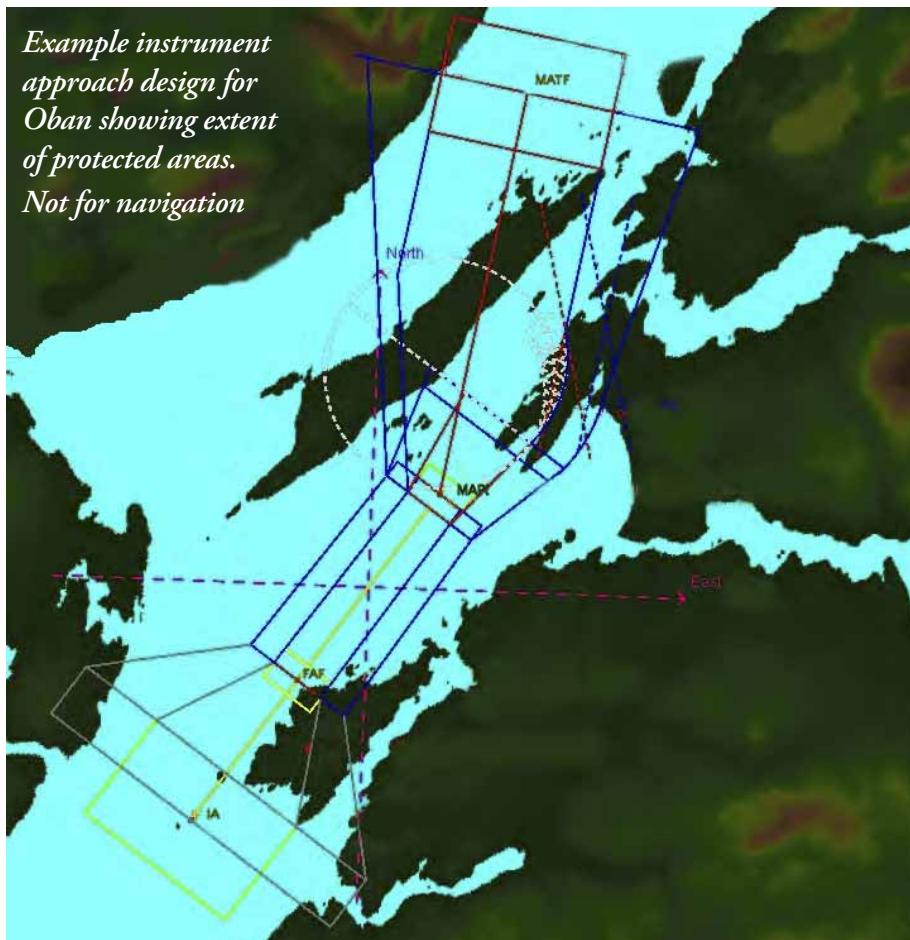
With effect from 30th June 2010, the *FAA* is deleting the term 'taxi to' from taxi and ground movement operations as it pertains to aircraft cleared to taxi to an assigned takeoff runway. The change requires controllers to issue explicit runway crossing clearances 'for each runway (active/inactive or closed) crossing.' And aircraft issued clearance to cross a runway must cross that runway before receiving clearance for a subsequent runway crossing. There is an exception: 'At airports where the taxi route between runway centre lines is less than 1,000 feet apart, multiple runway crossings may be issued after receiving approval by the Terminal Services Director of Operations,' according to the *FAA*.



Instrument approach protection areas

By Nick Gribble

Example instrument approach design for Oban showing extent of protected areas. Not for navigation



If I had a penny for every time someone has asked me about the size of protection areas then I'd not exactly be a rich man, but I might have a quid or two. It does seem that this is something that isn't generally taught because most instructors don't know anything about how protection areas are constructed or what size they are. This is not a failing; there is no need to know, but for interest's sake this article will take away some of the mystery about exactly how much room you have to manoeuvre before you're not safe.

Readers should be aware that this article is designed to inform, and it is not the author's intention that pilots thus informed should feel confident enough

to allow themselves to fly anything other than accurate, published procedures. Note also that in the calculations which follow, figures have sometimes been rounded for readability.

Height-keeping tolerance and underlined altitudes

Clearly it should always be one's aim to fly as accurately as possible; 'I shall be looking for smoothness as well as accuracy' is a phrase burned into my brain from years of conducting initial IR tests. The limits of acceptability of accuracy are described in some detail within FCL documentation, but don't actually bear any relation to the protection areas of

the procedures being flown. Tolerance vertically, for example, is generally 100ft above and below datum altitude, but this is the same tolerance regardless of whether one is on initial or final approach. An examiner's tolerance to a height bust, however, decreases with the height above ground, so whereas it may be acceptable to dip 100ft low during the initial approach phase, it most definitely would not be acceptable if this were on final approach.

On most non-precision plates there will be some altitudes which are underlined or in bold (depending on the provider; *Navtech/Aerad/AIDU*, for example, underline or embolden every altitude). Where there is underlining/bold type then (depending on the plate provider) this means that you must not fly below the stated altitude because to do so would infringe the required obstacle clearance. Take, for example, the intermediate segment, i.e. that bit between the Intermediate Fix and the Final Approach Fix (FAF). Let's say that there's an obstacle of 500m underneath this segment, directly under the flight path. The obstacle clearance required on this segment is 150m, so the minimum height at the FAF will be 650m, i.e. 2,132ft. If the FAF altitude were published as 2,200ft this would mean that a pilot flying to the standard 100ft tolerance would be flying between 2,100ft and 2,300ft, but in dipping to 2,100ft would be 32ft below the minimum safe altitude, so this is not acceptable and the FAF altitude will be underlined. If, however, the FAF altitude were 2,300ft then the pilot would be above 2,200ft at all times and thus safe even when flying as inaccurately as is allowed, so in this case the FAF altitude would *not* be underlined.

FAF height/altitude calculation

Taking this one step further, it's interesting to consider the calculation for the FAF altitude. The minimum height at the FAF is calculated by the method described in the preceding paragraph, i.e. it's the height of the highest obstacle plus 150m (unless the obstacle is in the secondary area, but more of that later). This is not the whole story, however, as it describes only the *minimum* altitude. The minimum and maximum altitudes are further defined by the required descent gradient, which for Cat A/B aircraft can fall between 5.2% and 6.5%, equating to about 3° to 3.7°. Consider a 5nm final approach segment (which is the norm, incidentally). Over 5nm (9,260m) an aircraft will descend

481m or 601m depending on the gradient. The descent gradient is calculated from the FAF to a point 15m (10.5m for helicopters) above the threshold of the runway in question (note that it's not calculated to the MAPt although PANS-OPS says that they should normally be coincident), so the minimum and maximum heights at the FAF for a 5nm final are 496m and 616m, i.e. 1,629ft and 2,024ft. Considering the obstacle mentioned previously, i.e. 500m high and under the intermediate segment, even if the slope of the final approach segment were set to the maximum allowed it would still not be enough. Thankfully there's a solution, but it's not an obvious one: increase the length of the final segment.

Increasing the length of the final segment to 6nm would change the minimum and maximum altitudes to 1,945ft and 2,419ft respectively, so the minimum FAF height of 2,132ft set by the obstacle under the intermediate segment would be acceptable. In this case, the designer might set the FAF height to 2,200ft, creating a descent gradient on final approach of 5.90%, roughly 3.4°. As described previously, this would require the FAF height to be underlined. The author's personal preference is to set altitudes at fixes high enough so that no underlining is necessary, thereby making procedures easier to fly.

Moving the FAF distance to 6nm, however, has more than just a notional effect on the FAF altitude; it also increases the distance over which the protection areas are at their smallest both laterally and vertically; laterally, the width on final is roughly half what it is on the intermediate segment, and vertically it's 75m on final (usually) versus 150m on intermediate. So ironically, by increasing the final distance in order to ensure that an obstacle under the intermediate segment can be cleared safely, the overall size of the protection areas is reduced!

Vertical tolerance

The minimum obstacle clearance (MOC) varies depending on where in an approach you are, as summarised in table 1.

These figures show the minimum clearance from obstacles which are under

the flight path and out to a distance laterally corresponding to that specified in PANS-OPS for the Primary Protection Area (PPA). This distance varies and is discussed in a few paragraphs time. The width of the PPA is calculated statistically in order to contain 95% of aircraft (which for the statistically-minded reader corresponds to 2σ). Since this still leaves 5% of aircraft unaccounted for, the protection area is further extended to a width (from the notional track) corresponding to 99.7% (3σ), which includes all but the most wayward pilots; this area is called the Secondary Protection Area (SPA). Whilst it might be tempting to assume that this still leaves 0.3% of aircraft unsafe (which on a typical day world-wide would be maybe 30), it should be noted that statistically it would only be possible to include every aircraft within the protection areas if the latter were made infinitely large since Gaussian distribution tails off to infinity on either side.

Since the likelihood of an aircraft being at a particular distance from track reduces as the distance increases, the vertical obstacle clearance is reduced linearly through the SPA from the full MOC at the boundary of the PPA and the SPA to zero at the outer edge of the SPA. Thus it is possible for there to be an obstacle at the edge of the SPA which is at the same altitude as the aircraft. To put it another way, if you drift all the way to the edge of the SPA then you run the risk of clipping an obstacle. Drift one metre further and you run serious risk of controlled flight into terrain since obstacles outside the protection areas are completely ignored.

Horizontal tolerance

The size of the protection areas laterally varies enormously, but the general principle is that the size reduces gradually until you get to the MAPt or facility and then starts increasing again.

VOR and NDB beacons have an associated tracking accuracy of $\pm 5.2^\circ$ and $\pm 6.9^\circ$ respectively. These are the figures associated with calculating the size of the PPA, but for the SPA it's $\pm 7.8^\circ$ and $\pm 10.3^\circ$ respectively, and at the actual beacons themselves the width of the entire protection area is ± 1 nm and

Table 1

Initial / en-route	Intermediate	Final ¹	Intermediate MAP ²	Final MAP ³
300m	150m	75m	30m	50m

±1.25nm respectively. These areas are clearly quite large, but what's important to remember is that the combination of technical inaccuracies both for the ground and airborne equipment, not to mention the accuracy to which pilots can set their instruments, means that just because the needle may be in the middle it doesn't follow that the aircraft is on track. This is important. A lot of people assume that the protection areas are there to protect pilots who wander off track up to half scale or 5°, and whilst this is not incorrect, it's possible to be near the edge of the PPA even when cockpit indications show that the aircraft is precisely on track. I remember flying back from Cherbourg one day and with about 40 miles to go to the SAM VOR/DME, air traffic control told me that as I was now outside the airway they could no longer provide a service. According to the VOR I was precisely on track, but a check of the GPS showed that ATC were (of course) correct. I should have been cross-checking my position with the GPS, but since the latter is not approved for primary navigation this prompts an interesting argument as to which instrument to believe, but I'll save that for another article perhaps.

Cone of silence

Consider the case of an NDB or VOR cone of silence and protection area sizes become obvious. You fly to the on-top of an NDB/VOR and when you get there the needle will swing. If you're lucky it's a rapid swing and you can start turning or timing as it passes the abeam position, but if you're unlucky then you lose the signal in the overhead, the needle swings backwards and forwards a few times and then eventually settles down as you get to half a mile or more on the other side. If you have an electronic display then the needle will quite possibly disappear when the signal goes, but if you're using conventional instruments with physical needles then these can't disappear (and with an NDB you don't get an off flag), so you can't trust them within a certain distance. How far is this distance? Well it's easy to calculate:

The cone of silence is considered by PANS-OPS to be at ±40° to the vertical for an NDB and ±50° for a VOR. The formula

to work out the radius of the cone at any particular height is:

$$r = 0.164 \times h \times \tan(\alpha)$$

where h is in thousands of feet, α is the angle in degrees, and r is in nautical miles. Thus the cone of silence if holding on an NDB at a height of 3,000ft is 0.8nm wide, and if it were a VOR then it would be 1.2nm wide. At a typical Cat A speed of 100kts it would take 29 seconds to cross an NDB at this altitude or 43 seconds to cross a VOR. Clearly it's impossible to know when you're getting to the edge of the cone of silence from needle information alone, but if you're lucky there will be a DME nearby which can give a clue. Be cautious, however, since NDBs and DMEs are rarely sited close enough to each other to give an accurate idea of the location of the NDB cone of silence; with a VOR/DME of course this problem is negated. Even then, the distance on the DME will be inaccurate since you have to consider slant range, and since 3,000ft is equivalent to half a mile, the DME will not go below 0.5nm at any stage!

Width of protection areas

If you're flying an RNAV or RNP procedure then the widths of the PPA and SPA are largely fixed since the satellites are equally inaccurate regardless of where in the pattern you are. Again, bear in mind that although RNAV is considered to be extremely accurate (which is true for the most part) it is possible that a combination of errors and tolerances can mean that even when the tracking bar is absolutely in the middle it does not necessarily mean that you are on track.

By way of an example, the widths of the protection areas for an RNP approach, from the nominal track to the outer edge of the PPA and SPA, are as shown in table 2.

These figures don't paint the whole picture but they give you an idea. What they don't show is how the areas link to one another; for example, they don't show the fact that the protection areas start to reduce in size on the intermediate segment as you pass a point 2nm prior to the FAF, which is why when you're flying

an RNAV approach you'll see the cross-track sensitivity scale change from 1nm to 0.3nm at this point (or from Terminal to Approach, depending on your equipment).

As if this wasn't enough, when no tracking is available, e.g. in turns, aircraft are considered to drift outward by 5° or more plus a notional (and quite strong) wind, which makes for some very large areas at times.

Conclusion

It is important to realise that protection areas are large not just because pilots can't fly accurately all the time but also because equipment is not perfect and, as just stated, aircraft do not always have something on which to track; consider the outbound leg of a hold, for example. But just because the areas are known to be generous, this does not mean that it's safe to go outside 5° or half-scale at any time since even when an aircraft is apparently on track it might already be near the edge of the PPA and any further exceedence could put it at serious risk of being unprotected.

There is a lot more that could be said on this topic, but although the author finds the method for designing protection areas fascinating, it's not a view that is shared by many. Readers who would like more information can find figures and diagrams galore in volume two of PANS-OPS 8168, but the writing is very dry and factual and there are a lot of cross-references.

As ever, more help and information is available from the author by contacting gCAP at nick@gcap.co.uk or phoning the office on 0845 054 2531.

Footnotes

- 1 This applies to non-precision approaches only, and is 90m if there is no FAF.
- 2 The intermediate missed approach segment is the initial climb phase when 50m MOC cannot be guaranteed, during which turns are permitted up to 15°.
- 3 The final missed approach segment is the climb phase after which 50m MOC is guaranteed.

Table 2

	IAF/IF	FAF	MAPt	Fix in MAP
PPA	±1.0nm	±0.3nm	±0.3nm	±1.0nm
SPA	±2.5nm	±1.45nm	±0.95nm	±2.0nm



Corsicily '09

Corsicily 09 - Part 2 of 3

By Sean Harding

Having become the proud possessor of a bright and shiny new IR, next an IFR trip with the family to Sicily with Cannes, Sardinia and Malta 'along the way'

I filed the following route for the first leg from Denham to Cannes:

F100 DCT CPT N859 SITET A34
KOVAK H20 DOMOD A3 NEV R31
MTL R161 AMFOU STAR

With the predicted winds my flight time was likely to be 4hr 45min - the longest I had ever done to date - so everyone pit stopped before we took off. We departed as planned at 11:05 (10:05 UTC). Shortly after I changed over to London and waited for clearance to enter controlled airspace. Very quickly I was given a climb into controlled airspace on track CPT and then soon after given radar vectors, all of which shortened my track. I was then routed direct DRAKE, then ETRAT and, as I approached French airspace, handed over to Paris Control, and routed DOMOD, TIS, and MTL. Due to the pressure levels I was asked to climb to FL110 to maintain minimum safe altitude and route over the edge of the mountainous area. This I happily accepted and was routed into TIPIK and given descents to intercept the localiser at Cannes, a non-precision circle to land approach on the localiser only with no ILS.

I called several times without reply

My only difficulty in all of this was the very, very busy (ridiculously so) Nice TMA. I called several times without reply (continuous radio calls from everywhere still going on). I had been given a radar vector out to sea and was getting worried that I was going to fly past my intercept course and potentially into other flight paths. I should not have worried as Nice operate this way most of the time. They immediately gave me a call to turn to intercept the localiser and handed me over to Cannes, they clearly knew I was on frequency and were

monitoring me on radar. It is still a bit un-nerving for a new IR pilot to be ignored/find it impossible to get a call in so far into the procedure and I was tempted to go back a frequency; luckily I did not.

The tower then gave me permission to descend on the procedure to follow the prescribed tracks for circle to land. I found this easy although I flew higher than the minimum as it was clear VMC and I felt the low level over the houses and hotels to be quite low for an SEP. It is a strange visual sensation heading towards a rising mountain.

I requested a taxi to the fuel station, which was no problem but it was unmanned at the time and we had to wait 40 minutes for the refueller to arrive back. Luckily the office is air-conditioned and has toilet facilities, essential after such a long flight especially as even stronger winds meant the flight time was actually 5hr 30min. And I still landed with over an hours fuel as I plan quite conservatively and flying at FL100 is much more fuel efficient.

Total Fuel pumps are 'Total card' only but...

Being very smug that I had taken off well after my fellow aviators and landed well before them - as they needed to re-fuel half way (one of the limitations of flying low!) - I was slowly losing my smugness as I waited by the plane in an extremely hot Cannes for a refueller. It then turned out that the *Total* fuel pumps are 'Total card' only - but the refueller swipes his card and you make use of the pump - then you pay at the office. Credit card was no problem and fuel pricing was reasonable at €1.75 per litre. Just as I

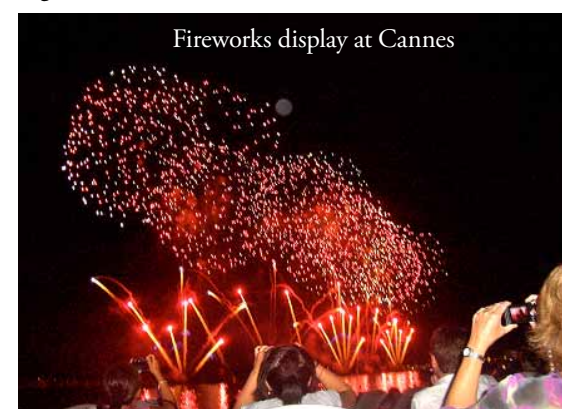


Leg 1 to Cannes

finished my fellow aviators started to arrive so I waited until all of us had refuelled before taxiing around to the parking area. The office sent out a van to collect us and our luggage. It was mandatory handling at the time. The fee for handling, landing and parking for two days was €48.65, which is excellent value in my book.

We decided to stay for a couple of nights as the weather was looking good. Luckily - and unluckily - we had turned up for the big fireworks competition. As such our hotel was fully booked for the next night so had to change hotels the next day! As it happened this was quite fortunate as the new hotel had a restaurant on the beach - we booked a table for the evening fireworks display and had a fabulous time. Whilst I liked Cannes it does seem to be looking a bit tired compared with my visits some nine years earlier. But the airport facilities make it a lovely destination.

Whilst my flight time was quite long, indeed, probably the longest I would like to do we definitely benefit from the non-stop approach and had much more energy for the nights ahead.



Fireworks display at Cannes

On to Sardinia with wealth tax removed

Having enjoyed a couple of days in Cannes we were due to head off to Sardinia. Sardinia had been essentially closed to GA for sometime when they introduced a wealth tax and any yachts or GA landing were charged extra. This has now been removed, making it a much more attractive option. My experience of Olbia airport is that this is one of the best facilities I have seen at a very sensible price. They have built a dedicated GA terminal that is larger than many international airports (see Palermo below!) It is clearly designed for all the jet traffic and is suitably equipped with excellent staff. More on this experience a bit later on...

My filed route was as follows:

F100 SID VAREK M623 ALG L5
POZZO STAR

We departed at 10:30 UTC. I was given a climb very quickly to FL100 but I suspect my climb rate was not good enough for them (I was flying at MTOW) and was given a stop climb at 3,000ft then climbed to 4,000ft and held whilst around the Nice TMA. After a few minutes I was then given an enroute climb and routed direct OMARD then VAREK. After I was handed over I was given a more direct routing to CORSI (almost direct to POZZO). As I approached the border I was given a new squawk and changed to Olbia approach who gave me ILS Z for RWY 06. There was some confusion with the controller over procedural vs. vectored. I was given a heading to fly and left to go almost past the final approach fix until I prompted him. He had assumed I was procedural and had only 'advised' me of a heading, only to hear another pilot being told off for starting the procedure without being told, and reminded who the 'Controller' was. All done in a friendly way though. Next time I will be more assertive in clarifying the 'instructions'. The other pilot was commercial and had obviously heard my conversation so did what he thought would be the same! The final approach was no hassle, along with taxi instructions.

On the ground at Olbia

There are two parking aprons for GA, the first outside the GA terminal is for jets and the second (the old GA parking area) is for



Leg 2 to Sardinia

propeller (piston and turbine). I was given the ground (GA handling) frequency when entering the GA parking area. If you are not given this then you must ask for it.

Handling is now done by *Eccelsa Aviation* in the new GA terminal (see www.geasar.it/eng/airport/the-terminal/eccelsa-general-aviation). This has to be one of the best GA terminals in the business. Make sure you wait for the transport to the new terminal. Do not attempt to walk, as it is at least two miles beyond the ordinary terminal and security may get upset. My fellow aviators who had arrived VFR had not been told to contact the ground handlers and walked to the ordinary terminal and somehow got through. The staff were amazed when they came to leave... they felt they were lucky not to have been challenged by the authorities. This was very unfortunate since it was very hot and one of the passengers has a very damaged foot and could not walk long distances without considerable pain. I don't know if this happened because they were VFR or because the controller forgot but please don't try and bypass the system, you will still be charged and not benefit from the facilities! Having seen the pain they were in I diplomatically did not disclose how nice it was until they realised when we went back to the terminal for departure - they were gutted!

Not sure how the pricing actually works but it seems to be about €50 basic and then something adding based upon parking and number of passengers. On the way down south we paid €53 for handling (including three nights parking) and on the way back €81 (with only overnight parking) so I can only assume they missed something on the way down... looking at the paperwork it seems this was more to do with 'passenger fees'.

Beware they close for long lunches

I did not need fuel on this journey but did on my return: fuel is expensive-ish and CASH ONLY at €2.49 per litre including tax. Be careful they quoted us €2.07 based on which we calculated how much cash would be needed for our uplift. I ended up getting a taxi from the GA terminal to the main terminal to use a bank till on the upper floor to obtain enough euros. They then added tax and that nearly caught us short. Make sure you ask the handlers to co-ordinate, you then taxi to the pumps, not far from the GA Prop parking. Also beware they close for long lunches, 12-2pm. We got caught on the way out and had to put our flight plans back two hours. But having said that they were very helpful once available.

Overall this was actually one of the nicest GA experiences I have had with the family. Those that like bacon butties in a shed need not visit (although to be fair I do like the occasional buttie). What was particularly good was that we had to wait some time for our fellow aviators to arrive and my wife and son could wait in a first class lounge - multiple brownie points for future adventures - but they have now come to expect this...

As a general note we often do ourselves a disservice by not using handling - especially when it improves the experience at minor cost. Handling charges do vary (see Palermo below!).

We then spent the next few days chilling out in a resort in the Bay of Sardinia, a very nice but sleepy area. The general cost of beer was

P 20 ►



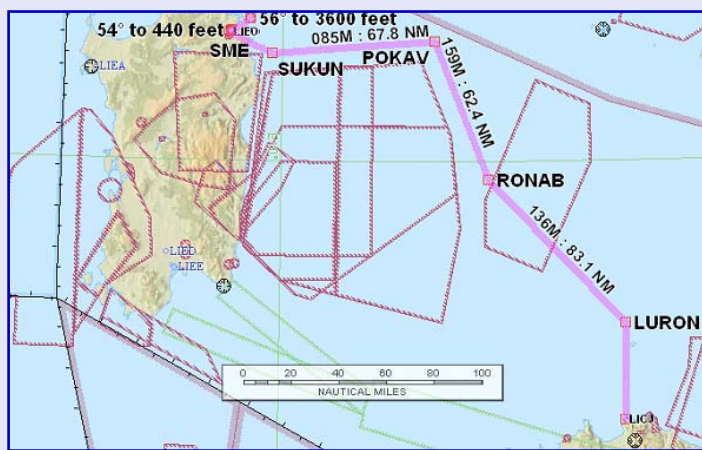
◀ P 20 extortionate but consistent with other Italian resorts. This kind of pattern works well for me and my family and occasionally I get away with fly/adventure/fly but it is always a balance. This was definitely fly/rest/fly.

Next Palermo (or the Sicilian nightmare)

Before my report on Palermo my first advice is simply: DON'T GO THERE!

I have often heard horrendous Italian stories - Palermo is one of them - they really make life hard. It is a very expensive proposition, crap facilities and actually not even the best place to go. But fortunately this is not true of the old town of Ragusa at the other end of the island - a fabulous place.

Our planned route from Olbia to be as follows:
F100 SUKUN M603 POKAV L12 GIANO



Leg 3 to Palermo

The problems started days before our planned arrival when we attempted to gain PPR and phoned every number in the AIP, *Jeppesen* and websites. We even got the receptionist at the hotel to speak to the airport and obtain a number to fax and an email address to which to send the information. All of which we did, with no response. On the day of departure we went to Olbia and asked the handler to contact them to confirm our arrival. They too had big problems getting through. Finally the handler contacted the Palermo handlers *AER* (email: ops@aersicilia.it) who were efficient and helpful. Whilst we were waiting to taxi, they contacted me on my mobile with the PPR number we needed to be able to land. Overcome by relief we did not bother to check any pricing!

The departure was all very easy, and once handed over to Roma we were given direct GIANO which is essentially direct all the way. The weather had shown isolated CBs and I became very glad I had a stormscope as much of the route was regularly lit up. Visual confirmation followed although interestingly I would not have said they appeared to be a problem as much of the activity was embedded in ordinary cumulus! East of Palermo airport showed some angry CB activity directly over the start of the ILS Z for RWY 25 procedure. I was about to ask to change course and shortcut the procedure to avoid the active clouds but ATC beat me to it, gave me radar vectors, and brought me down through the inactive clouds. As we descended the wind swung round and they switched runway and procedures when I was almost on final - note: keep all possible plates with you! Thus I did my first VOR approach, all very uneventful in the end, but at least I have now done a real one!

So we were now almost half a day late. We parked up on the main apron and were given a numbered parking place - luckily I had my official parking plate with me to help find it. It was actually just outside the GA cabin. We had been told there would be a high extra

charge if we refuelled after 5pm so did not. The GA handler gave me a contact numbers to call when we came back through into the main terminal which is run down as is most of Palermo in my honest opinion - a massive contrast from Olbia!

For various insane reasons four of us decided to walk most of the town and apart from two very long nice streets it has the feel of a beautiful historical but very neglected city. The opera house is well presented and a couple of other areas but they are the exception. My *Michelin* guide was empty for the area and for a city of its size that should have told me something. Sicily is a lovely place but avoid Palermo!

Now for the real shock

Now for the real shock, on our return to the airport...handling was a total of €161, made up of:

- €3.60 landing fee (excellent)
- €3.60 takeoff fee (excellent)
- €4.00 parking fees (overnight - excellent)
- €27.82 airport general co-ordination tax
- €40.00 basic handling (ok)
- €30.00 mini bus (for all of two hundred yards)
- €10.00 fire extinguisher service (whilst we refuelled)
- €40.62 passenger tax

Now I can hear your sharp intakes of breath at that but the real shock was the fuel!! The most expensive we found - €3.42 per litre - 'ouch!' - and they had already filled my tanks before I was told. *American Express* even phoned me to check it was legitimate since it was the most 'petrol' that anyone had paid for and they wanted to check it was not a fraud. My fault really, you live and learn: luckily I could then warn the others and they took on minimum fuel.

Overall very expensive - for a fairly run down and rubbish city - unless you have business then DON'T STOP - we looked at the GA arrivals board and we were the last ones there for several months! We then went onto the very different *Eremo* but that's another story...

In the third part of this article Sean escapes from Palermo to a hotel with its own airstrip called the Eremo della Giubiliana near Ragusa in Sicily - where the advice to pilots is 'don't ever, ever, ever do a touch and go!'

