

Instrument Pilot

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Cumbernauld to

Romania by Piper Arrow

By Cameron Aitken

Friday September the 8th found us flying down the east coast of Lincolnshire at 6,500 feet in a clear blue sky and only some fair weather cumulus below. My good friend and fellow pilot Lennox Webb and I had taken off from Cumbernauld near Glasgow and were now en route to Norwich in our Arrow Two. This was the first leg of our journey to Romania.

Each year we take a long weekend to explore a new European destination; living in Scotland gives us some of the best flying in Europe but just occasionally we want to have a peep over the fence and see what the rest of the world has to offer. This year we thought it would be interesting to try to visit one of the new EU applicant countries from the East.

AIS Briefing, Heathrow

I had emailed AOPA Romania and the Romanian CAA on entry requirements but got no response. AIS Overseas briefing at Heathrow had been more helpful and it seemed that VFR flights were acceptable subject to the prior faxing of all sorts of information but IFR flights only involved filing the flight plan, so here was hoping.

On the day of departure I faxed my IFR flight plan to Norwich ATC for the leg to Niederrhein (EDLV) in North Germany and that part worked well but a combination of delays with the bowser and the need to use ground transport to move from the stand to the terminal all

cost precious time.

Eventually we made it within the parameters of our flight plan and were soon heading east towards Holland. 60 miles out we made out the line of the Dutch coast and I was interested to see what would happen next as Niederrhein is almost impossible to access as a destination by using the published routings. But it was simplicity itself as the Dutch controller gave us a vector direct to the field and then cleared us on Langen radar for final vectors. It was getting dark but the Rhine shone out of the haze and after being turned overhead we were on finals for this large ex-RAF base that in Ryanair-speak is "Dusseldorf". Niederrhein has improved a lot for GA since PPL/IR Europe famously held an AGM there in an airport bus!

We got a good reception and the aircraft its own private blast proof pod for parking. There is nothing better after a days flying than a nice friendly hotel and I knew the very place - Hotel Beckmann (www.landhaus-beckmann.de) about ten minutes away and soon we were sitting with our beers and wienerschnitzel pondering the maps for our next day's flight.

Karlovy Vary

On Saturday 9th September our plan was to fly to Debrecen (LHDC) in Hungary with a fuel stop at Karlovy Vary (LKKV) in the Czech Republic. Ground handling at Niederrhein was excellent providing a lounge, complimentary coffee and

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computer terminals plus a little help with our flight plan. The total bill for landing fees and handling of 24 euros was not bad, but the fuel was a bit pricey.

Karlovy Vary is at the very Western end of the Country. The airport must stand a good chance of being in the top ten of the best GA airfields in Europe. It is perched on top of a hill 2,000 ft high surrounded by a mix of wood and arable land, it has a localiser approach, cheap fuel, friendly handling and an AIS that did everything possible to turn around my flight plan; it also has a good little restaurant nestled in the woods beside the airport. The town itself is in a hollow below the airfield; it was once called Carlsbad and was famous before the First World War as a health spa for the aristocracy of Europe. It still has the natural springs which are now known to be laced with radium from the surrounding hills.

The flight out of Karlovy Vary took us east towards Prague the landscape was one of fertile fields and lots of little villages. We were cleared towards Brno, the second city of the Czech Republic and as an avid reader of military history the location of Napoleon's most famous victory; Austerlitz. The battle was fought in 1805 just after Trafalgar and is located just to the east of the city. The easterly end of the airport runs towards a little stream called the Golbach, a line of trees clearly marked it from the air and it was from this line and hidden by the winter mists that the French army assembled to attack our Russian and Austrian allies.

Hungary

Brno is close to the Slovak/Hungarian border but we didn't need the Garmin to tell us we were at the frontier as out the window was the magnificent site of the Danube as it made its way through a number of bends towards Budapest.

Budapest approach wanted us at 9000 ft which was their transition level; far off to the south we made out the capital's airport of Ferihegy, an enormous area bigger than Heathrow but if the traffic on the radio was anything to go by, probably not that well used. By now we were heading east over the Hungarian Plain; flat country with a few large farms



Karlovy Vary, perhaps one of the top ten GA airfields in Europe?

more reminiscent of Colorado than Central Europe. The ex-Russian Air Force base of Debrecen appeared on the horizon with two huge parallel runways; one with grass growing through it. Debrecen is the second city of Hungary and we received a warm welcome and lots of help from the airport officials. We told the controller that we wanted to go to Romania and he did not think it much of a problem but as a precaution filed for us both VFR and IFR. The VFR involved us sending things like the certificate of insurance and all the other bits of paper that live in the aircraft's documents folder. With the plan confirmed we felt we had cracked it and went off to a nice hotel.

Sunday September the 10th was to prove a day of playing snakes and ladders. On arrival at the airport were met with a fax from Romania saying in effect that although our flight plan had been approved we could not proceed unless we paid a charge for customs. Well if Highlands and Islands Airports can charge mega-pounds to land out-of-hours at Campbeltown on a Sunday why shouldn't the Romanians get in on the act too? Problem was we couldn't contact anyone to agree to this. Phones rang out and others ran into fax lines. Eventually we got nowhere and decided to give up on our intended destination of Satu Mare and, at Air Traffic's suggestion, try Oradea (LROD), a large city located just over the border from where we were. Here the problems started again but my colleague Lennox who had been a telesales person before becoming a surgeon, refused to take no for an answer. We began to make some

headway but then had the phone hung up on us when one of our helpers spoke to them in Hungarian. This was a particularly low point. The problem it later transpired was that although Romania has eight airports designated 'Airports of Entry', none other than Bucharest and Constanta receive anything but a trickle of traffic. As this was a Sunday the staff were 'available' but not necessarily at their posts.

The breakthrough came when two Romanian private pilots (they do have them) walked into the operations room. They had the right numbers to telephone, spoke the right language and in a few minutes we were back up the big ladder with an approved IFR flight plan and permission to land at the other end!

Oradea

The flight itself was a bit of a non-event we barely got to 5000 feet before being handed over to Oradea that was complimented with another huge runway and despite the best efforts of the controller to coax us into using his ILS, we positioned visually onto finals.

We taxied in to be met on the apron by eight or nine officials who proffered hand shakes all round. These were customs, frontier guards, handling agents, ATC and security officials, more curious as to why on earth this small American registered aircraft wanted to land at their airport than annoyed about being dragged out of their pits on this lovely Sunday morning.

We went with the man from AIS who helped us file our next flight plan. He spoke excellent English and with the help from a nice lady in Bucharest

got a plan accepted for Wroclaw in Poland for later in the day.

That done they found us a taxi driver who spoke English and off we went to explore the town. It was a lovely old Austro-Hungarian city with

a decaying elegance though many of the old buildings were undergoing renovation. The taxi driver was a Hungarian speaking Romanian; real go-ahead young man who had worked illegally on a building site in Paris and was desperate to join the trek West again when Romania joins the EU.

Back at the Airport the staff were waiting patiently for their only movement to depart; hand shakes all round again, a bill that was pretty small except for a navigation fee, then off to Wroclaw.

To get out of Romania we had to file at the base of an airway which was 13,000 feet. An old engine and even older pilot had no chance of making that level so having got to about 9,000 feet we made some lame excuse to the controller about oxygen problems and he let us carry on at 9000ft. Romania passed into Hungary, then Slovakia and eventually Poland. Both Hungarian borders with its neighbours showed heavy signs of old fortification. Maybe not everything was so rosy in the old communist world. The Polish landscape was different again; long narrow strips of fields with all the houses in a long ribbon at the foot of the valleys. Farming made to meet the need of feeding families not markets.

We had to do a dead leg across southern Poland. The Polish airways have all a very high base which may be something to do with their radar coverage but they don't seem to keen to let you do short cuts outside controlled airspace. In the end we made it into Wroclaw (EPWR) before nightfall. A young man appeared and offered to do our ground handling for €20, well worth the money as Polish bureaucracy, while not on the Romanian level is still challenging. Another two nice ladies at AIS helped us with our flight plan for the next day which they got accepted but succeeded



Oradea Airport, Romania

in lifting €50 off us for “navigational charges”. I don't know if this was for their office party or whether it was the real thing, but I hope the practice doesn't spread further west.

Wroclaw (called Breslau in German) was formerly part of Prussia and before that Austrian. It was one of Hitler's fortress towns and held out against the Red Army until the War ended. Unsurprisingly much of the old German architecture was destroyed and the new post-war Polish buildings sit uneasily against their older counterparts but by now we were really too tired to take in any of the buildings except the SAS Radisson Hotel which was to be our home for the night.

Sedatan Mountains

Monday September 11th brought the forecast of clear blue skies all across Europe. The excellent privately run European Storm Forecast site (www.estofex.org) showed no thunder storms except of course in Scotland where a front was threatening. Our plan thus was to get back home by night-fall. Departure out of Wroclaw was straightforward enough though our flight plan routing to Dortmund (EDLW) had a huge dead leg that took us miles out of our way to the south but we let things run along, partly because our route south west was closing us on the Sedatan mountains, a beautiful area of Europe that marks the border of Poland and the Czech Republic, and I was reluctant to change the route. Once into Czech airspace however I asked for a re-routing and in their usual efficient manner this was organised in a few minutes and like a ping pong ball we got batted out of the Czech airspace and into German. Our third big river of our trip came into view, - the Elbe, running south then west towards Dresden. We passed Dresden

just to the north at 9500 feet.

The key feature of the town from the air was the huge awning over the railway station and the large expanse of sidings leading into it. On the moon light night of February 13th 1945 it must have been the obvious aiming point for the RAF crews. The old town and some of the residential areas hug the station which resulted in the large civilian casualties. Ironically the Elbe Bridges were undamaged in the raid but they lie some way to the north of the station and the industrial area where the factories making war materials were located were further north and ironically undamaged. Having just read Frederick Taylor's book about the raid - Dresden - it made it a fascinating part of the flight.

With Dresden gone we passed over the old border between West and East Germany 50 miles to the East of Dortmund and started our decent and after three and a half hours flight time, we were again on the ground. I picked Dortmund as a stop because previously I had had a record turn around of less than an hour. The GA terminal is beside the fuel pumps which in turn are beside the office. Today alas it was not to be; the fuelling part went off like clockwork but the AIS were the problem. The way it worked (or didn't!) was that the ground handling took our flight plan and faxed it somewhere. After 20 minutes it came back with a couple of 'errors' that we had to correct and sent it back but we were unable to communicate with whoever was handling it. Calls only produced a response that "...some one is working on it" and implied "don't pester us" (it was lunch hour). More than an hour passed before we eventually found out that the tower had been sitting on our accepted plan for ages but no one had bothered to tell us. At least the landing fees were cheap.

Departure out of Dortmund has a R/NAV SID that is reciprocated in the Garmin database. I had never flown one of these with the GPS before so I set it up along with the normal VOR on box two. There were a few differences but generally it worked a treat. Halfway into the SID we were turned off to the Dutch border. Amsterdam asked us very nicely if we could climb to FL100 which we agreed to and we were rewarded with a

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By Matthew Stibbe

Matthew Stibbe is editor of ModernPilot.com, the free online magazine for pilots

Breathe Easy

Instrument rated pilots without the luxury of pressurised aircraft often rely on bottled oxygen to fly higher. Two companies have recently announced products that should make it safer and more convenient. First up is Mountain High's EDS-02D1 digital 'pulse demand' oxygen system. It regulates the oxygen flow according to your breathing and your altitude. The manufacturer claims that it will reduce oxygen usage by up to a quarter. It will also warn you if you are not breathing enough oxygen. It costs \$600 from www.mhoxxygen.com.



The second product is a STC'd fixed oxygen system for the Cirrus SR22 from Precise Flight. Many Cirrus drivers will be familiar with their semi-portable oxygen system but this new version embeds the oxygen distribution manifold in the overhead dome light. The new system will be available as standard equipment on the new Cirrus Turbo SR22 (see previous edition).

Flying blogs

Blogs are an increasingly popular form of website. Technorati, the Google of blogs, reports that there are over 50m in the world. These personal, diary-like sites are easy to create and update. This seems to have encouraged many pilots to set up their own blogs. Some favourites include aeronaut.ca, www.boeing.com/andy, airplanepilot.blogspot.com, flightlevel390.blogspot.com, ifrpilot.blogspot.com and, of course, this writer's ModernPilot.com. You can set up a free blog at www.blogger.com or www.wordpress.com.

New York Cirrus Crash

The recent high profile crash of a Cirrus SR20 into a building in Manhattan on October 11th has triggered a media storm. The plane was flown by New York Yankees pitcher Cory Lidle and his instructor Tyler Stanger. It appears that it was trying to make a U-turn over New York's east river to avoid entering controlled airspace. The NTSB's initial investigation suggests that a constant bank angle of 53 degrees was required to make the turn. A less aggressive turn and a 13-knot crosswind may have pushed the plane off track.



Predictably, the media focused on the celebrity of the pilot and the location of the crash and seems to have ignored the deaths of eight other people in other Cirrus aircraft around the same time.

In another example of sloppy reporting, an article on the CBS website reports that "the concern is that Cory Lidle's accident may give terrorists ideas," without attributing the concern to anyone in particular. Certainly, anyone with longer memories might recall a more spectacular, more tragic example of planes hitting buildings in New York.

This didn't stop aviation-hating Mayor Daly of Chicago calling for a ban on GA traffic over the city. "Remember: a single- or two-engine plane can kill as many people as possible if they want to,"

he said. He is responsible for the death of Meigs Field, which many pilots will remember from Microsoft Flight Simulator. This kind of ill-informed opinionating reminds us that all pilots are ambassadors for aviation.

The other Cirrus crashes appear to have been weather-related and this prompted a more cogent and rational response (at least from a pilot's perspective) from the CEO of Cirrus, Alan Klapmeier, for pilots to exercise prudent decision-making in the face of poor weather and to check their personal limitations, currency and training.

Is it a bird or plane?

'Should I buy a plane or a helicopter?' It's a question that buzzes around here on a regular (but purely hypothetical) basis. Soon the lucky few will be able to avoid the dilemma completely thanks to the Bell/Agusta BA609 tiltrotor. Like the much larger V-22 Osprey, it has two large prop-rotor things on either end of a wing that swivels: Vertical to take off and land like a helicopter; horizontal to fly like a plane. The second prototype made its maiden flight in Italy on November 9. European and FAA certification is planned for 2010 and the company has orders for 60 civil versions.



ADS-B in Australia

Australia plans to deploy ADS-B across its entire upper airspace by the middle of next year. Under current plans, it will set up 28 ground stations, co-located with existing radio transmitters, to cover the entire country. It will provide a radar-like service to aircraft above 30,000 feet where no other coverage is available. Eventually, they plan to provide additional coverage to low flying aircraft. (*Bonzer*).

Eyewitness to a midair collision

There is an extraordinary video interview with Joe Sharkey, a columnist for the New York Times, about his experience of surviving a mid-air collision over the Amazon jungle (see: <http://tinyurl.com/rh5nn>). The incident, in which



a Boeing 737 collided with an Embraer Legacy business jet over the Amazon rain forest. All 155 passengers and crew on the Boeing died but the Legacy made an emergency landing and all aboard survived without injury. The incident is still under investigation. The interviewer, Randy Padfield, is editor of Business Jet Traveler and asks the sorts of questions a pilot might be interested in.

Cirrus gets a black box

Some pilots record radio traffic or use GPS systems and engine data downloads to do post-flight analysis. But now, Alakai Technologies has developed a black box for Cirrus aircraft. It records up to 10,000 hours of data including engine parameters, fuel use, vertical speed, OAT, GPS data. Data can be transferred to a laptop or USB

thumb drive for analysis and the recorder is protected by a hardened case designed to survive a crash. The system costs \$5,000 and takes 12 hours to install. An STC is expected early next year. It's another example of systems that were once found in airliners and high-end business jets making their way into the GA marketplace.

Truthful in-flight announcements

Compare and contrast. First, from the 7th September issue of *The Economist*.

"Good morning, ladies and gentlemen. We are delighted to welcome you aboard Veritas Airways, the airline that tells it like it is. Please ensure that your seat belt is fastened, your seat back is upright and your tray-table is stowed. After take-off, the most dangerous part of the flight, the captain will say a few words that will either be so quiet that you will not be able to hear them, or so loud that they could wake the dead.

So please sit back, relax and enjoy the flight. We appreciate that you have a choice of airlines and we thank you for choosing Veritas, a member of an incomprehensible alliance of obscure foreign outfits, most of which you have never heard of. Cabin crew, please make sure we have remembered to close the doors. Sorry, I mean: 'Doors to automatic and cross-check'. Thank you for flying Veritas."

And now, here's a similar announcement for PPL/IR pilots: "Welcome aboard. Feel free to bring as much toothpaste and shampoo as you like and don't worry about your hand luggage. You can leave it on the seat next to you. We'll be arriving at the VIP terminal at our destination so you'll be able to go straight through formalities to a waiting taxi. I'm afraid the in-flight meal of two extra strong mints isn't up to much and the only toilets are at either end of the flight but we'll be at our destination quicker than it takes to get through security at Heathrow. Thank you for flying PPL Airways, the personal airline."

VLJs a-go-go again

At the time of writing, Cirrus was expected to launch its single-engine CirrusJet at the NBAA Convention in Orlando. The plane will be fitted with the 1,900-pound-thrust Williams FJ33-4A-19 turbofan and is expected to cruise up to 25,000 and at more than 300 knots.

The Adam A500 received its full certification on September 29th allowing day, night, VFR, IFR and pressurised operation. The plane's two engines are arranged front and back in a push-me-pull-you configuration and propel it at speeds of up to 230 knots. It is the first new, pressurised piston twin to be built since the late eighties. The test flight program for the twin-jet A700 continues apace.

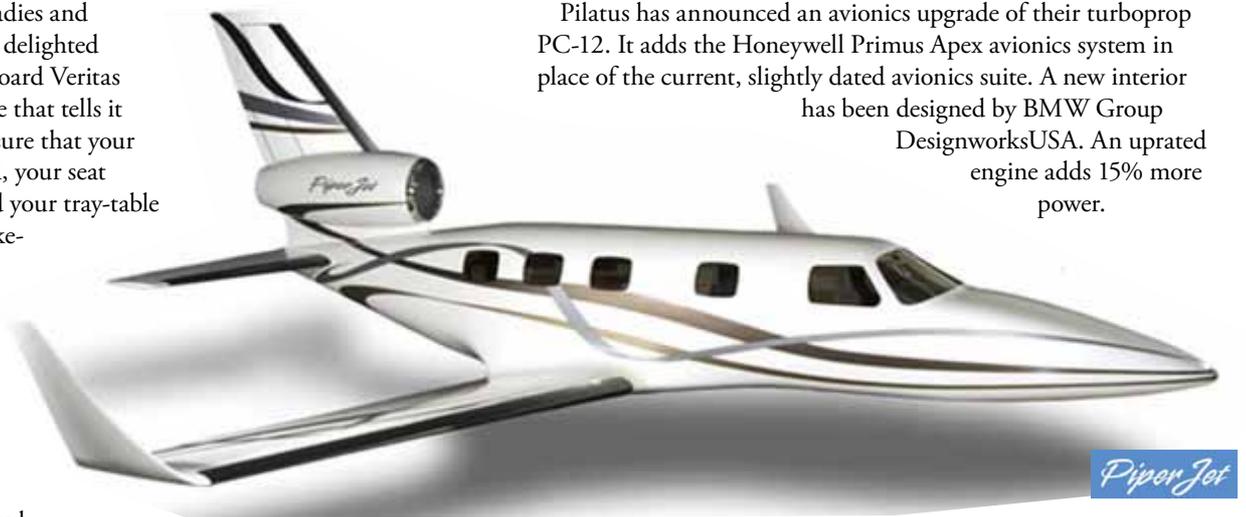
Epic Aircraft changed the name of its forthcoming certified version of its Epic LT turboprop to the Dynasty. Flight tests are expected to take place later this year in Calgary, Canada where the company plans to put the plane into production. Certification of the 340kt six-seater is expected in 2008. A sister aircraft – a twinjet

called the Elite – is being developed in cooperation with Georgia-based Tbilisi Aircraft Manufacturing and should make its maiden flight next spring.

Piper has announced more details of its Piper Jet. The single engine is mounted on the tail, like the third engine of a DC-10. The \$2.199m jet will cruise at 360 knots with a 35,000 ceiling. The company expects the plane to sit between its turboprop models and the \$4m Honda jet that it will market in the US. First flight is expected in 2008.

Pilatus has announced an avionics upgrade of their turboprop PC-12. It adds the Honeywell Primus Apex avionics system in place of the current, slightly dated avionics suite. A new interior

has been designed by BMW Group DesignworksUSA. An updated engine adds 15% more power.



So many planes. But how many customers? One estimate comes from a study by UK consultants PMI media which suggests that the VLJ market will be worth \$2.52 billion over the next five years. They believe that just six aircraft types will make it into service in that period. Annual unit sales will rise from 155 jets next year to a peak of 350 by 2011.

US rules on 'alien flight students' still unclear

Many private pilots choose US licences and ratings but getting them has become increasingly complicated since 9/11. The combination of visa requirements, TSA and FAA checks can be difficult to fathom. According to ABC News, it is proving challenging for the US authorities as well. "Currently DOS [Department of State] and ICE [Bureau of Immigration and Customs Enforcement] appear to have conflicting views on the appropriateness of B visas for flight training," according to a TSA memo dated July 21st which was cited in an ABC News report. Different pilots have received different advice from the US Embassy in London when asked about visa requirements for training for the FAA instrument rating. On the one hand, dozens of students have been able to start flight training without appropriate checks – which is an understandable security concern – and on the other hand, innocent would-be students are put off or find it very challenging to figure out the right way to do things. Churchill once said that the Americans will always do the right thing, but only after exhausting all the other possibilities first.

Fly drive sail

Think about your Christmas wish list. Perhaps you'd like a new Diamond Twinstar, Robinson R44 and a Ferrari. Rather than pretending you've been very, very good and hoping that Santa got your letter, V International (www.v-international.com) have started a kind of fractional ownership club that gives members access to top marques, Diamond aircraft and the Robinson helicopter for \$66,000 a year; which gets you 50 driving days, 50 hours flying and 50 boat days.



Pilots' Talk

Dates for your diary

PPL/IR Europe AGM
Saturday 28th April 2007
at Oxford (Kidlington), EGTK

Presentations from Lord Rotherwick on the Parliamentary Aviators Group and GA, and Steve Copeland on the use of oxygen in GA. Full details, schedule and booking forms in IP59 or from the website.

Spain & Morocco 2007
Saturday 12th to 20th May

See Pilots' Talk, page 8 in issue 57 of Instrument Pilot. Email your details to Anthony Bowles at gajb@corsock.com.

Highlands and Islands Spring Tour
May Bank Holiday 2007

For full itinerary, booking form and hotel reservation details see the >Events >Future Events page on the website at www.pplir.org or email Linda Mollison Linda@pat.uk.com or Steve Dunnett meetings@pplir.org.

July/August 2007, Weekend fly-in to Berlin Tempelhof - Before it Closes!

The "before it closes" line is not an empty threat. According to Kate Connolly, who writes for the Daily Telegraph, Estee Lauder, the American cosmetics firm, wants to take over Berlin's financially-troubled inner city airport and build a luxury medical clinic. According to government sources quoted in the financial newspaper Handelsblatt, the company has offered to assume the running of Tempelhof airport, where rich patients could be flown from around the world for top-class treatment.

Berlin has been pushing itself as a centre for medical tourism, advertising heavily in the Arab world in particular. The cosmetics company refused to comment but according to sources, Berlin's mayor, Klaus Wowereit, has said he wants the planned closure halted.

Dirk Kuhnu, the spokesman for the Federal Agency for Real Estate Properties, said the reported proposal was "...being taken seriously".

Tempelhof was the world's first commercial airport when it was built in the 1920s. It was extended by the Nazis, becoming the largest building in the world in its time, but has become something of a white elephant. It now has only half a million passengers a year and is losing millions of pounds. While it has been touted as a highly-convenient hub, particularly for private planes, the focus more recently has been on alternative uses. Suggestions have included a Formula One racing track, a concert hall and a golf course. The airport is held in high regard by Berliners who remember it as the stage for the Berlin Airlift of the late 1940s when US and British planes ferried vital supplies to the city during the Soviet blockade. Express an interest to Steve Dunnett (meetings@pplir.org).

EASA licence in difficulty

EASA's aims to introduce a recreational licence with "add ons" such as an IR were planned to apply to aircraft up to 5,700kg. NPA 14-2006 is the new concept for regulation of aircraft, other than complex motor powered aircraft, used in non-commercial activities and proposes some licences being issued by assessment bodies (eg PFA in UK). It mainly affects the recreational sector where EASA wants to introduce a new licence regime with a lighter touch.

We submitted a strong response to them giving our doubts about the wisdom of some of their proposals and stressing the need to make the present JAR IR more attainable on safety grounds alone. Our friends at Europe Air Sports (EAS) have several members on the Com 479 committee dealing with this and IAOPA is also involved.

EASA are to be applauded for trying to ease regulations but the current proposals are probably just a step too far. They proposed it apply to all non complex a/c under 5,700kg but that now seems likely to change to a more realistic weight, probably 2,000kg. There are also issues of medical standards where EASA proposed it be based on a declaration of fitness signed by a GP; it's the EU who are against that idea. Member states are also railing against the possibility of having to accept licences issued by assessment bodies in other states (*Paul Draper*).

NATS provides pilots with mobile phone alternative

Following a rise in the number of aircraft suffering total loss of communication with air traffic control in its flight information regions (FIR), UK air navigation service provider NATS has advised pilots how to use mobile telephony to report their situation. The number of reported radio failure incidents in the last year increased from 65 to 81, it reports.

"The Distress and Diversion Cells serving the London FIR and Scottish FIR may be contacted by phone by aircraft that have approved installations that can access the UK telephone network," says NATS, which provides the numbers to dial. It also reminds pilots that there are alternatives such as HF (high-frequency radio) and the ACARS datalink. NATS says aircraft operating in the Shanwick Oceanic FIR, or in contact with London Military, can also use "dedicated satellite voice telephone numbers programmed into the aeronautical ground earth stations of Inmarsat signatories". Meanwhile, NATS has carried out a seven-day study at its four ATC centres in the UK and at the 15 airports where NATS is the airport ATC contractor. Although pilots are supposed to include their cleared flight level in the information they provide to the controller on the first transmission to ATC after a frequency change, NATS reveals that 73% of the pilots among the 1,454 cases recorded did not include their cleared flight level. And when the controller requested it, 20% of the pilots reported the wrong cleared level (*David Learmount - Flight International*).

'Fly by DSC' - User friendly NOTAMs

Have a look at <http://fly.dsc.net/u/Charts>. It's a pictorial presentation of NOTAMs and is very easy to use plus it presents the information in a simple method related to one's route and is done in a way that encourages use by all pilots and hence be a tremendous benefit to safety and means of reducing infringements (*Paul Draper*).

British Government... "There are no reliable estimates of (Galileo) total costs"

7 November 2006. *Lord Rotherwick* asked Her Majesty's Government: What costs have been incurred by the United Kingdom to date for the Galileo satellite navigation system; and what future cost is anticipated for the completion of the project.

Lord Davies of Oldham: The European Union (EU) and Member States of the European Space Agency (ESA) jointly fund the development of Galileo. To date the UK's subscription to the ESA element of the programme has been €142m. The EU's contribution to the design and development phase of Galileo is made from the EC budget and is estimated by the Commission to be €790m. The UK makes its contributions to the EC budget as a whole and not to individual programmes within it. The UK's gross contribution to the EC budget is currently around 17 per cent, before abatement.

The deployment and operational phase of the project will be an EU public private partnership (PPP). The provisional budget in the draft Galileo financial regulation is €900m. There are no reliable estimates of these total costs. An assessment will be presented to Council and Parliament as the budget authorities once the main elements of the contract have been agreed. This is expected in the next few months.

ESA have recently published an additional call seeking further contributions from its member states for the European Geostationary Navigational Overlay Service (EGNOS), which is now integrated with Galileo.

The UK element would be €6m, if the Government agrees to contribute. The deadline for decision is 16 November.

Lord Rotherwick asked Her Majesty's Government: What was the cost of the

United Kingdom's share of the recent €200 million needed to cover the cost overruns incurred during the development of the European Galileo satellite navigation system; and whether this amount has been paid in full.

Lord Sainsbury of Turville: The UK's share of the €200m was €31m. These funds are principally required to cover costs associated with areas not covered within the original Galileo Declaration. This includes additional system security requirements and the building of an additional technology demonstrator satellite and its associated launch costs. It will be paid in line with ESA financial call-ups.

And while we're on the subject of aviation...

Lord Rotherwick asked Her Majesty's Government: Why Schedule 5 to the Air Navigation Order 2005 requires automatic directional finding equipment to be fitted in aircraft flying in airways within United Kingdom airspace.

Lord Davies of Oldham: The Air Navigation Order 2005 details the equipment carriage requirements for aircraft to navigate safely in UK airspace below flight level (FL) 95 without the need for air traffic controllers to provide navigational assistance.

The UK Air Traffic Services (ATS) route structure is a complex system of airways and Upper ATS routes enabling operators to flight plan and safely fly en-route under instrument Flight Rules (IRF) [sic] through UK airspace.

Above FL95 the ATS route structure is based on area navigation (RNAV) whereby aircraft can navigate without having to fly from one ground-based navigation beacon to the next. Below FL95 the ATS structure is predominantly based on conventional navigation which requires the fitment of ADF equipment in aircraft to safely navigate between ground-based beacons.

virtually impossible prospect as the licence requirements currently stand.

After our hard fought battle over this issue with much lobbying of DfT and, via the PAG, the Minister direct, for it is one that affects PPL/IRs more than most other GA owners and pilots, the Minister has now made a decision that no action will be taken by the UK in isolation to the EU deciding how to deal with the matter throughout Europe, a process which starts with EASA consulting with stakeholders at the end of the year.

However the UK is "not happy" at

Membership Renewals

It's time to renew your subscription. After many years of efficient service from Ole we are now using the services of Sally Gray, the group's paid part time administrator. She is quickly catching up with the job, but to help her through her first renewal season, we are asking members to renew as early as possible. If you don't want to renew please let us know explaining the reason. This saves us lots of wasted chasing time and also helps us to understand what is going on out there in the wider IR world.

To renew all you need to do is go to the website www.pplpir.org and click on joining and membership services. Then complete the online form and provide your credit card details via our secure system. While on the website you can easily update your membership details. Please, please as a minimum ensure that your email and contact details are correct. This data base is an important resource for your committee in deciding where our priorities should lie.

If you don't use the website (why not? - it has had a splendid update and is truly useful and impressive) we will shortly be emailing you with a membership renewal form.

This can be returned by email. If you prefer the post, print it off and return it with card details or a cheque for £45 to PPL/IR Europe, The Business Centre, Llangarron Herefordshire HR9 6PG. (Please only sterling cheques drawn on a UK bank made out to PPL/IR Europe).

If you have supplied a passport photo in the past you will receive an aircrew ID card during January. With the continuing security issues those of you who have not taken advantage of this service might care to do so. Those whose photos were taken many years ago might like to send us one that more closely resembles them now! Those who don't supply any photo will just receive a membership card.

Any questions Email memsec@pplpir.org.

effectively being forced to leave the matter to the EU but realises that if they decided to ban FRAs in isolation there could well be a move of registrations to other Member States. So, at least for the present, common sense has prevailed. However the latest CAA charges revisions are proposing charges for FRAs the amount depending on whether they decide surveys are required.

This does not mean the battle has been won and indeed we have been warned it may well mean the final outcome is worse for those with FRA and foreign licences.

P 8 ►

Chairman's Report

Foreign Registered Aircraft (N Reg) decision in UK

Good news – for the moment! This is the proposal to prevent FRAs being "permanently" based in the UK and which would mean members with them would have to change their registration to the UK or another EU State. Doing so would mean those pilots with only FAA licences would have to acquire a JAR licence to be able to fly such aircraft in Europe; a

Chairman's Report

continued from page 7

We know EASA has recognised there is a problem with changing N Registered aircraft, in particular, to EU certified status due to the non-reciprocal agreements on type and equipment approvals and also the issue of the FAA licences. Acceptance of aircraft without full EASA certification is a major stumbling block. Granting "Grandfather" rights to FAA licences may be an option but thereafter unless the JAR IR licence ground training syllabus is simplified there will likely be very few IR pilot licences granted in Europe in future; a serious effect on safety would doubtless follow.

SES Charging Scheme

More potential good news! Following the adoption of the Charging Regulation at the Single Sky Committee (SSC) Meeting on 29th September, the UK's policy for its implementation will be decided shortly and we await a statement from the Department for Transport.

This means that the EU has decided the current exemptions from Eurocontrol en-route charges (only), mainly those affecting aircraft under 2 tonnes, will continue. For aircraft affected the new charging scheme for en-route charges will apply from 1st January 2008 and terminal charges from 1st January 2010.

Whilst it is unlikely the UK will decide other than to maintain those exemptions we live in "interesting" political times for air travel of all types is under considerable pressure and the Government has to fund the charges which would otherwise be levied on aircraft exempted!

Briefing to Parliamentary Aviators Group (PAG)

The General Aviation Alliance, of which we are members, gave a briefing to PAG at the end of October covering all current major matters under consideration by DfT, CAA and the EU/EASA. This was to brief them before a meeting with the CAA Chairman Sir Roy McNulty.

I was involved in preparation of the paper together with Roger Hopkinson of PFA and David Roberts of BGA. We dealt mainly by discussion about the FRA issue and Lord Robin Rotherwick had a meeting with the Minister scheduled for the next day at which this was a hot topic (see decision above)!

The full range of items covered can be seen on the website at http://www.pplir.org/index.php?option=com_content&task=view&cid=228.

Transport Committee Inquiry into workings of the CAA

The committee has now reported and a link to its paper can be found on the web site (see http://www.pplir.org/index.php?option=com_content&task=view&cid=226).

They have taken a long time to produce this report and there are some useful comments within it. Probably the most important of the recommendations is:

The Government has been negligent in its failure to undertake strategic reviews of the role, remit and objectives of the CAA as required by the Sponsorship Statement. We recommend that the Department for Transport carry out a root and branch review to examine the continuing need for the CAA and the extent to which its functions could be more effectively undertaken in other ways.
This is likely to mean more work for us!

CAA Charges Proposals for 2007

In its detailed substantiation of the increases for April 2007, mainly in line with the original concepts of last year but with additions not highlighted, the CAA has not noted that in 2005 they delivered an ROCE of 54%. A profit of £7.3m was transferred to reserves (£5.8m in 2004) of which £3.2m was from SRG activities. These figures include a 6% Treasury required return which is a tax on safety. Their proposals for FRA charges are without consultation and there are no apparent EASA savings flowing through to users. Aerodrome and ATCO charges are substantial and will doubtless increase charges to users.

The CAA report that due to "AOC holders being subject to more intense oversight regulation than GA operators... a longer period between formal renewals for the AOC operator can be applied"

If there is more intense oversight, should not the charges be higher to reflect the higher workload under the user pays charging principal?

If airspace access is then linked to RVSM, MNRP, RNAV compliance this could potentially have an ongoing impact on PPL/IR owners (especially those operating very high end aircraft) – this is going to be £3,527 per issue and renewal (and probably £10,000 for the whole suite of certificates for Cat II and Cat III). This appears to be a way of increasing the revenue derived from the CAA of future growth in private ownership of very light jets which will

presumably require such certification. The CAA estimates that a further £300K per year will be gained from these measures.

We are making such observations in the consultation response. Full details of the CAA proposals can be seen at: www.caa.co.uk/docs/850/2007.08%20Charges%20Scheme%20%20Proposals%20commentary.pdf.

SESAR (Single European Sky Air Traffic Research Programme)

Following presentation of the Deliverable 1 (D1) stage proposals (definition of the project) the D2 presentation (establishment of a Joint Undertaking for Governance and Funding proposals), will be held in January 2007 and which I shall attend.

Whilst I am in direct touch with IAPOA's Dr Michael Erb (who sits on the Airspace Users sub group) for some input over the future, it is clearly very difficult for GA to make any major contribution to the debate as there is a requirement to invest in the project with both money and time/effort; IAOPA has done so. Nonetheless it is vital we input as we can to ensure we as PPL/IRs can retain access to the "system" for the future. There is little input from other GA sectors. More details of SESAR can be found at www.sesar-consortium.aero.

8.33 KHz Radio spacing

An apparent lack of spectrum availability is driving the need for this proposal to apply below FL195. Most of GA, S&RA, would need to change their radios (if installed) at vast cost (estimated at €327m); would we need to have dual installations? The Europe wide cost is estimated at a total €750m+ including ground equipment. This seems another example of GA, S&RA being required to install/change equipment for the benefit of CAT. Eurocontrol is soon to issue a consultation on the matter. http://www.eurocontrol.int/vhf833/public/standard_page/below_fl195.html.

European Security Proposals

The EU has started a consultation on proposals which are far reaching for pilots, who would require initial and continuing background checks, plus ALL aerodromes (includes any site operating aircraft) would need to implement security measures. I am liaising with GAA and GAAC. A response has been submitted to the DfT and EU. Full details of the proposals at: www.europarl.europa.eu/oeil/file.jsp?id=5274732
(Paul Draper)



Spotlight on leaded gas... Then & now

by Jim Stark

It was a sweet thing, being young and free with my childhood behind me and nothing but hopes and dreams ahead. I worked two consecutive eight-hour jobs every workday and didn't think it a burden. Early I was a checker at a government storage depot. After grabbing a sandwich en route, I arrived for the second eight hours at a gas station. Paul Henry's Cities' Service station was a bustling success following several failures on the same corner. His secret? Charming old ladies into buying new tyres and other auto needs at his station.

Charming as Paul could be, he ran the station with an iron fist. A car arriving on his ramp drove over a pneumatic tube that rang a bell. We had 15 seconds to get to the driver's window to ask, "Fill 'er up with ethyl?"

Tetraethyl lead

The gas available back then was either regular or ethyl. The ethyl was more expensive and was spiked with tetraethyl lead (TEL), a knock suppressant. Once the nozzle was set, we would wash the windows, then pop the hood to check the oil. We would also survey the engine looking for belts or hoses that needed to be replaced.

2006 is a different time. Personalized service is rare, gas prices are more than ten times what they were then, and there is no ethyl. The self-serve pumps offer up three grades and they are all marked "unleaded," as if someone was kind enough to take the lead out for you.

Lead is not a naturally occurring element in gasoline. A company named Delco began experimenting with adding lead to gas around the turn of the century (the last century, that is). GM bought Delco in 1916, and around that time Du Pont began acquiring shares of GM. In 1922, GM contracted Du Pont to supply TEL. In 1923 leaded gas went on sale in some markets, and several years later leaded fuel was introduced for aircraft.

Employees at the plant that made the TEL began calling the additive "loony gas" due to the number of workers who became violently insane

after exposure to the TEL fumes.

Though the detrimental effects of lead on human health were identified by the US public health community early on, leaded gas continued to be used. Eventually, lead's detrimental health effects were more universally recognized. In 1972 the EPA announced a phaseout of leaded gas in cars in the US. During the phaseout, leaded and unleaded fuels were sold side by side at the pump, with unleaded gas actually costing more. The leaded pump had a larger diameter nozzle so you couldn't pump it into a car requiring unleaded, which had a narrower gas tank neck.

Lead in Aircraft Engines

Leaded gas and aircraft Tetraethyl lead is, of course, the additive used in all aviation gas. It is also used in racing gas and a few other low-volume applications. The reason that aircraft were exempted from the EPA's ban on leaded gas is that air-cooled, high-compression engines require an additive of some type to prevent detonation, and nothing so far has met that need like TEL.

According to AOPA, there is currently one producer providing all the TEL for the nation's general aviation fleet, and that producer is not necessarily committed to producing TEL after 2010. Even if TEL is available after that, it will undoubtedly become more expensive. Airport operators and FBOs cannot feasibly afford to keep a variety of grades of aviation fuel on hand, and fuel producers are not going to be inclined to produce multiple grades of aviation fuel.

What Future for 100LL?

So if leaded gas is on the decline, what will the GA fleet use for fuel in the coming years? As the APOA stated in one of its regulatory briefs, 100LL is a "specialty fuel" that is produced in relatively small amounts. At best, "100LL will become increasingly more expensive relative to other petroleum products. At worst, it could be unavailable altogether," therefore, a

replacement fuel must be found soon. The search for 100LL's replacement is underway, though it may be years before an acceptable alternative is found.

Oil Analysis

When it is found, it will make our job analyzing your oil a lot easier. The lead in your oil report is primarily an accumulation of lead blow-by products. The problem with it being there at several thousand ppm is that it obscures bearing wear from your engine. Bearings are coated with babbitt, which is lead alloyed with copper and tin (usually, though other metals are occasionally used).

Doing an analysis on any unleaded gas or diesel engine makes reading bearing wear a piece of cake. Bearings are the heart of an engine. If they start wearing poorly, a catastrophic engine failure isn't far down the road. This would be nice information to provide pilots and aircraft operators everywhere, but lead from bearing wear generally measures at less than 100 ppm, and it is simply covered up when leaded gas is used. We still have copper and tin to work with, but both these metals can also come from bronze wear.

Leaded fuel's long and sometimes dark history in the US will be coming to an end at some point in the future, and when it's gone it will likely be to the benefit of the health of everyone who comes in contact with it. It will also benefit your oil reports, since we'll be able to tell you about the health of one more critical component of your engine—the bearings.

Note: We drew on several sources for this article, including:

<http://www.aopa.org/whatsnew/regulatory/regunlead.html>

<http://www.radford.edu/~wkovarik/ethylwar/>

<http://www.thenation.com/doc/20000320/timeline>

<http://en.wikipedia.org/wiki/Gasoline>

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“According to AOPA, there is just one producer providing all the TEL for the nation's general aviation fleet”

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Sicily

PPL/IR Europe Tour, June 2006
Part 1, as far as Pantelleria

Words by Jeff Pearce, Photos by Sally Turner

“ Calvi is interesting with high ground right and left of the runway and a mountain dead ahead ”

Following last year's successful fly out, as soon as 'volunteers' were called for this year's trip to Sicily and Tunisia, it was oversubscribed almost immediately.

The event proper was due to start on Saturday 17th June at Calvi, Corsica (LFKC) with us all making our own way there, but quite a few decided to start earlier, with an overnight stop en route, in our case at Grenoble (LFLS), as did three other crews.

Bournemouth to Grenoble

Checking the weather on Friday morning showed light winds and good conditions across most of France except for the last part of the journey which gave OCNL CB from 4,000 feet and a SIGMET reporting TS observed in the area of St. Etienne. The Grenoble TAF was giving few CB at 4,000 feet, recent rain and TS. Not having equipment to help out with potentially 'iffy' weather I try never to fly in IMC if CBs and TS are forecast, as my only way of avoiding them is to see them first. A VFR flight offered the possibility of getting there, albeit that rising ground between Roanne and Vienne would require an MSA of 4,500 ft which, given the forecast of CBs at four, seemed to indicate that Roanne would be as far as we would get, but at least we would be on our way. A revised VFR flight plan was drawn up, NOTAMs checked and we were ready to go.

To give credit to the Met boys, the weather ran exactly to forecast with the majority of the journey very pleasant. Beyond ROA the weather began to deteriorate but we were able to climb to 4,500 ft in VMC, to clear the higher ground ahead. The weather to our right around St Etienne was decidedly unfriendly with black clouds, heavy rain and

lightning, whilst to our left a smaller cell was doing its bit to dampen the parched French countryside and spitting out the occasional lightning as well. Fortunately, just slightly left of track there was a large clear area between the two cells and we could see clear air beyond the ridge, so we headed for that only to be greeted by lightning discharging to earth on the ridge directly where we were heading. I reasoned that having just discharged, that particular cloud was unlikely to discharge again immediately afterwards, so we went for it and after just a couple of minutes buttock-clenching flight, came out the other side of the rising ground to beautiful weather and a visual approach to Grenoble on a hot but calm evening.

Grenoble to Calvi, Corsica

Meteo provided a full written briefing with the unpleasant news that whilst the weather at LFLS and LFKC was CAVOK, there were embedded CBs and TS forecast and observed on the section MTL to STP. The forecaster offered the opinion that this weather would move northeast and weaken over the next two hours. So whilst the other three Stormscope equipped crews prepared to depart, we opted to file IFR for a two hour later departure, giving us approximately three hours before we would be in the region of the current weather. Dave and Anne in their Mooney were the last of the others to go, taking off about thirty minutes before our departure time.

All went well until reaching PERUS. As we progressed south we became IMC at F110 and it became increasingly turbulent and then the rain started and boy did it rain! Clearly the weather hadn't moved out of the way as forecast. As it became darker and the rain increased ATC

were kept busy by the 'heavy metal' requesting vectors left and right to try and avoid the worst of the weather. We could also hear Dave in the Mooney requesting vectors trying to pick his way through. With the value of hindsight, maybe we should have turned back but St Tropez looked invitingly close, where a descent out of the weather was possible, so we continued, although when lightning went across in front of us I questioned the wisdom of that decision.

From St Tropez a descent to FL60 and VMC resulted in a pleasant crossing of the Med to Calvi for a LOC/DME approach to runway 18. With a three knot tail wind and over 7,500 feet of runway, some opted for a straight in approach, while others broke off for a visual to 36. The approach into Calvi is interesting with high ground immediately right and left of the runway and a mountain dead ahead! As a result the MAP is 3.4 miles for Cat A aircraft, 4.2 miles for Cat C. Commercials landing on 36 have to break off from an 18 instrument approach and fly a visual circuit outside of the high ground before turning base to pick their way between that and the mountain, to line up on 36.



Approach to Calvi



The fortified city of Calvi

A short taxi ride brought us to The Hotel Le Belvedere in Calvi, close to the port and beach. Our room had a perfect view of The Citadel (the old fortified town) with the sea and the mountains in the background.

The next day was Sunday and we had planned for this to be a free day. Some spent part of the day on the beach, others took a glass bottomed catamaran ride down the coast of Corsica to view the underwater sea life and strange rock formations of the Scandola Nature Reserve. The Citadel was also well worth a visit with its old houses, cobbled streets and impressive views.

Monday - Calvi to Tunis

We were number three to depart and whereas the previous two got an AJO5C SID off runway 36 and straight out over the sea, we got an AJO5C off runway 18. This gave me two problems, never faced before. Firstly how do you get onto a northerly SID when using a southerly runway; the Jeppesen plate gave no indication on this. Secondly how to avoid the mountain staring us in the face! A maximum rate of climb on take off and a right turn avoiding the worst of the high ground to the west of the runway, with a 180 back over the field to pick up the SID seemed the only option, so we advised ATC of our intentions and as they offered no objections or alternatives that is what we did, clearing the high ground by enough to be safe but any sort of engine problem on the climb out would have left us with very few options.

The flight down to Tunis was straightforward at FL110 apart from strong downdraughts over Sardinia with close to 1,000 fpm on the VSI on occasions, which made height keeping difficult. We also had the added annoyance that the autopilot had gone U/S on the climb out from Calvi, leaving us with nearly

three and a half hours hand flying the aircraft in what was effectively IMC. Although all airfields en-route were reporting CAVOK, at FL110, whilst you could often make out the ground below, in front it was either cloud or so extremely hazy there was never an horizon to level on. In these conditions relaxing the instrument scan wasn't an option; it was to be a long flight.

The arrival into Tunis was a bit confused with some of us getting an ILS to runway 19, which we had no plates for. However, ATC were very helpful and assisted with vectors. Once on the localiser the runway was clearly visible from over ten miles out. On landing the OAT was forty degrees and by the time we had taxied to Tunisavia, our handling agents, we were like a 'limp lettuce'. Fuel had been arranged through Tunisavia and based on our anticipated requirements. Jim had pre-ordered the requisite number of barrels, Avgas not being normally available at Tunis. At Euro 2.83 a litre it was the dearest of the trip and having to hand pump the fuel it took the refuelers some time. Unfortunately, the full quantity we had ordered had not arrived and some mutual rationing had to take place to ensure we would all have enough to reach Sicily which would be the next 'watering hole' for the aircraft, otherwise it would mean a diversion to Malta.

Once four of us were refuelled we taxied behind a 'follow me' van to the apron in front of the Freight Terminal. A bus then took us back to an air-conditioned office, which was a welcome relief from the searing heat outside. When the next contingent had refuelled and taxied out to the apron, their pick up driver insisted that they had to go to the Main Terminal Building, which effectively meant our party was now split and caused problems for Jim who was left like mother hen trying to gather in all her chicks when half of them could only be contacted by mobile! In this atmosphere rumours start easily and at one stage we heard that the contingent in the Main Terminal were being questioned by police and that Paul, who had become separated from his wife Sally, was possibly under arrest as he was in

possession of two passports, his and Sally's. Needless to say, the rumours were all false but it did add a certain frisson to our situation. It also meant that by the time we got away the first to arrive had been stuck there for over three hours!

We were booked into the Hotel Sidi Bou Said in the pretty, small town of the same name just outside Tunis. The hotel proved to be excellent with a pool and scenic views over Tunis.



Pretty doorways like this abounded in Sidi Bou Said

Carthage and Tunisian feast

A tour guide and coach had been arranged for the day. In the morning we went to Carthage to see the Roman and Carthaginian ruins and then in the afternoon we went to the Medina, the old walled town, although virtually all of the original city walls were destroyed during the Second World War. We



Souk in old Tunis

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Jim was left like mother hen trying to gather all her chicks when half of them could only be contacted by mobile

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The
police
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and two
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later we
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then went into the souk, a covered market, where you can buy just about anything. Whilst in the souk we had a traditional Tunisian meal at the Dar Bel Hadj Restaurant, a four hundred year old large house now converted to an excellent restaurant. After lunch it was back to the coach and out to the old town of Sidi Bou Said. In practice, because of the heat, virtually all the pilots, and even a lot of the ladies passed up this shopping opportunity for the air conditioning of the hotel, with the excuse of having to file flight plans for the next day. Once again www.homebriefing.com proved its worth and the flight plans for the next day were filed relatively easily via Steve's laptop.

Tunis to Pantelleria

In view of the short distance and blue skies it was decided to keep this leg simple with VFR, DCT being the only entry needed on the flight plan. Departing Tunis VFR there is a visual departure route, initially heading southeast and at predetermined height. Simply taking off and heading straight towards LICG is not wise given the large prohibited area due east of the field. The visual route runs via points CE1 and then CE, both not above 1,000 feet and then we were told to expect a routing CE direct to the CBN VOR not above 1,500 feet, interesting given the high ground en-route to over 1,300 feet! In practice we were cleared to our flight planned altitude almost immediately on passing CE and well before the rising ground approaching CBN. There then followed an uneventful short flight to Pantelleria before joining right hand down wind for runway 26.

With us all landed, the Italian bureaucracy kicked in. This was intended to be a quick lunch break and whistle stop tour of this small island, but police and customs had other ideas. At first they wanted to check all our bags, and the first couple of aircraft got a full check, after which they cut it back to a quick cursory check of one bag of their choice from each aircraft. We were then allowed to continue, but only as far as airside in the Terminal Building, where the police amused themselves going through our passports and arrival paperwork. Two hours later we were free to go,



Carthage Museum, originally a Christian Cathedral

whereupon a mini-bus appeared to whisk us off to a local restaurant. On piling aboard it became apparent that there were not enough seats, quickly overcome by the simple expedient of adding a couple of plastic garden chairs in the space adjacent to the sliding door. Granted the second one would only stay in place when the door was shut as one leg was hanging over the door well and the chair would only stay upright when it had the closed door to lean against – but it all added to the ambience! Dave pointed out that based on these design criteria he was now reclassifying his Mooney as an eight seater

Italian Forms

The staff at the restaurant were unfazed by the sudden appearance of 20 hot and sweaty aircrew demanding a meal and very quickly produced an excellent fish meal but dessert was declined due to time and it was back on the bus to the airfield. Which was a pity because we would have liked to see more of this isolated Italian outpost. The problem now, of course, was getting airside once more. The best the police could offer was that we would be delayed 'no more than about half an hour' while they waited for one of their officers to return from the police station with an additional form which we had to fill in.

Pleading filed flight plans fell on deaf ears and it looked like we were going nowhere. However, in our faltering Italian we established that the forms needed were the ones we had already filled in on landing, but these had not been passed onto the police, who couldn't let us go as a result. So - find the forms,

problem solved! Well not exactly, each form needed to be married up with its relevant passport. They had all twenty forms and all twenty passports but seemed incapable of putting the two together. Fortunately Steve took control of the situation, taking both forms and passports from the police officer holding them, and then proceeded to give them back to him in matched pairs. To the officer's astonishment he realised that they did indeed match and we were on our way – but not all of us.

Alternator Failure

On taxiing out, the Bonanza's alternator went off line and Jim was forced to stay put. Here was the guy who had done all the legwork in putting this trip together and his was the aircraft going tech – there ain't no justice. And what a place to breakdown, stuck on a small, dormant volcanic island halfway between Africa and Sicily with nothing in the way of local engineering facilities.

Regretfully we must abandon Jim to his fate. The adventures of the Sicilian trip will be finalised in the next issue of Instrument Pilot.

P.S. A trip to Spain and Morocco is being planned for 2007. This will take place in May (to avoid the hottest weather). An exact itinerary has not yet been finalised but is expected to last nine or ten days with possibly an initial meet up in Valencia on Saturday 12th May, followed by visits to Fez, Marrakech and Seville. If you are interested in joining the trip, please express your interest by emailing your details to Anthony Bowles at gajb@corsock.com



PPL/IR Europe Weekend Meeting, Kortrijk, 9-10 Sep 2006

The weekend meeting was held at Park Hotel in central Kortrijk. Most attendees flew in to Kortrijk airport on the Saturday morning in good VFR, and departed on Sunday afternoon.

The meeting was attended by 27 members with eight partners, arriving in 13 aircraft from the Netherlands, Ireland and various UK destinations. The meeting was hosted by local organiser and executive member, Dirk De Jonghe, with the cheerful assistance of another PPL/IR Europe member (and Bonanza pilot) Bert Maes.

Seminar

On the Saturday afternoon, we had three very different presentations.

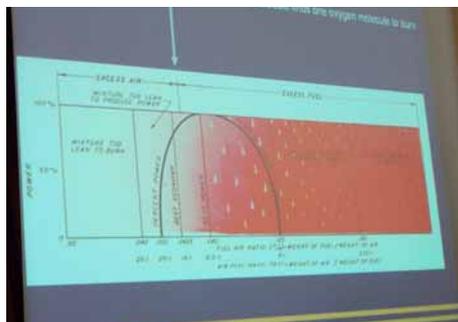
Michaela Verassimo represented EASA to outline and explain the changes and implementation of new European regulations for private pilot licensing, maintenance and airspace. Michaela offered clear encouragement that EASA is conscious of the problems of excessive burden of regulation being encountered by GA instrument pilots. Her presentation stimulated a spirited discussion and provided some reassurance and clarification that all is not yet lost! She kindly agreed that her Powerpoint presentation can be made available (see www.pplir.org > Past Events > Kortrijk meeting).



Jim Thorpe led a forum for discussing issues confronted by pilots in gaining access to the European airways for international flights, how to get flight plan submissions accepted by Eurocontrol, various web based flight planning tools, and ran a quiz (with a prize bottle of wine) on estimating flight distances via various routes between the UK and Italy.

Dirk De Jonghe gave a detailed presentation on engine management, how (and how not) to melt your engine by

running cylinder head temperatures too high, and numerous other strategies to ruin your engine by running to hot, too lean, too rich, too coarse, along with how to use an engine analyser (such as the EDM 700) to reduce the stresses at each stage of flight. Dirk's talk led to a detailed discussion further discussion in particular on the whole 'lean of peak' topic with the advantages of fuel injection over classical carburetion. Dirks slide are also available in Powerpoint (see website meeting report page, as above).



Social

The hotel laid on a sumptuous social dinner starting with champagne cocktail, and passing through lobster salad and on to wild duck and blackberry sauce, desert and lashings of fine wines throughout. An excellent social occasion, with one table still disputing the fine points of engine management and the other romanticising our flying adventures around the globe.



Sunday morning involved a train ride to Ypres/Ieper and a visit to the memorial gardens, graveyards and battlefield museum remembering the events of the Great War. Many mixed emotions of awe and sadness in this sensitive setting in a beautifully restored city.

Notes by Steve Dunnett (meetings@pplir.org), Pictures by Ian Chandler (treasurer@pplir.org).

Cumbernauld to Romania by Piper Arrow
continued from page 3

direct clearance through the Amsterdam Schiphol TMA on a direct track to the UK FIR at MIMVA.

Homeward Bound

The over water section between Holland and Humberside is 55 nm longer than from Norwich but you have the mild comfort that you are flying over numerous oil rigs and there is always helicopter traffic. For over-water flying I usually wear a survival suit. They look pretty effective bits of equipment and are not too cumbersome. I also carry a dingy but have often wondered if it would be more a hindrance than a help, there are just too many hurdles to overcome to get it out the aircraft and into it from the drink. The thought of ditching faded as we concentrated on getting back to our base at Cumbernauld before night fall.

We had radioed Humberside 50 miles out asking for the fuel bowser to meet us but an hour later we were still waiting for it and more time was lost trying to pay our landing fees at the terminal information desk behind a queue of angry motorists trying to get their money back from a failed parking ticket machine. As we readied to leave, word got through that Immigration was waiting to see us. The situation developed into farce as we met up with the man from Immigration through a locked security door with no one being available to unlock it. Good foot work managed to push a large enough gap between the doors to slide our passports through to the Immigration man who took them away. He quickly returned, squeezed them back and complained that he had been kept waiting an hour and no one had told him that we were here. Our response was that maybe Humberside and Dortmund should get a twinning arrangement.

By now we had no hope of getting home before night fall so our destination became Glasgow. It was a lovely night as we tracked towards TALA at FL65 we had a good tail wind and bounced in and out the tops before slotting on to the localiser at Glasgow. After logging 23 hours, nearly 3,000 miles and millions of litres of expensive fuel, we were back home. I would like to go back and try Romania again but would certainly allow a bit more time for the experience.



(OR VFR VS. IFR) Part 1

By
Phil Wadsworth

“ That was the last we saw of the earth until we descended below 700 ft on the ILS (281 nm) ”

It sounded a perfectly good idea at the time, but as one of my colleagues pointed out, short skirts are on display in the south of France in April, while parkas are the only sensible clothes in the Baltic region until June. Why on earth did we decide on a tour of Denmark, Sweden and Poland in April? I still have no answer.

Spring was just starting in southern England when I set out from Popham, UK in March, destination North Weald where the Royal Aero Club, Record Racing and Rallying Association were holding an air racing school over two days. The weather was very bumpy, 40kts westerly, and I was in and out cloud as I circumnavigated around the north of London at 2,400ft staying under Heathrow's TMA. The wind stayed over the Thursday and the Friday giving some interesting flying for new air racers! A very enjoyable Thursday night was spent with air racing friends at a hostelry in Old Harlow.

The idea was for three Grumman from the UK and Belgium to meet up in Kortrijk, Belgium, on the night of Friday, 31st March. Brian and Roger were flying Brian's Traveller from Turweston and Nigel, The Grumpy Gang leader and American Yankee Association (AYA) European Director (gosh, doesn't he sound important!) was flying his AA1 from Bournemouth then leaving it at Kortrijk Wevelgem, Belgium and flying with Andre in his Tiger. A fourth Grumman, a Tiger, based near Munich, Germany and piloted by Peter, planned to join us

on the Saturday. His co-pilot was an American visitor, Ed, who had travelled from California for the tour and certainly gets the award for being the most travelled Grumpy! Ed was a pilot with United.

I was flying my Tiger with Yogi as my co-pilot. Since Yogi lives to the north of Frankfurt, we had agreed I would pick him up in Bonn, so, after the air race school, I set off IFR for Bonn (Hangelar) airport. The stiff westerly was still blowing so I made the 283nm in a record time of 1.9hrs. Thunderstorms were rolling around, but I could see where they all were from my allocated FL80. Bonn Hangelar lies just to the south of Köln Bonn and they offered me a let down on their ILS, but conditions were VFR, so I declined. This was the last of the easy flights of the tour.



All pilots and co-pilots were quite experienced, even with IMC, although some IR ratings were not current.

Denmark

Next day, all four 'planes were due to meet in Sønderborg in the south of Denmark, to clear customs before flying on to Aalborg 140nm north. We never expected an early start from those in Belgium since Nigel can take some time to pull himself together in the morning, however, Yogi picked me up from my hotel spot on at 09:30 on Saturday, 1st April and we headed down to the airport. The weather to the north was not good, with multiple fronts, one occluded, passing from south west to north east, with all kinds of

weather involved. I had filed IFR anyway and since we had available alternatives, we decided to go.

A tip. If I am flying IFR from an uncontrolled airport, I try to speak on the telephone with the ATC unit I will be calling on departure. This way, they expect my radio call and I (usually!) avoid holding, staying out of controlled airspace, while ATC try to recover my flight plan from their computers. This worked a treat with Köln Bonn, who instantly gave us a squawk code and an airways intersection to navigate to. Unfortunately, neither Yogi nor I could find this intersection, even on the GPS, so we had to ask ATC for a clue! They very kindly gave us vectors; we flew into the clouds and rain heading north. That was the last we saw of the earth until we descended below 700 ft on the Sønderborg ILS (281nm). Now, Sønderborg is just north of the German border and is in uncontrolled airspace, so we set ourselves up on the ILS, following the charts warning not to drift back into German airspace. We had hoped to get some lunch while we waited for the others, but the restaurant was closed. Thank goodness Yogi had brought along emergency supplies and we tucked into his sandwiches. Eventually, we received a message from the others saying they were somewhere consuming beer in Holland (Groningen) and had given up for the day. We got used to their giving in!

Below IFR Minima

The weather at Aalborg was forecast to drop below IFR minima, so Yogi and I immediately set off, into the clouds again to reappear at 500ft on the approach to Aalborg, where the rain was really heavy and the GA parking is a long walk from the



Aalborg

terminal building! Here we were met by Anitta and Jens Neergaard and their girls. Jens, who has been a member of the AYA for years, has his own farm landing strip and we had originally planned to fly in there, but the ground was still frozen preventing any rain from soaking away, so it was a no no. His strip, Stagsted, is on the Jeppesen VFR maps, just to the east of Aalborg and I definitely want to fly in there during the summer! We stayed overnight with Anitta and Jens and were joined by Jens' parents, sister and her girls for the evening meal. Wonderful hospitality! The following day, the weather had improved to allow the lesser mortals in the other Grummans to join us, for a smashing lunch held for us in the house of Jens's parents.

The VFR v IFR score = 24 hours bonus to IFR

Field Landing

Later that afternoon, we departed VFR for Grenaa, a grass strip 64 miles to the south, near Aarhus. Just as we were setting ourselves up to join right base for runway 19, the obvious approach from the north, Nigel yelled that we all had to make left circuits! Brian had to abandon his approach and pulled round over the coast for another attempt. Unfortunately, this time he lined up on a different field, one which he and Roger obviously thought required a visit, and accomplished a perfect landing, but his ploughing technique definitely left something to be desired! Meanwhile, the other three Grummans had been met by the Grenaa gang. We then got a 'phone call from Brian to say he was only 0.7nm away, but stuck! The field he had landed in was owned by one of the Grenaa gang who rented it to a local farmer, who brought out his tractor, towing G-MALC over the fields to the correct landing ground!

No harm was done and after G-MALC had had a thorough wash, Brian and Roger were able to join us on the Gdansk leg.

However, I am getting ahead of myself. The Grenaa gang welcomed us as returning heroes, and after recovering Brian, Roger and G-MALC, we set off for a seafront restaurant where we could meet all their wives and partners, eat, drink and be merry. What an invite! Then it was off to the local Sports Hotel, the site of the highly successful 2004 European AYA annual Fly-In, (in reality, a youth hostel!) where we stayed the night. Just as we were getting ready for bed after such an eventful day, Niels dropped off a crate of beer – we must have looked thirsty! Thanks Niels! What a nice end to a Sunday.

Sweden

The following day we had planned to go to Kalmar on the east coast of Sweden, but the day started with 200ft cloud base and drizzle. While Peter kept updating us on the weather, Niels and Vagn drove us into Aarhus, where we explored and had lunch. Finally, the weather improved, we flew the few miles to Aarhus airport, refueled and flight planned for Sweden, with the exception of Brian and Roger, as G-MALC underwent an inspection. Yogi and I had filed IFR, much to the amusement of Andre and Nigel, who are convinced it only causes delays, which was true in this case as they crept into Kalmar while I was directed around for a radar vectored ILS. What a smug grin that Nigel puts on! I am glad to say that Peter and Ed remained perfect gentlemen and never felt they had a point to prove!

VFR v IFR score now stood at 10 minutes to VFR.

On the way to Kalmar, we had been flying through snow and adjusting altitudes to avoid icing. On the ground, it was bitterly cold with snow drifts! It took a while to find our way land side, where we went to the airport information desk to seek six hotel rooms. Now the information desk was manned

by the airport security guard who was also manning the airport shop. In the UK, the unions would have demanded three people to do this one person's job! Very helpful he was too, organising our hotel (with discount!) in the middle of Kalmar, and taxis. The hotel was excellent with a not too expensive restaurant and bar. Beer in Sweden is very expensive, but with a discount, we did very well.

The following day, Tuesday, we walked around the medieval walled city and were given a tour of the Cathedral. Then back to the airport where the security guard added another job to his list by dealing with our landing fees and escorting us airside. Today's destination was Visby, on the Swedish island of Gotland which lies to the south of Stockholm. The conditions at Kalmar were VFR, but cloud was forecast for Visby. After Nigel's nagging about VFR v IFR, Yogi and I elected to go VFR with the others. So, off to defrost the 'planes then launch into the air and out over the



Grumpy gang's mascot - a plastic chicken that gets stuck on the VHF aerial of Nigel's AAI

Baltic, where there was still plenty of sea ice! I would not have wanted to ditch in that at this time of the year! We were at 4,000ft over the sea when the cloud over Gotland became visible and, being determined not to let Nigel and Andre get one over us, decided to descend below the cloud, which we did at 800ft above the ice! The VFR pilots stayed VFR above broken/scattered cloud and we landed in Visby in freezing conditions.

The increasingly important VFR v IFR score was: - No difference!

In the next issue of Instrument Pilot Phil continues his epic adventures into the frozen north.



“
He lined up on a different field and accomplished a perfect landing but his ploughing technique left something to be desired
”



By
John Pickett

EASA

After producing the Advance Notice of Proposed Amendment (NPA) No 14-2006 concerning the better regulation of General Aviation, EASA face an enormous task. It is reported that over 4,000 companies, individuals, countries and organizations responded. In some cases multiple comments were made. It is estimated that over 15,000 Comment Forms were received. The number of responses will surely slow down the whole process.

The IAOPA – Europe newsletter reports that IAOPA believes that the amendment is “an attempt to re-invent the wheel when a better idea would be to address what is wrong with the current system”.

Surely the current system of over regulation has resulted in the continuous decline of European General Aviation that is not mirrored in the USA. The Czech Republic and France are showing growth in the sector because of a light touch by regulators. The number of foreign registered GA aircraft operating in the UK are indicative of the effect of over regulation.

Apparently, Council members are against delegated organizations, “assessment bodies” issuing licences and ratings. The civil aviation authorities of member states wish to retain this privilege. And the income! Some member states are saying that they will refuse to accept licences issued by “assessment bodies” in other states. The proposal to allow assessment bodies to issue licences and ratings is designed to keep the costs down and simplify the process!

The Council is also, apparently, opposed to the proposed method of medical certification. They want a medical examination to be conducted rather than a declaration to a GP.

In Instrument Pilot Number 55, part of a paper published by Dr Saunby was quoted. He gave the level of accepted aero medical risk as 2%. He advised that medical certification could be achieved by a review to consist of a declaration supported by an acceptable validation. (Examination, validation from records, or self-declaration). Compare the figure of 2% with the accepted EU Group 1 Private driver risk of 20% that produced in 1999 (the latest year for which figures are available) over 91,339 road accidents at an estimated cost of in excess of 659 billion US dollars. In comparison General Aviation is very small beer and does not warrant yet another overkill by regulation.

At the moment there is a lot of misinformation being bandied around Europe. When the dust has settled, and the Comment Forms analysed. The picture of the reactions to the EASA NPA will become clearer. Throughout all this turmoil of change it must be remembered that flying is meant to be enjoyable and safe. The lessons learned, as the result of some inappropriate JARs must be applied to the better regulation of GA.

Bulgaria, Romania and...Ireland

Bulgaria and Romania will join the EU on the 1st of January 2007. However, there may be restrictions placed upon Bulgaria. The EC has warned, in a progress report, that Bulgaria could risk restricted access to the EU internal aviation market when it joins. Bulgaria has been told it must address failings in aviation safety. Elsewhere, the European Commission has announced approved public funding of investment in six regional airports in Ireland.

Approach ban

With the advent of the season of mists and mellow fruitfulness discussion about the meaning of the phrase “Approach Ban” becomes appropriate.

In the United Kingdom many pilots consider that an instrument approach cannot be started if the reported cloud base is below a specified height. However, an “Approach Ban” only exists if the visibility along the “instrument runway” is below a specified distance.

In the United Kingdom, legislation exists which details Aerodrome Operating Minima. This minima applies to both public transport and non-public transport flights by UK and non-UK registered aircraft.

Jeppesen instrument approach charts show the JAR Ops minima in the bottom left hand corner of the plate. An example is chart 21-2 for Bristol Filton – ILS Approach to runway 27. For a Category A aircraft the minimum Runway Visual range is 650 metres. If the airfield lighting system is unserviceable the minimum RVR goes up to 1,200 metres. Therefore if the actual RVR is below these values an “Approach Ban” exists. This means that an aircraft is prohibited from descending below 1,000 feet above the airport elevation. Other factors could apply. If an aircraft is operated “single crew” then a minimum RVR of 800 metres could apply.

The UK CAA recently issued a Pink Aeronautical Information Circular number 103 about “Absolute minima”. This AIC may not be available to pilots in Europe operating into UK in a non-UK registered aircraft hence its repetition here.

JAR-OPS		STRAIGHT-IN LANDING RWY 27				CIRCLE-TO-LAND			
		ILS		LOC (GS out)		North of rwy 09/27			
		DA(H) A: 475' (290') C: 505' (320') B: 495' (310') D: 525' (340')		MDA(H) 610' (425')					
		FULL		ALS out		Max RVR			
						K15			
A	RVR 650m			RVR 900m	RVR 1500m	100	730' (504') 1500m	730' (504') 1500m	
B						135	730' (504') 1600m	830' (604') 1600m	
C	RVR 800m	RVR 1200m		RVR 1000m	RVR 1800m	180	830' (604') 2400m	1190' (964') 2400m	
D				RVR 1400m	RVR 2000m	205	980' (754') 3600m	1190' (964') 3600m	

Extract from approach plate for ILS 27 at Bristol Filton © Jeppesen; Not to be used for navigation

Instrument Rating (Helicopter), IR(H)

Considerable development work is proceeding on the Training Programme for the IR (H). However, in August 2006 the JAA published Amendment 4 to the JAR FCL2. FCL 2 is the document that covers helicopter pilot licensing and training. Amendment 4 contains major changes to the structure of helicopter flight crew licensing. The theoretical knowledge syllabus and examinations are changed. The amendment imposes very demanding requirements on the industry and pilots. In addition it makes it even more difficult for a PPL holder to obtain an Instrument Rating, Helicopters. Over the last ten years there has been a reduction in the number of flight instructors in Europe and consequently there is a lack of experienced instrument rating instructors. Some of the amendments to JAR FCL 2 create new requirements for simulator instructors. This will further increase the lack of availability of instructors. Yet again the JAA has produced an amendment without establishing the effect upon industry. In the UK the CAA, to its credit, recognized the impact of Amendment 4 on the industry. They called a meeting with industry to measure the impact of the amendment and advised the following:

“For the immediate future, the UK will continue to use previous issues of JAR FCL1 and FCL2 as the basis for licensing requirements

and guidance. For aeroplanes, JAR FCL 1 Amendment 5 and for helicopters JAR FCL 2 Amendment 3 will remain the effective versions used by the CAA these two documents and the amendment status will be referred to in Article 155 of the Air Navigation Order (2005) with effect from December 2006. In other words it is "back to the drawing board". The whole process of producing Amendment 4 appears to be wasted. The expense in terms of man-hours and volume of paper is incalculable.

GNSS News

Galileo

The first long term Radio Frequency S-band licence was granted to the Swedish Space Corporation (SSC). The licence will last until 2037. The SSC satellite station at Esrange Space Centre has been chosen as the first Galileo TT&C station.



GPS

The USA launched its second upgraded GPS Block IIR-M satellite on the 25th September. This satellite is expected to provide considerably improved navigation performance for both civilian and military users. The satellite has joined the first upgraded IIR satellite and 12 other



Block IIR-M GPS Satellite

non-upgraded satellites in orbit. This brings the total number of satellites to 29 in the "GPS constellation". The second civil frequency will improve the resistance to interference and improve accuracy by using actual, rather than predicted, atmospheric delay corrections. Previously GPS receivers would apply predicted delay corrections.

Location based services (LBS)

The estimated revenue from LBS in Europe will be 622 million Euros by the year 2010 according to the company "Berg Insight". The mobile phone company NOKIA has acquired Gate5. The introduction of GPS enabled mobile phones



into the European market is expected soon. These mobile phones will have pre-installed navigation software. Apart from the obvious facility of position fixing and subsequent navigation facilities the mobile phone will be able to detect if it is being used at home. Again Berg Insight is forecasting that "navigation" will account for 48% of mobile LBS revenues in 2010 and notes that the popularity of location based billing will increase dramatically. It is anticipated that mobile phone charges will be greatly reduced if the phone is able to detect that it is being used at home or work place. Apparently, over one third of O2's customers in Germany have opted for a discounted tariff at their home location. The life of the landline is being significantly reduced by the application of GPS.

General aviation

In concert with the EASA proposals for the deregulation of General Aviation there appears to be starting a discussion about the definition of GA. In ICAO parlance General Aviation is defined as "An aircraft operation other than a commercial air transport operation or an aerial work operation." However, in Europe, the title "General Aviation" has come to mean far more than the ICAO definition. EASA is tasked with the better regulation of General Aviation. In some European countries air taxi flying is considered to be part of GA even though it is a commercial air transport operation. In several countries of Europe, flying instruction, which is Aerial Work according to ICAO, is considered to be part of GA. In those countries, flying instructors give their services free of charge and provide a valuable contribution to flying training. Before too long it is necessary to define exactly what General Aviation, in Europe, means. Is it a co-incidence that one of the countries where flying instructors give their services free of charge is showing growth in GA?

Medical Periodicity

The International Civil Aviation Organization. (ICAO) has changed the Standards and Recommended Practices (SARPS) applicable to the periodicity of medical examinations for pilots over the age of forty. Before any SARPS are changed ICAO undertakes considerable research and a consultation process with 189 member countries. SARPS are, therefore, not changed unless lightly. The JAA has decided that it will go out to consultation before implementing the new SARPS!

Italian controlled airspace

It is reported that Italy has the largest Class A and C airspace in the world. The Italian Civil Aviation Authority has recently published a document defining the rules for the re-structuring of Italian airspace. This includes reducing Controlled Airspace to the minimum required for the safety of IFR traffic. Perhaps other countries in Europe will follow suit?



Another EASA problem?

Decisions about the teaching of instrument flying to potential helicopter PPLs is being put off until EASA takes over the responsibility for operations and licensing. Currently part of the helicopter PPL training course includes five hours of instrument flight instruction. A helicopter accident investigator advises that despite PPL (H) holders being taught instrument flying they should, upon encountering IMC conditions, land. For many years aspiring PPL Aeroplane pilots have been taught, upon encountering IMC conditions, to carry out a Rate One turn onto a reciprocal heading and never descend below the Minimum Safe Altitude until absolutely sure of their position.



Satellite navigation: What is WAAS/EGNOS?

The US Wide Area Augmentation System (WAAS) is the world's first satellite-based augmentation system (SBAS) to provide horizontal and vertical navigation for aircraft precision approaches.

Created by the US Federal Aviation Administration, WAAS has been operational since 2003. However, Europe's SBAS, the European Geostationary Navigation Overlay Service (EGNOS), is close behind, achieving initial operational capability in July 2005 and is scheduled to become fully operational in March 2007, a three-year slip from its original target date.

SBAS provides error correction to GNSS signals to deliver the greater accuracy and reliability required by aviation. The system achieves this by monitoring the navigation signals from the satellites at reference stations located across a large area such as the continental USA.

This data tells master stations about the satellites' orbit, drift in the accuracy of their on-board atomic clocks, and signal delays caused by the ionosphere. Correction signals are broadcast through geostationary satellites.

Both WAAS and EGNOS use the Navstar global positioning system (GPS) and their corrections improve the accuracy of the service from 10m-plus (33ft) to just 1m or 2m.

EGNOS is being developed by the European Space Agency (ESA) under a tripartite agreement between the European Commission, the European Organisation for the Safety of Air Navigation and ESA. EGNOS uses three geostationary satellites, Inmarsat's Indian Ocean Region and Atlantic Ocean Region-East satellites

and ESA's Artemis spacecraft, to transmit that error correction data to its 34 ranging and integrity monitoring stations (RIMS) located from Lisbon to Turkey. As well as RIMS, its ground network uses four interconnected master control centres. ESA claims the EGNOS service's coverage area could eventually cover all European states and be extended to other regions, such as South America, Africa, and parts of Asia and Australia.

In 2003, WAAS had two master stations, its own geostationary satellites and 25 reference stations. The FAA has been adding more of its RIMS, four in Alaska and five in Mexico. Under an agreement Mexico and Canada will be able to use WAAS.

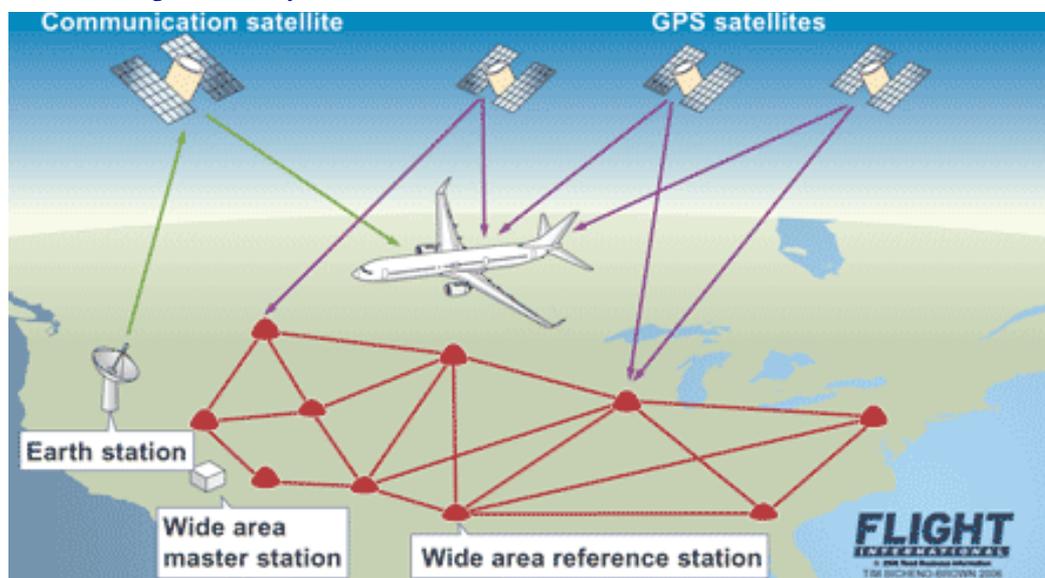
Today the FAA is rolling out WAAS localiser performance with vertical guidance approach information across US airports at a rate of 300 runways a year. It is certificated down to 200ft, equivalent to a Category 1 instrument landing system.

The FAA is also researching the use of WAAS and GBAS for providing Cat 2 and 3 approaches. This would also be possible in Europe with a single GPS reference station facility at an airport. The US version of this is called Local Area Augmentation System.

Other countries developing GPS augmentation systems are India, with its GPS and Geo Augmented Navigation, Japan with its Multi-Functional Satellite Augmentation System and Russia, which is developing its own global navigation satellite system's SBAS.

SBAS and GBAS will replace VHF omnidirectional range and distance measuring equipment. (*Flight International*)

Wide Area Augmentation System



Letters

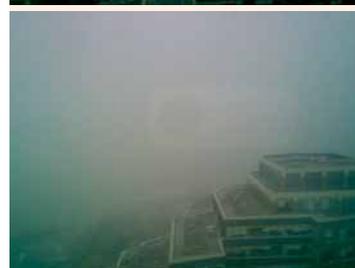
Autumn Fog

I read an interesting article the other day in my second favourite instrument flying magazine, *IFR* (after *Instrument Pilot*, of course!). In the October edition it has a timely reminder for this time of year about the dangers of radiation fog. It provides a useful background on the formation of this type of fog and makes two points very clear:

- 1 It is extremely difficult to forecast with any accuracy,
- 2 It can develop very quickly

As luck would have it, this very morning was to provide a graphic illustration of how true this can be. I am currently working in one of the taller buildings in Canary Wharf and have an excellent view over central London. On arriving at 8 o'clock I was particularly struck by a beautiful sunrise that I was inspired to take a quick snap with my telephone camera, as shown in the first photograph below. At this time a shallow layer of cloud could just be seen lingering over London. Half an hour later I looked up and was struck to see...nothing! A complete white out. The second photo shows that visibility had dropped to maybe 100 metres.

The coincidence of reading about this and seeing it in practice was something that I thought worth sharing with our readers. (*Paul Turner*)



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For reports on meetings, conferences and other activities attended in the last 12 months by members of the Executive on behalf of PPL/IR Europe members please go to <http://www.pplir.org> – Activities

COUP ICARE

By Jim Thorpe

This short trip in September went well. The Coup Icare (Icarus) is a celebration of all forms of non powered or minimally powered flight. Some 10 people were interested and in the event 6 of us enjoyed a truly amazing day. When did you last see a Citroen 2CV complete with puffing exhaust launch itself off a sheer drop of several hundred meters supported only by a flexiwing. The human spider was quite startling viewed against a web of lines which attached him to his wing.

Fancy Dress

There were literally hundreds of launches of which perhaps a third was in fancy dress. How about a whole band marching about playing real instruments and then launching themselves in quick succession so that pretty well the whole ensemble was airborne at the same time. Undercarriage failure takes on a new meaning when provided by four vigorously flailing legs on the two person machines. There were a few aborted take offs, fortunately without serious injury

Air traffic control was a man with a hand held radio and a megaphone running about between a continuous stream of parallel departures. A failed departure left the said ATC facility flat on its back and, possibly prejudiced by their less than amicable exchanges with ATC on arrival at Grenoble, one member remarked that's the way to deal with the bu**ers.



Arrival

Of course aviation wise it was not all simple. I had a cold and came by scheduled flight and two participants had to cancel due to 30 knot crosswinds at the departure airfield. One Dutch member arrived the day before the main group but had to leave early as he was in a hired VFR machine and the forecast was poor. This meant that although we exchanged telephone calls we never actually met.

From a personal perspective this trip involved me in minimal work but was a really enjoyable occasion. It could still have worked well with smaller or greater numbers. Since I was intending to be there anyway it would not have been a disaster if no one had made it.

Social

I feel sure that among the membership there are many who have local knowledge and contacts which would make for exceptional experiences and it would be great if we could offer three or four such trips every year. All you do is make members aware of what's on offer via Steve Dunnett, the meetings secretary. Just provide a brief description of the attractions, a couple of suggestions as to hotel accommodation, car hire etc. and a few practical details on the most convenient airport. Anyone who wants to go makes all their own bookings direct. Steve puts participants in touch and they can informally agree to share some or



all activities. In most instances people will chose to stay in the same hotel and share some meals. The idea is to provide the benefits of convivial social contacts

without commitment to the responsibility and work associated with leading a more formal organised trip.

Grenoble

Just to conclude, while I am not sure I would recommend the Grenoble area for a casual holiday visit, the airport is a useful staging point en route further south. It is quiet if you avoid the Ryanair arrival time and you need to look out for the parachutists just in case ATC does not. It costs little, has a helpful reception which always seems to be staffed,

efficient refuelling and there is at least one decent hotel within a short taxi ride at Cote St Andre.

