

Instrument Pilot

The PPL/IR Europe Magazine

No. 61

May-June 2007

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The author swapped his share in this beautiful Trinidad TB20 for a Pioneer 300 kitplane, proving that you don't have to give up flying entirely if you can't justify the costs of running a 'real' aircraft. See The Golden Age, pages 1 & 2



The Golden Age

by Arnold Parker

It might be a bit: "I Remember the Day War Broke Out..." but comparing then and now, things are looking pretty good for private flying. Veteran pilots regard the early '60s as the golden age of post war private flying. Aeronautical charts showed where you could go – practically everywhere - different from today's charts covered mostly by where you can't go.

In the '60s pilots simply chinagraphed a line to the airfield they wanted to go to and that was it. Stansted, Edinburgh, Brussels International and just about everywhere else were open to private light aircraft in the days before regional airports began self-deluding themselves that they are in the same league as Chicago O'Hare.

Today's "Classic Aircraft" were the standard flying club equipment. When they went we were delighted to see the back of them! Euphoria abounded.

No more temperamental ground-looping Tiger Moths and Chipmunks that you had to hand-swing to start - and freezing winter cockpits. Instead we got beautiful Cessna 150s and 172s - comfortable, nice heater, self-starter, tricycle undercarriage and a cigarette lighter - which was vital because we all smoked like chimneys in those days.

The Cessnas even had something called a "VOR" but none of us knew what it did and left it strictly alone. Radio navigation and instrument flying was a mysterious black art practised only by a select secret brotherhood.

Club hire rate for a C150 was £10 an hour with a C172 a quid more. It may sound cheap but it was still about a third of a working man's weekly wage. It is still the same - £120 an hour stacks up at about a third of a working lad's weekly wage.

We were all in awe of a pilot who actually owned his own new Cessna 172. I remember him remarking: "One has to keep one's flying costs in control; I limit myself to £2,000 a year for my flying budget." And I thought: "Cor! Imagine having £2,000 a year for flying!" - that was more than I earned in a year.

If you were ex-service you could fly the Territorial Group's Auster 5 for £4 an hour - God knows how, but I used to scrape up enough cash for a couple of hours a month. We trailed all over in that Auster with three of us divvying up the cost - the French Anjou Rally was an annual regular.

What about the workers?

In relative terms the cost of flying a basic (150, 112, PA28) aircraft is pretty much the same as it was fifty

P 2 ►

“ Club hire rate for a C150 was £10 an hour with a C172 a quid more ”

The Golden Age

continued from page 1

years ago. Still too expensive for most - but then it always was.

But for the person who wants to spend seriously daft amounts of money on flying, "cabin-class", private aircraft are hard to beat as a means of getting skint quick.

With "face the reality" actual cost of a 150-hours-a-year sophisticated single coming out on the top side of £300 an hour, these aircraft are not the natural habitat of ordinary folk. A person has to be either seriously rich or seriously daft to spend £300 an hour on anything - plus the odd several thousand pound bills which drop onto the mat out of the blue all too often.

Droves of private pilots are saying "Sod this for a game of cowboys" and calling it a draw. For many with families, school fees, mortgages, holidays and the stacks of other stuff that are now vital for normal family life, getting rid of the aeroplane is often a "no brainer" decision.

But rather than pack up flying altogether, some smart pilots are departing for grass strips and small airfields because the working class end of flying has become a stack more affordable and with better kit to boot.

What used to be aviation's equivalent of the motor cycle enthusiasts - flex-wing microlights and the odd old Piper Cub - have been joined by sophisticated micros (many of which outperform the aircraft at the bottom end of Cessna and Piper's ranges), and high tech VLA's (Very Light Aircraft) with retract gear, VP props, and 135 knots cruise.

But the main thing is - their owners can afford to fly them. At the very most the fuel burn will be 15 litres an hour. Chances are it will be mogas - so fuel will cost around £12 an hour. And they are all Permit aircraft, day-to-day regulated by the BMAA (British Microlight Aircraft Association) or the PFA (Popular Flying Association). These organisations actually treat you as if you are an adult. They accept that you can do basic routine maintenance - which is easy in the "always a knowledgeable mate around" environment, overseen by a usually resident inspector.

All of this means you can operate a very nice aeroplane for about the same money as running a Ford Fiesta. My Pioneer 300 has a 135 knots cruise, retract gear and a constant speed propeller. True, I had to sell a couple of grandchildren to come up with the £50,000 for the kit, engine and stuff - but once you've built it you can afford to fly it... even with all the standing and service costs it still only tops out at £30 an hour.

The Evektor Eurostar... all metal construction, superbly engineered by a major Czechoslovak aviation company, an unbustable Rotax 912 engine, 10 litres an hour on 95p a litre Mogas, feather-light beautifully harmonised controls, four hours duration with reserves, fantastic visibility. An absolute delight to own and fly. Pictured are Clive Hatcher and Pete Crowhurst



If you don't want to build you can usually buy a good second hand permit aircraft for not much more than the cost of the kit. Ten and twenty hours a month are common for pilots operating in this environment - because they can afford to do it - so the safety of currency is a by-product. And the ultra-reliable engines, plus GPS etc., mean that these aircraft make practical long-range machines.

In the £30,000 to £50,000 permit range there are sophisticated aircraft often more technically advanced than many in the £100,000

plus area. The Pioneer gets airborne inside 200 metres and is very content operating in and out of any airfield with 400 - which means pretty well anywhere.

I recently had a share a TB20 Trinidad, which is a very comfortable, large, four-seat cruiser. The Trinidad vastly prefers tarmac and is not happy with any surface, tarmac or grass that is less than 700 metres. This means small grass fields cannot be used as Trinidad destinations, which can limit an aircraft that is used as a business tool.

This permit sector of flying is the real growth area of General Aviation and more and more pilots are transferring over. The sad thing is that UK red tape and restrictions strangled development of these aircraft in the UK. The rest of Europe and the USA is now so far ahead of us that even with a strong dose of reality injected into our CAA, we are never likely to catch up.



Arnold Parker, in his TB20, is a founder member of Sky Watch, an organisation whose objective is to have as many volunteer pilots as possible trained in basic air observation and search techniques to spot potentially hazardous instances and report them to the emergency services via ATC. More at <http://www.skywatch.org.uk/>

From Sky Watch's point of view, this economical flying is a blessing - because without it most pilots could not afford to fly on Sky Watch otherwise. The down side is that in the UK a permit aircraft is only allowed to fly in day VFR - and mostly they only have two seats. There is a view that this rules them out from being "serious" aeroplanes - and the detractors have a point. But they are certainly far more practical than the "golden age" stuff we used to go touring all over the UK and Europe in.

The GPS has proved a great help. Even though charts are packed with controlled areas, at least with GPS we can find our way around and under them, so the restrictions are not the problem they could have been. Folk can say what they like about GPS but I reckon it is the most significant contribution to safety in private flying that there has been since the 1960s.

Don't look now, but "The golden age of flying" has just come back. But instead of it being the pre-war playground restricted to our plus-fours wearing betters, now we can all do it!



Serious Touring Aircraft. A group of pilots who flew three Jabirus to Friedrichshafen from the UK for the Aero Show. Fuel cost per aircraft was around £75. Back row is Clint Judd, Roy Clark, Tony Paterson, Alan Macknish. George Rowbotham and Dave Smith are at the front.

Trip to Aero 2007, Friedrichshafen



By Peter Holy

This article describes an IFR (airways) trip in a Socata TB20GT to the AERO 2007 show in southern Germany. The flight was uneventful and very pleasant; of approximately 3:20 duration each way.

Route Planning

The route has to be acceptable to the Eurocontrol CFMU route checker http://www.cfm.eurocontrol.be/chmi_public/ciahome.jsp?serv1=ifpuvs otherwise you cannot even file the IFR flight plan. There are several ways to do this, ranging from reading the standard route documents (SRDs), through various hacks, to filing something rough and leaving it to ATC to fix it up while hoping they won't chuck it out altogether. The system exists for airlines and private pilots are out on their own. I always first try the amazing and free ASA autorouting website <http://rfinder.asalink.net/free/> which was developed for deadly serious flight simulator users and is as unofficial as you can get but it's only a means to an end, and works most of the time. In many cases, the route needs to be manually iterated by excluding various conflicts that are reported at the bottom of the page, and re-routing.

The ASA site quickly came up with these two routes:

EGKA DCT MAY R8 DVR L9
KONAN L607 GILOM M624
DIK M150 KRH N850 NATOR
T733 USETI T732 NEGRA
DCT EDNY
(alternates EDD5, LSZR)

EDNY DCT TRA L856 HOC
W102 LEPLA W110 LUMEL
T10 TORPA V40 LUL G4 RLP
B3 BILGO H20 XORBI G40
ABB T27 GURLU Y8 WAFFU
M605 SFD DCT EGKA
(alternate EGMC)

By an amazing coincidence, both routes have the same length of 489nm, against a Great Circle distance of 428nm. This is a 14% excess; not unusual in Europe. Clearly, the system is not (yet) run by Ryan Air.

Both routes passed CFMU in the FL140-FL160 area (though not much lower) and the normal objective, in an unpressurised aircraft carrying oxygen, is to ask for a "stop climb" once in clear VMC, to reduce the oxygen usage and (if non turbo engine) obtain a better speed. There are limits to this (airway MEAs, or crossing certain terminal areas) but generally ATC are happy to comply.

One cannot load a route with named airways into any GPS other than the most modern type, so one needs to translate these routes into the individual waypoints:

EGKA MAY DCR KONAN
KOK MAK GILOM DIK
KRH NATOR USETI NEGRA
EDNY

EDNY TRA HOC LEPLA
LUMEL TORPA LUL RLP
VATRI REM BILGO XORBI
ABB GUBAR GURLU WAFFU
SFD EGKA

I use Jeppesen Flitestar for this; enter the CFMU-accepted airways route into the "plain text" route entry option and all the waypoints appear in the plog, together with their place names beloved by ATC to confuse pilots (e.g. KRH is a place called Karlsruhe).

Flitestar does much more than this, but how much of the extra one uses varies according to preference. I carry a current IFR enroute chart but ensure



it is rarely looked at, by printing out enroute map sections from Flitestar. If printed at 10 nm=1 inch scale, the airways intersection names are visible (usually!) and this is all one needs for enroute. I carry a tablet computer with Jeppview (which, basically, displays approach plates) but, never completely trusting electronics, I always print out the approach charts for the destination and alternate.

The flight plan was filed using the excellent <http://www.homebriefing.com> which charges a flat rate Eur 36/year. With IFR flight plans, the acceptance/rejection usually comes back in under a minute, and the accepted flight plan gets transmitted to the enroute sectors within seconds.

AERO 2007 is a busy event and one has to book VFR and IFR departure and arrival slots. They can be booked 4 weeks in advance and the process is well organised, with website booking and Paypal payments available. Hotels were hard to get even weeks beforehand but we found some (pricey) rooms at the Krone hotel which is about 20 minutes by taxi.

For an IFR flight above FL095 the aircraft must be BRNAV equipped, and for GA this is fulfilled by (and only by) an IFR certified GPS. In my case, it is the KLN94 with a KMD550 multi-function display.

“The normal objective is to ask for a “stop climb” once in clear VMC to reduce oxygen usage

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By Alain Toogood

US GA in 2006 is safer than 2005

In the USA Civil aviation safety continued to improve in 2006, according to NTSB numbers released in March. According to those statistics, the number of accidents throughout all segments of civil aviation in 2006 was less than in 2005, with general aviation recording the lowest number of accidents and fatal accidents in the 40 years of NTSB record keeping. Major air carriers continued to rack up the lowest accident rates in civil aviation, while 2006 accidents among on-demand Part 135 operations including air taxi, air tour and air medical operations were down almost 20 percent from 2005. "This is very good news," said NTSB Chairman Mark V. Rosenker, "but it is no reason to let down our guard. We need to build on this improving record with a continued emphasis on safety in all phases of aviation."

Major US air carriers in 2006 carried 750 million passengers more than 8 billion miles while logging more than 19 million flight hours. At the same time, these carriers had 31 accidents, down more than 20 percent from 2005. Only two of the 31 accidents were fatal, resulting in 50 fatalities. In 2006, on-demand part 135 operators had 54 accidents, down almost 20 percent from 2005, with 10 of those accidents resulting in 16 fatalities. The decline in general aviation accidents continues an ongoing trend, according to the NTSB. General aviation accounted for the greatest number of total and fatal accidents last year -- 1,515 accidents, 303 of them fatal, resulting in 698 fatalities. Part of the decline in GA accidents is due to a steady decrease in the industry's flight activity, said the NTSB. Since 1990, GA hours flown has declined 20 percent and, as a consequence, the accident rate has remained relatively stable, averaging approximately 7.5 accidents per 100,000 flight hours.

"Black box" for Cirrus approved

The FAA has granted Supplementary Type Certification for the Alakai Technologies engine trend monitoring system for Cirrus SR20 and SR22 aircraft, which when combined with the Alakai digital flight data recorder performs the same basic functions as the so-called

"black box" recorder required on airliners. Such recorders are not required on aircraft with fewer than 10 seats, but a growing number of Cirrus airplanes are being used in air-taxi operations and pilots were required to record engine data manually while flying the aircraft. "This new system will allow Cirrus owners and operators, especially Part 135 operators, to focus on flying rather than manually documenting engine performance while in the air," said Cirrus co-founder and Vice Chairman Dale Klapmeier. The system also allows operators to accurately track engine data and spot potential problems before they become full-blown emergencies. Additionally, the information can help operators reduce costs by improving efficiency and reducing downtime due to costly repairs. Alakai says the installation might also prompt reduced insurance rates because the recorder will be able to provide accurate data on aircraft performance immediately before an accident. (AVweb)



Pilot catch-22 in India

Indian airlines are apparently eating their young as flight instructors, desperately needed to train the thousands of pilots required, are instead offered jobs as pilots. According to Daily News and Analysis, 18 out of 35 flight schools in India are out of business because they have no instructors and foreign CFIs that are attracted to India are soon snapped up by the airlines. But personnel shortage is not the only issue. "It's also the shortage of aircraft, coupled with the large number of students, that makes it impossible for them to function," an unnamed source told the news service. The biggest problem is pay. Instructors are paid less than half the rate of a new airline pilot. Would-be pilots are leaving India in droves to take training in other countries. It's estimated that India will need 10,500 pilots within three years but only 150 new pilots graduated in India last year.

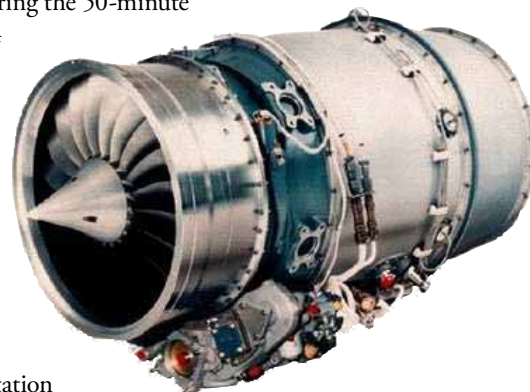
CJ4's Williams engine flies on test-bed

The new 3,400-pound-thrust Williams FJ44-4A FADEC engine slated for the Cessna Citation CJ4 flew for the first time aboard a Citation test-bed at the beginning of April. "The first flight of the new engine went very well, and performance exceeded our expectations during the 50-minute

flight," said CJ4 Program Manager Norm Baker III.

According to the Wichita aircraft manufacturer, the coming "moderately swept" wing Citation CJ4 will have a full fuel

payload of 1,000 pounds, a maximum payload of 2,100 pounds and a 435-knot cruise spawned from any runway longer than 3,299 feet. The jet is scheduled for first flight in the first half of 2008, with entry into service following in 2010. The FJ44-4A outshines the CJ3's FJ44-3A thrust output by 580 pounds and "has the best thrust-to-weight ratio in its thrust class," Cessna notes. It also incorporates proprietary aerodynamic improvements that result in "a significant reduction in fuel consumption." Like the CJ1, CJ2 and CJ3, the CJ4 will come standard with Rockwell Collins Pro Line 21 avionics featuring four 8- by 10-inch LCD screens. Other standard equipment includes engine indication and crew alerting system (EICAS), TAWS Class A (terrain awareness warning system), TCAS II (traffic alert and collision avoidance system), cockpit voice recorder (CVR), electronic charts and XM graphical weather, according to Cessna. (AVweb)



"All-attitude" recovery technique promoted

APS Emergency Maneuver Training, an Arizona upset recovery training school, says it has developed a single set of in-flight procedures to recover from virtually any uncontrolled flight



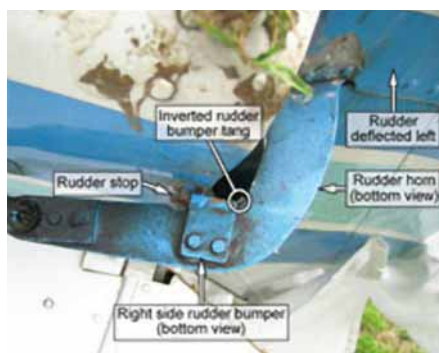
attitude, outside of a fully developed spin. Called the All-Attitude Upset Recovery Technique, the deceptively simple protocol is aimed at reinforcing the correct, and usually counterintuitive, actions to take when the airplane is doing something that neither the pilot nor manufacturer intended. APS President Paul "B.J." Ransbury, in a letter to customers, said that while there are numerous factors affecting the successful recovery from those life-changing moments, a decade of experience teaching those skills has shown him and his instructors that there are also some basic similarities. What's more, he said, the resulting technique works in everything from light singles to heavy transports. "The All-Attitude Upset Recovery Technique Checklist is a logical single-procedure checklist that, when combined with proper knowledge and skill, effectively deals with a wide variety of stalls, upsets, wake turbulence encounters and unusual attitudes encountered in fixed-wing aircraft," Ransbury said. The program takes two days including six hours of class time and three flights to teach a pilot to memorize just five words (push, power, rudder, roll and climb) and when to express them through control inputs. But since at least some of them are exactly the opposite to what a pilot's highly charged senses are telling him to do in these awkward circumstances, it takes time to ingrain the training. "The key to being properly prepared to deal with an aircraft upset is no different than any other specialized flying skill: study, instruction, understanding, integration, application, error analysis and practice, practice, practice," Ransbury said. It also may be just a little fun. All flights are in an Extra 300, a popular aerobatic aircraft used by Patty Wagstaff and other air show performers.

Airmen: say bye-bye to paper certificates

According to an AINalerts press release, under FAA rulemaking proposed last month, two years after a final rule becomes effective, paper pilot certificates could no longer be used and five years after the final rule becomes effective, certain other paper airmen certificates, such as those of flight engineers and mechanics, could no longer be used. Instead, after those respective dates, airmen would have to hold "upgraded, counterfeit-resistant plastic certificates," like the ones the FAA has been issuing since 2003. There would be a \$2 fee to upgrade. In addition, those who transfer ownership of U.S.-registered aircraft would have five days from the transaction to notify the FAA Aircraft Registry. Those who apply for aircraft registration would have to include their printed or typed name with their signature. The FAA said these requirements are intended to assist law-enforcement agencies in their effort to combat drug smuggling in general aviation aircraft, but the agency didn't explain how.

NTSB asks for Cessna 150/152 rudder AD

The National Transportation Safety Board on Wednesday recommended that the FAA issue an Airworthiness Directive requiring Cessna 150s and 152s owners to comply with Cessna Service Bulletin No. SEB01-1 specifying a one-time inspection of the airplanes' rudder bumpers. If mandated, the check would need to be done at the next 100-hour or annual inspection to verify that the rudder bumpers are correctly installed on the rudder horn assembly. The Safety Board's recommendation stems from an April 11, 2005,



crash of a Cessna 152 (N24779) in a field near Williamsburg, Ohio, after the rudder jammed during spin recovery training, killing the flight instructor and student pilot. According to the Safety Board, examination of the wreckage revealed that the rudder was jammed approximately 35 degrees, which is beyond its left travel limit. Further examination revealed that the two rudder bumpers had been installed inverted and that the right rudder bumper had travelled beyond the rudder stop and had locked behind it, the NTSB said. NTSB investigators could not determine whether the incorrect installation of the rudder bumpers occurred at the time of production or during the airplane's maintenance history, prompting the Safety Board to ask the FAA to issue the AD. (AVweb)

FCC unlikely to lift in-flight cell phone ban

Lingering uncertainty about whether cell phone calls placed by airline passengers would cause interference with the cell system on the ground has prompted the US' Federal Communications Commission (FCC) to drop a longstanding proposal to relax the current ban. FCC chairman



Kevin Martin said it's unclear at this point whether cell phone calls placed from aircraft would contact multiple cell towers simultaneously, which can disrupt the overall system. Technology has been developed to prevent such interference, but cellular providers have told the commission that technical and engineering issues have yet to be resolved. As a result, Martin wants the FCC to keep the cell phone ban in place for now. This might not be the end of the story, however. So-called Wi-Fi smartphones for the consumer market are on the way. Unlike traditional cell phones, smartphones use available wireless Internet connections to route calls. Passengers one day might be allowed to use these phones on aircraft fitted with onboard Wi-Fi connections without violating the FCC's rules, according to industry insiders. If the technology can be proved safe, the FAA is likely to allow the use of smartphones. (AINalerts)

Longer duration for some medicals proposed

Under a notice of proposed rulemaking published today, the FAA is seeking comments on its intention to increase the duration of first-class and third-class medicals for airmen under the age of 40. Currently, the maximum validity of a first-class medical certificate is six months, regardless of age. For a third-class medical certificate, the validity period is 36 months for pilots under 40. The FAA wants to increase the duration of validity from six months to one year for first-class medical certificates and from three years to five years for third-class medicals for pilots younger than 40. Existing U.S. medical certificate validity standards for commercial pilots under age 40 in a multi-crew setting currently are the same as those of the International Civil Aviation Organization and, therefore, the FAA said it "sees no need to consider a change to FAA second-class medical certificate validity standards." (AINalerts)

WANTED! New column writer for Intel Reports

Unfortunately, Matthew Stibbe is unable to continue with the excellent work he has put in to Intelligence Reports due to business commitments. We are therefore looking for a new volunteer to take up the column. Regular press releases and suitable material will be forwarded by the editor; it's just a matter of researching and compiling the interesting stuff. If you are interested please ring David Bruford on +44 (0)1823 461 310 or email him at editor@pplir.org.



Beyond the PPL/IR

An overview of recurrent and advanced training

Part two of a two-part article by Vasa Babic,
PPL/IR Europe Executive Committee member

“The JAA ATPL is not more difficult than the FAA theory but the volume is greater and classroom attendance is required”

Part 1 of this article described some options a PPL/IR pilot has for further training beyond the initial Instrument Rating and its annual JAA re-validation or FAA Flight Review (BFR). Ad-hoc recurrent training in aircraft, FNPT2 simulators and specialised US simulator training schools was reviewed. The article concluded with the ways an FAA PPL can upgrade to a Commercial certificate. The article in full is available at www.pplir.org.

Commercial Pilot Training (continued)

JAA CPL(A)

The JAA CPL(A) flight training is a fraction of the cost of a JAA IR – it is in the region of £5,000 for 25 single-engine hours (5 of which have to be on a complex aircraft, typically the PA28R) or merely ‘training as required’ for holders of an ICAO CPL⁽¹⁴⁾.

The JAA CPL Theory⁽¹⁵⁾ is something of an anomaly. It’s probably the least studied JAR-FCL course. If you already have a JAA IR, then a lot of the material will be familiar, but you still need to take eight of the nine CPL papers (you are exempt Human Performance). If you don’t have a JAA IR, then the full ATPL distance learning ground school makes much more sense, because it gives you more privileges than the combination of CPL and IR theory, for less study time, cost and fewer exam papers to sit⁽¹⁶⁾. However, if you hold an FAA CPL/IR, you are exempt the compulsory JAA classroom training for the CPL and IR exams, but not the ATPL ones.

I have recently started studying for the JAA ATPLs. Compared to the FAA theory, the actual content and exams do not seem more difficult,

but the volume of both is greater and there is the infuriating requirement for classroom attendance. The whole FAA vs. JAA debate is beyond the scope of this article, but, for what it’s worth, I personally feel the regulatory tide is shifting in favour of sticking to the JAA system, when you combine the possibility of EASA easing some training regulations and increasing the restrictions on Foreign Registered Aircraft (FRA) based in Europe with the visa and TSA bureaucracy needed for training in the US.

The JAA CPL is probably the most demanding of the ‘elective’ courses covered in this article. It is more of a long-term project than a weekend recurrent training option. However, training which seems dauntingly expensive and time-consuming at first, can become quite attainable in practice, simply by chipping away at the requirements one step at a time.

Instructor Training

This section will not describe how to become a fully-fledged flight instructor from scratch; plenty of US and European school websites outline such courses in great detail. What I thought PPL/IR Europe members might find interesting are some options for instructor qualifications that may be surprisingly attainable. Even more surprisingly, the most attainable are JAR-FCL qualifications rather than FAA ones!

Why get an instructor qualification when most of us struggle to fly enough, let alone instruct? Firstly, the training can be effective purely for major ‘de-rusting,’ skills enhancement and confidence-building. Secondly, you can use instructor privileges to give recurrent training, legally and safely, to a pilot you share a

trip with, both of you logging the flight time and learning from what might otherwise have been a routine ‘bimble’. Thirdly, instructor training can have some useful synergistic benefits; for example, I passed my FAA Instrument Instructor check ride on a G1000-equipped C172, teaching GPS procedures and approaches, which neatly, I think, makes me compliant with the differences training requirement both for the G1000 and for flying GPS IAPs in Europe. Additionally, some Instructor privileges are not hard to maintain, even if you do not do a lot of teaching. The FAA requires a 24 month renewal, which can be done on-line, and the JAA Class Rating Instructor requires only some modest training every three years.

JAA Class Rating Instructor (CRI) MEPL and SEPL^{(17), (18)}

These two JAA qualifications are somewhat obscure, but very useful and attainable. You do not need a JAA CPL, you do not need to pass the JAA CPL Theory and you do not need a Class 1 Medical. The CRI courses require a fair amount of ground school (25-30hrs) but only a modest minimum amount of flight training (5hrs CRI-MEPL, 3hrs CRI-SEPL). The cost is about £2,500-£3,300 for the CRI-MEPL and only £1,200 for the CRI-SEPL, plus a skills test with a JAA Flight Instructor Examiner.

As a CRI, you cannot teach ab-initio students, but you can provide differences, recurrent and renewal/revalidation training. You can also teach students for the initial Class Rating, but this must be through an approved course at a JAA Flight Training Organisation (FTO). A PPL

CRI may not receive any valuable consideration for instructing.

I did the CRI-MEPL at BCFT in Bournemouth in May 2006 and found it one of the best courses I have done. The ground school has two elements: the theory of learning and training, a 'foundation' for any FI rating, and the theory specific to the Class Rating. I initially thought the learning theory was a bit waffly and abstract, but it actually turned out to be quite interesting, and even relevant to professional work outside of aviation. The Multi-Engine theory covered the same topics as the initial MEPL Class Rating in much greater depth. I had 800hrs of twin time at this point, and it felt very worthwhile to try and master Multi-Engine theory from a senior ground instructor of vast experience.

The flight training is very structured, and it focuses on teaching the JAA Multi-Engine Piston Class Rating. It is broken down into five lessons, and for each you are taught exactly how to give a detailed ground briefing and how to conduct the flight. All the content is familiar to a twin pilot, but the challenge is, firstly, in flying accurately from the right-hand seat; secondly, in teaching a manoeuvre whilst demonstrating it; and thirdly, in identifying and correcting student errors. Individually, none of these is particularly hard, but putting it all together and delivering an effective and complete lesson is demanding, especially given how much is packed into 3.5 hours in the asymmetric part of the syllabus. Personally, I have found some JAA training over-formalised and narrow at times, but I thought the CRI course was perfect, in that the detailed structure gave you both a precise path to accomplishing the training in a relatively short time and a precise reference for teaching the MEPL rating to your own students.

A few months later I was lucky enough to have a very motivated and capable pilot as my first student. The flight training took 1hr more than the 6hrs minimum, I simply didn't have the experience to teach the entire syllabus in the allotted time, and the ground school took a lot more than the seven hours required. Conducting training to a good standard and being efficient in how the student's time

and money is spent is not easy. My respect for professional instructors has increased a lot! I think for an 'occasional' instructor like myself, initial Class Rating courses are a stretch, because one doesn't have either the ideal level of teaching experience or the ideal level of currency on the training aircraft type. Where I find the CRI most useful is in giving you the ability to instruct in the kind of flying you are already experienced and current on, in my case multi-engine training and conversion to the 421C. This is the motivation, I imagine, behind the JAA's design of these excellent courses. As a twin pilot, I can say that every minute of the MEPL-CRI was worth doing even if I never intended using it.

JAA Instrument Rating Instructor IRI(A)^{(19), (20)}

Holders of a JAA IR with over 200 hours of actual instrument time (or 800 hours IFR flight) can become instructors for the JAA IR and CAA IMC ratings. Like the CRI, the IRI does not need CPL theory or a Class 1 medical. The course is 30-40hrs of ground study and 10hrs flight or FNPT2 training, followed by a skills test. Teaching Multi-Engine IFR also needs the MEPL-CRI, but the two courses can be combined very efficiently. The IRI is valid for three years, and requires a skills test for re-validation.

The leap from zero instructor qualifications to the IRI may seem a considerable one, given the usual career path for instructors is to start as Restricted FI(A)s teaching the PPL and perhaps taking years to move to IR training. However, I think the JAA system makes a lot of sense, because an experienced IFR pilot with the right instructor training may be just as well suited to teaching IFR as an experienced FI(A) is with the right IFR training. I don't have a JAA IRI, but based on my FAA experience, I actually found Instrument instructing the easiest of the trio of CFI, MEI and CFI-I ratings. VFR stick-and-rudder skills are something of an art, and teaching them is quite different from just applying them. IFR is very algorithmic and codified, and teaching it involves, to a reasonable extent, merely verbalising and explaining the

normal processes of IFR flight.

In summary, I think the JAA CRI and IRI are a great combination: relatively inexpensive to train for and an excellent skills developer and refresher. Using the privileges to give occasional recurrent instrument training can be rewarding and cost-effective: two pilots can log the flight time, and, as the instructor, you can learn a lot from the process of teaching and observing your student.

FAA Instructor Qualifications^{(21), (22)}

The FAA system is a fairly simple one, with three Instructor qualifications: the single-engine Certified Flight Instructor (CFI), the Multi-Engine Instructor (MEI) add-on and the Instrument Instructor (CFI-I) add-on.

The entry requirements are straightforward: you need to have an FAA Commercial Certificate with Instrument Rating for the CFI and CFI-I, and a commercial multi-engine Class Rating for the MEI. There is no ME upgrade to the CFI-I, you just need multi-engine IR privileges in order to teach IFR on twins.

There are three instructor written tests. The Fundamentals of Instructing (FOI) is short and easy. The CFI written test is one of the harder FAA exams. The CFI-I written exam is almost identical to the Instrument rating one. These three exams do not require any training endorsement in order for you to sit them; you can study on your own and just take the test.

Each of the three qualifications requires an Instructor endorsement (but with no minimum training hours specified) and an oral exam and flight check ride from an FAA Designated Pilot Examiner (DPE). The initial instructor qualification (the CFI) usually involves a thorough and demanding session with the DPE; it is always scheduled to start in the morning and can take most of the day. Booking this test also requires a little more planning, because the local FAA office has to be notified and can insist that one of their staff examiners conducts the test. The MEI and CFI-I add-ons are fairly quick and straightforward, especially if you do them with the same DPE as your initial CFI.

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I thought the JAA CRI and IRI were worth reviewing in some detail, because they are little-known courses that might be of particular interest to a JAA pilot. For the FAA qualifications, there are many web resources and books available, so I will only mention a few points from my experience that may be useful:

☞ Getting your initial CFI is quite a lot of work, but the FAA approach is very progressive and flexible. You don't have to complete an approved course at a single school; you can build up to the final check-ride step by step. Get one of the CFI textbooks and study a bit. Do the easy FOI exam. Get a few hours of CFI training and see how you like it, it doesn't need to be with an FAA instructor; you could use a JAA one, and take it from there. If you get hooked, study for the CFI written and plan a couple of weeks in the US.

☞ If you also have a UK PPL, you could do the CRI (SEPL or MEPL) first; all the JAA training contributes to your FAA CFI, since the principles of teaching and flying from the right hand seat are common to both systems, and there is no requirement for FAA-specific training, beyond getting an instructor to endorse you for the check-ride.

☞ Remember that you cannot get paid for any FAA training in the UK unless you have the parallel JAA CPL and FI qualifications. Paid training on a N-reg airplane requires a DfT waiver. Any training, even unpaid, towards a license or rating in the UK requires a JAA Instructor under the UK ANO. For an FAA instructor to conduct ab-initio PPL, Multi-engine or IR training outside the USA still requires TSA registration and approval. In effect, these regulations limit an FAA CFI to unpaid recurrent training and BFRs – but, for the PPL/IR, that may be a worthwhile goal.

There is an additional feature of the US system relevant to the experienced Multi-Engine pilot. You can take your initial CFI certificate on a twin and do the single-engine CFI and CFI-I as add-ons. This may be easier, because the difficult Initial test will focus on familiar multi-engine procedures like

VMC demos and engine failure drills rather than the various single-engine ab-initio training manoeuvres.

Hence, for the multi-engine pilot transitioning to the FAA system, the most efficient sequence for getting all the qualifications up to the ATP is:

1. Private Certificate check ride (following Private written)
2. Multi-Engine check ride
3. Combined Commercial and Multi-Engine Instrument check ride (following Commercial and Instrument writtens)
4. Multi-Engine Initial Instructor check ride (following FOI and CFI writtens)
5. Combined Single-Engine Commercial and CFI add-on check ride
6. CFI-I check ride, may be on a single for both single and twin privileges (following CFI-I written).

Conclusions

Flying regularly plus the JAA IR revalidation or FAA BFR is a fair means of staying safe and current. For many pilots, additional training might be useful, enjoyable and cost-effective. There are a lot of training options available beyond the routine and familiar ones, and, with some careful planning, you can achieve multiple training goals from a single course.

Electing to do additional FNPT2 simulator training is probably the most effective way for a PPL/IR to maintain skills and currency at a higher level. US type-specific simulator schools are a good resource for pilots of the more complex GA aircraft.

For the JAA License holder, the CRI and IRI courses offer an accessible step-up qualification which is also a good source of recurrent training and skills improvement. For the FAA Private Instrument Pilot, the equivalent is probably the upgrade to the Commercial certificate. Under both systems, the more daunting advanced qualifications can, to some extent, be broken down into manageable steps.

This rather long article is still only a brief overview of the many topics covered. The PPL/IR Europe website forum (<http://www.pplir.org/pplir/>) is a good place to draw on the experience of members who are expert in one or more of these subjects.



References and Notes

Numbering starts from (1) in Part 1 of the article

- (17) JAA Class Rating Instructor (SPA)
see LASORS Section H3
<http://www.caa.co.uk/application.aspx?categoryid=33&pagetype=65&applicationid=11&mode=detail&id=1591>
- (18) JAA CRI course examples BCFT at Bourne-mouth, the course I took, is highly recommended
<http://www.bcft.org.uk/flyinginstructorcourse-meplcrispa.shtml>
Also, Ontrack Aviation at Wellesbourne, I haven't trained there but they have a good reputation
<http://www.ontrackaviation.com>
- (19) JAA Instrument Rating Instructor IRI(A)
see LASORS Section H2
<http://www.caa.co.uk/application.aspx?categoryid=33&pagetype=65&applicationid=11&mode=detail&id=1591>
- (20) JAA IRI course examples
<http://www.bcft.org.uk/flyinginstructorcourseiri.shtml>
<http://www.ontrackaviation.com/iri.htm>
- (21) FAA Instructor Qualifications
see 14 CFR 61.181-189
http://www.access.gpo.gov/nara/cfr/waisidx_06/14cfr61_06.html
- (22) Example of FAA Instructor courses
CFI: <http://www.flyoft.com/cfi.php>
MEI: <http://www.flyoft.com/mei.php>
CFII: <http://www.flyoft.com/cf2.php>

Training Resources

Three of our members are involved in supplying the kind of training described in this article:

- ☞ Peter Bondar's Papa-Bravo Aviation operates a DA42 Twinstar with G1000 avionics which is available for differences training, JAA MEPL class ratings and LPC, JAA IR and IMC training, and FAA training including BFRs, IR etc.
Email: peter@papa-bravo.com; Web: www.papa-bravo.com; Mobile: +44 7775 883122
- ☞ Anthony and Linda Mollison run Professional Air Training Ltd at Bournemouth EGH and also specialise in meeting the needs of the Private/Business Person pilot. They can provide SE and ME Aircraft and FNPT2 training, for the JAA IR, CPL, ME-CR and IR renewals/revalidations
Email: info@pat.uk.com; Web: www.pat.uk.com/index.html; Phone: +44 1202 59 33 66
- ☞ IP's Editor, David Bruford, owns part of an FNPT2 Simulator business based at Exeter EGTE, Simulator Flight Training Ltd, which offers a 10% discount off of the standard training and IR renewal test fees subject to production of a current membership card. Enquiries or bookings via Airways Flight Training's office at Exeter Airport on +44 1392 364216.

Updating a Twin Comanche

By Alan South



Photo © Philip Whiteman, reproduced with permission

All in all it was quite a shock. However, unlike the surprise discovery of fog, or a thunderstorm over the destination, or a flickering oil pressure gauge this shock was on the ground. Our newly acquired Twin Comanche was on jacks, the stabilator was off, and both engines were out. The panel was half empty, and wires sprouting in all directions.

Despite the shocking appearance, the project was more or less running to plan. It's just that we had chosen to do quite an ambitious project on an old, relatively complex IFR aircraft and no amount of planning on paper prepares you for what it looks like in practice.

During the project, we learned a lot about upgrading, repairing, and maintaining an aircraft to the standard we require for serious personal IFR transport. I don't think that a project of this scale is for everyone, nor a Twin Comanche, for that matter, but many of us may need to carry out some of the steps, so I thought I would share the experience.

Why do a project in the first place?

My long term flying partner, Julian Scarfe, and I loved the speed and economy of our Mooney, but wanted a twin with some ice protection. After a long hunt, we concluded that the Twin Comanche would be the perfect aircraft. It is fast, has simple four cylinder engines, simple systems, and a huge range. It also has a polarising cult following - just like the Mooney.

Its performance is down to an efficient airframe that originally was very expensive to build. This was part of the reason Piper did not recommence building them after the factory flood in 1970. This meant that the youngest airframe would be thirty years old, and the Twin Comanches up for sale were suffering from either a lack of modernisation, or from neglect, or from both.

We decided to look for a project, and we found one that was a good basic airframe, and almost priced fairly. The engines had 1600hrs and were last overhauled in the 80s with a mish-mash of cylinders. The avionics were ancient, except for a Garmin

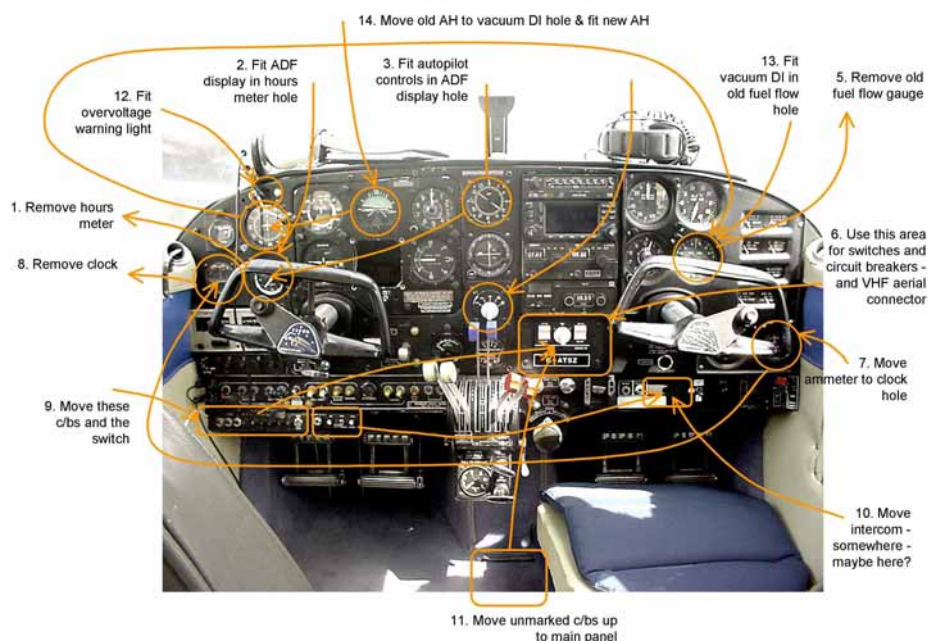
430, so the aircraft was technically BRNAV approved.

Stage 1 - Avionics Upgrade

RGV at Gloucester were booked to do an avionics upgrade. The most critical item was to replace the generators with an aftermarket alternator kit as there is no point having good avionics without enough power. Next was an S-Tec autopilot. We really liked the idea of a rate-based system driven by the electric turn coordinator and totally unaffected by vacuum failure. Finally, we fitted a Sandel EHSD, a WX-500 stormscope and a Shadin fuel flow computer to keep track of the fuel in each of the six tanks.

All this work was a CAA major modification. This is about the combined effect of the modifications on this type, and is recorded as an AAN. If any other Twin Comanche owner wanted to do some or all of the modifications to their own aircraft, they can refer to our AAN and save the fee. There's a searchable database of AANs on the CAA's website.

Despite removing heavy generators and



Avionics upgrade - Start with a plan!

heavy old avionics and replacing them with lighter alternatives, the empty weight went up. I think this happens every time you weigh an aircraft, but the empty weight as sold did feel a bit too good to be true.

Shakedown

By flying the aircraft in anger, we shook out a few more snags. An alarming one was where one engine would quit intermittently after a long climb. The problem was fuel related, but putting on the electric pump didn't help. I know that there's twice the chance of an engine failure in a twin, but this just seemed unfair. It was a weak fuel pump on the right engine, and a new one fixed the problem.

The aircraft was now at its permanent base at Cambridge, and over the following years we worked with the engineers at Marshalls to develop a deep understanding of the aircraft and its systems. The worst problems would be those that were intermittent, and would only happen in the air – like a rare radio interference problem that we spent two years trying to track down. The inspiration came from listening to the radio at home

and noting the interference as my heating boiler cycled. A true 'eureka' moment – and the problem turned out to be a 50p capacitor that had gone missing on the combustion heater's thermostat.

The engines

The engines gave much better service than expected. One had a valve seat come loose at 2000 hours and made metal that circulated through the engine. Although a new cylinder would not have been too expensive, the metal in the engine meant a teardown, and it simply wasn't worth doing this without a rebuild at the same time. The other engine made almost 2400 hours, when it started to suffer plug fouling. As the engine was on extension, and on a public transport CofA, there was little option but to rebuild it. I think this reflects well on the overall simplicity and robustness of the IO-320.

The options are to rebuild the existing engine or to roll the dice with an exchange. I'd previously bought a factory exchange via Van Bortel, but was increasingly hearing reports of poor Lycoming quality standards.

Two engineers independently suggested Norvic at St Neots, so I went over to see for myself. It felt good to be able to meet the people in charge, and I liked their specification in terms of new parts used, and their use of aftermarket parts like Millennium cylinders and Slick magnetos. The warranty they offer is good, and feels a lot more useful when they are so close to hand.

Stage 2 - Airframe Upgrade

The paint was by now in bad shape, and there were signs of corrosion bubbling up under the de-icer boots. BF Goodrich have drawings on file of every boot they've made, and will supply to order to the original part number, and a new set was commissioned. Don't ask about the price.

The next step was to book a slot for a respray with a reputable firm, and had to book nine months ahead for a precious March slot at Colton.

This gave us time to come up with a design. The real satisfaction from all that expense will depend on how good the design is, and I know enough about design to know that creating a good scheme for an aircraft is a deceptively hard thing to do. We worked with the creator of many current factory schemes, Craig Barnett. He has an internet based business called Scheme Designers. For a fixed fee, you brief Craig by telephone, and then he works up a number of options for you and sets them up on a privately accessible website. You then review the schemes, give feedback, and Craig revises them. Our brief was to 'bring out the best in the form, and celebrate, not hide the age of the aircraft'. The final solution had a modern, swoopy layout to accentuate the form, but used quite muted colours in deference to the age of the aircraft.



G-ATSZ stripped ready for respray

We also realised it was time to refurbish the interior, and worked out a plan with Richard Baldwin from Interair at Elstree.

Marshalls did a couple of exquisite metalwork jobs. The first was to rivet in some little patches flush under the boots. The second was in fitting a 1/4" windshield and it is not easy putting a thick windshield

in the space previously occupied by a thin one. To this day, I am amazed at the metalworking skills of the team. Around the base of the windshield was a 40 year old, very thin strip of aluminium with compound curvature. This needed to be teased into a new compound curve to take into account the different windshield, and you have to look pretty close to distinguish the trims from new.

Craig Barnett's design was geometrically quite sophisticated, and it is a skilled job to transfer a scheme from sheets of A4 to an airframe. Mistakes are expensive to fix, so it was a huge relief to go and collect a fantastic looking aircraft from Colton.

The CAA now require a reweigh after a respray as a mandatory item. We'd removed thick paint and installed light glass/carbon nosebowls, and the empty weight had gone up another 50lbs! Just like people, aeroplanes weigh more with age. In all fairness, we had greatly improved the interior and soundproofing, and that's probably where a lot of the increase came from. Also, I'd rather know what the real weight is of a light twin than hide behind the legality of a weighing from many years ago. You only get single-engine climb performance if you are honest about the empty weight, and without single-engine climb performance, it's a bit pointless having a twin.

Finishing touches

The Twin Comanche has a reputation of being tricky to land, with abrupt stalling characteristics and a lot of ground effect. However, Micro Aerodynamics have a vortex generator STC for the Twin Comanche, which promises better landing characteristics, along with lower Vs and Vmca. The problem was that it was an FAA STC, and our CAA have a reputation of wanting to do an examination from first principles before granting a UK STC. Such an examination of something that is designed deliberately to change the flight characteristics of a 40-year old twin felt a daunting task.

At this point, help came along from an unexpected source: EASA. The approval process changed in 2004, and Micro were willing to help. Micro had to apply for an examination of their STC, which EASA would delegate to the national authority responsible

for vortex generators. This was the Italian authority, ENAC, who decided to accept the FAA STC without further question! Any EASA registered Twin Comanche can now fit vortex generators as a result of this approval. The process took ten months, many emails, but no cost. I understand that EASA will be encouraging this approach and that's good news for us.

By November 2005, we had the vortex generators installed, and their effect can only be described as magical! It felt like we had a new aeroplane, and with all the work finished, looked like one too.

Was it all worth it?

I sometimes worried we were sinking too much money into this project but eventually realised that any well equipped, well sorted, and pretty IFR aircraft is going to cost a lot of money. We just happened to be starting from a relatively cheap original airframe. I also learned that there is a big difference between an aircraft that is basically safe and legal, and one that is truly sorted for reliable IFR transport, will have no snags at 6am on start up for an important business meeting, and will work to the book throughout the flight envelope. I have a hunch that most of the aircraft for sale here in the UK would need a lot of work and money to get them up to this standard.

The issue is liquidity. One can very easily spend an additional 100-200% of the original purchase price on upgrades, repairs, and improvements. However, the only way to get the value is to fly it out. Few of the costs could ever be recouped if the aircraft were to be sold. For a project like this, it has to be at minimum a ten year project. We're nearly at the end of year seven now.

A project like this will always need a fairly long timescale. In my mind there is a limit to how many things can be changed at once, and a finite time to settle down again. I would not have liked to do much more at each step than we did. We kept the aircraft flying airways IFR all through the project, which on reflection was important to its success.

The question of age is only about the airframe, as engines and avionics are replaced regularly. My view is that all airframes reach a steady state after

a relatively short time, and if they are properly maintained will stay in that state, and that there is little difference between a five or a thirty-five year old, properly maintained airframe. The issue is that most old airframes at some point in their existence end up not being properly maintained. In terms of the little snags, there's evidence that new aircraft seem to suffer as well. At least one's expectations are lower with a 40 year old airframe.

Compared with buying something like a Twin Star new, which requires some guesswork around resale values and ongoing cost of ownership to make a fair comparison, this project is a lot cheaper, but has required a lot more time and mental energy.

Owning an aircraft of this age and complexity needs a long term relationship with some great engineers, and wouldn't be possible without the resources of the International Comanche Society. It also requires deep involvement and engagement as an owner to build the understanding and network to resolve problems and source parts.

We chose to keep the aircraft on the UK register. This makes some things harder, and there have been moments when it was tempting to think about going N-registered, especially when looking at modifications and STCs. In the end, we've managed to get everything done that we've wanted. There is usually a way, but one has to build an understanding of how the UK and now EASA systems work. From what EASA are saying, this should be getting easier in the coming years.

I've personally found the project incredibly rewarding in its own right. It has added a new dimension to my aviation hobby, giving me a level of knowledge and understanding I never otherwise would have had.

Also, the Twin Comanche was originally chosen for the project despite its age. However, owning a classic has turned out to be a great joy. It's a very engaging aircraft to operate, and I get a real sense of personal pride in trying to master the craft of flying a piston twin. Looking back, this project has that rare characteristic of making both rational and emotional sense – though it didn't always feel that way at the time!



“There is a big difference between an aircraft that is basically safe and legal and one that is truly sorted for reliable IFR transport”



By
John Pickett

Mode S again

In response to comments by the aviation industry and Eurocontrol, EASA recently published a letter in an attempt to clarify the certification of Mode S transponder modifications.

A lot of the letter is taken up with certification, aircraft modifications, exemptions etc. However, the second paragraph concerns which aircraft are required to have Mode S – Elementary Surveillance transponders (ELS). Fixed wing aircraft of over 5,700kg MAUW or a maximum cruising speed greater than 250 knots (true airspeed) will require Mode S Enhanced Surveillance (EHS) transponders.

EASA go on to explain that certain EU countries, including France, Germany, and the UK have implemented Mode S enhanced surveillance for IFR flights operated by General Aviation aircraft in designated “Mode S” airspace from the 31st March 2007. Most IFR flights, in Europe will be conducted in Mode S designated airspace and will therefore require Mode S ELS. If you operate in a European country that does not have a Mode S airspace requirement, but you fly within a country which does have a Mode S airspace requirement then you will have to comply with that country’s requirements. All aircraft flying IFR as General Air Traffic (GAT) in designated Mode S airspace will require at least Mode S ELS.

German transponder squawks

German transponder codes have been changed to comply with the rest of Europe. As of March 2007 the code 7000 replaced codes 0021 and 0022.

General Aviation in Europe

The long awaited paper on General Aviation in Europe has been published by the EU.

The paper includes estimates as to the number of pilots, aircraft and flying hours in Europe. There are, apparently, 90,000 (powered aircraft) pilots and 20,000 aircraft flying 3 to 4 million hours a year.

There are also 40,000 microlight pilots, 90,000 glider pilots, 115,000 hang glider pilots and 5,300 balloon and airship pilots.

The value of GA is described as £1.4 billion in the UK and 20 billion US dollars in Europe. Comments on the paper were required by April 2007 and the results are awaited with great interest.

Galileo

As of press date there was still no decision as to the location of the Galileo Supervisory Authority. Jacques Barrot, the European Commissioner for Transport has alerted the EU to the possible failure of the Galileo Project. The project is falling victim to animosity and disagreement within the Consortium of European companies asked to implement it.

The Consortium, which includes EADS, Thales, Immarsat, Alcatel and Finmeccanica have been unable to agree how the deal

with the EU should be structured and have now effectively quit the project after failing to meet the 10 May deadline set for getting the project back on track. However, the time is fast approaching when the order for the remaining Galileo satellites must be placed and EU Transport Commissioner Michele Cercone has now said that the EU will take over project. The EU hopes to have the system partially operational by early 2011 and fully operational by 2012.

In addition there are fears as to the profitability of the project. The London Financial Times has reported that there are doubts as to whether Galileo can attract enough revenues. Why should one pay for a Galileo navigational service when GPS is free?

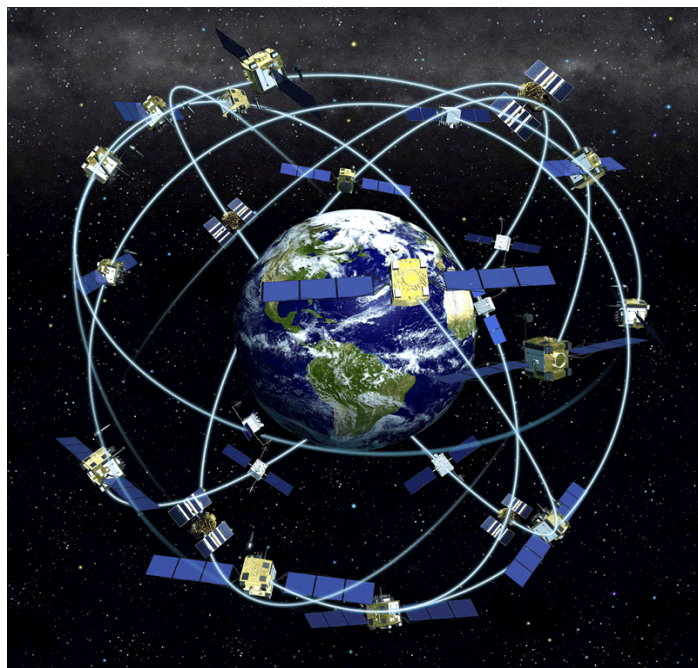
Not only are there problems with the management of the project, and doubts about profitability, but technical problems relating to frequencies are developing.

Europe registered with the International Telecommunication Union (ITU) certain frequencies for use by Galileo that are close to ones used by the US for the future GPS3 signals. It is thought that Europe was hoping that a joint US-EU committee would regulate use of the signals that would give the EU a veto power over US satellite navigation warfare. The tactic failed.

Now there is a similar conflict with the proposed Chinese system. China has registered with the ITU its intention to use frequencies that are close to those used by Galileo. Taylor Dinerman, a specialist author and journalist, reports that there is considerable speculation that this is a Chinese response to the European refusal to allow China into the senior management of the Galileo project. He goes on to say “For Europe, Galileo may yet turn into a technological triumph but the odds are getting longer. The Chinese may use the frequency overlay issue to gain leverage over EU policy worldwide. The Europeans may find that China’s supposed rise to great power status is coming at their expense as well as that of the US.”

Meanwhile, the Galileo website confirms that “30 satellites will be operational by the year 2008 providing a Global navigation facility. The cost of 3.2 billion Euros being already provided for by the EU. The benefits being the generation of 9 billion Euros for the EU economy and the generation of 100,000 jobs”.

There are obviously problems of communication within the Galileo project. However our dependence on GPS continues to increase.



Maybe there are just a few too many satellites for the world?

GPS and city centre buses

There are ninety buses in the UK city of Bristol fitted with GPS and Bristol City Council is investing £570,000 (£838, 000) in fitting 250 more buses with GPS.

Why install GPS in a bus when the bus drivers know exactly where they are? Well the investment is to provide real time information to passengers as to the whereabouts of buses. Bus stops will be fitted with a digital Real Time Passenger Information Display and a "Talking Bus" display with data coming from the GPS fitted in the bus.

MAVs

Many years ago the writer was flying a Cessna 172 descending through cloud towards Cardiff (Wales) Airport. Upon breaking cloud the aircraft hit a seagull. The damage to the leading edge of the wing was considerable.

Imagine the effect of a light aircraft hitting a solid object with a wingspan of 16 inches. The Wasp Micro Air Vehicle has gone into active service with the US Marines. The MAV has a wingspan of 16 inches, can operate at an altitude of 1,000 feet and achieve a speed of 37 miles per hour. It can be controlled manually or by GPS based autonomous control. In other words a large controlled or uncontrolled metal and composite seagull!



We are told that the MAV has tremendous potential both in military (surveillance) and civilian applications. The civilian applications include traffic monitoring, crowd control and building inspections. For example, a local council in the South East of the UK recently commissioned aerial surveillance to monitor energy losses of houses and businesses using a light aircraft. Before long, MAVs could be used instead. But it appears that MAV activities are totally unregulated and present a horrendous flight safety risk to light aircraft!

A Gozo airstrip

The island of Gozo, part of Malta, has a disused helipad. AOPA Malta, amongst others, is campaigning for the helipad to be extended to allow use by aircraft with STOL capabilities. Currently Gozo is only accessible by boat or helicopter.



Gozo helipad

IFACTS

Another acronym – Interim Future Area Control Tools Support (IFACTS). The UK national air traffic control provider (NATS) is claiming that a set of computer based predictive tools that it has developed will bring about the biggest change in Air Traffic Control since the introduction of RADAR. IFACTS will deliver tools into the ATC system at the main en-route control centre at Swanwick, in Hampshire UK. Primarily the tools will increase the amount of air traffic that controllers can handle. In addition it will increase capacity of the system and provide early warning to controllers of flights which are not following their flight plans. The system monitors radar and makes assessments of the viability of various options available to controllers for manoeuvring aircraft.

The CAA (Sweden)

European Union law permits the personal possessions of citizens to be moved from one country to another within the EU. In addition, the law requires that there should not be any impediment to free movement of such possessions. The CAA of Sweden has admitted to excessive charging "in order to finance other activities". Should a car owner relocate from say, Germany to Sweden, the fee for re-registering the car is between 59 and 212 Euros, AOPA Sweden reports. However, if a light aircraft owner wishes to move his aircraft from Germany to Sweden he will be charged 2,336 Euros for re-registering the aircraft. In addition, many countries, including Germany, demand that the owner pays for an "Export Certificate of Airworthiness".

AOPA Sweden has asked the Director General for Taxes and Duties in the EU to try and resolve this charging anomaly.



Yet again an example of light aviation being penalized and subject to excessive charges.

Aviation under attack

Whilst agreeing that the environmental impact of greenhouse gas emissions must be managed the attack on aviation is unwarranted. It appears to be fashionable to single out aviation as a major contributor to climate change.

The British Airline Pilots Association (BALPA) has recently published a comprehensive and informative paper about Aviation and the Environment. BALPA quotes from official Government data the following sources of CO2 emissions:

| Source | Percentage of UK emissions |
|-----------------------|----------------------------|
| Domestic consumers | 22.5% |
| Road transport | 24% |
| Other sources | 17% |
| Industry | 27% |
| Domestic flights | 0.5% |
| International flights | 5.0% |

So only 5.5% of UK CO2 emissions come from aircraft when 73.5% comes from industry, domestic consumers and road transport!



The art of achieving anti-procrastination

By Jim Thorpe

I have been involved in a number of discussions which lead me to think that pilots do not have a good understanding of what is involved in maintaining or more importantly changing the legal and operational framework within which we fly. What follows is not designed to be comprehensive, it just gives a flavour of what is involved if we want to affect some aspect of the rules which govern how we fly.

Legal and regulatory framework

The UK is now part of Europe and individual European states are signatories to agreements to assure common practice across the world. Thus we have ICAO setting down standards. Within this framework EASA and Eurocontrol implement (or add to) ICAO practice and below this the CAA and NATS develop their own rules. None of these bodies is the source of the prime legislative authority so they operate within some framework laid down by national parliaments. Major and sometimes minor changes therefore require legislative action. The EC is the instigator of many of the regulations now coming forward as a result of the Single European Sky initiative. That means the politicians set the boundaries and requirements and by the time it gets down to EASA and Eurocontrol to deal with the Implementing Rules, the "Framework" has already been set. There is often a system which allows nations to register variations from ICAO or European rules although Europe is steadily taking steps to reduce the power of nations to opt out. This means that there is always a tension between individual state's needs and preferences and the unarguably desirable objective of consistent aviation practice world-wide.

All this means that to gain agreement on anything is a long and laborious process of consultation, compromise and legislation. You do not have to be stupid to misunderstand the ramifications of apparently simple changes. When I first attended a Mode S meeting in Brussels I was amazed that so many of the 200 or so participants appeared to be generals. Leaving aside those countries where functions which would be civilian in the UK are military, I spoke to one 'proper' general whose job

involved killing people using tanks. It turned out that the tanks have a sort of transponder system along the wartime IFF (Identify Friend or Foe) lines. Without proper coordination it was feared that tanks might automatically fire on transponding aircraft. For once there was total agreement that this would be a bad thing.

Discussion and consultation

It is hardly surprising that once some project is underway it generates working groups, discussion papers, consultations and the like. Even this is not the initial stage which you might suppose. Perhaps a decade before the first meetings about the possible implementation of a new system takes place (for example, the implementation of Mode S), technical specification bodies meet. They tend to be populated on a voluntary basis by delegates from industry together with a smattering of representatives from with national Aviation Authorities.



They do lots of very real and detailed work which at first sight is uncontroversial. It's just technical. However let's imagine that they decided that the transponder power consumption needs to be very high to get good range. They did the electrical load analysis for a Boeing 737 and it was trivial addition. Job done. No one thought about the output of a 30 year old design 60 amp alternator on a Cessna 210. There is no representative of GA on this body so

without any ill-will a big problem for GA has sneaked into the world. No one will notice it until years later.

We have just been invited to participate in the main European technical specification body. They have decided that every specification they produce should have a 'light' version suited to GA. This is a fantastic offer but significant workload is involved and the decisions made will probably not affect IFR pilots till about 2017. Any volunteers?

Involvement of GA

So let us return to these notional working groups beaver away partly constrained by technical specifications agreed a decade earlier. Still no one from GA participates. They are not excluded they just don't participate either because they do not have the interest or the resources. At this stage there are vigorous arguments. Some countries don't like aspects of the concept. Some country's air forces don't want the expense and want exemptions. Some technically skilled participants have built a career of demanding that all avionics be painted pink. The participants from countries on the fringes still think that valves are the coming technology. The FAA representative says that if US airlines are disadvantaged because they favour mode Mode T and will need to fit two lots of equipment all European airlines will have to enter the USA via Mooseneck Alabama. Ridiculous you may say but at an EASA presentation we were told that there was no progress on the automatic adoption of FAA STCs because it was seen as part of the negotiation with the US about landing slots at Heathrow and elsewhere.

Very painfully over many meetings skilled administrators edge these groups towards a consensus. Maybe they set out to design a better horse but they decide they can live with a camel with one very small hump and if it makes the man from Mars happy we really don't care if it's painted pink.

Public awareness

Round about this stage, probably 10 or more years into the project the GA community notices something is happening. Someone

who should really get a life spots it on an obscure bit of the Eurcontrol website or some Euro administrator proud of their progress issues a press announcement which makes it to Flyer or Pilot. The GA community sees the implications and leaps into action like Woody Allen's parents who, when he was kidnapped, rented out his room. They convince themselves that it is all an evil plot by the Campaign Against Aviation and write vitriolic letters to Pilot or fulminate on the forums. They don't join AOPA or PPL/IR Europe, they don't get together and fund the development of high output alternators and they certainly don't offer their services to participate in the process.

The response to this press activity is typically a consultation process. You could be completely cynical and say that this is just a way of making an issue go away in a politically acceptable fashion. There is perhaps an element of truth in this but the real problem is that the change process has real momentum. The administrators, who may or may not care about the underlying issues, do care that they have spent many hundreds of hours getting to the current status quo. They have managed to overcome many obstacles. Introducing changes at this stage, which may seem easy to the newly arrived GA representative, have ramifications with the potential to unravel the whole deal. Of course they dig in their heels.

Example

Consider Temporary Guidance Leaflet TGL 10 which defines PRNAV requirements, some of which seem to us unnecessary and onerous. (*Implementation of TGLs has cost European aviation millions, but nobody seems to have ever bothered making them anything more than just "temporary"!* Ed). This document was authored by a CAA executive on behalf of a European committee over a period of about five years. He not unnaturally feels that it is to some extent his baby. He put a measurable chunk of his life into overcoming obstacles and getting the job done and is rather proud of his achievement. Perhaps this person is actually pretty well disposed to GA and holds a PPL so wants to help. However he knows that if he allows people to ignore TGL 10 requirements without very strong justification this painful pan European consensus might unravel and his working life will be made much harder. You can thump the table and try to apply pressure but in my view at least it is hopeless. The only way, and it's a way with no guarantee of success, is to produce well reasoned arguments as to the problems and possible solutions

and encourage the professionals to suggest possible ways of presenting changes which are compatible with their objectives. Maybe gaining this acceptance involves jumping through some rather irrelevant hoops but so be it. Remember back to your initial IR. If the objective is to get the rating and the examiner wants you to paint your private parts blue, grit your teeth and politely enquire what shade.

Privilege

A final reflection on the basis on which we fly in the IFR system. Many pilots seem to see this as a right. I incline to the view that it is a privilege. This is hardly unique to flying. Was it a right to drive without charge in central London? Was it a right to board an aircraft without someone confiscating your tooth paste? Perhaps my presence on an instrument approach delays a 747 by 10 minutes. That has just cost the airline 1/6 of a ton of fuel, deprived 500 people of nearly two days of life and reduced the landing capacity of the airport. It is pretty hard to argue that our presence in certain parts of the IFR system has significant economic value. The whole of democracy is about balancing the rights of individuals against the good of the majority. We are scarcely a popular minority being easily characterised as wealthy polluters. I suggest that we need

to tread carefully to protect and enhance what we enjoy by virtue of historical accident.

The future

If you accept this concept of how the process works, could we do better? Well I think PPL/IR Europe is now starting to have an impact. For the last three or four years we have been struggling to catch up but in recent months there has been a real sense of progress. We are now on more committees and get invited to yet more meetings and events which, good as it is, creates its own problem of increased workload. We are part of a decision processes, not yet at an early enough stage, but at least at a point when our needs might be accommodated more easily. We feel that we are being listened to and our views given weight. The CAA is adapting to its role of regulator rather than rule maker and service provider and is implementing its responsibility to balance the rights of all stakeholders. Internally we have started to find time to move from simply reacting to external threats and are working towards developing a concept of an IFR system which could be effective and accessible to increasing numbers of pilots holding a more attainable instrument rating.

Watch this space.



For Sale



F-GFYJ, (120,000 Euro, subject to negotiation)

Cessna Centurion T 210 N (1979), S/N: 210-63648, TTAF: 3900 hours
 Engine: TCM Continental TSIO520R9BR, S/N: 293592R, 250 hours available
 Propeller: Tri-blade Mc Cauley D3A34C402, S/N: 794606, overhauled 2007
 Equipment: Fully de-iced (boots and electric windshield and propeller), Bendix weather radar, oxygen, IFR/BRNAV/FM-immune; Dual Garmin GNS430; HSI; RMI; 2nd VOR (King); Dual ADF (ARC); DME (ARC); Garmin Mode S Transponder; Dual vacuum pumps (one new); Navtronic autopilot with electric trim and GPS coupling; Dual artificial horizon (vacuum and electric); Dual altimeters; Electronic fuel-flow-meter; Interior: red leather, 8/10; Exterior: beige, 8/10. Aircraft imported to France in 1988. Owners (50/50):

Jean-Luc BRICE

72, route de Cantalauze
 F-31470 FONTENILLES
 +33 (0)6 75 07 62 65
brice.jean-luc@wanadoo.fr

Raymond PAULIEN

40, Place des Carmes
 F-31000 TOULOUSE
 +33 (0)6 08 33 20 89
rpaulien@fid-conseil.com

Pilots' Talk

Dates for your diary

Malta Air Rally - Saturday 30th June to Wednesday 4th July 2007

Full details appeared in IP 60. Enquiries to George Kissaung on kissaung@mail.global.net.mt. Details of previous years' rallies can be seen at <http://www.geocities.com/maltarally/main.htm>.

4th/5th August 2007. PPL/IR Europe fly-out to Berlin Tempelhof

Full details on the website at www.pplir.org > Events > Future Events, or email Steve Dunnett (meetings@pplir.org).

September, member organized trip

Can I have indications of interest in a tour in September to the Greek Aegean Islands, a day trip into Turkey out via Czech Republic (one night) and back via Venice or a Croatian island (one night) about nine days in total? No need for commitment at this stage and no promise it will happen as yet. Contact Jim Thorpe, chairman@pplir.org.

Saturday 13th October 2007. PPL/IR Europe one day meeting at Oxford Airport

Three seminar presentations. Final details will be posted on the website when speakers confirmed, or email Steve Dunnett (meetings@pplir.org).

Get less for your ASDA with TORA

The following appeared in the AIS Agora forum and settles those nagging negative stopway distance queries. Print this off or rip out the page and stick it in your anorak, ready to read during a quiet moment.

The following NOTAM is currently in effect for Las Vegas (KLAS):
A0309/06 NOTAM
A) KLAS
B) WIE
C) UFN
E) QXXXX RWY 01R LDA 8676
ASDA 9436 TODA 10167 TORA 9770
According to this NOTAM, the

Accelerate Stop Distance Available (ASDA) is less than the Takeoff Run Available (TORA) which implies that the Stopway is a "negative" distance. The conservative thing would be to assume that the TORA is equal to the ASDA (9436 ft in this case) but I was wondering if anybody has seen this type of apparent discrepancy before, and if so, how you dealt with it?

R.N. Aer Lingus, Ireland.

Strange as it seems we have noticed that several US airports depict an ASDA shorter than the TORA. This will create some problems in most Airport Obstacle Databases and performance software since it's usually assumed that the TORA is shorter than ASDA. After discussions with the airport and our customers we decided to enter a TORA equal to the ASDA for Las Vegas in our system. <https://www.eurocontrol.int/aisagora/selectAuthor.do?said=2078>.

H.A. European Aeronautical Group, Sweden

The following answer was kindly provided by the manager of airports division for the FAA.

Here is the answer to the question whether the ASDA can be shorter than TORA. Normally this is not the case. However, when declared distance is used to obtain runway safety area, the ASDA can, in fact, be shorter than TORA. There are times when, to obtain a full safety area, runway length is used to obtain the full safety area. When this happens, the TORA remains the length of the pavement but the ASDA ends where the runway safety area begins. As an example, there may be a runway that is 7500 feet long. At one end, the safety area is 600 feet. To get the 1000 feet necessary for the standard RSA, 400 feet of the runway is included in the RSA. Since TORA assumes a takeoff, the whole 7500 feet is available for TORA. However, the ASDA would be 7100 feet since the remaining 400 feet is now RSA. Hence, the ASDA is shorter than the TORA and the limiting factor in MTGW would be the length of ASDA.

A.P. Eurocontrol, Bruxelles.

And just to clarify, H.W.A. Director Aircraft Performance Systems, Navtech, Inc/EAG, states: We do understand the logic

of using ASDA shorter than TORA, even though it is somewhat "non-standard". The problems for providers of performance data is that in most systems you cannot enter an ASDA shorter than the TORA, this since the software used for the calculations wouldn't accept it. That is why we (and many others) will have to enter a TORA equal to the ASDA for such runways. – Oh, if only everything in aviation was so simple – *Ed.*

Single European sky

The CAA has issued an information bulletin stating that the DfT (UK Department for Transport) has now written to the Commission confirming its intentions for the UK implementation of the Charging Regulation. With regard to terminal charges, the UK has decided not to apply this regulation to air navigation services provided at airports with less than 50,000 commercial air transport movements per year. In accordance with Article 18(2), the UK intends to defer the application of Article 9 and Articles 11 to 15 in respect of terminal charges until 1 January 2010. ERG has been commissioned to carry out a contestability assessment, of those UK airports with 50,000 or more but less than 150,000 commercial air transport movements per year to determine the extent to which the conditions laid down in Annex 1 of the regulation are met. Once the results of this assessment are known, a decision will be taken by DfT as to whether the provision of air navigation services at some, or all, of these airports may, in accordance with Article 1(6) of the regulation be exempted from the requirement to calculate terminal charges and set unit rates as stipulated in the regulation. Furthermore, during 2007, DfT will begin consultation with air navigation service providers and airspace users on the definition and establishment of charging zones as required by the regulation.

Acronyms!

We are aware that there are lots of acronyms used throughout this edition of Instrument Pilot and plan a comprehensive decode for the next edition.



“Back to the Future...”

By Paul Draper

19 years of flying, c1430 hours, 75 per annum, singles, twins and back to singles, now semi-retired (but not), 40 years of marriage and 5 years of those also, it seems, to PPL/IR Europe as Chairman!

PPL/IR Europe in 2002

Our old journal, “Network” 31 (June 2002), shows we had our AGM that year “kindly hosted by Shipping and Airlines in their Biggin Hill hangar”. This year we again held our AGM at Biggin but in the less draughty environment of the main terminal.

In 2002 I reported “Last year at Southend I was elected Secretary and this year Chairman, which leads me to think perhaps I should not attend next year for fear of what might happen!” However, my arm had been firmly pushed up my back and I agreed to do it for 3 years but that became 5!

In 2002 it was also noted “the company would be vigilant about various regulatory threats, specifically: Mode S, RVR 800, LARS, JAA Ops 2, Access to regional airports and Eurocontrol. The company would aim to work with, rather than in opposition to, the CAA. It would continue its fruitful liaisons with AOPA and with GASCo.”

So not much has changed you might think, but you would be wrong; much has changed and much still needs to change. We continue to see regulatory pressures, now much wider due to the European Commission involvement, but we are much better placed to deal with them now that we are better recognised by the authorities. But this also means we now have to sit on more committees, both in UK and Europe, attend more meetings and undertake much more travel. We are now members of Europe Air Sports, founder members of General Aviation Alliance and get much help from the Parliamentary Aviators Group.

Commercial Air Transport has mushroomed in the last 5 years and that has meant more controlled airspace, more equipment requirements and more procedures such as PRNAV. In the UK, NATS has been privatised and the DfT has been much more receptive to GA; we sit on several of their GA committees. The CAA has found a new way of addressing us with the results of the welcome Regulatory and Strategic Reviews. The Government’s Transcom inquiry into the workings of the CAA recommended there be a “root

and branch” review of the CAA, to which the Government has recently agreed, and it will start in 2008; more work for us I suspect! Recently we have become involved in working with NATS who realise we need to be considered in relation to proposed airspace changes and ways of working.

In Europe, much new regulation is being issued. SESAR is a huge undertaking, due to finish its initial briefing work in 2008, with implementation phased in between 2012 and 2020, based on an increase in commercial air traffic of 240% to 300% of 2005 levels. It is difficult for GA to have a significant voice in this project but we need continued representation to stand any chance of being listened to.

We have been, and continue to be, involved in all these matters due to commitment by many of your Executive members.

PPL/IR Europe in 2007

You now have a new Chairman, Jim Thorpe, who has been on the Executive for some time. Jim has initiated a number of proposals with the CAA, the main one being the use of GPS approaches, as a result of which official trials have been held and there is a real prospect of them becoming adopted at a number of airfields. This will help improve our ability for approaches at smaller airfields as we become driven away from regional airports. Despite what other organisations have claimed, it is Jim’s initiative that got this issue on the radar for us all.

There is also now a real chance of doing something about the difficulties of getting a JAA IR and its variance with the FAA IR. We have a small sub-group working on this with both the CAA and the European Commission/EASA.

I also hope we shall be able to increase our member numbers, particularly in mainland Europe where language difficulties continue to hold us back. We have been so heavily committed dealing with regulatory and other issues that increasing the membership has taken a back seat, but our website continues to be a great help in recruitment.

Fortunately we have Executive members who are willing to continue their tasks and keep us progressing with our services to members. Our “IP magazine”, most ably edited by David Bruford and produced by Paul Turner, continues to gain much recognition within the industry as being a

leading publication; but we do need more contributors (see David’s plea in IP 60). Thanks are also due to Timothy Nathan and Derek Fage for our much improved website.

In 2003 our membership fee was £30p.a. and it is now £45. It is proposed to increase it again from 1st January 2008 (to £60) and I am afraid this is essential if we are to continue our efforts to protect your ability to fly IFR in Europe. We have much more travelling involved in attending European meetings, mainly Brussels and Cologne but also Paris and Geneva. Each involves at least one overnight stay and whilst we might prefer to fly ourselves, we mostly use “cheap flights” or Eurostar (with age concessions where possible!) and it is an expensive business plus very time consuming to boot. Membership fees are still equivalent to much less than an hour’s flying costs!

Looking to the future

As I approach the end of my comments I would like to give a positive view of the future. I attended Aero 2007 at Friedrichshafen and was much heartened by what I saw. It was the largest such show yet and there was much innovation. New glass cockpit aircraft such as the Columbia 400, Cirrus Turbo, DA50 single and DA42 twin, were on show attracting much interest. One can now buy a Liberty IFR equipped and EASA certified single for c£90,000 and I think that is where the future IR pilots will come from as it makes our type of flying much more attainable for the younger generation. GA sales in and from USA are at record highs and the EU appears to have “got the message” about GA in Europe needing some “TLC” and it is involving us and other GA organisations in the debate. The UK Government has agreed the CAA needs review; the CAA has started its own better dialogue with GA and NATS are talking to us positively. We are even making some headway in the debate about a more attainable PPL Instrument Rating. So, the horizon is giving signs of clearing a little but we must remain vigilant and continue our efforts to keep the momentum going.

I will continue to be a member of the Executive mainly dealing with GAA and EAS plus EU-type matters but I must now also find time for other matters besides PPL/IR Europe!

My thanks to you all for your support during my term of office.



PPL/IR Europe Annual General Meeting

Biggin Hill Airport, Saturday 28th April 2007

The Annual General Meeting was held this year at Biggin Hill airport. Originally booked for Oxford Kidlington Airport, the venue was changed at short notice when we discovered the maintenance work taking place at Kidlington. In spite of the general consternation of the organising team, 39 members turned up on the day and we have not heard (yet) about anyone who tried to land at Oxford instead!

Parliamentary Aviation Group

The day comprised two main speakers followed by the AGM. Before lunch, Lord Rotherwick described the workings of the Parliamentary Aviation Group (PAG). He offered a very human face on what can sometimes seem remote government. The PAG is a non-partisan group with members from both Houses of Parliament that acts to promote the interests of general aviation within the halls of government. They are private pilots and fit in this work among their multiple other responsibilities both within and outside parliament.

The PAG exerts pressure on ministers and public bodies such as the CAA and DfT, to complement and reinforce the messages coming from private pilots and organisations such as our own. If we can provide the detailed research on specific issues, especially when presented in a balanced way that represents the whole of our flying community, the PAG can provide direct pressure to ensure that these concerns are properly addressed. Any formal replies received carry great weight and can be treated as formal interpretations of law.

In the course of his presentation, Lord Rotherwick provided many examples on specific issues, and described the tactics required to get effective focused responses to the specific questions raised.

After the presentation, a lively debate ensued on a range of current issues of concern to our members. A key issue involved the recent amendments to the ANO setting mandatory requirements for the carriage of ELT/PLBs, life jackets and oxygen systems that cannot be complied with due to absence of any equipment approved by the CAA!

The tension arose not just because of the illegality of non-compliance, but also whether one's insurance might also become

invalid. The CAA is aware of the problem and is believed to be working vigorously behind the scenes for a rapid fix, expected within weeks rather than months.

A sumptuous buffet was enjoyed by all non-vegetarians. The meetings secretary continues to be apologetic to the several of our members not so described, and promises that a universal franchise will be assured in future.

Use of oxygen in general aviation

The after-lunch speaker was Steve Copeland, who led a spirited session on the use of oxygen in general aviation. Steve started with a reminder of the physiology and regulations that had sufficient new material, clearly presented in a practical way to keep everyone awake.

But then the meeting really took off when Steve switched to the practicalities of different types of equipment, what to buy, how and when to use it, how to get your cylinders filled and equipment serviced. He had been able to bring a variety of types of constant flow and regulated flow units with cylinders, regulators, cannulae and masks for the group to inspect. If a picture beats a thousand words, so hands-on handling, weighing up and inspecting the equipment itself beats a thousand PowerPoint slides.

Steve's presentation was continuously peppered with detailed questions which were uniformly fielded with practical solutions and detailed knowledge. Everything was covered from how to locate adaptors for matching cylinder types with oxygen recharging at diving centres, the safety issues of handling oxygen under high pressure (and the explosive consequences of getting it wrong – not illustrated!), and the practical arrangements for using different types of equipment in light aircraft at various altitudes. All members learned new information, and many came away having undergone a revelation experience.

Annual General Meeting

Following an afternoon coffee break (for those who could tear themselves away from the oxygen equipment table) we came to the annual general meeting itself. The formal minutes will be published in due course, but the following summarises the main items covered.

Firstly separate brief reports were provided by the journal editor (in absentia), meetings secretary, web-site manager and membership secretary and Roger Dunn summarised the regulatory activities on a wide variety of national and European committees.

The treasurer presented the annual accounts and the budget for the coming year. Despite considerable voluntary contributions from a dedicated few, rising costs and stable membership has resulted in the need to raise the membership fee to £60. This was accepted unanimously by the members attending.

The formal business of PPL/IR Europe was conducted, including acceptance of the accounts, and reappointment of Ian Chandler and appointment of Steve Dunnett as directors.

Paul Draper, our retiring Chairman, provided a summary of his activities in support of the PPL/IR Europe over the last 5 years, during which time we had seen the transformation of the organisation from a group with little influence, to a highly respected player representing the specialist interests in the national and European corridors of power.

Paul's modest summary was followed by Roger Dunn providing a more appropriately positive recognition for the major role that Paul has played in this transformation and expressing the sincere thanks of the membership.

Jim Thorpe, the newly elected chairman, went on to expand on the challenges that lie ahead. He described the more open committee structure that we are adopting in order to respond even more efficiently and effectively to the many issues that affect us and he presented his vision of some of new activities that will occupy us during the year ahead. After brief questions the meeting wound up at 3:30pm, with road and air departures for home.

Finally on behalf of all the membership I offer our big thanks to the local members (in particular Roger Dunn) who assisted in making the Biggin Hill rearrangements at short notice, and to all the ground staff at Biggin who were outstanding in the courteous and helpful service on offer on the day.

Steve Dunnett,
Membership Secretary



**Director & Chairman,
Membership Secretary
& Technical Specialist**
Jim Thorpe



☎ +44 1989 770355
☎ +44 1989 770511
✉ chairman@pplir.org

**Director, Editor &
Press Secretary**
David Bruford



☎ +44 1823 461 310
☎ +44 1823 461 928
✉ editor@pplir.org

**Director, Secretary &
Treasurer**
Ian Chandler



☎ +44 1702 200 353
☎ +44 1702 354 488
✉ treasurer@pplir.org

**Director, NATMAC,
PAG, GAA & EAS
Representative**
Paul Draper



☎ +44 1962 850775
✉ paulr.draper@yahoo.co.uk

**Director, CAA GA
Strategic Forum
Team Member**
Roger Dunn



☎ +44 1622 814896
☎ +44 1622 817115
✉ R.Dunn@btinternet.com

**Director &
Meetings Secretary**
Steve Dunnnett



☎ +44 2920 875 188
☎ +44 2920 876 749
✉ meetings@pplir.org

**Director, Pilot
Training Specialist &
BBGA Representative**
Anthony Mollison



☎ +44 7813 678373
☎ +44 1202 574020
✉ anthony.mollison@fsmail.net

**Executive Member
& DfT EASA Forum
Representative**
Vasa Babic



☎ +44 777 557 0000
✉ vasa_babic@hotmail.com

Executive Member
Peter Bondar



☎ +44 1845 501 062
☎ +44 1845 501 067
✉ peter@bondar.co.uk

**Executive Member &
AIWG Representative**
Ian Harnett



☎ +44 1582 833196
☎ +44 1582 834592
✉ irharnett@aol.com

**Executive Member
& DfT SES Forum
Representative**
Alan South



☎ +44 1763 838465
☎ +44 1763 838465
✉ alan@littlewissett.eclipse.co.uk

Belgium Representative
Dirk DeJonghe



☎ +32 5635 0710
☎ +32 5635 0780
✉ dirk@color-by-dejonghe.com

Italian Representative
Eugenio Pozzo



☎ +39 348 300 6906
☎ +39 041 810 9917
✉ eupozzo@tin.it

Web Master
Derek Fage



☎ +44 1534 861372
☎ +44 1534 752301
✉ webmaster@pplir.org

Web Site Editor
Timothy Nathan



☎ +44 1372 812 469
☎ +44 1372 747 778
✉ webeditor@pplir.org

**Membership
Administrator**
Sali Gray



☎ +44 1452 618899
✉ memsec@pplir.org



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

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Editor

David Bruford
Toogoods,
Nynehead, Wellington
Somerset, UK, TA21 0DB
Editorial e-mail: editor@pplir.org
Website: <http://www.pplir.org>

Art direction & production

Paul Turner
14 Langworth Close, Wilmington
Kent, UK, DA2 7ET
paul@exec-flight.co.uk

Printing and distribution

Lithocraft Ltd
35a Dane Road, Coventry
West Midlands, CV2 4JR

Instrument Pilot

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

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

The Flight

This was uneventful, in hazy but otherwise fine CAVOK conditions. We received a provisional departure clearance at Shoreham and called up London Control shortly after takeoff, when we received the usual rapid climb into controlled airspace. I asked for a change in flight plan level from FL150 to FL090 and this was granted immediately. FL090 is above all the enroute MEAs and was maintained for the entire route.

The route flown was essentially as filed but with several shortcuts given by ATC. However, the most obvious shortcut (cutting out the KRH corner) was not granted despite several requests. Presumably, German ATC are unable to talk to French ATC.

I had booked an IFR slot and arrival was a radar vectored ILS via Zurich radar. The approach would have offered beautiful views if it was not for the haze.

The top tip in flying is to never leave the aircraft until avgas has been sorted and this is as true at AERO as at some Greek island. We didn't do it and had to get the shuttle bus all the way back to the aircraft, wasting a couple of hours.



EDNY, Friedrichshafen

AERO 2007

This is a huge GA aviation exhibition, far bigger than anything seen in the UK and covering all aircraft types short of large transport jets. There were some aerial displays too but in my view once you have seen one you have seen them all.

The immediate observation is that most new GA activity is taking place in two areas: (a) light aircraft in what is variously called "sports", "ultralight", "permit" etc categories, and (b) airways machines with 7-digit (and above) price tags. All the aviation regulators should be sent (on an all expenses paid trip, of course) to this show to see for themselves how successfully they have throttled activity in the certified light GA arena! The usual players (Cirrus, Cessna, piper, Mooney) were there alongside a few



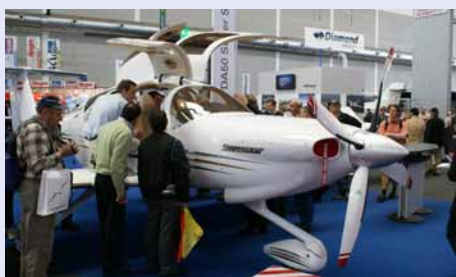
Cirrus SR22 on display



Glass cockpit in the Czech-built VUT 100 Cobra



Example of new "sports" category aircraft, but strictly VFR



The new Diamond DA50 Super Star attracts huge interest; perhaps because of the smart wooden trim and glass panel, shown below



half baked newcomers like the Czech-made Evекtor Cobra but clearly innovation in this market moves at snail's pace, presumably because almost nobody in Europe is buying IFR machinery in the sub-\$1M bracket. Total Cirrus SR20/SR22 sales in Europe are only 100-150 to date but they are busy cleaning up the USA.

Huge hangars were dedicated to ultralights, where the Czechs are particularly busy. Nearly all are limited to VFR by law but looking at the equipment in many of them it's easy to guess where they will be flying...

Another hangar was full of machines best described as a parachute with a lawn mower on the back of it, but it shows how diverse the market can be – so long as regulation is appropriate to the risk to the public.

The turboprop and jet markets were well represented as one would expect, with Piper (Meridian, Jetprop), Socata (TBM850), and the light jets. Eclipse were present with a real aircraft but surprisingly the Diamond D-jet was a mock-up. It was difficult to get near these, presumably because priority was given to looking after potential customers.



Beechcraft Hawker Premier 1, light business jet

Return Flight

This was uneventful. The departure clearance referenced a SID but was taken over by Zurich radar within a few miles, and followed the filed route with a few minor shortcuts. We asked, and were granted, a reduction in the flight planned level to FL100 but climbed to FL110 and then FL120 to get above some cloud, to descend back to FL100 later.

To the south we could see the Alps but there was a lot of haze.



Back in UK airspace, London Control gave us a "direct Shoreham" at the FIR boundary and a descent out of controlled airspace shortly afterwards.

