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FLIGHT TRAINING NEWS

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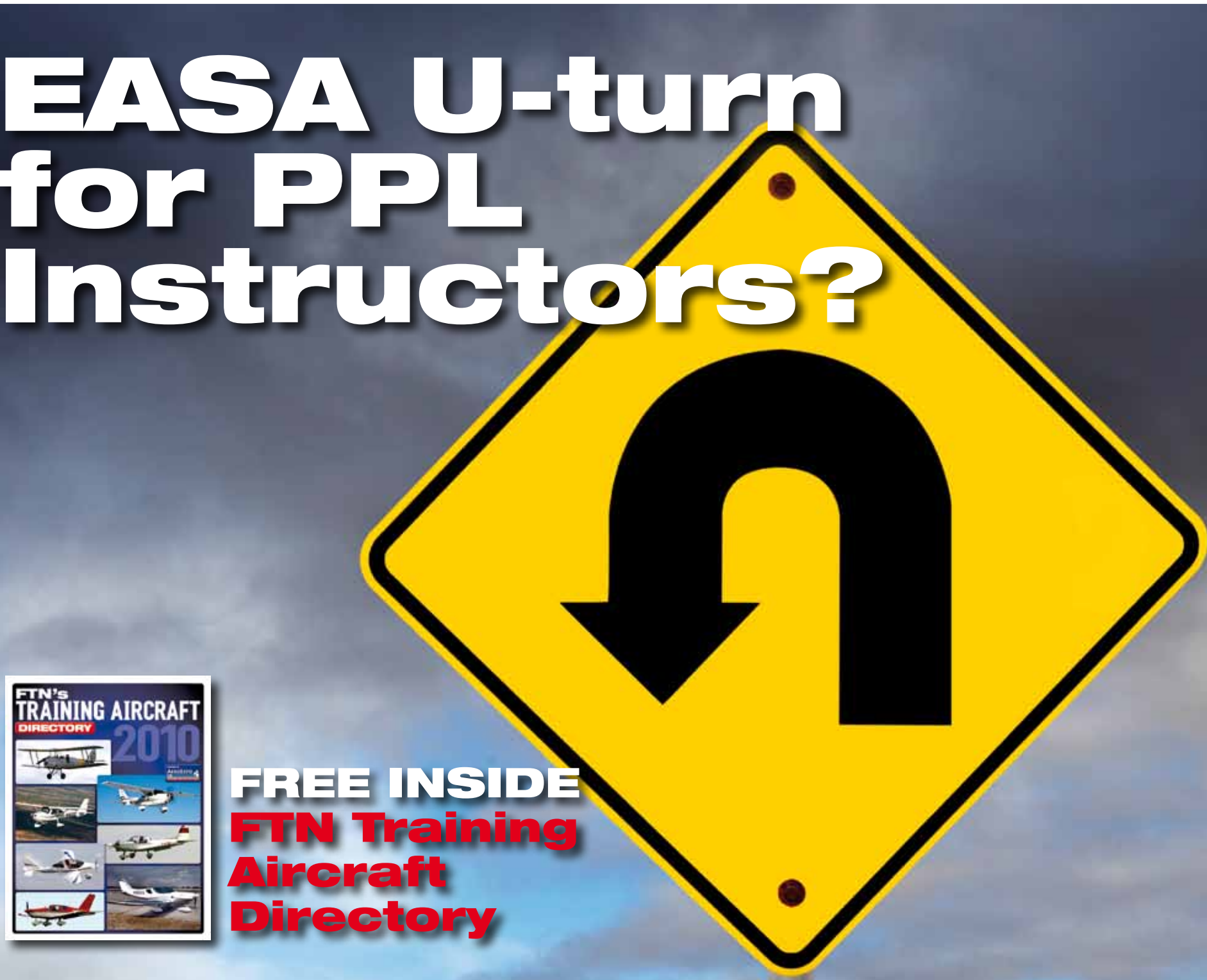

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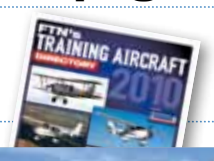

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EASA to renege on PPL instructor promise?

When the European Aviation Safety Agency (EASA) first started writing proposals for future pilot licensing requirements, one piece of encouraging news for the flight training community was that the necessity for PPL instructors to hold commercial pilot licences before being eligible to be paid for their work was to be axed. In a surprising about-face, however, the Agency has now apparently had a change of heart and has re-instated the requirement in their latest document defining their proposals for future Flight Crew Licensing (FCL). If, as currently appears to be the case, the CPL knowledge requirement for PPL instructors remains, industry experts have warned that this could lead to a severe instructor shortage in Europe for years to come.

Going back more than 20 years, it used to be possible for a PPL holder with at least 150 flying hours experience to become instructor rated to teach the private pilot licence syllabus and to be paid for doing so. All that was required was a minimum level of hours as pilot in command and then the individual could undertake an instructor course. Thus, for around £2,500 investment, a PPL could work (and be paid) as a flying instructor and gain valuable hours and experience towards a commercial licence, or just instruct as a career or part-time occupation. Twenty years ago the UK Civil Aviation Authority decided that this practice was at odds with international agreement (under the auspices of the International Civil Aviation Organisation (ICAO)), and so altered the rules to require PPL instructors to hold a CPL. However, existing instructors could be granted a Basic Commercial Pilot Licence (instruction only) which involved no requirement to undergo the full CPL exams and flight test. Later still, with the advent of JAR-FCL, the BCPL disappeared and so any aspiring instructor had to complete the full CPL in addition to the flight instructor course, before being eligible to be paid for flight instruction. Thus, a flying instructor rating that could be acquired for around £5,000 - £6,000, in today's money, also required a full CPL, adding a further £15,000 or so to the cost of obtaining the rating.

In 2007, FTN discovered that around 90% of flying schools in the UK were short of instructors

Unsurprisingly, this new barrier to becoming a PPL instructor meant that the sort of person who was once the stalwart of many flying schools – the experienced PPL holder who had an occupation outside aviation but chose to instruct part-time, was now faced with an unrealistic investment in time and money for the modest return their instructing income would bring them. The upshot was that UK and many mainland Europe PPL flight schools quickly found themselves short of instructors. The issue became so acute that in 2007 FTN discovered that around 90% of flying schools in the UK were short of instructors and as a consequence were struggling to fulfil their customer's requirements. A number of flying schools in the UK even reported at that they were having to close on certain days of the week due entirely to instructor shortages. The finger of blame was laid squarely at the airlines that, at the time, were desperate for pilots and were taking graduates from commercial flight training courses practically before the ink on their new licenses had had time to dry. And the remaining potential workforce, i.e. those experienced PPL holders who would be happy to put something back into the flying world they had taken so much enjoyment out of, were effectively ostracized due to the expensive and arduous CPL requirement. So when EASA began publishing its rulemaking proposals the announcement that they intended to remove the CPL requirement for PPL instructors was met with considerable enthusiasm.

So why have they now had a change of heart?

Certain national aviation authorities have suggested that as there is an international agreement in place for PPL instructors to be CPL rated, then why should Europe choose to opt out?

According to sources close to EASA, one key reason the Agency has chosen at this stage to retain the CPL theoretical knowledge requirement for PPL instructors is due to objections from certain national aviation authorities, and not down to the Authority at all. Certain national aviation authorities have suggested that as there is an international agreement in place for PPL instructors to be CPL rated then why should Europe choose to opt out? However, as Europe Air Sport Vice President Rudi Schuegraf, who was a member of EASA's FCL.001 working group which worked on the FCL proposals, explains, the argument is somewhat specious.

"Originally, we had convinced EASA that for the flight instructor teaching PPL(A) students the CPL knowledge requirement is a onetime burden without any benefit. But unfortunately it is a requirement of ICAO Annex I. However, given that the supplement of filed differences to Annex I has more pages than the Annex itself, the ICAO requirement should not be the problem preventing EASA to return to their initial position."

Mr Scheugraf added: *"In our response to the Comments Response Document, Europe Air Sports will be asking that the CPL knowledge requirement needs to be deleted for flight instructors who instruct to the level of PPL."*

So it would appear that a number of licensing experts from certain national aviation authorities want EASA to toe the ICAO line, despite the fact that there appears to be no safety case to support the requirement. Indeed, instructors teaching EASA's proposed sub-ICAO European pilot licence - the Light Aircraft Pilot Licence (LAPL), will not require CPLs.

Before going to print, FTN spoke with EASA. They told us:

"As with most of the issues which were changed during the comment review of NPA 2008-17, this topic is also explained in the Explanatory Note for the CRD FCL.001:

In relation to the FI, the only relevant change that has not been mentioned so far is the re-introduction of the requirement for the FI to have at least the CPL theoretical knowledge level. The Agency had initially proposed to alleviate this requirement, allowing that an FI instructing for the PPL and LAPL would have only the PPL theoretical knowledge level. However, the comments received, highlighting among other things that this would represent a difference to ICAO Annex 1 requirements, convinced the Agency to return to the original text of JAR-FCL.

"It should be added that the review of comments was done together with a group of licensing experts. They also supported to go back to the JAR-FCL requirements and to comply with the ICAO requirements (Annex 1). Altogether these arguments convinced the Agency to change the initial proposal. For the new instructor category LAFI such a requirement was not introduced."

There is a large pool of PPL instructors in Europe at present. Many graduates from commercial flight training courses are becoming instructor rated in order to keep their flying practices current while Europe's airlines recover from the economic downturn. As a result, there is virtually no shortage of PPL instructors currently. But as is well known within the industry, aviation growth is cyclical in nature, and as soon as airlines begin recruiting in earnest again, this pool of instructors will quickly dry up. And if the only route to becoming a PPL instructor still requires a CPL as a stepping-stone, industry experts are claiming that Europe could once again be faced with a severe instructor shortage.

An examiner's view of EASA pilot licence proposals

In June 2008 Europe's new aviation regulator, the European Aviation Safety Agency (EASA), published its Notice of Proposed Amendment (NPA) 2008-17b, detailing proposals for future Flight Crew Licensing. A public consultation then opened for interested parties to comment on the proposals between June 2008 and February 2009. During this period the Agency received some 11,000 comments from over 800 commentators, including national aviation authorities, professional organisations, private companies and individuals. Due to the volume of comments received, and in agreement with the European Commission and the Agency's Management Board, the decision was taken to publish the Comments Response Document (CRD) to NPA 2008-17 in phases. Accordingly, a CRD for the pilot licensing element of the NPA was published in April this year and is currently open for final comment before a final draft is written and forward to the European Commission and written ultimately into law.

Irv Lee

As with all rulemaking documentation, the FCL proposals are, not to put too fine a point on it, comprehensive and littered with 'legalese' writing. The resulting 600+ page document doesn't exactly make for light bedtime reading therefore. In order to bring readers a brief synopsis of some of the more contentious rulemaking proposals, FTN has interviewed Irv Lee, a UK instructor and examiner based in Hampshire, to find out how EASA reacted to some of his suggestions in the initial consultation round.

Irv is well known for his regular articles in a number of aviation publications; his clear advice to individual pilots confused by 'official-ese' in regulations, and also the PPL Masterclasses he holds around the country. Irv's background, or 'Curriculum Aeronautae' as he calls it, is on his website, www.higherplane.co.uk . Irv is also the ideas man behind FlyOnTrack (www.flyontrack.co.uk) a website owned by the General Aviation Safety Council (GASCo) which details news, links and information to help pilots avoid infringing temporary and permanent airspace around the UK.

Irv agreed to an FTN interview subject to it being clear that he has not been involved in any way with forming the EASA proposals, merely responding after having read them when everyone else did, as an individual, and not as the voice of FlyOnTrack.

FTN: What was your input to the first consultation round, and did you have any 'wins'?

Irv: Well, my input is in the public domain (http://www.easa.europa.eu/ws_prod/r/r_crd.php) and having an unusual name, not hard to find. Let's start with something simple. I'd noticed that the test content for various licences and rating renewals required various pre-flight skills (e.g. weather checking), but (with the exception of helicopter tests) did not require the candidate to check NOTAMs. It also perhaps indicates a culture problem which could explain some of the infringement problems with NOTAM'd temporary airspace.

FTN: Surely you must have had success on that one?

Irv: Some success, but not 100%. A majority of test schedules have now been amended, accepting my comment to include NOTAM checking, but one or two haven't, as the owners of those schedules didn't seem to me to understand the importance. For example, EASA thought that for Sailplane tests, checking the pilot could make "a full study of all the NOTAMS might not be very useful". Instead, they have substituted 'airspace brief' as if this skill would be sufficient for the rest of a glider pilot's flying life.

FTN: OK, what about the IMC Rating?

Irv: Allow me a 'flippant' comment first: EASA should turn all its efforts to standardising weather over the whole of the EU, and until they do, leave the IMCR as a safety-required UK rating. OK, to be serious though, I do have alternative proposals which I submitted, but even those would not be needed if they made the IMC into an EASA rating with 'opt outs' for any country not wanting it. All other EU legislation seems to go that way for contentious issues, why not aviation rules?

Prior to the consultation response, I also had the opportunity to ask to senior EASA officials face to face why, for at least two decades, every organisation and agency in Europe, from the Parish Councils to Governments, from small businesses to international conglomerates, are all encouraged or even forced to develop a risk-free culture which preserves life and reduce injury. Despite this, EASA is the only organisation that, in my personal opinion, seems content to oversee a process which will increase fatalities and accidents over the long term by putting post-PPL bad weather qualifications out of reach of the weekend hobby pilot.

As can be seen in the public record, I believe we need to 'work up' from the PPL level in achievable useful steps, not simply make an Instrument Rating slightly easier. I proposed an initial 'cloud rating' and detailed the training syllabus and test. The objective was to give a PPL holder something affordable to aim at, and which could save a life.

In 'my' proposed initial cloud rating, there would be no instrument approaches, merely training to survive in poor visibility and cloud, with extra Radio Nav skills, and the demonstrated ability to be 'talked down' to somewhere safe below cloud. In practice this would be accomplished either with a real radar unit or more likely in practice by talkdown from the examiner or instructor alongside. 'My' initial cloud rating would confer no extra 'airspace' qualification over that already held.

My second, higher rating might not be needed by many pilots, as many would be content with stage one. Stage two would require a current 'cloud rating' then further training for instrument holds and approaches, but allow these in controlled airspace but only under direct radar supervision in a CTA and CTR. The third step would be to the full, but perhaps easier, ICAO instrument rating in any airspace including airways.

FTN: And the answer?

Irv: It was not accepted, but neither was it rejected. Instead it was referred on to the FCL.008 group, which I believe, because of their 'understood' terms of reference, is likely to say 'thanks and no thanks' – but we'll see! If it turns out it has been referred to FCL.008 by EASA but then rejected there merely due to the previous terms of reference given to the group, then that is really a disgraceful state of affairs as it's a perfectly sensible achievable step and affordable skill development, based on safety initially and then utility later, if needed.

FTN: So much for ratings, anything about the new licences?

Irv: Yes, I had quite a few points there, and 'lost' most. Let's start with the main failure. The leisure licence (LAPL) [now renamed the Light Aircraft Pilot Licence, Ed] is to be based on 'continuing self-regulated privileges' rather than having an aircraft rating with an expiry date. This was copied from our initial NPPL-SSEA scheme, yet that was admitted to be a CAA drafting error. In other words, the ANO error of 2002 has now been copied for ever into the European Leisure licence by the so called experts who didn't seem to know that a live UK trial over a few years had already proved it does not work in practice and was about to be abandoned on the NPPL. Despite the real-life evidence, they did not conceive there could be a problem. My suggestion to move to a normal aircraft rating in the LAPL with a simple stated expiry date to be revalidated on the leisure licences was therefore not accepted.

A partial success was the amendment of the Basic LAPL privileges to be more of what it should be – an achievement stepping stone to the full LAPL. The way it was proposed would be a cowboy's charter, to the detriment of us all, as it originally allowed unsupervised flight with a passenger for a radius of 50 km around a base airfield, with basic handling training, and to be honest, inadequate untested navigation skills to be let loose in our congested airspace. The fact that the radius was proposed in kilometres rather than nautical miles suggests to me this was invented by someone who has no practical knowledge of leisure aviation.

My objections were to the proposal for a Basic LAPL to be anything more than a stepping stone 'achievement step' on the way to a full LAPL. I proposed it should allow very short range, single occupant flight in defined minimum weather conditions, (far better than official VMC minima), and until certain hours had been met, pre-flight supervision of plans by an instructor. As it is, the no passenger element has been accepted, and I was informed that my proposal to limit the range had been partially accepted, making it 30 kilometres from base, which I still think is too far as no thought has been given to high visibility minima considering the lack of navigation experience. However, despite this assurance that a reduction in range was accepted, the new published proposals remain at the original 50 kilometres radius.

Speaking of licences, the overall proposal to force a formal test on every pilot every six years has been dropped. I was ambivalent on this, seeing the point, but worrying it might decimate our population (who hate formal tests) and enough pilots drop out anyway. Now there is no enforced test, I will be commenting that the two-yearly training hour now needs a formal hour of groundschool attached to it. We short change pilots by thinking of the revalidation training as purely a flight with pre- and post flight briefs,

when there could be so much more added-value with an hour of compulsory, targetted groundschool.

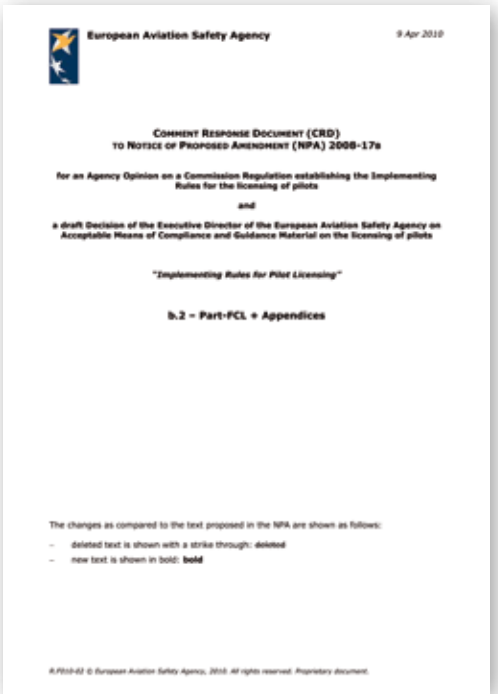
FTN: Any other important points?

Irv: Yes, the 'aerobatic' definition. The proposed definition of aerobatic meant that a normal licence could only be used for what is essentially a straight forward 'bimble for a bacon sandwich' unless the pilot had an expensive aerobatic rating. The definition of aerobatic was so wide ranging that instructors would not even be able to teach the PPL syllabus without one. Rental checkouts would be meaningless – no stalls or engine failure after take off practice; no spiral dive recoveries; no practice forced landings - all would be illegal without an aerobatic rating. I proposed a definition of aerobatic that I think most pilots would agree with, which excludes manoeuvres normally found in a PPL syllabus.

FTN: And the result?

Irv: The point was accepted but the official definition has been amended in their words, not mine, and I think in an ambiguous way. It is now not clear whether manoeuvres found in a PPL syllabus are exempted at any time, (which is what I proposed), or whether they are only exempted whilst under training for the PPL or rating. I think I will be trying again to comment on this latest aerobatic definition, hopefully to provide clarity and a common sense, safe solution.

The consultation runs until 9th June 2010. EASA says that it will take reactions of stakeholders into consideration when developing its opinion on pilot licensing, which is expected to be published and submitted to the European Commission later this summer.



European Aviation Safety Agency 9 Apr 2010

COMMENT RESPONSE DOCUMENT (CRD) TO NOTICE OF PROPOSED AMENDMENT (NPA) 2008-17b

for an Agency Opinion on a Commission Regulation establishing the Implementing Rules for the licensing of pilots

and

a draft Decision of the Executive Director of the European Aviation Safety Agency on Acceptable Means of Compliance and Guidance Material on the licensing of pilots

"Implementing Rules for Pilot Licensing"

b.2 – Part-FCL + Appendices

The changes as compared to the text proposed in the NPA are shown as follows:

- deleted text is shown with a strike through: ~~deleted~~
- new text is shown in bold: **bold**

news briefing...

CAE signs pilot training contract with Hangar8

At last month's European Business Aviation Convention and Exhibition (EBACE), training provider CAE confirmed the signing of a contract with Oxford Airport based corporate jet company Hangar8 for pilot training services on eight aircraft types.

CAE will provide training on Hawker Beechcraft, Bombardier Challenger, Cessna Citation, Dassault Falcon and Embraer aircraft models. The Hawker training will be conducted at Emirates-CAE Flight Training (ECFT) in Dubai, UAE. Training on other aircraft types will occur at Burgess Hill, UK near London, and CAE SimuFlite in Dallas, Texas.

"Hangar8 and the entire CAE team share an unparalleled commitment to safety and customer service," said Dustin Dryden, CEO of Hangar8. *"CAE's presence around the globe and training flexibility are important to our expanding base of operations."*

"We are very pleased that Hangar8 has decided to begin training with CAE, and look forward to helping them grow their business by producing proficient and effective pilots," said Jeff Roberts, CAE group president, civil simulation products, training and services. *"Our global network of business aviation training centres helps bring operationally relevant training closer to our customers' base of operations."*

Training insurance cover for student pilots

At the recent FLYER Flight Training Exhibition at Heathrow, insurance company Hiscox unveiled its new loss of training cover.

The new policy covers student pilots for the debt they will incur should they fail to complete their training through either accident or illness. The package includes protection for the time between obtaining a licence and beginning work, living expenses cover, and an option to extend cover for loss of licence once qualified.

www.hiscox.com/flying

SSAFA Force Help official charity of Farnborough International Airshow 2010

Farnborough International Limited (FIL), organisers of the Farnborough International Airshow 2010, have announced that SSAFA Forces Help will be the official charity at this year's show to be held 19 – 25 July.

With it being the charity's 125th Anniversary, its presence at the airshow is just one of a number of high profile events SSAFA has calendared for the year.

The Soldiers, Sailors, Airmen and Families Association (SSAFA) Forces Help is the national charity helping and supporting those who serve in our Armed Forces, those who used to serve and the families of both.

Specific initiatives include the SSAFA Homes from Home which enables families of injured servicemen and women to be close to their loved ones when they need them most. Other initiatives include holidays for the disabled children, siblings and carers of serving military personnel, Support Groups for the families of bereaved and injured Service personnel, an Adoption Service and charity shops.

Speaking about being chosen as the official charity partner for the Farnborough International Airshow 2010, Major General Andrew Cumming, Controller of SSAFA said: *"Our Corporate Friends Scheme already brings in support from exhibitors such as BAE Systems, Finmeccanica and MBDA. We are therefore convinced that Farnborough International Airshow, with its strong defence and MoD connections, will provide the perfect venue to reach a receptive audience and raise valuable funds and awareness."*

FIL Chief Executive, Shaun Ormrod further added: *"We are extremely pleased to have SSAFA Forces Help as our official charity at this year's Farnborough International Airshow. It does a huge amount of work to help all those who have served in our Armed Forces and we hope its presence at the show will help raise its profile even further."*

Adams Aviation on the move

As a result of continued expansion, aircraft and pilot supplies company Adams Aviation are relocating to new premises, just off Biggin Hill Airport on the outskirts of London, where their former base was located.

"This move will give us nearly four times as much warehouse and office space, so that we can increase the already wide range of products that we hold in stock, ready for immediate shipment," said Adams' managing director, Steve Langston.

"We will also be increasing our existing stock holdings, which will help to reduce lead times and provide increased availability to you; and with greater capacity to consolidate orders we can help keep your costs down too!"

From 7 June Adams Aviation new contact details will be:

Adams Aviation Supply Company Limited
Mercury House,
Vulcan Way,
New Addington,
Croydon,
Surrey, CRO 9UG
Tel: +44 (0) 1689 842999
Fax: +44 (0) 1689 808966
www.adamsaviation.com

Free GPS Guide for GA pilots

A CD guide to navigating with GPS has just been released for GA pilots.

The disc aims to highlight the benefits as well as the limitations of using GPS technology as a navigational aid. Produced by the Civil Aviation Authority through the Airspace & Safety Initiative the CD explains how GPS actually works and the dangers of over reliance on it.

The CDs are initially being distributed to flying schools and clubs across the UK, but will be made available to the wider GA community throughout the Summer at air shows such as AeroExpo at the end of June and the LAA Rally at Sywell in Spetmeber. The content is now also available on the ASI website, www.airspacesafety.com

GASCo to host CAA GA Safety Evenings

The UK Civil Aviation Authority has contracted the General Aviation Safety Council (GASCo) to deliver the General Aviation Safety Evening programme over the winter months of 2010/11.

The CAA's Safety Evenings provide GA pilots with an opportunity to develop their knowledge and understanding of all aviation safety matters. The events form part of the CAA's commitment to working with the GA community to improve air safety. Around 20 Safety Evenings are held throughout the UK each year. Last year, over 1,000 people attended the events, which took place at locations from Cornwall to Scotland.

Gerald Hackemer, Chairman of GASCo, said: *"We are looking forward to working alongside the CAA in its Safety Promotion and Education programme. GASCo is able to reinforce the CAA safety material capitalizing on the safety efforts of our members and we hope to engage with other organisations such as NATS to add variety and depth to the delivery of Safety Events delivered on behalf of the CAA.*

"We plan to introduce gradually a Regional Safety Officer scheme which will increase the number and frequency of safety events available to flying organisations nationally reaching out to the whole General Aviation Community in the UK. These safety officers will have a passion for safety promotion and education and, when the scheme is fully implemented, will increase the vital contact at individual and club level."

Flying Clubs and Associations wishing to host a Safety Evening in future should contact GASCo. www.gasco.org.uk

Wings Over Westminster
Lembit Öpik

United we fly...

Resident flying politician Lembit Öpik reflects on the vast number of bodies representing aviation, and asks: why can't we all just get together?

"In all my many years of public life, I've never come across a business or leisure sector so set on dividing itself into loads of pressure groups and then all speaking at once!" So said a frustrated - and very well known - figure in the flying world. He was exasperated because he'd been trying to sort out some issues relating to aircraft maintenance regimes, and had come to the frustrating conclusions that, to an extent, the problems had been created by the industry itself.

I got to thinking about this. Was he right? The first stop was to have a look at how many bodies there really are out there, all speaking for some aspect of flying. The answer is, in pub numbers, about a "gazillion!" So many, in fact, that I found groups I'd never even heard of before. I asked a member of one such organisation what they did. He said, "Well, Lembit, I actually run it, but we only call meetings from time to time when we want to shake a fist at the Government. Often we don't even get together for months." In a way, that made sense – no unnecessary meetings. But, in a different way, it spelt trouble because that approach depends primarily on the continuity individual players bring to the mix. Get a bad, or ineffective, team leader and the whole thing fades away like a summer mirage.

> **How many bodies are there, all speaking for some aspect of flying?**

Other groups are the product of great energy from a great blast of fanaticism for some niche in flying which prompts the excited gang to form a group. I'm willing to bet that any day now a group will be formed called the 'Channel Crossers Using Small Helium Filled Balloons Association'. And no doubt the CCUSHFBA will soon enough fall into a contretemps with the National Air Traffic Service who quickly tire of lone aviators drifting out of control through Class A airspace between Heathrow and Charles de Gaulle – leading to the 'Channel Crossing Small Helium Filled Balloons Act', which stipulates 100 new minor regulations about that airspace – and, if the past is anything to go by, inadvertently bans ALL aviation from the said part of the sky. The anti-aviation lobby will then seize upon the precedent and say, "Well, our quality of life has improved massively since flights between Britain and France were banned. And think of the environment!" And they'll have slogans like 'Balloons to go, they're too slow!' and 'Jumbos to France, mais non!' And then we'll all be in a mess.

So what should we do? First, there's NO case for merging ALL the organisations into one. Commercial airlines have little interest in the plight of users of unregulated airspace, in the same way that a glider pilot will never be concerned about the drills involved in the event of an engine failure. So there's no harm in having a myriad of groups each celebrating and defending their corner of flying. The problem comes when we don't work together on areas of common interest and concern – areas which must be resolved and WILL be, either by us of FOR us if we can't agree.

And that's the core point here – and a point I'm increasingly going to mention until we actually take a strategic decision to work together. In simple terms, we're not far away from the moment when, in a very practical way, our freedom to fly will become measurably curtailed by our own inability to work together to prevent great evils from befalling the flying community as a whole.

In a sense, this is what's happened with EASA which is most evidently an instrument of politics, not practicality. This assessment is informed by a number of infamous gaffs by EASA such as the geological lengths of time it takes to get some approvals for maintenance through. And then there are all those other proposals which the Powers That Be come up with, such as putting Air Speed Indicators on hot air balloons and fire extinguishers on hang gliders – these are both true examples! That's what happens when people who don't understand a beautiful but technically demanding field attempt to legislate for it.

I don't actually hate these people, or these organisations. That would be ridiculous. Mostly, the errors are made from ignorance, not spite, and I've come to the absolute view that, generally, humans do their best to live life in a good way and work effectively in whatever they find themselves doing. But, it IS a sign of the aviation sector's failure to wield enough power over its own destiny to prevent idiotic ideas getting surprisingly far down the road of implementation.

So let me make an almost impatient proposal here. I suggest we hold a seminal summit of the interest groups – everyone – somewhere we don't get disturbed for two days, and create a common agenda for aviation. This should recognise the areas of shared concern, and shared solutions, as well as differentiating them from the areas of internal dispute within the sector. Once we've done this, we need to agree that at the core of each organisation's credo is to make its contribution in the collective interest, and to engage constructively within the industry on areas of differentiation. Note that, whether or not we solve these problems for ourselves, solved they must be. We either do that or have it done to us, and I know which of these I'd far prefer.

> **As an ex-MP, I have two useful tools: a knowledge of how Parliament works, and an understanding of what it takes to bring people together when they don't really think they want to - or need to**

Now for the good news. As an ex-MP, I have two useful tools: a knowledge of how Parliament works, and an understanding of what it takes to bring people together when they don't really think they want to - or need to. These two elements are at the heart of my proposed agenda, and I think there are enough individuals who 'get it' to make the first tentative steps to a seriously strategic common message. I'm shortly going to list the whole gamut of Aviation bodies –including the CCUSHFBA if it exists by then, and invite them all to get involved.

No one organisation can really represent everyone. But it is possible to generate a united front that delivers just this. And there's a time imperative for doing it now, before things get even further out of our own control.

By the way, I'm NOT a pessimist. I do think the time is right to give this a real go and it's not as if people haven't tried to achieve this in the past either. There are regular meetings along these general lines every year. It's just that, ironically, even these meetings seem to duplicate the effort and don't lead to long term strategic partnerships.

I promise not to write about this every month. But, equally, I am committed to nagging aviators and their respective organisations to doing this together, until everyone gives in and says "OK, let's try and make an agenda for aviation."

As I've said before, that agenda must cover safety, security, punctuality, airspace and environment. There may be other things too, but it can't be a list of more than, say, nine items without becoming unwieldy. What matters right now is that we generate some sort of list, and move ahead from there.

I think aviators are fantastic people. I was honoured to attend the GAPAN dinner in The City recently, and hugely enjoyed the tales of dare devil sound barrier breaking flights in fighter planes, and near misses in combat situations. I thought to myself, we've got so much in common, and we know so much more than the politicians, let's help them to help us all. Flying's too important to let unqualified people take the controls. It's time we took the same approach to aviation policy too.

Liverpool Helicentre continues to expand

Liverpool Helicentre opened a new base at Caernarfon Airport on 1st June 2010. The new training facility will offer a complete package of PPL(H) training courses, pleasure and charter flights.

Helicentre Liverpool's new Schweizer CBI G-OCBI

To celebrate the opening of the new base, a special event was held on the 1st June, attended by over 50 people, including local dignitaries such as the Mayor of Caernarfon, who enjoyed a flight in the local area with Helicentre managing director and CFI Jonathan Rayner. The RAF also put in an appearance with a visit by their Search & Rescue helicopter based at nearby Valley.

Marking a double celebration, Helicentre Liverpool has also recently purchased two new aircraft to add to their fleet, a Schweizer CBI and a Robinson R44 Raven II. Both helicopters were manufactured in 2007 and are low houred aircraft, and will be based at the Helicentre's main school at Liverpool Airport.

Jonathan Rayner commented: *"This is a very exciting time for Helicentre Liverpool as we expand our fleet and branch out into North Wales. Caernarfon is a superb airfield to operate from and flying in Wales offers some the most spectacular scenery and terrain in the UK. We are also able to offer residential courses from Caernarfon. So why not bring the family and have a holiday in Snowdonia as well!"*

Plans are also in place to purchase a third new aircraft - a modern single-engine turbine helicopter, although at the time of writing the jury was out as to which type (although FTN suspects the new Robinson R66 may be high on the shopping list). In all this will represent over £1 million pounds investment in upgrading the school's fleet.

New simulator technology in place at Romania Aviation Academy and Ottawa Aviation Services

National flight training school, Romanian Aviation Academy, have received certification for their new Ascent XJ Trainer.

The Mechtronix Systems manufactured Flight Simulation Training Device (FSTD) is configured as a generic twin-engine heavy jet, enabling RAA to complete their ATPL syllabus with MCC training and jet orientation courses, helping to prepare their students for Type Rating training with the airlines they move on to. The Ascent XJ Trainer has been certified as JAR FSTD A, FNPT II MCC under EASA regulations by the Romanian local aviation authorities (AARC).

"We are very pleased with the successful certification of our Ascent XJ Trainer," said Mr Sorin Cristian Rosca, training director at RAA. *"Our new synthetic trainer enables us to provide our airline customers with highly qualified pilot students well trained for MCC and who have been introduced to the jet environment. This new device is a real gain for our students and our academy as it will increase efficiency and enable us to maximize our price/training capability ratio."*

The Ascent XJ Trainer is equipped with a conversion kit to a Regional Turboprop and fully functional EFIS, EGPWS, FMS, TCAS, and weather radar. The new device will familiarize RAA's students with the automated flight deck, systems complexity, handling quality and performance of a large commercial jet while offering high fidelity via a FFS-quality Image Generator (IG) and Full HD projectors. The FSTD features a 180° x 35° FOV and Continuous Earth Real Terrain System (CERTS) providing realistic visual scenery.

Meanwhile, across the Atlantic, Mechtronix have delivered an Ascent Turboprop Trainer, configured as a regional turboprop to Ottawa Aviation Services based in Ontario, Canada. The FSTD will be used for ab-initio training, turboprop transition, Crew Resource Management training as well as for Instrument Flight Rating courses, given the device can be converted easily to represent multi and single-engine piston aircraft.

Mechtronix Systems Inc., an MWC company, a world leading manufacturer of Flight Simulation Training Devices ("FSTD"), today announced that Ottawa Aviation Services ("OAS"), based in Ottawa, Ontario, Canada, has acquired an Ascent(R) Turboprop Trainer(TM) configured as a generic regional turboprop with conversion kits to multi and single engine piston. The FSTD will be used for Ab-Initio training, Turboprop Transition, Crew Resource Management ("CRM") as well as Instrument Flight Rating ("IFR") courses.

"The Ascent(R) Turboprop Trainer(TM) will improve the quality and safety of our training program and expand our professional curriculum to better prepare our students for commercial operations." said Cedric Paillard, co-owner and vice president at OAS. *"Integrating Mechtronix leading flight simulator technology into our training programmes will be a real gain for our students, allowing them to improve their flying skills in both normal and abnormal aircraft operation."*

From the Flightdeck

James McBride

What Goes Up...?

Of all the laws of physics which govern our activities as pilots, the gravity one never fails. Whether we are moving, hovering, climbing, descending, taking-off or landing we can rely on good old gravity to do its thing. Of course sometimes not all the parts of an aeroplane which commence flight leaving the ground at the same time return to earth simultaneously. You only have to think of the number of times when bits have fallen off airframes while in flight. DC10 cargo doors in the '70s; Concorde Rudder parts in the '80s; BAe ATP Landing gear bits in the '90s and you get the impression that the sky is full of falling debris!

Of course it's not really true. However the fact remains that it all must come down somewhere and fortunately one has to say, 99% of the time all of the airframe returns to Terra Firma in one piece. There are some aircraft that had a reputation for losing parts of the airframe whilst in flight and one wonders whether the Avro Shackleton Airborne Early Warning aircraft of '60s and '70s fame was one of these. This four engine propeller driven bomber was an incredible piece of engineering with its roots harking back to the Second World War and carried the nickname "Ten thousand rivets... flying in close formation!" Perhaps some of them became rather 'loose formation' at times? I actually recall having had the privilege of flying the "Lead Ship" with a Shackleton formating on my aircraft back in 1988 while working as an Air Taxi pilot on light twins in Manchester.

Funnily enough it wasn't even supposed to be my flight, but the company had accepted an air to air filming assignment for a TV News Station at very late notice. I just happened to be in the company offices at the old South Side hangar at Manchester Airport, when all of a sudden there was a big commotion. Due to a breakdown in communication, the RAF 8 Squadron Shackleton had appeared and was now on the ramp on the other side of the airport, across the runway from us, with its engines running! Now this was a serious issue as the Shackleton crews used to have a massive lead up time to get themselves ready for operations. Whereas other operational types of military aircraft used to have their crews prepared to launch at say "Readiness Five" (meaning five minutes required to getting airborne), the Shack used to have various states of crew alertness including I think something like 5 hours in advance! Additionally, the TV camera crew contacted the Air Taxi company from the ramp on the North side to say they were ready to climb aboard our light twin and "Where the Hell are you!?"

The pilot who was supposed to fly the mission turned to me and said, "I've not flown close formation for a long time and I'm not sure if I can do it..." Within seconds we swapped roles and all of a sudden I found myself Captain of an aircraft which was about to fly formation lead with a dissimilar type. The run through the hangar was exciting, but not as exciting as finding the Partenavia PN68 outside with a flat battery! "GET A GPU QUICK!" I shouted at the top of my voice to the company engineers who were watching. Soon we were cranking for England and the engine burst into life with a cloud of blue exhaust smoke immediately blasted backwards. Chocks gone and we started taxiing with my oppo working the R/T as fast as he could to get us clearance across Manchester International's busy runway.

I don't recall feeling sweaty palms. In those days we all wore leather gloves when flying the camera ship as it could get cold and windy inside flying with the big back door off the aeroplane, but was that sound in my headphones really from my heart beating wildly? There was a full harness with safety straps for the cameraman so he could move around the freight section at the rear and a headset socket so he could communicate directly with us in the cockpit. Having done most of the preflight checks as we crossed the runway, we had reserved the power checks until the engines had warmed up – at this rate these would be done as we lined up for takeoff, I thought to myself as we taxied alongside the huge Shackleton. Both aircraft were powered by propellers, but in reality that was where the comparison stopped. The little high-wing Partenavia piston twin with tricycle landing-gear was dwarfed by the four-engined, tail-dragging bomber with twin contra-rotating props on each motor. I remember it being very, very shiny and I wondered how long it took to polish all that paintwork. But no time for reverie just now, as soon as the parking brake was applied, the camera team were climbing aboard being briefed by the P2, while the Co-Pilot from the Shack came to my window for a quick brief for the formation on behalf of his skipper.

We must have made a very odd couple as we lined up for takeoff as a formation pair with a five second gap between the times of 'brakes-release'. Power checks being done just before we slipped the brakes, we were soon rolling in a south-westerly direction gathering speed. Behind us the mighty Shackleton roared down the runway and lumbered skywards. We had agreed a speed of 150 knots for the formation and this seemed to be common ground for both airframes – perhaps a bit fast for the Prat and a bit slow for the Shack, but at least we knew our aeroplanes' capabilities. The actual piloting as lead-ship was a non-event in many ways. All I had to do was to fly as smoothly as possible, getting my co-pilot to call the speeds and heading changes so matey could formate on us. He came into position in close formation at 'Echelon Starboard' which meant that he was on our right-hand side and set back a little behind our wing line so the cameraman could get a really good view of the machine. We manoeuvred with Liverpool ATC now in order that we were heading northwest and therefore the sun would be behind the lens for the best pictures. There was quite a lot of chatter both from the ATC frequency and on the intercom with the cameraman, but not much between the formating aircraft. Through the open back door I could hear the drone of the engines next door, even above the noise from our own slipstream.

My view was obstructed over my right shoulder, so I couldn't actually get a look at the Shackleton, but from what my chum in the right-hand seat was saying, it was an impressive sight, worth seeing. Both the co-pilot and the high-wing were in the way, "I want to see, let me have a look", I said and briefly he took control of the aircraft as I loosened my harness and leaned right forward into the area behind the windshield – the sight took my breath away! Only mere feet away from us, alongside was the Shackleton. It looked ABSOLUTELY HUGE with shiny dark grey paintwork and ALL those propellers spinning round in the sunshine - it felt they were turning only inches away from our wingtip. The faces in the other cockpit wore big grins and they looked very relaxed, but my pulse rate must have gone off the scale. "THANKS! I have control!" I said on the intercom with as much sangfroid as I could muster, once again concentrating on keeping the wings level and controlling my breathing. Strewth, that is CLOSE FORMATION! I thought to myself while trying not to heavy-breathe on the microphone.

"How does it look from there?" Came the transmission from our right wing and I keyed the mike,

"You're looking BEAUTIFUL!" I hoped he realised I was talking about the aircraft. Eventually the TV crew had enough footage and the RAF had used enough fuel – it was time to Part Company. "You're clear to break right..." and in one smooth dark grey wingover they were gone.

From what I heard later, ITV were very pleased with the pictures. My family taped the evening news story, but I never got to see the video film as the tape was a duff one which was used for the recording. That being said, I will never forget that truly beautiful sight of a four engined bomber just outside the window of our little Partenavia on a sunny afternoon. Of course I don't know how many rivets were still together when they got it back to base, but I guess they may have lost a few.

This brings me back to the original thought of bits falling off aeroplanes. Perhaps the most extreme example was the Pan Am 103 disaster in early 1989 when a whole B747 broke up in mid-air after the bomb exploded killing all onboard. A good friend of mine, who lived nearby, heard about the event and travelled to the site that night to see what had happened. He is not a morbidly curious type, but has always maintained an interest in aviation – his father and stepfather were both pilots. From a distance he said he could see the emergency services were very obviously in attendance with a huge fire being tackled by fire engines where the main part of the airframe landed. As he had arrived quietly on his motorcycle through the back lanes he had avoided the police roadblocks and now he set off on foot across the fields in the dark. All of a sudden he came across the remains of an engine, still smoking, in the middle of a field! It was a huge shock. At that moment he realised that this was not the place to be. He turned around and left before he discovered anything more macabre.

Macabre is certainly the word to describe the stories about bodies being found on the flightpath for London Heathrow very occasionally, assumed to have fallen from the main landing gear bays of long haul aircraft inbound from the third world. Of course these poor stowaways don't realise that without pressurisation, they will actually die from hypoxia, well before the airliner reaches cruising altitude. Fortunately, with increasing improvements in security standards at foreign airports, these tragic events are now much rarer.

On the lighter side, there are some amusing stories about what falls from the sky and one of these was a favourite of mine for some time. I recall when I was much younger that I thought that perhaps the toilets on airliners were simply flushed into the atmosphere. It didn't occur to me then that airframe manufacturers would have gone to the trouble of plumbing in holding tanks full of blue fluid to store the waste products of in-flight catering. Not all systems work perfectly however and there are occasions when (according to the engineers) the dump valves of the lavatory tanks develop leaks into the service panel area while flying in the freezing conditions of high altitude cruising – not a pleasant thought. This thought probably did not occur to the farmer in Cheshire on the flightpath for aircraft landing at Manchester, who called the police to investigate what he termed a "UFO" which he found, had landed in his field. When the police arrived, he duly showed them into his kitchen where he had put the UFO for safe-keeping. In the family freezer, along with the steaks and a shoulder of lamb he proudly showed them a very large chunk of blue-ice!

What goes up... must come down, somewhere!

Athens, Greece, 06 MAY 2010

Anglo-American Aviation found guilty of visa fraud scheme

According to American broadcaster Fox News, the former owners of a Gillespie Field Airport based flight school have pleaded guilty to a visa fraud scheme in which they hired illegal immigrants as flight instructors, a scam that immigration officials claim posed a "significant" threat to national security.

Andrew Burr and Christopher Watson, the former president and vice president of Anglo-American Aviation, pleaded guilty on 20 May 2010 to misdemeanor counts of hiring unauthorised workers. The admission comes as part of a larger felony case against the flight training school that was the culmination of a two-year investigation by Immigration and Customs Enforcement.

ICE officials found that from 2001-2008, the school hired 11 illegal immigrants as flight instructors.

"The actions by the defendants in this case not only undermined the integrity of our nation's legal immigration system, they also posed a significant national security risk," Joe Garcia, acting special agent in charge for the ICE Office of Investigations in San Diego, told Fox News.

ICE investigators focused on a four-month period in the summer of 2007, when the school issued visa documents to more than 100 foreign students, even though the Federal Aviation Administration had revoked their certification to train commercial pilots.

According to ICE officials, the company was allegedly abusing an online database developed in the wake of 9/11 to track foreign students. Without FAA certification, the company was forbidden to issue I-20 immigration documents to its students, who used the forms to get visas from the US State Department.

ICE investigators successfully tracked down 53 of the students and confirmed that none were found to pose a security risk. They provided no information on those they failed to locate.

At the hearing, Burr and Watson were sentenced to five years' probation, and along with the flight school must repay $250,000 in illegal profits.

Anglo-American Aviation Inc. also pleaded guilty to felony charges for making false statements and creating false visa documents, and will be sentenced on 21 June 2010.

Meantime, the school is now operating under new ownership and has been rebranded American Aviation Academy and continues to offer JAA alongside FAA courses. The new owners are not affiliated with the former business and have full FAA approval.

Pilot shortage predicted in the US

Last month industry experts attending a National Transportation Safety Board forum in Washington warned that future airline pilots will soon be in short supply.

Although there are more pilots looking for work currently than there are airline positions available, it is generally understood that the reverse will be true as airlines recover from the economic downturn and begin to recruit in earnest once again. The inevitable pilot shortage will likely fall heavily on regional airlines, who tend to employ less experienced low hours pilots at lower salaries, they said.

According to aviation consultant Judy Tarver, in the US they are currently around 54,000 pilots working for major airlines, approximately 19,000 regional airline pilots and about 2,500 qualified pilots seeking employment. Following an economic upturn, Ms Tarver estimates that US airlines will need to hire around 42,000 pilots over the next decade, based on industry growth predications and pilot retirements.

Panel members said there are far fewer military pilots leaving for jobs with airlines. Fewer college students say they want careers in aviation because they see it as an economic dead end, and airlines are increasingly having to compete with corporations for pilots.

Paul Rice, a pilot and spokesman for the Air Line Pilots Association, said he shared the panel's concern that there will be a shortage of experienced pilots at regional airlines, which account for half of all domestic flights and are the only scheduled air service to about 400 communities.

Low level salute

Tad Higher

I had been a working instructor for six whole days when I met Mr Kowaski. Mr Kowaski was a 90 year old Polish ex-Spitfire pilot who hadn't flown for years and whose loving family wanted to give him one last flight before he became too old. It was his birthday and they were unsure about his ability to cope with it all, so we might just take off do a circuit and land. We might not even get to take off if he felt it was too much for him. Too much for him? At the end of the flight he went away with a broad smile on his face and I went to lie down in a darkened room...

©Istockphoto/petemasson

The meet and greet part over, we are walking out to the aircraft with Mr Kowaski and grandson when as part of the general chit-chat I discover that the grandson flies small airliners in the USA and helps to run a large flight school. Excellent. No pressure there then. Both are pleasant men and my apologies to Mr Kowaski that our aircraft today may not be the machine he is used to, is met with a charming smile and conciliatory shrug of stiff shoulders. On board, strapped up, checks and start up completed we taxi out to the holding point. Excitement, camaraderie and expectation of fun already pervade the atmosphere. I think this is going to go well. There are three people in the aeroplane who are looking forward to sharing time in the air. A very good place to be.

The first thing I noticed was as I lined the aircraft up on the runway. As I let go of the throttle my elderly, frail Polish friend took hold of it. Fair enough, I am trained to allow a student to use the throttle on the runway for the first time so I can certainly handle this. As we accelerate down the runway I feel a slight resistance in the stick and rudder. He wants, no he assumes, that he is doing the takeoff. OK, I can still handle this. With my hands and feet lightly following through with the controls we carry out a very respectable take off that many a PPL would struggle to achieve.

As we climb away it is clear the frail elderly man is in his element and intends to enjoy it. We turn right and head towards the nearby sandy estuary at about 600 feet altitude. I gently coax our pilot higher as the ground rises to nearly 300 feet before dropping into the wide, flat surrounds of river, sand, mud and marsh grass.

"Too high," is the firm statement from the left hand seat. Too high?! My training reminds me of things like minimum safety altitudes, unmarked obstacles, low flying jets, 500 foot rules, 1000 foot rules, bird strikes and engine failures.

"Too high," is the repeated phrase with what I assumed were words of Polish added to it.

"At this height he would get shot," translates the grandson in the back.

OK then. 500 feet along the estuary. No one on the radio on either frequency. It is absolutely flat, but with plenty of texture, no obstacles and plenty of un-walked on sand within easy gliding distance. Not planned, but in reality safer for us professionals than driving down the M1 in the rain.

"Still too high."

Ah...

He pushes firmly on the stick and smoothly we descend.

Let us pause here - something you can't do in the aircraft. Yes, I am an instructor. Yes, even after just one week I could easily say "I have control" and force the aeroplane up towards 1,500ft or more. Tell him with my full authority he can not have his way. Then we would fly calmly around the tranquil countryside in silence for half an hour and I would have earned my money; next customer, please.

With very little training he climbed into a Spitfire and stayed below 100 feet while people shot at him so my parents had something to give me when I was born

We all know, even if we don't acknowledge it, that life is never as simple as sitting in the pub saying how it should be. Or, for that matter, reading it out of the manual and doing it that way for evermore. Mr Kowaski is 90 years old. He lost everything to the Nazis and rather than ring up Injury Lawyers For You, he went to a strange country, and with very little training climbed into a Spitfire and stayed below 100 feet while people shot at him so my parents had something to give me when I was born. I am in his debt. Plus I am concerned about what he feels and thinks. It's a personality weakness.

So we descend. Smooth air, still no high obstacles or aircraft. My hands are applying increasing back pressure on the stick; I have already quietly trimmed back a long way and the grandson has his hand patting granddad on the shoulder and repeating, respectful, loving words of appeal for him to climb a little higher.

At what I assume is about one hundred feet above the rapidly moving sand and mud I look sideways at a post that is barely discernable from what I call a normal height. I was probably 500 feet away from that structure and I have seen nobody near the rarely trodden shifting surface below me, but it was then that the thought occurred to me for the first time that after less than a fortnight I was about to lose my hard won licence.

We continue weaving very, very low along the estuary for some time, all the while watching everything outside the windscreen rush past us at unfamiliar speed and feeling so close.

Bird strike! No we hadn't had one, but that was another good reason for not being here.

"There are a lot of birds ahead, we need to climb or we are going hit them." The grandson joined in with enthusiasm and reluctantly granddad decided it was safer to be shot at than to face his wife after spreading her grandson all over a muddy estuary. The Nazis were one thing, his wife quite another. There are some things even a Polish Spitfire pilot hesitates to take on.

We climb slowly to a horizon-expanding 300 feet and grandson and I begin to relax. Granddad looks cautiously about for light rounds whizzing past the canopy. We fly around the estuary and headlands somewhat lower than I am used to, but it lacks the thrill of what we have just experienced. We are in the air for an hour. I have to use my imagination to keep us flying in areas of few people, vehicles, structures and birds and hope no one has complained, but Mr Kowaski is in the air. Not as low as he wants to be, but nevertheless in the air once more. Grandson can see the clear change in the grandfather he loves and who probably inspired him to fly, while I sense a deep privilege at being able to help an ex-Spitfire pilot feel the joy of being in the air just one more time.

Now, where's that darkened room?

AeroExpo UK 2010

AEROEXPO UK
ONE MARKET • ONE EVENT • ONE CHOICE

From the 25th to 27th June, Wycombe Air Park will play host to AeroExpo, the UK's largest General Aviation event.

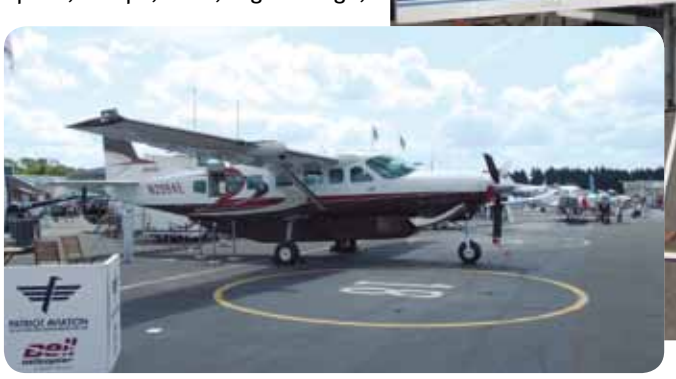
2010 is the fifth consecutive year that AeroExpo has taken place at Wycombe Air Park, some 20 miles west of London, and the show continues to grow each year. Of particular interest to FTN this year is the inclusion of a Career Centre at the show.

According to event manager Alex Ayling, the Career Centre will offer an opportunity for aspiring pilots to talk with flight training representatives from a number of training organisations about what is involved in becoming a pilot and what types of jobs are available in the world of aviation. A series of seminars are planned, including presentations from Airways Flying Club, Cabair and the RAF.

The show also includes a number of outside static displays by major General Aviation aircraft manufacturers, including, Aero AT3, Alpi, Aquila, Breezer, Cessna, Cirrus, Daher-Socata, Diamond, Escapade, Europa, Extra, Flight Design, Hawker-Beechcraft, Mistral, Piper, Robinson, Schweizer, Tecnam.

In the two exhibition halls visitors will also find the latest in aircraft engines, propellers, avionics, accessories, spare parts, maintenance, safety, fuel, oils, tires, simulators, pilot supplies, insurance and many other General Aviation related products and services. FTN will also be attending and we will be delighted to see you there. Our stand is B21.

www.expo.aero



Emirates cadets to train at FTE Jerez

Middle East airline Emirates has chosen Flight Training Europe (FTE) to provide ab initio ATPL training for cadets on the airline's National Cadet Programme.

Captain Abdulla Al Hammadi, Emirates' National Cadet Pilot Manager and Boeing-777 captain (left), pictured with FTE Financial Director Oscar Sordo"]

According to an FTE spokesperson, the decision to select FTE Jerez for preparation of its new generation of pilots came after a rigorous selection process, which included many of Europe's top FTOs. FTE Jerez's success reinforces its reputation as one of the premier airline training establishment in Europe, and adds Emirates to its list of airline customers, including BA City Flyer, British Airways, CityJet, Flybe, Loganair, Middle East Airlines and Thomson Airways.

Emirates say their decision to choose FTE Jerez was based on key factors such as all training and accommodation being delivered on one site; dedicated student care and welfare; local weather conditions ideal for flight training; and the quality of training delivered, all of which fit perfectly with the Emirates drive for excellence.

The first two groups of cadets have already arrived at Jerez and have, according to FTE sales manager Alex Padina, adapted quickly to life on campus in southern Spain.

In total, Emirates will be sending approximately 100 cadets to FTE over the next two years.

Are you up to date?

Aeronautical Information Circulars (AICs)

Air Traffic Services Outside Controlled Airspace	(Pink 1/2010)
Common VHF Frequency – 'Safetycom'	(Yellow 014/2010)
Flight Crew Examination Arrangements and Timetable for Professional Pilots and Flight Engineers 1 January to 31 December 2010	(White 084/2009)
Military Aerodrome Traffic Zone	(Yellow 002/2010)
Military Low Flying Training in the United Kingdom	**(Yellow 027/2010)**
Royal Air Force Air Experience Flights Operating Procedures	(Yellow 065/2009)
The Effect Of Thunderstorms and Associated Turbulence on Aircraft Operations	**(Pink 019/2010)**
Vortex Ring	**(Pink 020/2010)**

CAA Publications

Publication	Current Edition/Version
CAP 168 Licencing of Aerodromes (December 2008)	Ed 8
CAP 393 Air Navigation Order amendments up to 1/2010 (14 April 2010)	Third edition incorporating
CAP 413 Radiotelephony	Ed19 (15 December 2009)
CAP 413 Supplement 1 – quick reference guide to UK phraseology for commercial air transport pilots May 2007	Ed1
CAP 413 Supplement 3 - A Reference Guide to UK Phraseology for General Aviation Pilots 7 October 2009	V1
CAP 601 Multi Engine Piston Aeroplane Class Rating Syllabus Issue 2 (18 Dec 03)	
CAP 637 Visual Aids Handbook	Issue 2 (May 2007)
LASORS	2008 (Feb 08)
GASIL 2010/04 (18 May 2010)	
Flight Safety Magazine	**Summer 2010**

AFE Publications

UK VFR Flight Guide	2010 (Green cover, Dec 09)
UK Aeronautical Information Guide	2008 (Photo cover, May 2008)

CAA Chart Editions

Chart Edition	Current Edition	New Available
1:500,000 series		
Southern England & Wales	36(11 Mar 10)	
Northern England & Wales	33(6 May 10)	5 May 2011
Scotland	26 (2 July 09)	16 Dec 10
1:250,000 series		
North Scotland West	5(28 Aug 08)	26 Aug 10
North Scotland East	5 (3 Jul 08)	1 Jul 10
Northern Ireland	6 (4 Jun 09)	
The Borders	**7 (3 Jun 10)**	
Central England & Wales	8 (9 Apr 09)	2 Jun 11
England East	9 (24 Sep 09)	28 Jul 11
West & South Wales	9 (30 Jul 09)	28 Jun 11
England South	14 (8 Apr 10)	8 Apr 11
London Heli Routes		
	13 (20 Nov 08)	23 Sep 10

Instructor Notes
Helen Krasner

Querying exam results

Teachers, examiners, and other so-called experts don't always get things right. This is something I discovered at a very early age. I must have been about nine years old when my class teacher called me up to her desk, wanting to explain to me how to correct a spelling mistake she thought I had made. In an essay, I had correctly written the plural of 'roof' as 'roofs'. But according to her this was incorrect, and she insisted that the plural should be 'rooves'. My homework for that evening was to write out 'roof' followed by 'rooves' three times, so that I would remember in future.

I still remember my sense of helpless outrage. I just knew 'roofs' was right. I even went so far as to try looking it up in the dictionary, but at that young age I didn't understand how to identify plurals in dictionaries, and I couldn't find either 'roof' or 'rooves'. I thought of asking my parents, but for some reason I didn't. I seethed in anger, but finally gritted my teeth and did my homework. The teacher was right; I definitely remembered after that... though I never altered my spelling to her incorrect version. But I never forgot this incident, and I think it had a far-reaching effect on my attitude to those who are supposed to know more than us, as well as to officialdom in general.

Fast forward about 12 years... I was doing a university degree course and as part of this I had an exam halfway through the year, for which I hoped to gain a merit certificate. The subject was Logic and although I can't remember the details, I know that I had to write out a detailed proof, covering several pages of calculations. It came back marked as incorrect, but I couldn't see quite why. I went over and over it, and finally, despite being very shy and hating to do anything unusual, I went to see the examiner. He assured me that my answer was definitely wrong. However, despite my nervousness I insisted on showing him that my calculations and demonstrating that my arguments were mainly correct. Eventually he stopped trying to brush me aside and looked at my paper more clearly. I had actually made a small mistake early on which had affected the final answer, but most of my working out was right. Looking slightly shamefaced, he re-marked my paper, and the extra marks gave me the merit certificate I so wanted.

> **I had failed an exam, yet I knew that it was likely that one crucial answer was correct**

Interesting, you might say. But what has all this got to do with flying? Well, many, many years later, when doing my helicopter CPL ground exams, I found myself in a similar position. Basically, I had failed an exam, yet I knew that it was likely that one crucial answer was correct. And this time it was the CAA that I had to take on...

Things have changed somewhat, but at the time when I was doing my commercial ground exams they were divided into two groups, the Navigation Group and the Technical Group. The subjects within each group had to be taken at the same exam sitting; you could then re-sit at a later date any within that group which you had failed.

I had taken the nine subjects of the Navigation Group – Radio Aids, Navigation, Instruments, Flight Planning, Meteorology Theory, Meteorology Practical, Human Performance, Air Law, and Signals - in March of that year, passing seven subjects and failing two. I had re-sat these two the following month, passing them both. Now there were the five technical subjects to deal with, which I was taking in June. If I passed them, I would be able to have a summer free from looking at books before I dived in and started the hard work of my CPL(H) flying course in the autumn. I had had enough of studying by that point; it seemed to have been going on forever. I really wanted to have some time off that summer – a chance to go on holiday, to chill out, to forget about aviation altogether just for a little while. But if I was to do that I would have to pass all five technical subjects on my first attempt, and as a rather non-technically minded person, I wasn't sure that I would be able to do it. Still, I would give it my best shot.

I worked like mad and I thought I was in with a chance. But when the results came back I felt a mixture of emotions, of which annoyance and frustration probably came top of the list. I had passed four - Engines, Electrics & Autoflight, Airframe Systems, and Loading – all the subjects which I found so difficult. Helicopter Principles of Flight, my favourite topic since it was the only one which was rotary specific, I had failed, and by a mere two marks. I couldn't believe it. How utterly infuriating! Fancy failing my best subject, and by such a small amount. I knew the result meant essentially that if I had got one more question right, then I would have passed.

Anyway, that was that, or so I thought initially. My free summer had gone, at least to a certain extent. I would have to register for the September re-sit, and I'd need to spend at least some of my time revising Principles of Flight again, for with my bad memory I couldn't even rely on remembering the stuff I knew well, not over a period of a couple of months. "Oh well", I thought to myself, "I might as well start sooner rather than later." For me, I've learnt from experience that a little bit of study at regular intervals worked best, and so I began to read the books again almost immediately.

It turned out to be lucky that I did start so early. For it was while I was going over some of the theory connected with hovering that I remembered something about the previous exam which turned out to be absolutely crucial. To explain, when hovering a helicopter, the air which is sucked downwards through the rotor blades cannot all be dissipated, but instead some of it forms a cushion of air underneath the aircraft. This is rather important, as it means that less power is needed to hover close to the ground, since this 'ground cushion' helps to hold the helicopter up, as it were. It also makes landings difficult for students, but that's another issue altogether. Anyway, according to all the textbooks I had ever read, the height of this ground cushion is two-thirds to three-quarters of the diameter of the 'rotor disc', i.e. the hypothetical disc which the rotors make when they are turning.

I had forgotten until I read it again, but one of the questions in the exam which I had failed had been on ground cushion height. It had been a multiple choice exam, and four possible answers had been given – half rotor disc diameter, the whole of the rotor disc diameter, and two answers which were obviously wrong. But, most importantly, none of the choices had been the answer I knew to be correct! Remember, I only needed one more correct answer to have passed that exam. Could I possibly challenge the CAA examiners and get that question looked at again... and get my free summer after all?

I wasn't quite as shy as I had been as a university student all those years ago, but I still found it hard to believe that I was right and, more importantly, that I could do anything about it. However, I checked with several helicopter pilots who had far more experience than I, and they all agreed – ground cushion height was indeed normally said to be two-thirds to three-quarters of rotor disc diameter. Write to the CAA, they all said. One, an army pilot who was used to being obeyed, was most insistent: "You are to write; do it now!" he ordered, thrusting the relevant email address into my hand. "They've got it wrong, and they shouldn't get away with it."

So I wrote to the CAA. I said that I had no idea what answer I had actually given in the exam, or if I had chosen the answer they assumed to be correct, by sheer chance. "However," I said, "I would appreciate your checking this. I got 73% for that exam. Credit for that question might give me a pass."

The answer from the ground examiner came back within two days, and I still have a copy of it, filed along with my exam results. The examiner said that he had researched my query, and although the answer the CAA used was supported by one standard text, other well known books agreed with my opinion of the depth of the ground cushion. He concluded by saying, "I have therefore authorised that you be given the benefit of any doubt, and your result in this examination has been adjusted to become a pass at 75%. A revised result sheet will be posted out today." He continued: "We will adjust the offending question before it is used again. Good luck in your future career." I had done it!

I think the moral of this story is too obvious to need stating. And... I had a great summer, with lots of sunbathing and relaxing and outdoor activities, coming back in September refreshed and ready to start my commercial flying course and future career.

The JAA Instrument Rating

by Jonathan Shooter

First Officer Jonathan Shooter's home base is Manchester International Airport where he flies for Thomson Airways on their B767 fleet.

Having gained an RAF flying scholarship at the age of 16, Jonathan was granted 20 hours of flight training at Carlisle Airport. Continuing his flight training at Woodford, Jonathan completed his PPL and following a stint in the US hours building he was then lucky enough to be selected to join a part-sponsorship scheme run jointly by Flybe and flight training organisation Cabair.

The sponsorship deal meant that alongside gaining his commercial ratings, Jonathan was contracted to work as a flight instructor for Cabair for a couple of years, first as a PPL instructor at Cabair's Elstree Airfield base and later as a commercial instructor at Cranfield. During his time as an instructor, Jonathan gained some 2,000 hrs of teaching experience before joining Flybe on their Dash 8 fleet. Following a year with Flybe, Jonathan was then offered a position with First Choice Airways, which amalgamated with Thomsonfly to form Thomson Airways in 2008.

Jonathan says he continues to enjoy flying GA aircraft and alongside his day job, is also a multi-engine instructor working part time for JD Aviation based at Liverpool John Lennon Airport. He is also currently writing a book on the modular training route for aspiring commercial pilots.

The JAA Instrument Rating is a favourite topic of discussion round many flying club bars and aviation Internet forums. There are plenty of myths surrounding the course and flight test, most of which are passed down from previous students; some are to encourage but most are to scare! Often perceived as the final hurdle before landing that elusive first commercial flying job, the IR is, in reality, a first stepping-stone, as the skills taught are the 'tools of the trade' for any commercial pilot. The UK has ideal conditions for the course, thanks to our slightly damp and cloudy climate and, arguably, we have some of the best schools in the world, so for once it's a great place to learn!

The training course includes 55 hours flying (50 hours if you have a JAA CPL) with a minimum of 15 hours on multi-engine piston aircraft (MEP) such as the ubiquitous Piper PA-34 Seneca. The remainder of the flying depends on the school and the equipment in place, and ideally it will include a mix of aircraft and simulator training.

The course typically starts with a lot of basic instrument flying, including straight and level flight, climbing and descending and turning. The difference on this course to previous ones will soon become apparent as the tolerances will be far tougher, and you are expected to perform the manoeuvres at specific datums rather than just arriving at the end result. Consequently you shouldn't be surprised if you find yourself performing a lot of straight and level at different speeds and configurations, descending at a specific ROD and turning at different angles of bank, etc. The purpose of these exercises are not to bore, or burn holes in the sky, but to establish a solid instrument scan so you can perform more complex manoeuvres and have spare mental capacity to complete other tasks.

Next on the course is radio aids navigation, where you'll be taught to use VOR, NDB, DME and GPS, if fitted. You will learn to position fix, intercept and track both to and from a station, taking in to account drift, all of which will be in simulated or actual instrument meteorological conditions (IMC). Often this is done by attaching slotted plastic screens in the windscreen of the cockpit so you can't see out but the instructor can. At this stage you will probably be introduced to your first instrument approach, typically a surveillance radar approach, where the radar controller will give you headings and altitudes to fly at and guide you towards the runway, where at approximately 4-6nm from the runway he/she will ask you to 'commence your descent to maintain a three degree slope' and this is where time spent practicing flying the aircraft at specific rates of descents pays dividends! Ah, I hear you all cry from the clubhouse 'You'll never need to fly an SRA in an airliner'. Well I flew one in a 757 last week down to minima, and we also practice them in the simulator! For completeness, and if you can, try and fly at least one precision approach radar approach (PAR), although this can be difficult as they are pretty much only available at military airports in the UK.

Just as you have mastered flying in cloud with all of the instruments fully serviceable, the course requires you to demonstrate the ability to control the aircraft following the failure of the attitude indicator and directional gyro, referred to as partial panel. Again you will practice all the basic manoeuvres, including timed turns using the compass and stopwatch, along with recoveries from unusual attitudes, such as a spiral descent.

The next stage, typically between 10-15 hours into the course, will see instrument procedures being introduced, beginning with holding. You will learn how to enter a holding pattern from different directions, based on the various radio aids available, and once established you will learn how to correct for the wind, which admittedly there is a lot of fudge factoring to achieve, no matter which method you use. I hear another cry from the bar, 'The FMS does it for you'. Well, yes, it does, but you have to monitor the aircraft at all times and it can get it wrong, especially in the simulator, as the examiner may fail the FMS to assess that you can still do it. It's happened to me both in the aircraft and the simulator.

Having mastered holding procedures, you will move to the core of the instrument rating course, which is learning to fly both precision and non-precision approaches. A precision approach is one which provides guidance in both the vertical and horizontal path, typically an ILS approach, while a non-precision approach is one which only gives guidance in the horizontal path and may not be quite aligned with the runway direction, such as VOR, NDB, VDF and the recently approved GPS approaches at certain UK airfields. Initially, you will probably be radar vectored on by ATC, and then as you become more proficient you'll fly them procedurally, which is where you position the aircraft on the final approach course using radials or bearings from a radio aid on the ground. The procedures are found on a published instrument approach procedure plate, and you will learn to read these like a musician reading a sheet of music.

Having mastered all of the techniques mentioned so far, you will now move onto the multi-engine phase, which is arguably the hardest part. If you haven't completed a JAA multi-engine piston rating then expect to complete it at this point, as you must hold a valid rating before attempting the test. You will begin to fly routes to local airfields which have instrument procedures. A typical route flown will consist of a standard instrument departure to join Class A airspace, a short flight in airway and then a standard instrument arrival, to fly either a precision or non-precision approach flown down to the minima, followed by the published missed approach procedure. You then divert to either your home base or another airfield and practice the other type of approach, usually to circling minima, which means you will carry out, essentially, a visual circuit to another runway. During this stage of the course you will regularly practice approaches with one engine simulated as failed, along with failures during the missed approach, throughout all of which you must maintain control of the aircraft, follow the publish procedure and complete any drills. Once the course is complete and your instructor is happy that you have reached the required standard, you will be put forward for your 170a, which is a trial flight test. At the end of the trail flight test, and if the examiner is happy, you will be presented to the CAA for the famous (or infamous!) instrument rating test.

The initial instrument rating test has too many false rumours and myths to even write, but a lot of people seem to think that you only demonstrate the various disciplines on the initial test; once you get into a commercial flying job you can simply let the autopilot do the work. Unfortunately this is far from true. Any instrument rating renewal test follows the same profiles and requires the same standard to be reached whether you are in a PA-34 or a B777. Admittedly there are certain systems you can use to help, but they are needed due to the complexity of the aircraft. I always thought this until I was asked to do an ILS with no flight director on my first multi pilot skills test!

On the day of the test you will meet the CAA examiner at a pre-arranged time at one of the regional test centres and he/she will give you a comprehensive brief on what is expected of you and, most importantly, where you will be flying. The examiners are all human and know what an important day it is for you and they will do their best to put you at ease. But it's only natural to be nervous, and if you do make some little mistakes don't worry, it may not constitute a fail. As they say 'keep calm and carry on'! The flight is a simulated public transport flight, flown in assumed or actual icing conditions with the format of the test similar to the 170a described earlier. The flight lasts about 1 hour 30 minutes and at the end the examiner will discuss any points he has with you, and let you know the result, hopefully a full pass.

The Instrument Rating is hard, but no more so than doing a type rating and I think the major hurdle is a psychological one, like any aviation course work hard both on the ground and in the air and you will enjoy it and you'll certainly never ever forget your initial instrument rating test!

Jargon buster

ATC – Air Traffic Control
CAA – Civil Aviation Authority
DME – Distance Measurement Equipment
FMS – Flight Management System
GPS – Global Positioning System
ILS – Instrument Landing System
IMC – Instrument Meteorological Conditions
JAA – Joint Aviation Authority
MEP – Multi Engine Piston
NDB – Non-Directional Beacon
PAR – Precision Approach Radar
ROD – Rate of Descent
SRA – Surveillance Radar Approach
VDF – VHF Direction Finding
VOR – VHF Omnidirectional Range

Heli Air receive training approval for new Silverstone base

Following on from the announcement in January that Heli Air Ltd had been selected to operate a permanent heliport at Silverstone Race Track (home of the Formula 1 British Grand Prix), the company has now announced that it has received CAA approval to conduct flight training from its new base.

Base manager Mark Woodleigh told FTN that they are now fully operational and are conducting PPL(H) training from Silverstone in both Robinson R22 and R44 helicopters. Additionally, Heli Air are offering introductory flying days, where prospective pilots take to the skies and run through the first five lessons of the PPL(H) syllabus as well as getting to grips with the delicate art of hovering a helicopter.

Heli Air took over management of the heliport on 1 April 1st and bookings are now being taken for the 2010 Formula 1 Santander British Grand Prix taking place from 9 - 11 July and we gather that demand for slot bookings is exceeding expectations. Anyone wishing to secure a slot for that busy weekend should contact Heli Air on +44 1494 769976 or silverstone@heliair.com for more information on availability.

Heli Air has been operating for over 20 years and offers a full range of helicopter services around the UK and abroad, including charter, training, utilities, maintenance and aircraft sales utilising its fleet of 110 helicopters.

for your diary

June 10

1 Helicentre Open Day
Caernarfon Airport
www.helicentre.com

1-4 JAR-FCL Examinations ATPL (A), (H)
Gatwick, Oxford, Shuttleworth College & Glasgow www.caa.co.uk

4-6 Eur-Avia 2010 4th International Exhibition of General Aviation
Cannes-Mandelieu, France
www.eur-avia.com

4 Cabair Intergrated Commercial Pilot Seminar
The Auditorium, Cranfield
www.cabairintegrated.com

8-9 JAR-FCL Examinations IR (A), (H)
Gatwick
www.caa.co.uk

8-9 Safety & Training Summit 2010
Hyatt Regency Tech Ctr – Denver
www.aviationtoday.com

9-10 Flight Simulation Technology Future Potential
RAeS No 4 Hamilton Place London
www.raes.org.uk/conference

10 GAPAN Aptitude Testing for Commercial Pilots
RAF Cranwell (Guild of Air Pilots and Navigators)
020 7404 4032
www.gapan.org

16-18 Pilot Training College Assessment Day
London Heathrow
www.pilottrainingcollege.com

16-17 Operating Helicopters Safely in a Degraded Visual Environment
RAeS No 4 Hamilton Place London
www.raes.org.uk/conference

19 British Aerobatics Association Beginners Day
Little Gransden, Bedfordshire
www.aerobatics.org.uk

19-20 British Precision Pilots Association Novice Introduction Training / Cometition Weekend
Andrewsfield, Essex
www.rallyflyingclub.org

23-25 Pilot Training College Assessment Day
Edinburgh
www.pilottrainingcollege.com

25-26 The British Aerobatic Association – Aerobatic Competition
Compton Abbas Airfield
www.abbasair.com

25-27 AeroExpo 2010
Wycombe Air Park
www.expo.aero/london/

July 10

3 Oxford Aviation Academy – APP First Officer Open Day
Oxford Airport, Kidlington
www.oaa.com

5 Summer Reception & Open Meeting Of the Air Law Group
No.4 Hamilton Place, London
www.raes.org.uk

5-8 JAR-FCL Examinations ATPL (A), (H)
Gatwick, Oxford, Shuttleworth College & Glasgow
www.caa.co.uk

7-8 Canadian Business Aviation Association Convention
Calgary, Alberta, Canada
www.cbaa-acaa.ca

10-11 British Precision Pilots Association Novice Introduction Training / Cometition Weekend
Shipdham, Norfolk
www.rallyflyingclub.org

10-11 Flying Legends
Duxford, Cambridgeshire
http://duxford.iwm.org.uk

12-13 JAR-FCL Examinations CPL (A)
Gatwick
www.caa.co.uk

14-15 JAR-FCL Examinations CPL (H)
Gatwick
www.caa.co.uk

17 Cabair Helicopter Open day
Helilondon, Elstree Aerodrome
www.cabairhelicopterpilot.com

24-25 British Precision Pilots Association Novice Introduction Training / Cometition Weekend
Halfpennygreen
www.rallyflyingclub.org

26-1 Aug EAA AirVenture Oshkosh
Oshkosh, WI USA
www.airventure.org

FTN's TRAINING AIRCRAFT DIRECTORY 2010

FTN's TRAINING AIRCRAFT 2010 DIRECTORY

Welcome to FTN's quick reference directory of the single-engined training aircraft which serve the UK's flying clubs and schools, compiled by renowned author and training aircraft expert Rod Simpson.

Many of these aircraft are models which are available as factory built new aircraft - but we have also included a good selection of the traditional classics which still serve faithfully with many operators. For each aircraft, you will find a description, a photo and brief performance and specification data in our tables.

Some of the aircraft included in the Directory may surprise you. Seventy years after they were built, there are still a serious number of Tiger Moths flying in the UK - and several schools offer either ab initio or conversion training. The same goes for the Chipmunk which continues to be an ideal machine to teach classic taildragger techniques. The flying club scene is also dominated by those stalwarts - the Cessna 150 and 152 and the Piper PA-28 series. However, there are newcomers which are making a determined bid to bring the most modern technology to private flying.

Although some suppliers such as Diamond (with the DV.20 Katana) have been producing two-seat trainers, industry leaders, Cessna and Piper, have been out of the dedicated trainer market for some while. Certainly, a handful of Warriors and rather more Cessna 172s have trickled through to flight training in recent years - but, with the price of a basic Cessna 172 coming in at $270,000, a new aircraft becomes hard to justify unless it is acquired for long-term contracted training. Help is at hand, however, with the advent in the USA of the Light Sport category - and Cessna and Piper have jumped on the bandwagon. Cessna has developed its very promising Skycatcher which is now starting to reach customers. Piper has moved with commendable speed to tie up a marketing agreement with Czech Sport Aircraft which sees the low-wing SportCruiser now marketed worldwide as the PiperSport.

At less than half the cost of a Skyhawk or Warrior, these aircraft offer a real choice to clubs and schools. Other modern aircraft from manufacturers in Poland, the Czech Republic and other eastern European countries have made good progress. The Aero AT-3, which is an all-metal factory-complete VLA, now serves with several UK flying schools including the Brooklands School at Sywell. Then there are the aircraft which are still named 'microlights' but are truly fully-fledged light aircraft with a 450kg weight limit. These include the Aerospool Dynamic, the Ikarus C.42, the Eurostar and the Flight Design CT and all of these are flying in some numbers.

Some models have been approved at higher weights as VLAs (Very Light Aircraft) but the real prize is for the European Community to adopt the American Light Sport category. The European manufacturers are already building substantial numbers of LSAs (with a 1,320 lb/600kg maximum weight) but these are not approved yet by EASA. EASA Permits to Fly have been issued for models such as the Flight Design CTLS and Remos GX but these permits only have a two-year life. It is not clear whether these aircraft will continue to be approved when the two years expire - and there seems no probability of the new EASA light aircraft category rules being finalised in the reasonably near future. In the meanwhile, many flight training organisations will have to make do with traditional light aircraft which are all showing their age and are hard pressed to present a modern image of private flying to the market.

For those of you reading this Directory who have yet to take the plunge and start training towards a pilot's licence, the myriad of training aircraft available today may well look daunting and you could be forgiven for thinking "how on earth can I choose what's best for me?"

If this is the case, and our Directory leaves you more confused than you were before, then our best advice is simply to try as many different training aircraft as you can. Trial flights are available at all UK flying schools and all time spent in the air will ultimately count towards your minimum training hours requirement, so the time and expense won't be wasted. And if you're still struggling to choose after you've flown a few different types, then by all means seek advice from as many pilots as you can, but remember, if you ask seven pilots which training aircraft is best, you'll probably get seven different answers!

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Aero AT-3	New	2	100hp Rotax 912S	7.55	6.25	582	116	429
Aerospool WT9 Dynamic	New	2	80hp Rotax 912UL	9.0	6.4	450	119	600
Am. Champion Adventure	New	2	160hp Lyc. 0-320-B2B	10.21	6.75	794	117	454
Aquila A210	New	2	100hp Rotax 912S	10.3	7.35	750	130	620
Aviat Husky	New	2	180hp Lyc. 0-360-A1P	10.82	6.88	998	122	695
Beagle Pup 100	Classic	2	100hp Cont. O-200-A	9.45	6.99	725	103	495
Best Off Sky Ranger	New	2	80hp Rotax 912	8.5	5.7	450	95	287
CAP Aviation CAP-10C	Classic	2	180hp Lyc. O-360-C1G	8.08	7.16	830	148	540
Cessna 152	Classic	2	110hp Lyc. O-235-N2C	10.16	7.34	760	100	315
Cessna 172S	New	4	180hp Lyc. IO-360-L2A	11.0	8.28	1160	126	518
Cessna Skycatcher	New	2	100hp Cont O-200D	9.14	6.95	598	118	470
DH.82 Tiger Moth	Classic	2	100hp DH Gipsy 1	9.14	7.29	748	74	278
DHC-1 Chipmunk	Classic	2	145hp DH Gipsy Major 10	10.46	7.82	913	103	243
Diamond DA-20C-1	New	2	125hp Cont. IO-240-B3B	10.87	7.16	800	140	547
Diamond DA-40NG	New	4	160hp Austro AE300	11.5	7.16	800	140	547
Evektor Eurostar EV-97	New	2	80hp Rotax 912	8.1	5.98	450	120	500
Extra 200	New	2	200hp Lyc. AEIO-360-A1E	7.5	6.5	840	160	425
Finch Robin Ecoflyer 400CDi	New	4	155hp Centurion 2.0L	8.71	6.95	1100	137	647
Flight Design CTLS	New	2	100hp Rotax 912S	8.51	6.22	600	120	1000
Grob G.115E	New	2	180hp Lyc. AEIO-360-B1F	10.0	7.79	990	124	685
Grumman Tiger AG-5B	Classic	4	180hp Lyc. O-360-A4K	9.6	6.71	1088	139	667
Ikarus-Comco C42	New	2	80hp Rotax 912UL	9.45	6.25	450	105	375
Liberty XL-2	New	2	125hp Cont. IOF-240-B	8.76	6.19	794	125	500
Medway Executive SLA-80	New	2	80hp Rotax 912UL	9.69	5.72	450	78	615
Morane Rallye MS880B	Classic	4	100hp Cont. O-200-A	9.6	6.95	770	92	408
Piper Arrow PA-28R-201	New	4	200hp Lyc. IO-360-C1C6	10.8	7.5	1247	137	880
Piper Colt PA-22-108	Classic	2	108hp Lyc O-235-C1B	9.14	6.1	748	100	282
Piper Sport	New	2	100hp Rotax 912S	8.78	6.49	600	120	600
Piper Super Cub 150	Classic	2	150hp Lyc. O-320	10.76	6.86	794	100	400
Piper Tomahawk PA-38-112	Classic	2	112hp Lyc. 0-235-L2C	10.36	7.04	757	109	402
Piper Warrior PA-28-161	New	4	160hp Lyc. O-320-D3G	10.7	7.3	1107	115	513
Remos GX	New	2	100hp Rotax 912ULS	9.3	6.48	600	113	745
Robin R2160	Classic	2	160hp Lyc. 0-320-D2A	8.33	7.09	900	130	513
SAL B.125 Bulldog	Classic	2	200hp Lyc. IO-360-A1B6	10.06	7.09	1066	120	539
Slingsby T.67M Firefly	Classic	2	160hp Lyc. AEIO-320-D1B	10.59	7.31	975	121	548
Socata TB-9 Tampico	Classic	4	160hp Lyc O-320-D2A	9.76	7.63	1058	107	450
Tecnam P2002JF Sierra	New	2	100hp Rotax 912S	8.58	6.58	580	130	500
Tecnam P92JS	New	2	100hp Rotax 912S	8.7	6.4	550	113	430
Thruster T600N Sprint	New	2	80hp Rotax 912	9.6	5.8	450	90	240
TL2000 Sting	New	2	100hp Rotax 912S	8.44	5.93	600	135	450

Aero AT-3

The Polish-built Aero AT-3 is a hard-wearing all-metal aircraft which has proved itself in service with several training schools. It is an EASA-certified VLA with a 582kg gross weight. UK operators include the Brooklands Flying School and the Old Sarum Flying School and the AT-3 also flies in France for the Aero Club Air France at Toussus. It is powered by the popular Rotax 912 engine and has pleasant classic handling and a comfortable cockpit which gives confidence to the student. With fuel consumption at 14 lit/hr the all metal AT-3 is economical, and while it is an efficient trainer it also makes a good group or private owner aircraft with comfortable seats, reasonable baggage space and 116kt maximum cruising speed. The most recent Aero AT-4, which has a 600kg gross weight, is based on the American Light Sport version and is sold with an EASA Permit-to-Fly which does not allow it to be used for training - though this is expected to change in the next 18 months when the EASA LSA category comes into force.

Aerospool WT9 Dynamic

The two-seat Dynamic is a streamlined all-composite aircraft from Slovakia. Over 300 have been built to date and 16 are flying in the UK. The largest school using the aircraft in the UK is Chiltern Airsports based at Chiltern Park Aerodrome. The Dynamic is a very appealing machine with a roomy cockpit offering excellent all-round visibility and entry to the cabin is through a forward-hinged clamshell canopy. It offers good performance on an 80hp Rotax 912UL. Most examples have a fixed tricycle undercarriage - though a retractable gear version is sold in some countries. Overall, this microlight is a good all-rounder with nice handling.

American Champion Adventure

American Champion's Adventure is one of the US-built high-wing taildraggers which originated in the Champion Citabria aerobatic aircraft. The entry-level Champion is the 118hp 7ECA Aurora but there are two 160hp variants - the 7GCAA Adventure and the 7GCBC Explorer which has a slightly longer wing and flaps. All the models have metal frames with fabric covering, fixed tailwheel undercarriages with spring steel gear legs, comfortable seating, rear baggage space and instrument panels which will house a modern avionics box. As trainers, they provide very crisp performance and require students to master tailwheel landings and learn the skills of stick and rudder flying.

Aquila A210

This German-built VLA is an all-composite two-seater which is now marketed in the UK alongside the Cirrus four-seaters. Powered by a 100hp Rotax, it has a long-span wing with compound sweep on the leading edge and wingtip winglets. It makes a very suitable trainer and will fit in to a general flying club where many members will want to use it for touring because of its very large baggage area behind the seats and roomy cabin which makes it comfortable on longer cross country flights. This is not the cheapest two-seater around but it delivers high quality and good handling.

Aviat Husky

For those hankering after a new replacement for the Super Cub, the Husky is a good choice particularly as it has good load carrying ability and excellent performance. It is similar to the Champion and Super Cub in being built from tube and fabric and it has tandem seating with stick controls. There are three engine options starting with the entry-level A-1B-160 with a 160hp Lycoming and followed by the A-1C-180 with a Lycoming O-360 and the 200hp A-1C-200 with a fuel-injected IO-360. Although often sold as a farm strip aircraft, the Husky will deliver all the necessary tail dragger skills in a training environment

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Aero AT-3	New	2	100hp Rotax 912S	7.55	6.25	582	116	429
Aerospool WT9 Dynamic	New	2	80hp Rotax 912UL	9.0	6.4	450	119	600
Am. Champion Adventure	New	2	160hp Lyc. 0-320-B2B	10.21	6.75	794	117	454
Aquila A210	New	2	100hp Rotax 912S	10.3	7.35	750	130	620
Aviat Husky	New	2	180hp Lyc. 0-360-A1P	10.82	6.88	998	122	695

Cessna 172 Skyhawk

There will be few pilots who have not flown a Cessna 172 at some time in their lives and this Kansas-built four seater combines top features as a trainer with the flexibility of four-seat touring in a club setting. Over 47,000 have been built to date and new 172s come in two flavours - as the 172R with a 160hp fuel injected IO-360 engine and as the 172S Skyhawk SP with the same engine uprated to 180hp thanks to a different propeller. In reality, most buyers opt for the higher powered version and all new Skyhawks are fitted with the Garmin G1000 glass cockpit. The success of the Skyhawk is down to its spacious cabin with two large entry doors and loads of rear seat passenger space. For training, Cessna sell a version with a single centrally placed rear seat which allows for a third student observer. There are also plenty of older Skyhawks around, many with the 150hp Lycoming O-320 and classic instrument panels which will still give good service even when they approach their half-centuries !

Beagle Pup 100

Built by Beagle Aircraft at Shoreham, the Pup first flew in 1967 and continued to be built till the company folded in 1969. Today, a fair number of the 176 production aircraft are still around. It is a pretty all-metal aircraft with a stout tricycle undercarriage and its crisp and responsive handling is much praised by owners. There were two versions - the two-seat Pup 100 trainer with a 100hp Continental O-200-A and the four-seat Pup 150 powered by a 150hp or 160hp Lycoming. A few are in club use and a good one can certainly be worth having.

Best Off Skyranger

The Best Off Skyranger is the most popular three-axis microlight in Britain with over 200 now in operation. Many of these are used for training and they provide a reliable platform at reasonable cost with reliable and safe flying characteristics.. The latest version is the Skyranger Swift which has a reduced empty weight which improves the useful load and also features a redesigned shorter wing to give it better speed performance. Now starting to appear is the Best Off Nynja which has a more attractive appearance and is fitted with has a redesigned aluminium wing with X-lam covering.

CAP Aviation CAP-10C

The financial crisis at Dijon-based Apex Aviation has meant that production of the CAP-10C two-seater has been suspended. However, many examples serve with flying clubs and schools where they provide a fine platform for aerobatic training. Designed by Claude Piel and developed from the Emeraude, it has sold to both military and civil users. The latest CAP-10C has a composite wing, improved ailerons and a stronger undercarriage. The structure is tube with fabric covering and it has a wide cockpit with a blister canopy giving excellent visibility. While it is fairly expensive, even second hand, it is a favourite with many schools.

Cessna 152

In 1957, Cessna flew the prototype Model 150 and by 1985, when the last of the 150/152 line appeared, nearly 24,000 had been built in Kansas and Reims. The original 150 had a straight tail and fully enclosed cabin, but progressive modifications saw a swept tail, rear view window and a change from the Continental O-200 to the Lycoming O-235 when the Model 152 was introduced in 1978. There was the Aerobat for limited aerobatics and some 152s have been fitted with tailwheel gear. This classic trainer took many pilots safely on their first solos and remains a backbone of the flight training industry.

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Beagle Pup 100	Classic	2	100hp Cont. O-200-A	9.45	6.99	725	103	495
Best Off Sky Ranger	New	2	80hp Rotax 912	8.5	5.7	450	95	287
CAP Aviation CAP-10C	Classic	2	180hp Lyc. O-360-C1G	8.08	7.16	830	148	540
Cessna 152	Classic	2	110hp Lyc. O-235-N2C	10.16	7.34	760	100	315
Cessna 172S	New	4	180hp Lyc. IO-360-L2A	11.0	8.28	1160	126	518

Cessna 162 Skycatcher

Cessna is back in the two-seat training market with the brand new Skycatcher, aimed at the American Light Sport (LSA) category. This roomy little machine has a strut-braced high wing and Cessna has chosen to give it a new version of the well proven Continental O-200 rather than the more common Rotax 912. Its cockpit, which is easily entered through two doors ahead of the bracing struts, is comfortable with unusual panel-mounted stick controls which become familiar much faster than one might imagine. Its handling and performance are very similar to the Cessna 152. The Skycatcher, which is being manufactured in China and then reassembled in the USA, is now starting to reach the first of over 1,000 customers who have placed orders. It will be some while before it reaches the European market because the EASA light sport category has to be refined before the Skycatcher can be approved. However, it is likely to become a cornerstone of the British training market so long as the price, currently expected to be around £75,000, remains competitive.

De Havilland DH-82 Tiger Moth

It might seem strange to include a 70-year old biplane in our directory, but the classic Tiger Moth is used by the Cambridge Flying Group for flight training and other organisations such as the de Havilland School of Flying at White Waltham offer conversion training. The Tiger Moth, which has tandem open seating, was the standard club trainer of the 1930s and most current examples were built for wartime RAF instruction. It is powered by a 130hp Gipsy Major inverted in-line engine. The stick and rudder skills learned on a Tiger Moth will prepare a student for anything else they may fly.

De Havilland DHC-1 Chipmunk

While it may have been designed in Canada, 1,000 Chipmunks were built in the UK for basic instruction with the RAF, Air Experience Flights and the University Air Squadrons. Dozens were released from RAF stocks to the civil market and they provide the means of teaching students classic handling and tailwheel techniques. The tandem cockpit is enclosed by a framed sliding canopy, although Canadian-built aircraft have a bubble enclosure, and the all-metal Chipmunk uses the 145hp de Havilland Gipsy Major 10 in-line engine. Around 130 Chipmunks are active in the UK including a fair number with flying clubs.

Diamond DA-20

Until last summer, manufacture of the Diamond DA20 had been suspended but Diamond Aircaft has now returned the DV20 Katana with the Rotax 912S engine to production. Around a dozen DA20s are in use with British flying schools, mostly the DA20-C1 with a 125hp Continental IO-240. The aircraft has an all-composite airframe with a T-tail and tricycle gear and a distinctive narrow rear fuselage. The cabin feels a bit like a glider cockpit and may feel a bit cosy for two people but it has excellent visibility, responsive handling with its stick controls and the advantage of electric flaps and trim.

Diamond DA-40

Diamond's four-seat equivalent of the Katana is the DA40 Diamond Star. It is all-composite with a large forward-hinged canopy for front seat access and a port-side rear door for rear seat passengers. While the DA40-160 with a Lycoming O-360 is available in North America, European examples have used the Thielert 1.7 Centurion diesel - which has not been an unqualified success. Consequently, Diamond now sells the DA40NG which is fitted with their new Austro diesel engine and is available to replace existing Centurions. The diesel option has strong cost advantages and the DA40 is a useful aircraft in a mixed club fleet.

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Cessna Skycatcher	New	2	100hp Cont O-200D	9.14	6.95	598	118	470
DH.82 Tiger Moth	Classic	2	100hp DH Gipsy 1	9.14	7.29	748	74	278
DHC-1 Chipmunk	Classic	2	145hp DH Gipsy Major 10	10.46	7.82	913	103	243
Diamond DA-20C-1	New	2	125hp Cont. IO-240-B3B	10.87	7.16	800	140	547
Diamond DA-40NG	New	4	160hp Austro AE300	11.5	7.16	800	140	547

Finch Robin DR.400 Ecoflyer

Following the financial confusion with Dijon-based Apex Aviation, new production of the Robin four-seaters is promised by Finch Aircraft who expect to restart the assembly line later this year. The most popular model in recent years has been the DR.400CDi Ecoflyer, fitted with the Thielert Centurion engine and Finch expect to install the higher powered version of the Centurion in new production aircraft. All the Robin DR400s are hand-built from wood and fabric, which means the aircraft needs to be hangared. The Ecoflyer, which has a wide track tricycle undercarriage making for good ground stability, is quite fast and very quiet and comfortable with excellent outside visibility. Due to its diesel engine, its economics are good and it is suitable for general club use. Other variants of the DR400 include two versions of the Regent - the 160hp DR400-160 and the more popular DR400-180 which is also available as the Remo 180 glider tug. The Regents have a lengthened cabin with additional rear windows. At the top of the line is the President which is largely sold to private owners.

Evektor Eurostar EV-97

The Eurostar, which has a common design origin with the Aero AT-3, has been very successful in the UK and, while many of these are kit-built VLAs, the 450kg microlight teamEurostar is available as a ready-to fly aircraft. In the future it is expected that the LSA SportStar version with a 600kg gross weight will be on the market under new EASA rules. The Eurostar is all-metal with side-by-side seating and a huge bubble canopy which provides superb all-round visibility. As a trainer, this is another pleasant little aircraft which will give good service and burns around 11 litres per hour with an 80hp Rotax 912.

Extra 200

Extra Aircraft is well known for its competition aerobatic aircraft and their entry-level model is the tandem two-seat EA-200. This is fully capable of unlimited aerobatic manoeuvres and it has predictable stability and responsive handling which makes it ideal for ab initio or advanced aerobatic training, tailwheel training and solo hire for club pilots with suitable qualifications. The Extra 200, which is in service with the Cambridge Aero Club, is powered by a 200hp Lycoming AEIO-360, and most students will find it gives an exhilarating ride without being frightening and is straightforward to land.

Flight Design CTLS

The Flight Design CT series of ultralight/LSA aircraft are currently the most popular models in the USA. In the UK, the CT and the short-span CTSW are widely used as 450kg microlights but the 600kg CTLS is now becoming available under the EASA permit arrangement. The highly streamlined CT is all-composite with a strutless high wing and the 100hp Rotax 912S. It has a very spacious and functional cabin with gull-wing doors and there is a separate baggage compartment with an external door. Performance is good and this is a rugged machine which should delight flying club customers.

Grob G.115

Dating back to 1985, the Grob G.115 is an all-composite side-by-side two seater which was built by Grob-Werke at Mindelheim in Germany and sold widely for civil and military training. The aircraft was designed as a trainer from the outset and has classic handling which will implant good student skills. Over 100 are registered in the UK and, while Lancashire Aero Club and others operate the type, the majority are military contract aircraft used for air experience and University Air Squadrons, replacing the SAL Bulldog. The G115 comes with either a 160hp Lycoming O-320 or, as the G.115D, with a 180hp AEIO-360 engine.

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Evektor Eurostar EV-97	New	2	80hp Rotax 912	8.1	5.98	450	120	500
Extra 200	New	2	200hp Lyc. AEIO-360-A1E	7.5	6.5	840	160	425
Finch Robin Ecoflyer 400CDi	New	4	155hp Centurion 2.0L	8.71	6.95	1100	137	647
Flight Design CTLS	New	2	100hp Rotax 912S	8.51	6.22	600	120	1000
Grob G.115E	New	2	180hp Lyc. AEIO-360-B1F	10.0	7.79	990	124	685

Grumman AG-5B Tiger

Although it has been out of production for some years, the Tiger remains a flying club favourite, offering above average cruise performance and a nice balance of features for training and other club users. It was built by several manufacturers including Grumman American, American General and, finally, Tiger Aircraft. It is the big brother of the AA-5A Cheetah which uses the same airframe but has a 150hp Lycoming O-320 instead of the Tiger's 180hp O-360. There is also a smaller two-seat 115hp version, the AA-1B trainer which is less common in the UK. The good news is that a newly established company, True Flight of Valdosta, Georgia, is on track to start producing new Tigers later this year. It will build the AG-5B in several versions from the basic VFR model with fabric trim to a leather finished deluxe model with a Garmin G1000 glass cockpit. The Tiger, which is all-metal, has a neat sliding canopy which provides good access to the rear seats and, for a low-winger, visibility from the front seats is about as good as it gets.

Ikarus-Comco C42

The C42 is not the most charismatic of designs but its practical simplicity means it is one of Europe's most prolific 450kg ultralights. Its fuselage has a large central aluminium tube running from firewall to tail which is covered in a streamlined composite shell. It has a strut-braced high wing and a rugged tricycle undercarriage fitted with pneumatically-damped primary struts and hydraulic disc brakes. There are no plans for raising the gross weight of the C42 to LSA levels but the C42 performs well and is used by a significant number of UK flying schools including Solent Flight, Clench Common based GS Aviation and Airbourne at Popham.

Liberty XL-2

With around 120 produced to date the two-seat Liberty XL-2 is aimed at training schools and private owners. The XL-2, which has a composite fuselage with metal wings, has its origins in the Europa kit aircraft. The latest XL-2 Vanguard, which has an increased gross weight of 190kg, is fitted with new toe brakes and cabin entry steps. The Liberty is used by a number of flight schools in the USA and is now becoming more common in Europe. Internally, it has a wide and comfortable cabin and most are delivered with a standard IFR package including a Garmin GNS430.

Medway SLA Executive

Built at a small factory in north Kent, the Executive is produced by an established microlight builder and comes in two versions - the SLA 80 with a Rotax 912 and the SLA 100 with a 100hp Rotax 912S. It is fitted with electric trim and electric flaps and has a 100-litre fuel capacity. Externally, it is similar to the Skyranger and the Rans Coyote and is built of steel tube and fabric. It has side-by-side seating and is equipped with a central control stick and dual rudder pedals - and the panel contains an Adsim Flight-Box electronic instrument unit.

Morane Rallye

Over 3,200 Rallyes of various types were built by Socata in France between 1961 and 1992 and many remain as reliable club aircraft all around Europe. The basic all-metal Rallye Club had a 100hp Continental but the range went up to the higher weight Rallye 235 with a 235hp Lycoming O-540. Many Rallyes are 150hp variants which can carry four people reasonably comfortably. The Rallye has automatic leading edge slats which will pop in and out rather abruptly - but do give the Rallye outstanding slow flying abilities. Though it is a bit long in the tooth - the Rallye is still a good club machine.

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Grumman Tiger AG-5B	Classic	4	180hp Lyc. O-360-A4K	9.6	6.71	1088	139	667
Ikarus-Comco C42	New	2	80hp Rotax 912UL	9.45	6.25	450	105	375
Liberty XL-2	New	2	125hp Cont. IOF-240-B	8.76	6.19	794	125	500
Medway Executive SLA-80	New	2	80hp Rotax 912UL	9.69	5.72	450	78	615
Morane Rallye MS880B	Classic	4	100hp Cont. O-200-A	9.6	6.95	770	92	408

Piper PiperSport

When it announced the SportCruiser in 2006, CSA (Czech Sport Aircraft - formerly CZAW) sparked a flood of interest and, as a kit aircraft, this low-wing all-metal two seater has been extremely successful with many now completed and operating in the UK. Amateur-built Sport Cruisers have been powered by either the 100hp Rotax 912ULS engine or the 120hp Jabiru 3300 and the aircraft is sold as an LSA in the American market. With Cessna entering the LSA scene with the Skycatcher, Piper has decided to compete with the PiperSport which is the SportCruiser with minor modifications including a BRS emergency parachute recovery system, a stronger nose gear and a full leather interior. It is manufactured in the Czech Republic by CSA and marketed through a sales network including existing Piper dealers. The PiperSport uses the 100hp Rotax 912S which is approved for use of MoGas, and will climb at 1,200 fpm. Piper have delivered the first examples of the PiperSport and we can expect it in the UK once the certification issues of EASA LSA are sorted out.

Piper PA-28R Arrow

Although no Arrows were delivered last year, Piper keeps it in its product line for sale to individual order and classes it as one of its Trainer products although it may be attractive to a few private owners. It remains virtually the only reasonably priced four-seat retractable on the market. Essentially similar to the Archer, the Arrow is often used as a complex aircraft trainer and new production examples come with an Avidyne two-screen instrument panel and a standard GNS430 GPS/comm and GTX330 transponder. Older examples of the Arrow include the Arrow IV which has a T-tail - and the turbocharged Turbo Arrow.

Piper PA-22-108 Colt

Before Piper introduced the all-metal Cherokee in 1961 their main single-engined aircraft was the 4-seat PA-22 Tri Pacer which was of tube and fabric construction, equipped with 150hp or 160hp engines and unkindly dubbed "the flying milking stool". In 1961, faced with competition from the Cessna 150, Piper announced the Colt which was a PA-22 airframe with only two seats and a 108hp Lycoming O-235. Several dozen were imported into the UK where they served as good club trainers for several years. Around 20 are active in the UK, some converted to taildraggers, but a good one remains a cost-effective option for a flying club.

Piper PA-18 Super Cub

Everyone knows the 65hp Piper J3 Cub which was introduced in 1937 and became the most popular light aircraft in the world. Its successor was the PA-18 Super Cub which Piper manufactured from 1950 to 1990 and has spawned modern copies from American Legend and Cub Crafters. As a trainer, the Super Cub teaches all the basic skills together with the essentials of flying a taildragger - and with the cockpit door open a student can watch his wheels as they reach the grass ! Super Cubs come with 95hp, 105hp, 125hp, 135hp and 150hp engines, so performance varies - though this is no fast cruiser !

Piper PA-38 Tomahawk

Piper's two-seat PA-38 Tomahawk had a relatively short production career from 1978 to 1982 with total production reaching just over 2,500. This all-metal trainer was intended to compete with the Cessna 152 but Piper's training customers seem to have preferred the flexibility afforded by the four-seat Warrior. The Tomahawk has a framed bubble canopy with two access doors which, combined with the narrow wing, gives pretty good all-round vision. Some people don't like the tail which shakes a bit in the slipstream and the PA-38's handling can be an acquired taste, but overall it is a pleasant enough trainer.

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Piper Arrow PA-28R-201	New	4	200hp Lyc. IO-360-C1C6	10.8	7.5	1247	137	880
Piper Colt PA-22-108	Classic	2	108hp Lyc O-235-C1B	9.14	6.1	748	100	282
Piper Sport	New	2	100hp Rotax 912S	8.78	6.49	600	120	600
Piper Super Cub 150	Classic	2	150hp Lyc. O-320	10.76	6.86	794	100	400
Piper Tomahawk PA-38-112	Classic	2	112hp Lyc. 0-235-L2C	10.36	7.04	757	109	402

Piper PA-28-161 Warrior

The Warrior has been a consistent favourite with those who want a low wing four-seater and it competes with the Cessna 172R in the training market. Demand for the Warrior III, which is powered by a four-cylinder 160hp Lycoming O-320, was fairly depressed last year with only eight aircraft delivered. Nevertheless, it is used by many schools and clubs and it offers rugged construction and stable handling which will give confidence to new students. The Warrior's design goes back to the original Piper PA-28 Cherokee, but it was upgraded a number of years ago with a compound taper wing. As with all PA-28s, the cabin has a single starboard-side main door and clambering into the rear seats can be a bit of a scramble. New production Warriors have the two-screen Avidyne FlightMax Entegra flat panel 2-screen display system and are equipped with dual GNS430 Nav/Com/GPSs, an engine monitoring system and CMax electronic approach charts. As an alternative, the Garmin G500 ProVision system can be fitted and another option is Synthetic Vision.

Remos GX

The Remos GX is quite a newcomer to British skies but it has proved to be very successful in the Light Sport market in the USA. The carbon fibre composite Remos is marketed from Germany and the GX has been developed as an LSA from the earlier G3. It differs from the G3 in having a new wing, changes to the shape of the fuselage and a modernised interior which is accessed through two large doors positioned ahead of the wing support struts. The cabin is nearly 4-ft wide and equipment includes a cabin heating and ventilation system and electric trim and flaps.

Robin Alpha

The Robin Alpha all-metal low-wing two-seater was designed by Chris Heintz in the 1970s and built by Avions Robin at Dijon until 2004. There were several versions from the 108hp R.200 basic trainer up to the fully aerobatic R2160 Alpha Sport with a 160hp Lycoming O-320 engine and examples of all these are on th UK register. Robin sold production rights to Alpha Aviation in New Zealand, but they completed only a handful of Alpha 160As and Alpha 120Ts before going out of business. With comfortable side-by-side seating, stick controls and crisp handling these rugged little aircraft remain a good flying club choice.

SAL Bulldog

The Bulldog was developed from the Beagle Pup (described earlier) but, due to the failure of Beagle Aircraft, the design was taken over by Scottish Aviation who built 331 examples for the RAF and for other governments including Sweden, Nigeria and Malaysia. The RAF started to sell off its aircraft in the late 1990s and around 80 Bulldogs now fly in the UK with civil owners. Some are used for training by schools such as Skysport at Kemble and the aircraft is noted for its stability and its light and positive handling and its ability to perform basic aerobatics.

Slingsby Firefly

Glider manufacturer, Slingsby developed the Firefly from an original light aircraft by the French motor glider designer, Réné Fournier. Consequently, the Firefly has a distinctive long-span wing. Slingsby's early models were all-wood, but they redesigned the Firefly with a composite airframe and a 200hp Lycoming AEIO-360 engine. The Firefly is no longer in production but customers included the US Air Force and a large batch was sold for contracted RAF basic training. These have now been released to the civil market and provide a good opportunity for flying clubs and schools to acquire an efficient trainer with excellent handling qualities.

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Piper Warrior PA-28-161	New	4	160hp Lyc. O-320-D3G	10.7	7.3	1107	115	513
Remos GX	New	2	100hp Rotax 912ULS	9.3	6.48	600	113	745
Robin R2160	Classic	2	160hp Lyc. 0-320-D2A	8.33	7.09	900	130	513
SAL B.125 Bulldog	Classic	2	200hp Lyc. IO-360-A1B6	10.06	7.09	1066	120	539
Slingsby T.67M Firefly	Classic	2	160hp Lyc. AEIO-320-D1B	10.59	7.31	975	121	548

Socata TB-9 Tampico

Socata's all-metal four-seaters have now been out of production for a few years but over 2,000 of the various models were built and they became a well established feature of many flying clubs and schools. The Tarbes factory built three fixed gear versions - the 160hp TB-9 Tampico, primarily for training, the 180hp TB-10 Tobago and the 200hp TB200 - all of which were upgraded in 1999 with a higher roof line, altered window shape and new cowlings. The Tampico Club, which is the main training variant, has a roomy cabin with two large access doors and an externally accessed baggage compartment. The aircraft were delivered with stylish modern seats and a distinctive instrument panel design which marked them out from some of the more traditional American built light aircraft. The TB has quite a narrow wing which, when combined with a high seating position, results in good all-round visibility. Just under 100 TB-9s and TB-10s are current in the UK and, despite their increasing age, a good example will be an asset to any flying organisation.

Tecnam P2002 Sierra

The P2002JF is Tecnam's factory-complete version of the attractive little Sierra. This low-wing all-metal VLA aircraft is built in the south of Italy and reviewers have praised its agile handling and all round comfort and its well balanced controls and low control forces. The powerplant is a 100hp Rotax and Tecnam also build a retractable gear version of the Sierra - the P2002JR. The interior of the Sierra provides plenty of elbow room and entry is via a sliding canopy although constant club use could produce wear and tear quite quickly. Nevertheless, several schools are happily using the Sierra for training.

Tecnam P92

Tecnam's high-wing P-92 Echo is normally kit-built, but Tecnam also sells a factory-complete higher weight VLA version, designated P92JS. The P92 has a wide cockpit with reasonable headroom and outward visibility and its panel is large enough for a comprehensive fit of instruments and avionics. The airframe is all-metal with some non-structural composite parts and the aircraft's handling is pleasant with stick controls for both seats. The P-92 has not had the success it deserves in the UK training market although it is popular in Europe, but it is certainly worth consideration for clubs seeking an economical and reasonably priced high winger.

Thruster T600N

We know quite a few very happy microlight pilots who trained on the Thruster - which was the UK's first 3-axis microlight trainer. The original Thruster TST was much improved as the T300 with a new wing and then as the T600 with more power. Current models are the tricycle-gear T600N and the tailwheel T600T which have either the Rotax 503, the Rotax 582 or the Jabiru 2200A. All the models have the option of enclosed or open cabins and rear fuselage structures. None of them have flaps but they are easy to fly and ideal for teaching basic skills.

TL Ultralight TL2000 Sting

TL Ultralight is another Czech company which has been successful in the ultralight and LSA markets with its low-wing TL96 Star and TL2000 Sting. Both are pretty low-wingers and the current Sting is built from carbon fibre and, for the UK market, sold as a kit - with 14 near to completion. The LSA version will probably come to the UK as a factory-complete aircraft - but only when the EASA regulations are settled. The company has also launched a new version of the sting - the S4 - which has a new trailing arm nose leg, increased baggage area and the tail of the high-wing TL Sirius.

Aircraft Data

Model	Cat.	Seats	Powerplant	Wingspan metres	Length metres	Gross Wt Kg	Max Cruise Kts	Max Range NM
Socata TB-9 Tampico	Classic	4	160hp Lyc O-320-D2A	9.76	7.63	1058	107	450
Tecnam P2002JF Sierra	New	2	100hp Rotax 912S	8.58	6.58	580	130	500
Tecnam P92JS	New	2	100hp Rotax 912S	8.7	6.4	550	113	430
Thruster T600N Sprint	New	2	80hp Rotax 912	9.6	5.8	450	90	240
TL2000 Sting	New	2	100hp Rotax 912S	8.44	5.93	600	135	450

ftn reviews

OAAMedia JAA/EASA ATPL training CD-ROM, DC Electrics

Another of the popular multimedia training CD-ROMs from OAAMedia is DC Electrics, and, yes, it does maintain the standard of its predecessors.

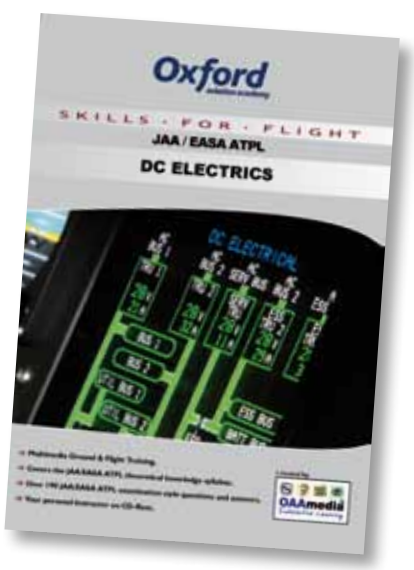
You may not have read our previous reviews of OAA Media (formally OAT Media) products but, briefly, we here at FTN Towers think they are generally very good indeed. They have excellent and clear graphics, are logically laid-out, using the course to progressively build a solid depth of knowledge and understanding, helped by summaries and plenty of self-test questions.

I'm ambivalent about the use of voiceovers. While they can't help forcing the pace, they do allow one to concentrate on the graphics, rather than reading heaps of text, and that can be useful. The risk is that, by over-enthusiastic use of the fast-forwarding function in the progress bar at the bottom of the screen, you miss something on-screen which is timed to coincide with the commentary. That said, the progress bar is easy and intuitive and does make a quick skim of a section or, for that matter, a backtrack-and-recap, very straightforward.

Once you are familiar with the OAAMedia way of doing things, all the products tend to work in much the same way and even a newcomer should quickly become familiar with the functions and tools. It would be nice, however, if hovering the mouse pointer over a control gave a quick text-box description of its function, as happens increasingly in modern software. It's a minor niggle, the controls are not exactly numerous, or complicated, but it's worth mentioning because the developers otherwise seem to get most things right.

The subject sections include:
Basic Principles – a handy revision of GCSE electrical theory
Switches
Circuit Protection
Capacitance
Batteries
Magnetism
Generators & Alternators
DC Motors
Aircraft DC Electrical Power Systems
Bonding and Screening.

The latter sections aside, much of the material covered here would also be useful for GCSE or 'A' level revision. That makes this product a versatile tool, and highly recommended.



OAAMedia JAA/EASA ATPL training CD-ROM, DC Electrics
ISBN 978-1-906202-31-6 Single CD-ROM, typically £36 from pilot shops
Produced by OAAMedia, www.oatmedia.com

Action Stations Revisited, vol 3 by David W Lee
Action Stations Revisited, vol 4 by David Berryman

I recall the original series of 'Action Stations' books: smallish paperbacks, around a dozen in the series to cover the UK. The books provided brief histories of all the military airfields in a particular region, describing the use the airfields had been put to, the squadrons and military units operating there and key operations which had been undertaken from the sites. The Crécy Publishing editions take that original concept and bring it up to date in excellent quality hardback format. Not only modernising the style – Crécy books are invariably immaculately presented – but also updating the airfield histories as far as possible to the present-day. Dunsfold, for example, in Action Stations Revisited volume 3, describes its current use as, among other things, the home for the BBC Top Gear programme.

Volume 3 covers South East England, a swathe which broadly covers the southern counties from Hampshire to Kent, and those south of the M4. Volume 4 covers South West England, from Cornwall heading east to meet up with vol. 3. Volume 3 therefore covers most of the 'Battle of Britain' airfields, while volume 4 has a good scattering of 'Coastal Command' sites and the training airfields in and around Wiltshire.

While it is perhaps sad to think of so many historic sites which have now passed into memory and live on only in histories such as these, it is still gratifying to see their past so meticulously researched and recalled within these pages. It is also quite astonishing to consider just how many airfields there must have been in times gone by – rather more of the airfields featured here are long-gone, than remain in use as airfields today, and many sites with a glorious history have been redeveloped for industry or housing. It can only be hoped that the current occupants take the occasional moment to ponder on what happened on the site before their time. Books such as Action Stations Revisited do have an important role to play in marking these airfields' places in the pages of history. It is therefore right that the job is done properly. The authors and publishers should be congratulated on a thorough job, well done.

Action Stations Revisited, vol 3 by David W Lee, ISBN 978-0-85979-110-6
Action Stations Revisited, vol 4 by David Berryman, ISBN 978-0-85979-121-2

Hardback, 344 and 368 pages, illustrated with monochrome photographs and diagrams. £24.95 each, from bookshops, pilot shops or online from the publisher.

Published by Crécy Publishing, www.crecy.co.uk

Action Stations Revisited, vol 1 by Michael JF Bowyer,
ISBN 978-0-85979-145-8

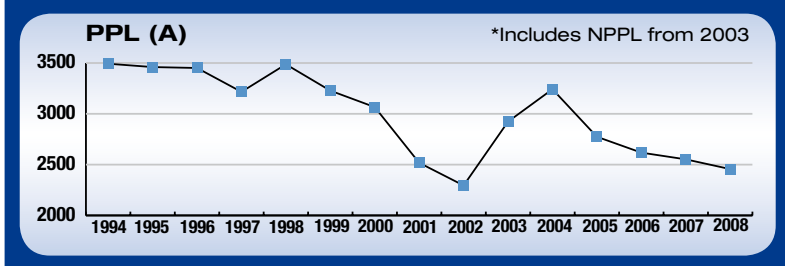
Almost an 'Action Stations Revisited – Revisited'. This is a newly-printed second edition of volume 1 of the current series, which further updates the first edition in light of recent developments which have seen, and will probably continue to see, significant changes to the remaining military airfields of East Anglia. Volume 1, East Anglia, covers the multitude of WW2 'bomber' airfields so, in tandem with the newly-published volume 3, would serve as an excellent primary reference for anybody interested in aerial warfare in the Second World War, and the ensuing cold-war period.

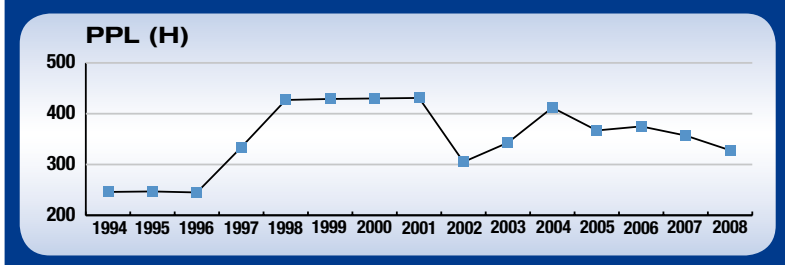
Action Stations Revisited, vol 1 by Michael JF Bowyer, ISBN 978-0-85979-145-8

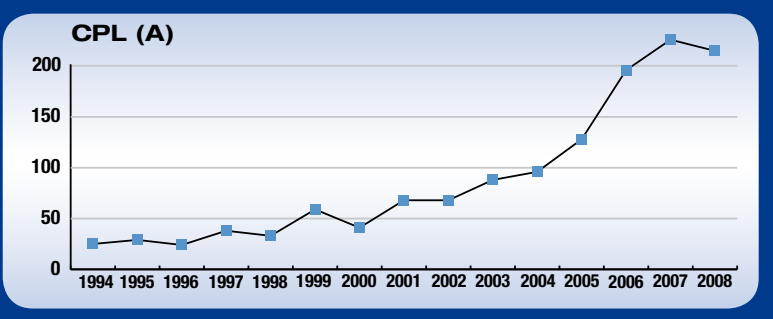
Hardback, 496 pages, illustrated with monochrome photographs and diagrams. £24.95, from bookshops, pilot shops or online from the publisher.

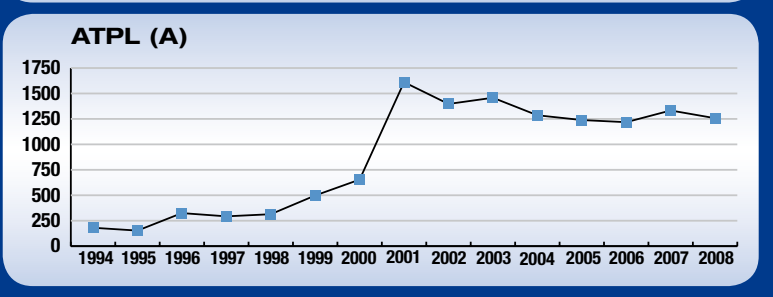
DATA & STATISTICS

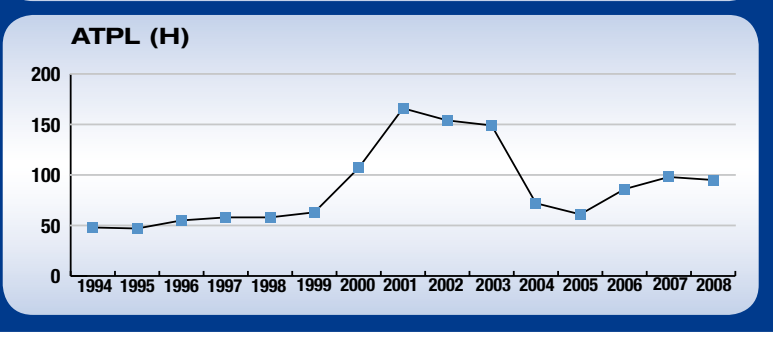
UK Initial Licence Issues

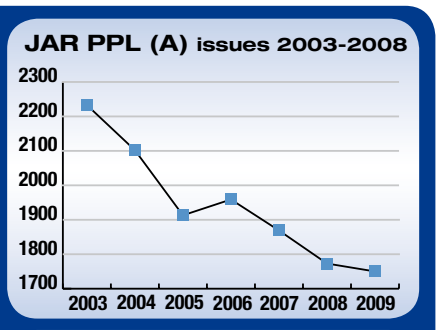


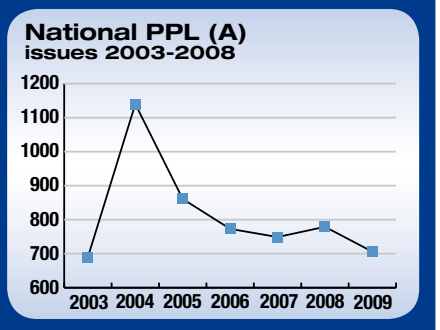


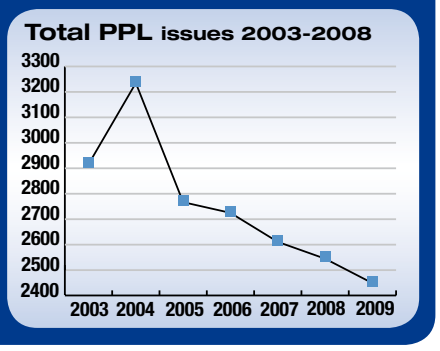




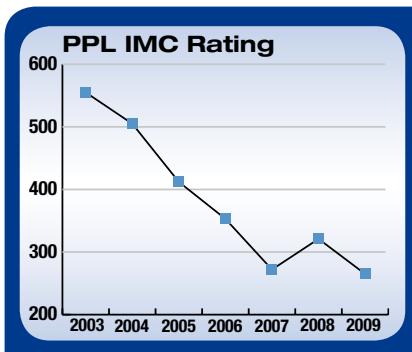


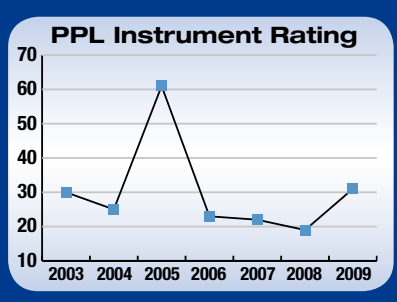


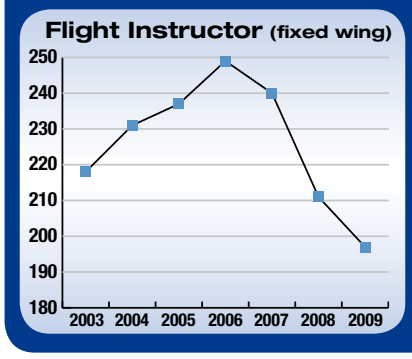


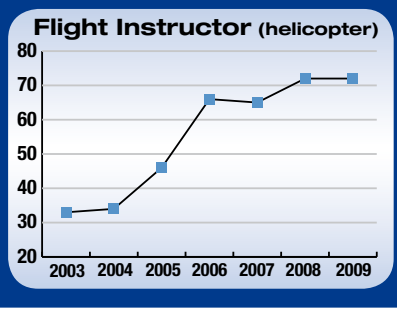


Ratings - seven year trend









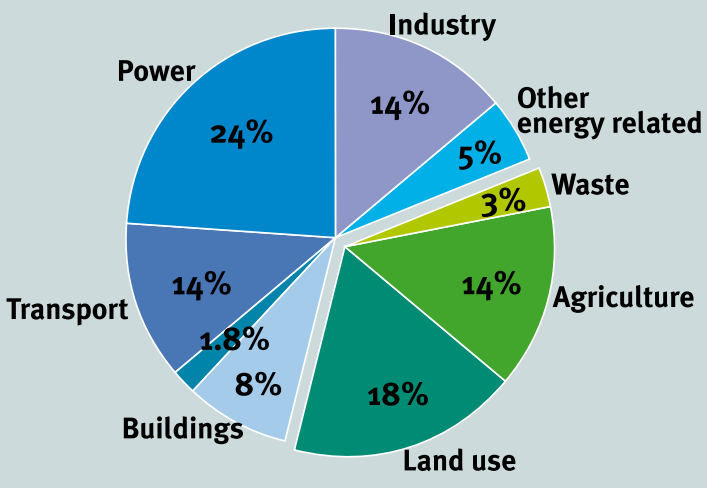
2009	figure	year-on-year change
PPL (A) (includes JAR/ EASA PPL and NPPL)	2456	-4%
PPL (H)	328	-8%
CPL (A)	1330	unchanged
ATPL (A)	1257	-6%
ATPL (H)	95	-3%

How green is aviation?

All forms of transport combined account for 14% of global greenhouse gas (GHG) emissions.

Domestic and international air transport account for 14% of transport-related global greenhouse gas (GHG) emissions.

- Water transport is responsible for 1.5% of global greenhouse gas (GHG) emissions.
- Air transport is responsible for 2% of global greenhouse gas (GHG) emissions.
- Road transport is responsible for 11% of global greenhouse gas (GHG) emissions.
- Business and General Aviation uses less than 1% of the fuel of the airlines and accounts for only 0.016% of all CO_2 emissions. (Source: BBGA)



For further environmental data, see www.enviro.aero

Number of licenced airfields in the UK **142**
(Source: 2009 UK AIP)

Professional Flying Training Organisations UK and ROI **102**
*excluding organisations that are solelyTRTOs
(Source: Flight Training News)

Microlight Schools UK and ROI **107**
(Source: Flight Training News)

Helicopter Schools UK and Ireland **102**
(Source: Flight Training News)

Current Licence Processing Turnaround

As at the 24 May 2010, the UK CAA were processing licence applications received:

Professional Flight Crew	7 May 2010
Private Flight Crew	7 May 2010
Instructors	10 May 2010
NPPL Flight Crew	None

(Source: CAA)

European General Aviation

90,000 pilots engaged in private powered flying
40,000 microlight pilots
90,000 glider pilots
115,000 hang glider and paraglider pilots
5,300 balloon and airship pilots
20,000 General Aviation aircraft
22,000 gliders

Statistic of the month

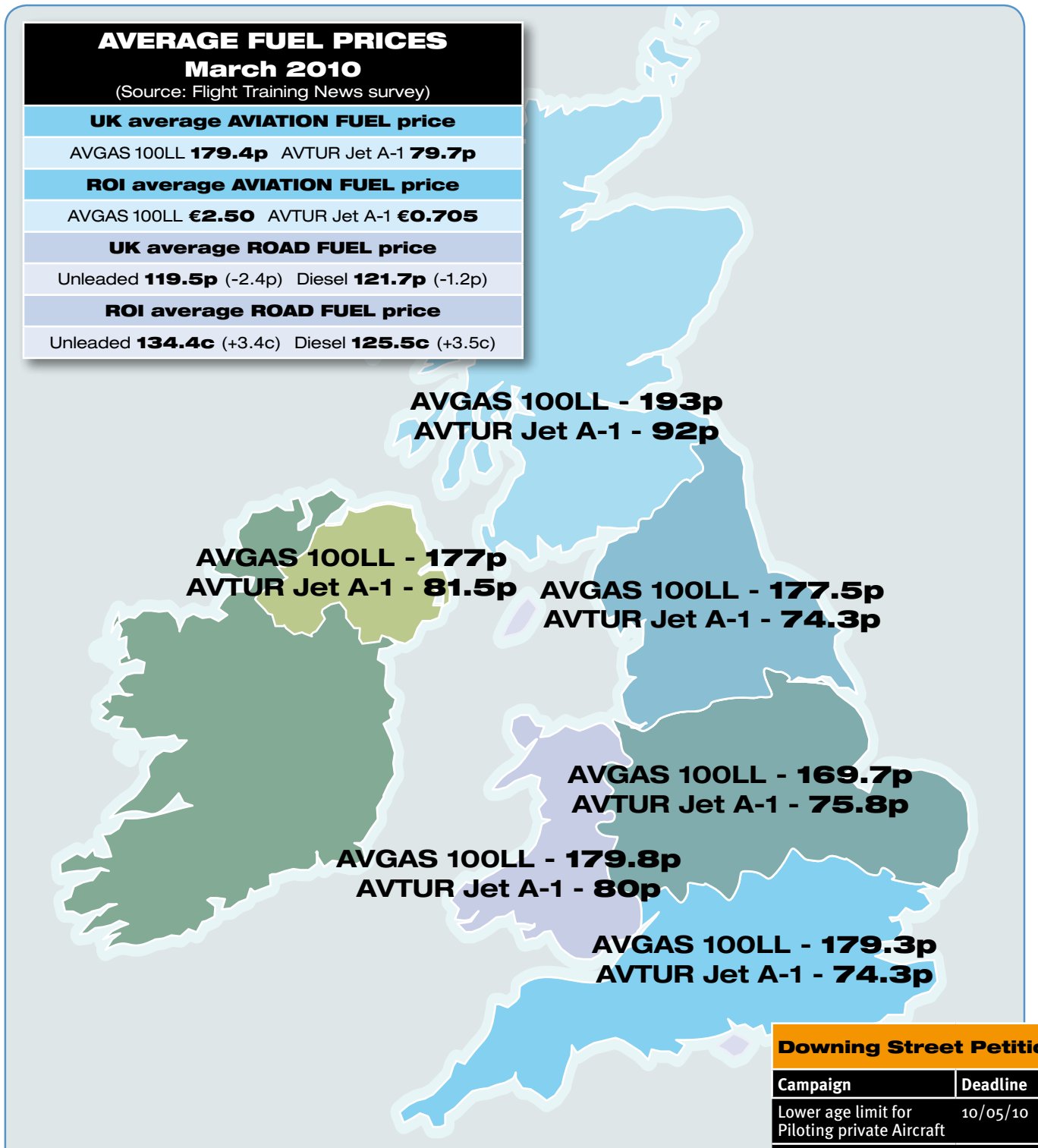
Holiday firm Activity Breaks has seen a 25% increase in enquiries for no-fly holiday packages.

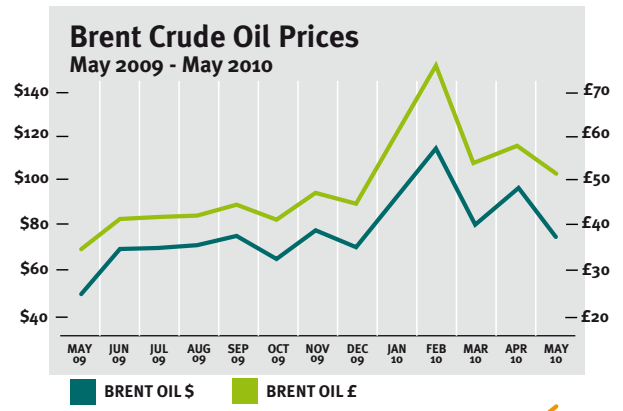
DATA & STATISTICS

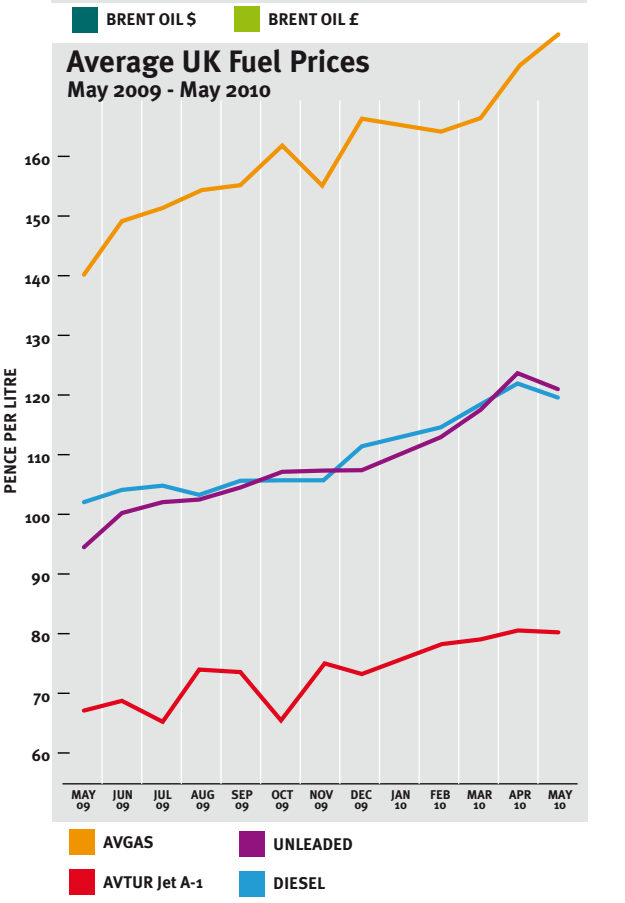
AVERAGE FUEL PRICES March 2010

(Source: Flight Training News survey)

UK average AVIATION FUEL price
AVGAS 100LL **179.4p** AVTUR Jet A-1 **79.7p**
ROI average AVIATION FUEL price
AVGAS 100LL **€2.50** AVTUR Jet A-1 **€0.705**
UK average ROAD FUEL price
Unleaded **119.5p** (-2.4p) Diesel **121.7p** (-1.2p)
ROI average ROAD FUEL price
Unleaded **134.4c** (+3.4c) Diesel **125.5c** (+3.5c)







Forthcoming UK and ROI JAR Theoretical Knowledge exams

JAR ATPL (A) & (H) ***Exam Centres:*** *Gatwick, Oxford, Shuttleworth College & Glasgow*

Exam month	Closing date for applications	Subjects	Exam dates
JULY	21/06/10	Principles of Flight, Airframes, Mass and Balance, Performance	Mon 5 July
		Instrumentation, Operational Procedures, Flight Planning	Tue 6 July
		General Navigation, Radio Navigation, Meteorology	Wed 7 July
		Air Law, Human Performance, VFR Communications, IFR Communications	Thur 8 July

JAR CPL (A) ***Exam Centres:*** *Gatwick only*

Exam month	Closing date for applications	Subjects	Exam dates
JULY	28/06/10	Principles of Flight, Aircraft General, Performance and Planning	Mon 12 July
		Navigation, Meteorology, Operational Procedures, Air Law, Human Performance, VFR Communications	Tue 13 July

JAR CPL (H) ***Exam Centres:*** *Gatwick only*

Exam month	Closing date for applications	Subjects	Exam dates
JULY	30/06/10	Principles of Flight, Aircraft General, Performance and Planning	Wed 14 July
		Navigation, Meteorology, Operational Procedures, Air Law, Human Performance, VFR Communications	Thur 15 July

Republic of Ireland Theoretical Knowledge exams

All held at: *The Gresham Hotel, 23 Upper O'Connell Street, Dublin 1*

Exam month	Closing date for applications	Subjects	Exam dates
JULY	02/07/10	CPL/ATPL/IR	19-22 July
	02/07/10	PPL	23 July

Downing Street Petitions and Campaigns

Campaign	Deadline	Current Signatures	Sign up
Lower age limit for Piloting private Aircraft	10/05/10	2	http://petitions.number10.gov.uk/PlaneAgeLower/
Stop airlines receiving payment from pilots in return for flying	01/08/10	313	http://petitions.number10.gov.uk/PAY2FLY/

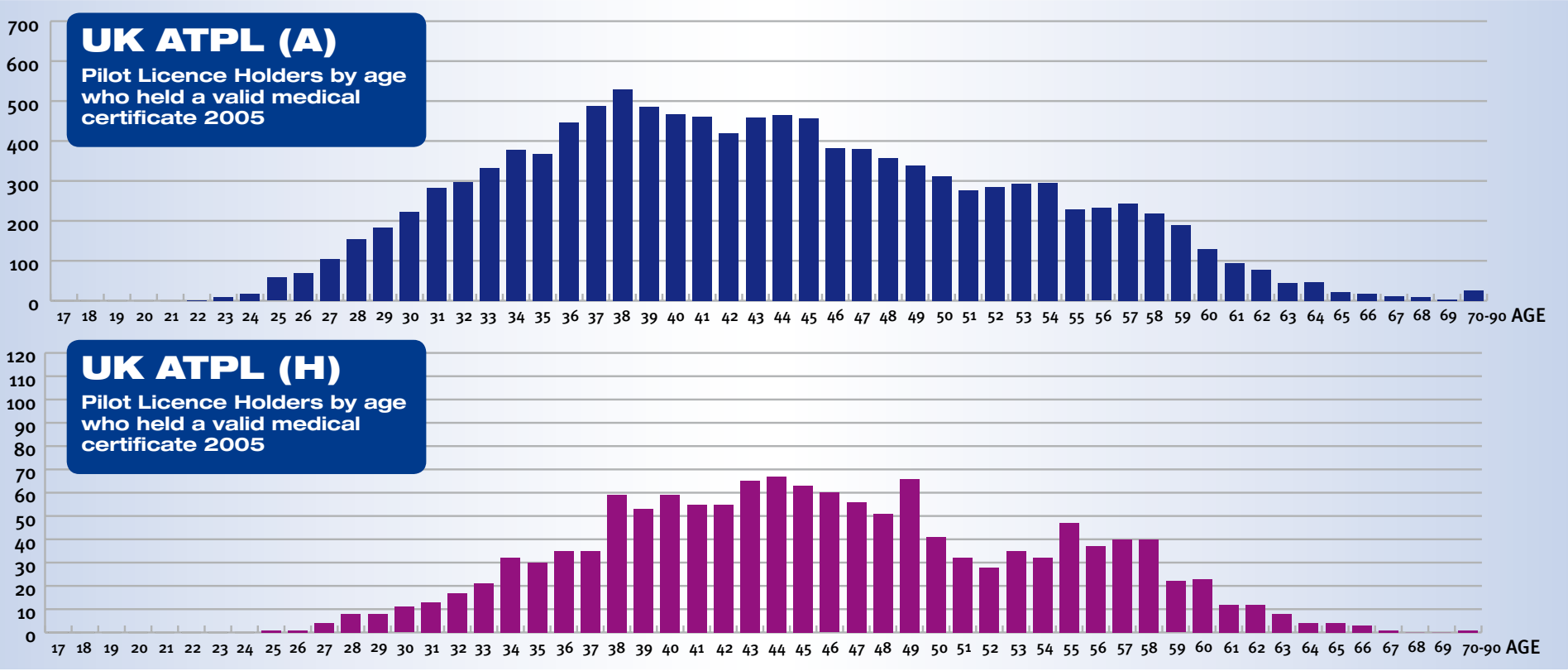
UK CAA Open Consultations

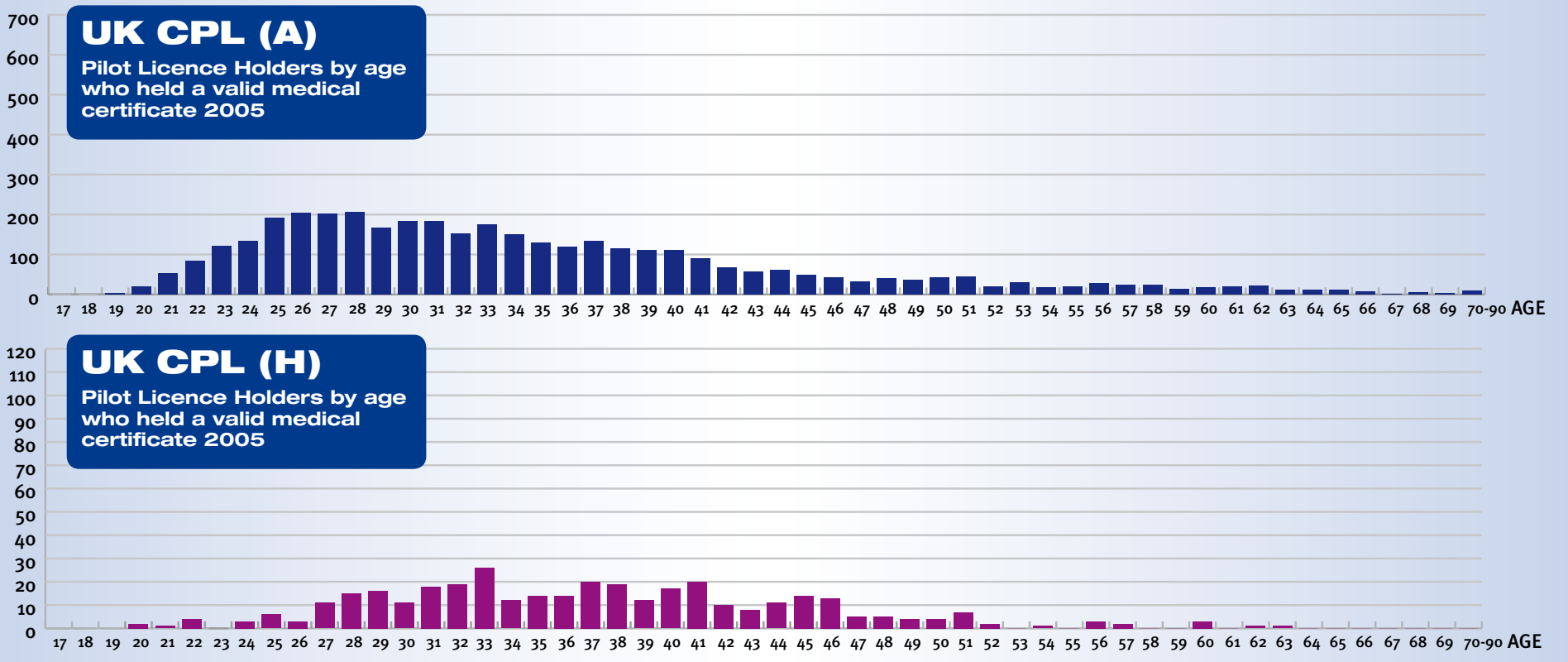
Consultation	Deadline	Details	Link
Proposed changes to CAP 168	20/02/10	Includes proposed changes to the requirements for licensed aerodromes and provides further guidance and explanatory material. Proposed changes include incorporating information from NOTALs into CAP 168, development of good practice from industry, changes to technology, AAIB Safety Recommendations, and aligning UK requirements to ICAO Standards and Recommended Practices (SARPs) where practicable.	http://www.caa.co.uk/default.aspx?catid=1350&pagetype=90&pageid=11066

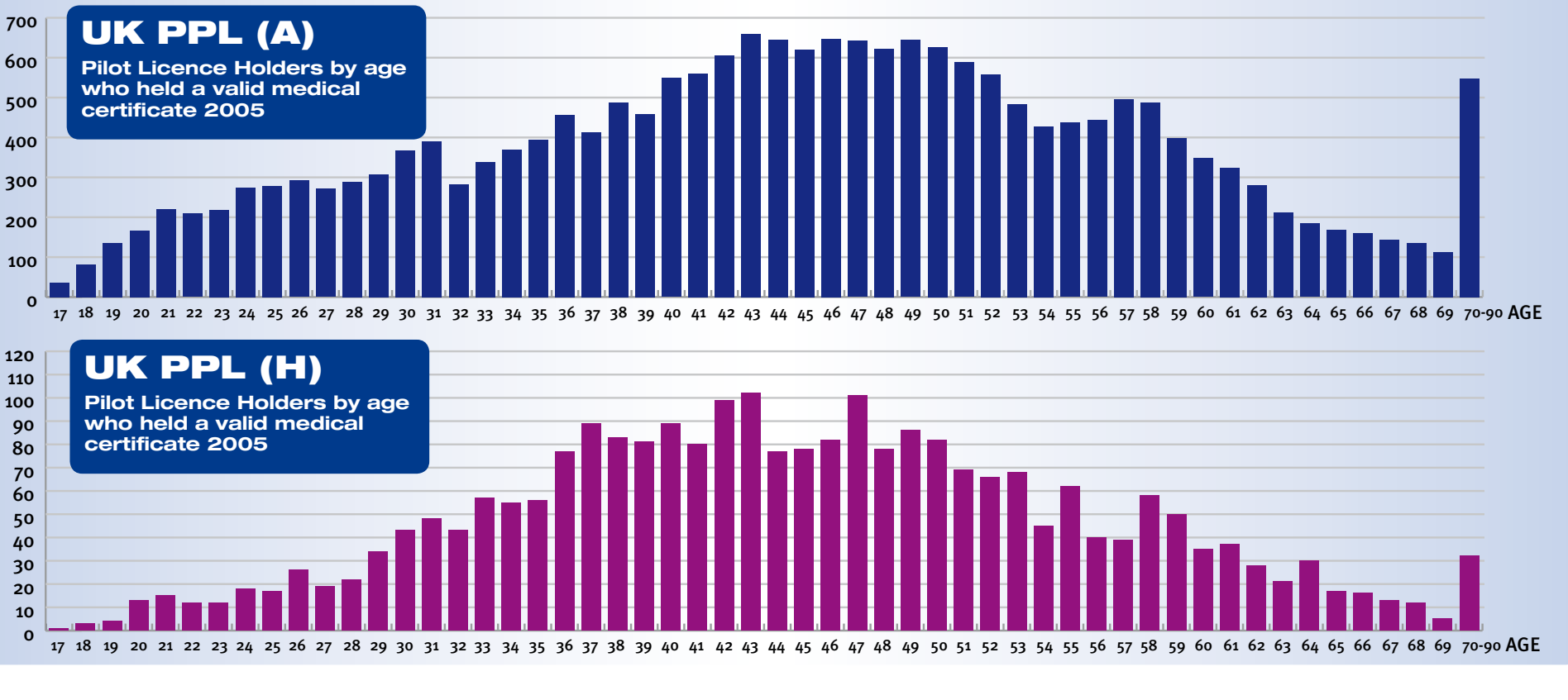
EASA Open Consultations

	Task No.	Title	Begin date	End date
Awaiting response to comments	20.006(C)	Airworthiness Approval and Operational Criteria for onboard equipment related to Area Navigation for Global Navigation Satellite System approach operation to Localiser Precision with Vertical guidance minima using Satellite Based Augmentation System	23/03/2009	23/06/2009
Awaiting Response to comments	Fcl.001	Authority and Organisation Requirements - Regulatory Impact Assessment on Flight Crew Licensing (FCL)	31/10/2008	15/04/2009
Awaiting Response to comments	MDM.003(a)	Flight Testing	29/08/2009	31/01/2009

DATA & STATISTICS







DATA & STATISTICS

Pilot Demand to Support Fleet Growth & Pilot Retirements (2006-2026)

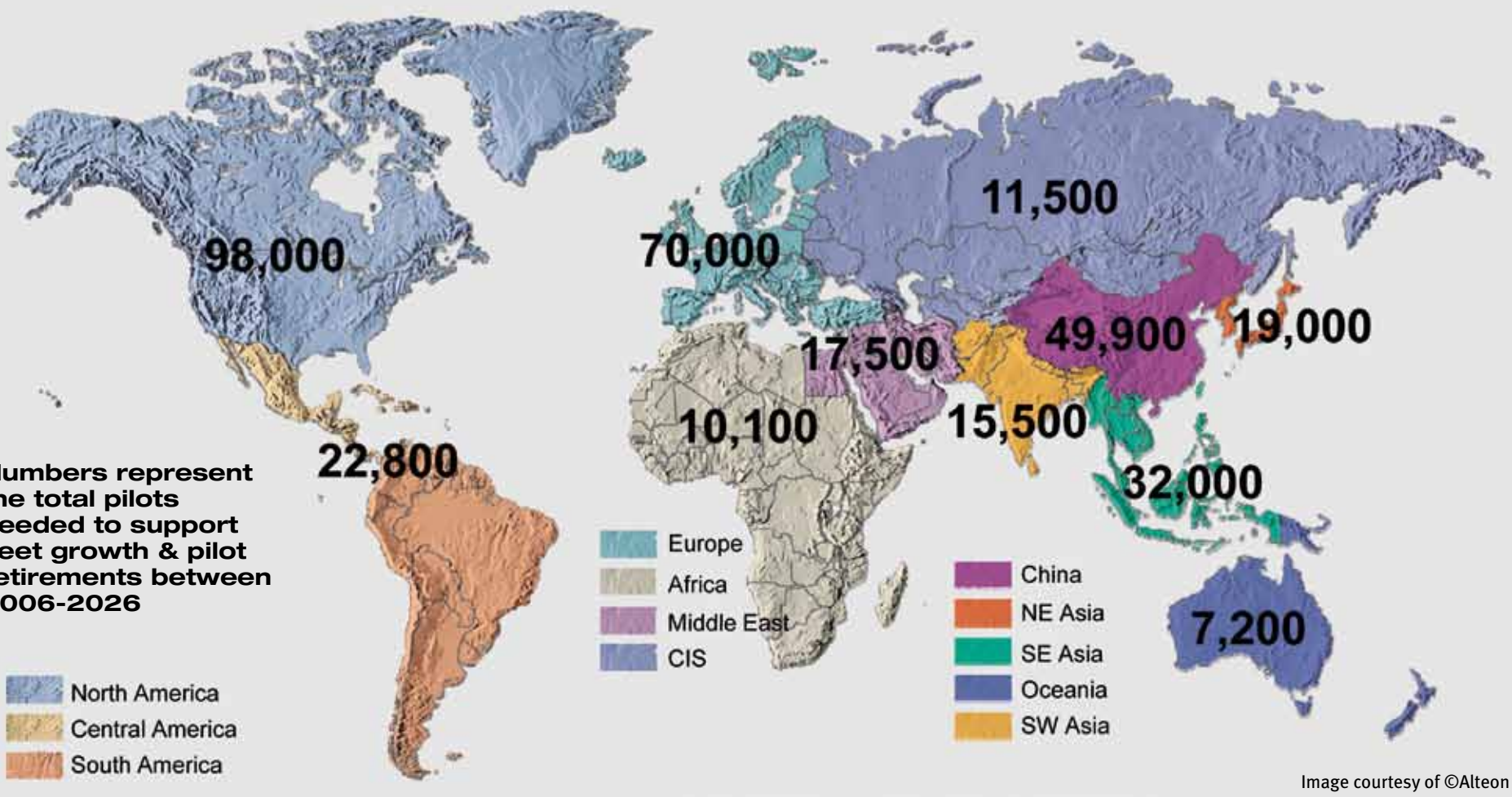


Image courtesy of ©Alteon

Industry Watch

Scheduled services of Association of European Airlines member airlines
March 2010

Type of Traffic	Passengers Boarded (000s)	Annual Change
European	18,19.8	-9.5%
International short/medium haul	13,012.5	-8.3%
Longhaul	5,050.9	-9.3%
Type of Traffic	**Freight Tonne-Kms**	**Annual Change**
European	63.6	-14.9%
International short/medium haul	168.5	-5.8%
Longhaul	2,473.3	-17.8%

General Aviation new aircraft deliveries worldwide
(source, General Aviation Manufacturers Association)

2009 vs. 2008 shipments of airplanes manufactured worldwide

Category	2008	2009	Change
Piston	2,119	965	-54.5%
Turboprop	535	441	-17.6%
Business Jet	1,313	870	-33.7%

British Airways passenger statistics
April 2010

	April 2010	April 2009	Change
Passengers (000)	2.081m	2.756m	-24.5%
Load Factor	76.6%	78.1%	-1.5%

EasyJet passenger statistics
April 2010

	April 2010	April 2009	Change
Passengers	3.49m	3.77m	-7.6%
Load Factor	85.2%	84.2%	+1.0%

Ryanair passenger statistics
April 2010

	April 2010	April 2009	Change
Passengers	6.2m*	5.3m	+17%
Load Factor	83%	82%	+1.0%

* This figure is based on booked passengers, rather than passengers actually flown

BAA airport passenger statistics
To April 2010

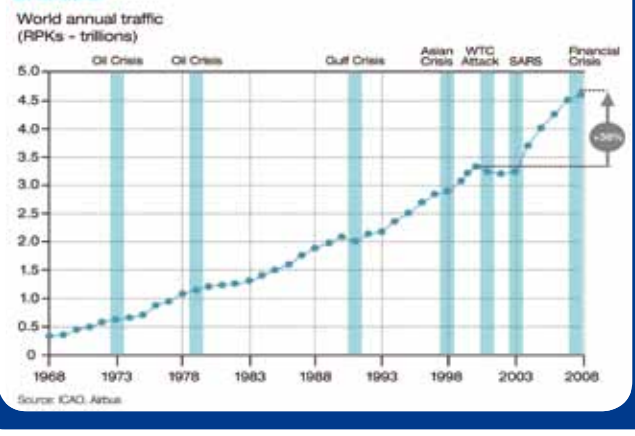
Airport Passengers (000's)	May 2009 to Apr 2010	Change
Heathrow	64,966.6	-1.7%
Stanstead	19,361.2	-9.5%
Southampton	1,765.4	-5.5%
Glasgow	6,928.2	-11.6%
Edinburgh	8,790.2	+1.1%
Aberdeen	2,886.3	-9.9%

UK National Air Traffic Services traffic data

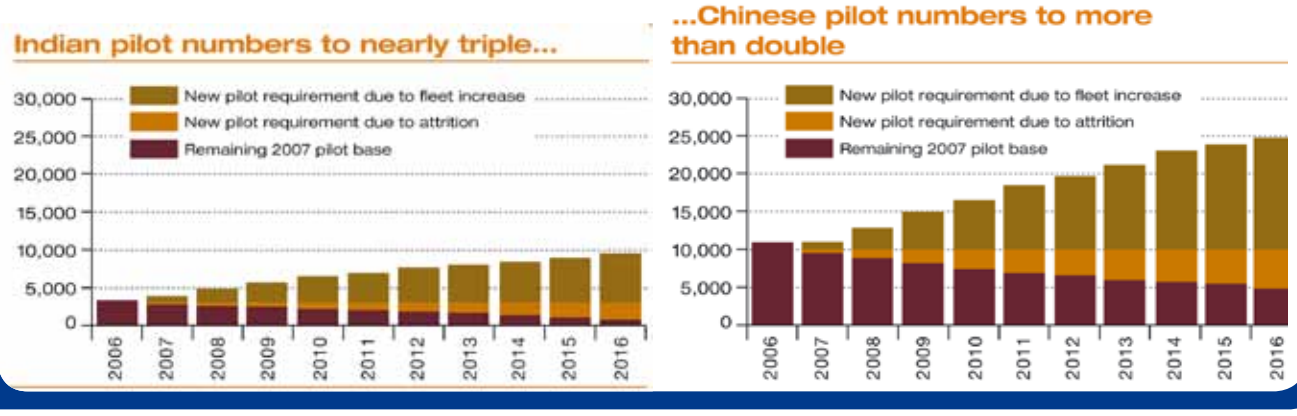
Type of Flight	Apr 2010	Apr 2009	Change
UK Flights	141,956	180,166	-21.2%
Transatlantic Arrivals/ Departures	8,284	10,006	-17.7%
Other Arrivals/Departures	87,005	109,229	-20.3%
Domestic	27,693	35,876	-22.8%

Airbus Passenger Traffic Data - the long term view

Air travel has proved to be resilient to external shocks

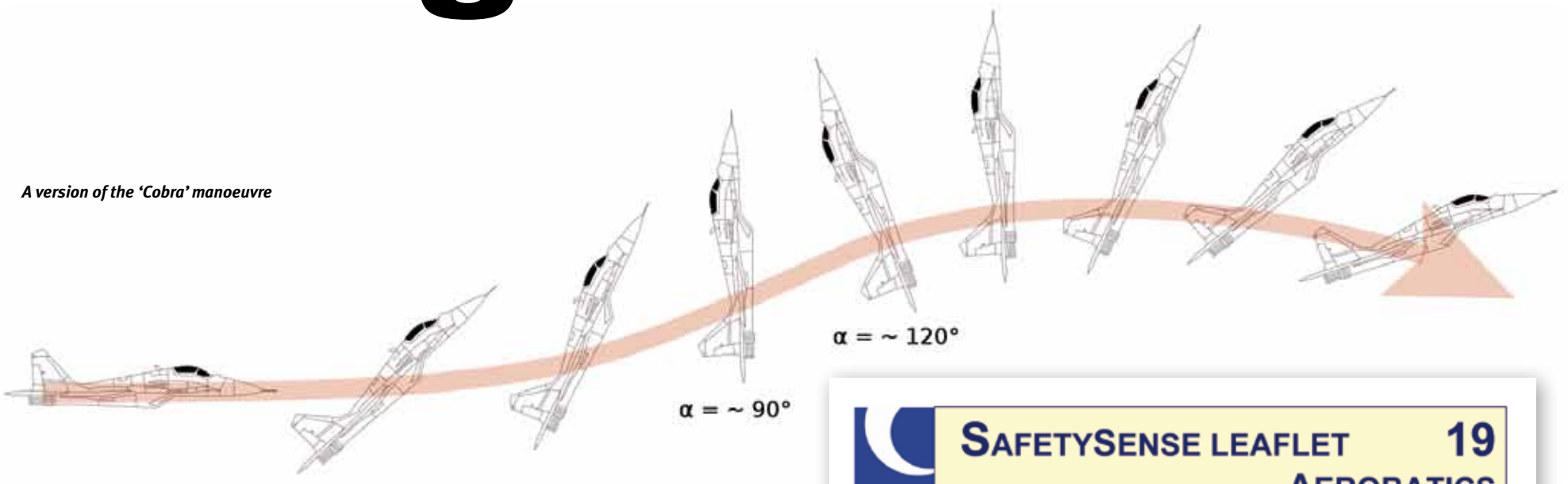


Airbus Pilot Demand Forecast - emerging markets



safety matters

Practice aerobatic manoeuvre went wrong at low level



A version of the 'Cobra' manoeuvre

The pilot was practicing an aerobatic 'flat sequence' over the airfield, intended for performance below 1,000ft agl. Actual meteorological conditions included scattered cloud above 2,700ft and a light wind from the north east.

Witnesses saw the aircraft pitch up almost vertically before entering what was described by most as a stall turn and by others as a wingover, near the apex of which the engine was heard to "cough". One witness stated that the aircraft entered the manoeuvre at a height of approximately 300ft but the lack of any onboard or radar recording meant that there was no means of assessing it accurately. Other witnesses did not offer an opinion. After exiting the manoeuvre with its nose pointing downwards the aircraft pitched up to an approximately level attitude. The flight path remained downwards, however, and the aircraft struck the ground with a high rate of descent. It bounced, leaving behind parts of the landing gear, propeller and engine cowlings, before coming to rest upright near the threshold of the grass runway, approximately 250m south east of the initial impact. There was no fire and the fuselage was substantially intact but the pilot, who was wearing a seven-point harness and helmet, sustained serious injuries.

The pilot described himself as a full-time display pilot with considerable knowledge of aerobatics including at low level. He stated that he held an 'unlimited' level display authorisation and had experience in several Pitts types and other aircraft powered by the Ivchenko M14. Interviewed several months after the occurrence, he could not recall the flight but concluded that during the manoeuvre described by witnesses, he was probably attempting a figure that he referred to as a "cobra". This involved slowing the aircraft to below approximately 80mph using idle power, then applying full throttle while pitching the aircraft nose-up to achieve a near vertical attitude for a short period. Recovery would be affected by pitching nose-down and flying out of the manoeuvre as the aircraft accelerated.

The pilot commented that if control was lost at the apex of a cobra manoeuvre with full power applied, the aircraft tended to roll and yaw to the right and sometimes pitched inverted. He added that when applying full power rapidly from idle the engine might respond slowly and that a momentary lack of power in the climbing phase of the manoeuvre would make it harder to complete successfully. He usually aimed to enter the manoeuvre at between 750ft and 850ft but had done so at 600ft in training.

The AAIB contacted other pilots, including a co-owner of the accident aircraft, who had conducted this manoeuvre in aircraft powered by the M14 engine. They concurred that the engine could be slow to respond to rapid opening of the throttle and stated that they would normally conduct the manoeuvre at a minimum height of 600ft, much of which would be required to affect a recovery if control was lost at its apex.

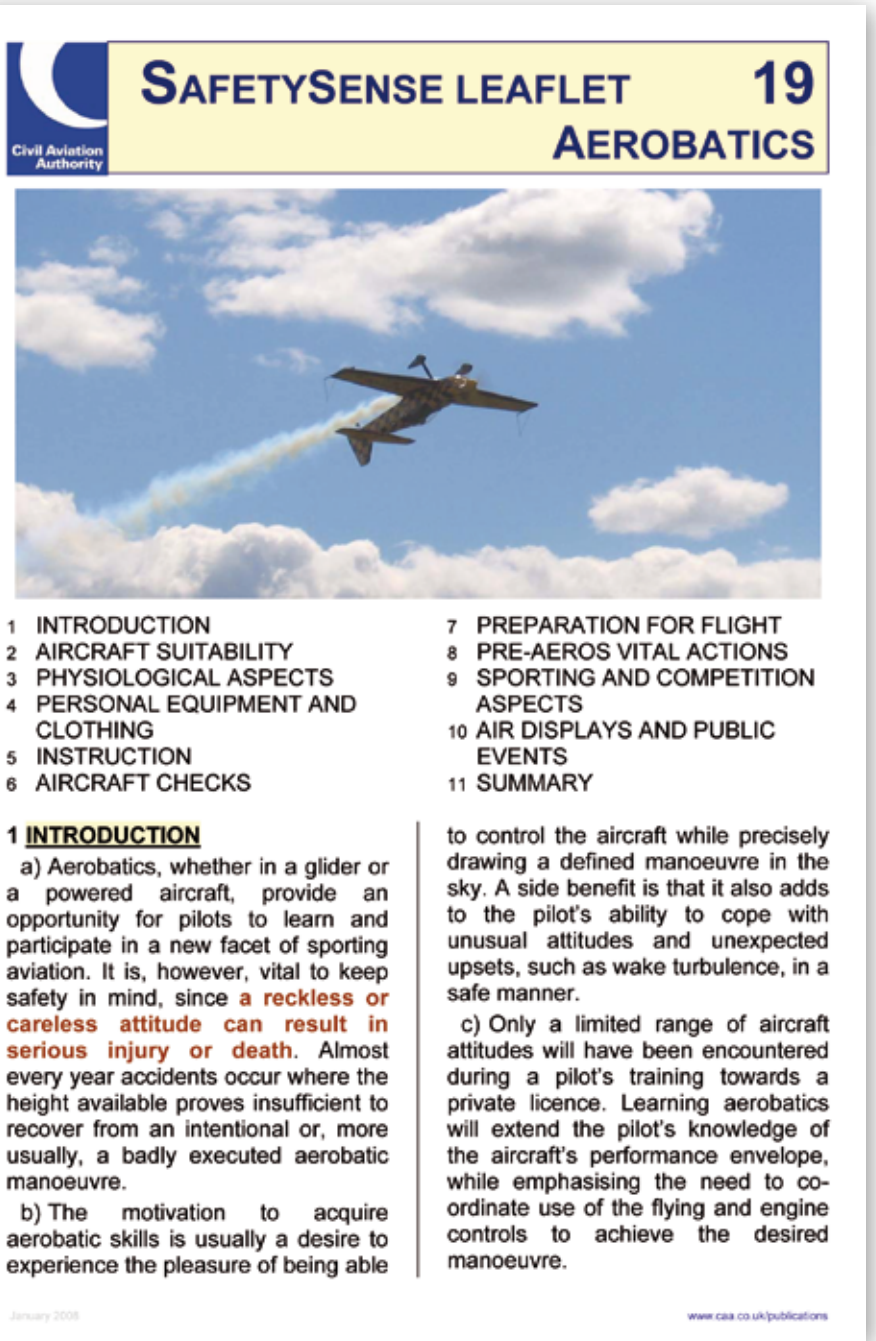
The co-owner commented that at high engine power the ailerons of the Pitts S-12 had insufficient authority to maintain roll control of the aircraft if forward airspeed fell below 40mph, which might occur rapidly if insufficient power was available in the climbing phase of a cobra manoeuvre. The co-owner added, however, that witness reports of the aircraft being almost vertical indicated that full power had been available at some point in the manoeuvre because insufficient pitch control would have been available without it.

Analysis

Witness statements were consistent with the aircraft failing to complete a cobra manoeuvre in a manner characteristic of loss of control at its apex. Slow engine response to rapid throttle opening probably caused an unexpectedly rapid loss of airspeed which, when full power was achieved, resulted in insufficient flight control authority. The aircraft did not return to a safe flight path in the height remaining.

Comment

All of the pilots consulted during the investigation, including the accident pilot, emphasised the importance of entering a manoeuvre at a height from which recovery was possible in the event of failure to complete it as planned. The British Aerobatic Association refers on its website to Safety Sense Leaflet 19 – 'Aerobatics' – published by the Civil Aviation Authority, which considers this issue. The leaflet states in its summary "...start with sufficient height to give plenty of margin if things go wrong".


Civil Aviation Authority

SAFETYSENSE LEAFLET 19
AEROBATICS

1 INTRODUCTION
2 AIRCRAFT SUITABILITY
3 PHYSIOLOGICAL ASPECTS
4 PERSONAL EQUIPMENT AND CLOTHING
5 INSTRUCTION
6 AIRCRAFT CHECKS
7 PREPARATION FOR FLIGHT
8 PRE-AEROS VITAL ACTIONS
9 SPORTING AND COMPETITION ASPECTS
10 AIR DISPLAYS AND PUBLIC EVENTS
11 SUMMARY

1 INTRODUCTION

a) Aerobatics, whether in a glider or a powered aircraft, provide an opportunity for pilots to learn and participate in a new facet of sporting aviation. It is, however, vital to keep safety in mind, since **a reckless or careless attitude can result in serious injury or death**. Almost every year accidents occur where the height available proves insufficient to recover from an intentional or, more usually, a badly executed aerobatic manoeuvre.

b) The motivation to acquire aerobatic skills is usually a desire to experience the pleasure of being able to control the aircraft while precisely drawing a defined manoeuvre in the sky. A side benefit is that it also adds to the pilot's ability to cope with unusual attitudes and unexpected upsets, such as wake turbulence, in a safe manner.

c) Only a limited range of aircraft attitudes will have been encountered during a pilot's training towards a private licence. Learning aerobatics will extend the pilot's knowledge of the aircraft's performance envelope, while emphasising the need to co-ordinate use of the flying and engine controls to achieve the desired manoeuvre.

January 2008

www.caa.co.uk/publications

From an AAIB report

safety matters

Glide approach led to heavy landing

Following a standard join and circuit, a glide approach was set up. The instructor reported that the student pilot under instruction initiated the flare, but there was no consequent reduction in the aircraft's rate of descent. Despite pitching up further, and applying full power, the aircraft continued to descend and made heavy contact with the ground, damaging the nose section of the trike unit.

The wind at the time was reported as east-southeast at 5 to 7kt, which placed the touchdown point on the runway downwind of adjacent farm buildings and a small copse. The instructor attributed the heavy landing to severe turbulence at low level.

From an AAIB report

Converting pilot lost directional control on landing

While landing on a wet grass runway, the microlight veered to the right and entered a field of crops. The nosewheel dug in to the soft ground and the aircraft rolled onto its right side. The pilot, who was uninjured, was converting from three-axis to flex-wing aircraft and may have applied too much force to the brakes and, in doing so, have turned the nosewheel to the right. The pilot's flying instructor was watching the landing and stated that the approach, flare and touchdown appeared normal and that it was only after the aircraft was fully on the ground that it veered to the right.

From an AAIB report

'Running change' during circuit session went wrong

Two pilots decided to fly circuits at the airfield where the aircraft was based. The aircraft had not been flown for a couple of months and, despite having previously charged the battery, required the use of jump leads to start the engine.

One of the pilots then flew three circuits before landing and stopping on the runway to hand the aircraft over to the other pilot. Due to the earlier problems starting the engine, it was decided to keep it running during the change of pilots, with the wheels being chocked as a precaution. The second pilot reported that, after the first pilot had vacated the aircraft, during boarding the trouser leg of the flying overalls being worn caught the throttle lever, causing it to apply full power. The pilot was not in a position to close the throttle and apply the wheelbrakes and the aircraft jumped the chocks, leaving the edge of the runway and hitting a low stone wall and earth dyke. This collapsed the landing gear nose leg and broke the propeller. It also bent the left landing gear leg and damaged the left wing. The pilot, who was not strapped in, was uninjured and managed to isolate the fuel and magnetos before vacating the aircraft.

Comment

The aircraft is flown from the left seat as the wheelbrakes are only accessible from that side. This meant that it would not have been possible for the first pilot to have remained at the controls whilst his colleague boarded the aircraft.

Shutting down the engine, although inconvenient, would mitigate the effect of inadvertent throttle movement.

From an AAIB report

No brakes!

The cockpit of a PA34 (not the incident aircraft), in this instance with toe brakes fitted on both pilot positions. Copyright© Pekka Lehtinen]

Although this incident is classified as non-reportable, as there was no intention of flight, there is a significant safety message which warrants the publication of a report by the Air Accidents Investigation Branch.

The flying club had three PA-34 aircraft, two of which were fitted with toe brakes in both pilot positions and one aircraft, the subject of this incident, which only had toe brakes fitted in the left pilot's position. An instructor at the club noticed that the incident aircraft had been parked on the taxiway near the fuel pump, preventing other aircraft from being refuelled. The instructor, who was current on the PA-34, assumed that the incident aircraft had been parked there for refuelling and that an engine had probably flooded, which would have made it difficult to start. The instructor climbed into the right seat, visually checked that the parking brake was on and proceeded to start the right engine. As it started, the aircraft began to move forward. The instructor attempted to apply the toe brakes, and then realised that they were not fitted to the right pilot's position on this aircraft. The aircraft swung to the left and its right propeller struck the bonnet and radiator grille of a van which had been parked close by. After shutting down the engine, the instructor checked the parking brake and discovered that it could be pulled on another notch.

Following this incident, footbrakes have been fitted to the right pilot's position on the incident aircraft such that all the PA-34 aircraft at the club are now of the same standard. Aircraft are no longer allowed to be parked in the area of the fuel pumps and the airfield has reviewed its policy on the parking of vehicles.

From an AAIB report

Solo student lost directional control on take-off

The instructor gave permission for the student pilot to undertake a solo navigation exercise following a number of instructional lessons earlier that day. During the lessons prior to the accident, the student had performed six take-offs. As noted in the instructor's narrative, the weather was good, with light winds, and the grass runway was reported to be dry and firm.

Following pre-take off checks, the student pilot obtained clearance to line up on the runway ready for takeoff and was informed of a 5kt crosswind by the controller. On commencing the take-off run, the student pilot applied power and the aircraft quickly veered to the left. The student applied right rudder to counteract this, but later assessed the control input as too vigorous. The student then applied left rudder even harder to try to correct, causing the aircraft to leave the runway. The nose gear collapsed and the aircraft came to rest in an adjacent ploughed field, damaging the propeller and forward section of the aircraft.

The student pilot exited the aircraft safely, with only a minor injury to a hand occurring as a result of the accident. In describing the events, the student pilot believed that the accident was as a result of overly vigorous control inputs and not reducing the throttle quickly enough to prevent the aircraft from departing the runway into the adjacent field.

From an AAIB report

Scholarships and sponsorships

APT needs YOUR help

The Aviation for Paraplegics & Tetraplegics Trust (APT) is a flying charity that operates out of Old Sarum Airfield in Wiltshire. Over the last fifteen years the charity has provided air experience flights for well in excess of 1,000 individuals, a number of whom have continued their training and ultimately gained pilot licences.

The charity is funded entirely from donations.

Recently, nine disabled people from the British Limbless Ex Servicemen's Association and RYA Sailability, took trial lesson flights in APT's purpose built Microlight aircraft, a Shadow CD. According to the trust, the weather was ideal and everyone had great introductory flights, with at least two individuals returning for additional flights, who will hopefully progress to becoming fully licensed Microlight pilots.

These two days were generously sponsored by Liberty Accounts, who also provided ground support. When asked why they had seen fit to sponsor such an event one of the company's directors said: *"We have long known of the fantastic work done by the dedicated APT volunteers to help disabled individuals challenge themselves and demonstrate their latent potential for achievement and success. We were only too pleased to be able to help fund the events and seeing the smiles on the faces of the participants after their flights was its own reward."*

The Trust, which was founded in 1994, uses a specially adapted CFM Shadow Microlight aircraft operated by flight training school Shadow Aviation. The aircraft has specially adapted controls, which are a marvel of ingenuity and allow a quadriplegic to have full control of the aircraft. The left control (which grips the pilot's arm) operates throttle and rudder. The right control operates aileron and elevator. And to apply the brakes, a third control is operated by moving one's head back. A remarkable piece of ingenious design.

It costs the charity around £50 to get someone airborne. Chief pilot Raymond Proost donates his time free of charge. Although this may not sound like much money, the charity is nonetheless struggling to continue to keep going, as charitable donations have dipped of late.

To learn more about the charity and the fantastic work they do, visit www.disabledflying.org

Or drop them a line:
Aviation for Paraplegics & Tetraplegics Trust
Hangar 3
Old Sarum Airfield
Salisbury SP4 6DZ

They'd love to hear from you. And they probably wouldn't mind if you insisted on making a donation.

Scholarships & Sponsorships
quick reference guide

	AIRCRAFT TYPE				FLYING TRAINING TYPE												OTHER		CONTACT DETAILS
	FIXED WING	ROTARY	GLIDER	BALLOON	ATPL	CPL	IR	PPL	GLIDER LICENCE	NPPL	FI(R)	FI(MULTI)	FI(INSTRUMENT)	FI(AEROBATICS)	JOC	AEROBATICS	PRE-SOLO	NGINEERNG/OTHER	WOMEN ONLY	
Air Cadets	•		•						•							•	•			www.aircadets.org
Air League Prince Philip Flying Scholarship	•									•										scholarships@airleague.co.uk
Air League Flying Scholarships	•									•							•			scholarships@airleague.co.uk
Air League Flying Bursaries	•	•	•		•	•		•		•	•	•				•				scholarships@airleague.co.uk
Air League Gliding Scholarships			•						•							•	•			scholarships@airleague.co.uk
Air League Balloon PPL Scholarship				•				•												scholarships@airleague.co.uk
Air League Engineering Scholarships																		•		scholarships@airleague.co.uk
Atlantic Airlines Cadet Pilot Sponsorship Scheme	•				•															www.atlanticflighttraining.com
British Aerobatics Foundation Annual Bursary Scheme	•															•				www.aerobatics.org.uk
Amy Johnson Memorial Trust Scholarship	•	•			•	•	•				•								•	murieltucker@supernet.com
BWPA PPL Training Bursary	•	•						•											•	www.bwpa.co.uk
Caroline Trust			•						•								•			www.carolinetrust.org.uk
Dennis Kenyon Junior Helicopter Flying Scholarship		•						•												www.dennis-kenyon.com
Flying Scholarships for the Disabled	•							•		•							•			www.toreachforthesky.ork.uk
GAPAN JN Somers ATPL Scholarship 2009	•				•															www.gapan.org
GAPAN PPL Scholarships	•							•												www.gapan.org
GAPAN Flight Instructor (Restricted) (Fixed Wing) Rating Scholarship	•										•									www.gapan.org
GAPAN Flight Instructor (Restricted) (Rotary) Rating Scholarship		•									•									www.gapan.org
GAPAN & EPST Jet Orientation Course Scholarship	•														•					www.gapan.org
GAPAN Flight Instructor Bursary Programme – Instrument Rating Instructor (up to £2,000)	•												•							www.gapan.org
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GAPAN Flight Instructor Bursary Programme – Multi-Engine Instructor (up to £3,000)	•											•								www.gapan.org
Glen Stewart Flying Scholarship Trust	•							•												www.flyingscholarship.co.uk
de Havilland Educational Trust	•							•		•						•		•		www.dhmothclub.co.uk
Royal Aero Club Trust	•	•	•	•				•	•	•						•	•			www.royalaeroclubtrust.org
Royal Aeronautical Society Centennial Scholarship Fund																		•		www.raes.org.uk
RAF Association Flying Scholarship	•																•			www.rafa.org.uk/scholarships.asp
Royal Navy Gliding Scholarships			•														•			www.faasquadron.org.uk/glidingawards.html
University Air Squadron	•		•													•	•			www.universityairsquadrons.com

...Secret diary of a flying school manager, old before his time...

The CAA Fly-In ...Part I

Contrary to popular belief, the UK Civil Aviation Authority's staff compliment does actually include more than one person who is the proud holder of a pilot's licence. As a matter of fact, I believe the number of pilots at Aviation House in Gatwick even reaches double figures, currently.

The reason I know this is that we recently played host to a CAA fly-in at the airfield. Fifteen of the Authority's finest from their Safety Regulation Group, spouses included, decided to hold their annual outing at our airfield this year and we were delighted to extend them the invitation. In retrospect, this was clearly only marginally more sensible than the time Linus agreed to let the local Hell's Angel strut hold a meeting in the cafe at the same time as a WI group were running a whist drive. Poor Hell's Angels didn't stand a chance. But, I digress.

It was Friday morning and Linus had just finished putting out the flags out on the edges of the runway for the spot landing competition. Following his return to the clubhouse I assembled the staff and gave them a briefing on the day's events.

"Right, you lot, today, as you will no doubt be aware, we are playing host to a CAA fly-in and so for the next 10 hours or so we are not at home to Wing Commander Cock-Up, or any of his cronies, understood?"

"Yes, Boss..." chimed the assembled masses.

"Good. Now, you instructors," I continued, turning to Arnold, Mike & Claire, "I want everything by the book today. I absolutely forbid any beat-ups of the airfield and, for preference, would like you to keep your students out of the circuit as much as possible. Claire, I see you have Mr Entwhistle booked for most of the day, so suggest you take him on an extended navigation exercise. Mike, you've got mainly trial lessons today. Take 'em wherever they want to go, but there's to be no impromptu aerobatics in the overhead. And Arnold, I see that you've got a couple of new students to be getting on with. Make sure you get them to read and sign the Flying Order book and for God's sake none of your 'Red Baron' RT calls, OK?"

"Right you are, Boss-man," replied Arnold, with an uncustomary level of acquiescence, which always tends to put me on edge.

"OK. The fly-in is scheduled to commence from midday and will include a spot-landing competition, for which Linus has already put the flags up and drawn the chalk line; a timed arrival challenge, and a special prize for the best RT, to be judged by yours truly.

"Re the spot landing competition, this is for the CAA pilots only. However, if you should happen to touch down on the chalk line purely by accident and in doing so put the Authority chaps to shame, then I shan't be issuing your P45s on the spot.

"Linus gets the honour of judging the spot landing competition and so won't be available to re-fuel the club aircraft in between your lessons, so you will need to ensure you are running on schedule today, please. While he is out on the field I will handle the radio and look after the timed arrival challenge. Right, if that's all understood then off you go."

"Linus, a moment of your time please," I added as the assembled masses headed off to their allotted tasks.

"Yes, Boss?" asked Linus.

"Linus, it is entirely probable that this spot landing competition will end in tears, with bent nosewheels, shock-loaded engines and inverted aircraft, if previous experience is anything to go by, so I want you to take the fire truck with you and make certain you keep in radio contact with me over the handheld."

"Erm... OK, Boss," replied a less than confident Linus. "Should I get the fire hose ready?"

"No, stupid boy, that's the last thing I want you to do. I want you to exude confidence and professionalism, that's all, although I admit that in your case that's probably stretching credibility a bit far. I just need you to be aware that accidents can happen when pilots start making 'carrier landings' in order to touch down on the right spot on the runway. If, heaven forefend, we do have an incident, you are to first call me on the radio if I haven't already spotted it and sounded the crash alarm, and then wait for me to join you before we tackle any fires or attempt to rescue any pilots. On no account are you to attempt to do anything until I get there. Understood?"

"S'pose so Boss..." replied Linus, clearly none too happy at the thought of sheared-off propellers whistling skywards in his direction.

"Good lad. Now off you go."

So, everything was as prepared as it could be. The instructors were looking after themselves; Linus was sitting on top of the fire truck out on the field, with score card in one hand and radio in the other; the G&Ts had nearly finished the hundred-weight of eggy sandwiches they were preparing for the CAA group visit, and I was sat at the radio waiting for the first inbound call. What could possibly go wrong?

To be continued.

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CLASSIFIEDS

squawk!

Welcome to Squawk, FTN's page for aviation anecdotes and gossip.

How many Chipmunks?

Playing our usual Friday afternoon round of 'guess the collective noun' for various aircraft types (we really do know how to live-it-up, here at FTN Towers) the subject turned to Chipmunk aircraft. Before we tell you the correct answer, one of the more senior members of our squawk team re-called the story of what we reckon is one of the largest airborne sorties of Chip-munks in living memory.

The date was 1965 and the occasion was the World Gliding Championships, held at South Cerney in the UK. Under a new rule, all competitors were to be launched as quickly as possible. To help facilitate this, the RAF kindly donated their whole Air Experience fleet, comprising 37 Chipmunk aircraft.

The problem arose when trying to find enough tug pilots to crew the aircraft, and so volunteers, with or without prior tugging experience were rounded up. Clearly, undertaking one's first tow at a very public event wasn't an option, so an equal number of gliders and glider pilots were pulled in from RAF gliding clubs and towing practice commenced.

Of course, being the Services, an Operational Order had to be written to ensure proper procedures - Health and Safety is not a recent invention – and so due thought went into making sure the tug pilots had the appropriate levels of experience. To provide this, the order included the interesting requirement that: *"The Tug Pilot and Glider Pilot must never have less than a total of ten toes."* Whether this was for medical reasons or the outcome of a shorthand typing error is not entirely clear – but it was signed off by the Commanding Officer, Flying Training Command.

In all, the event went off successfully, and the sound of 37 simultaneous Koffman starter cartridges was memorable.

So what's the collective noun for a group of Chipmunks? A 'scurry' apparently – you can thank us later...

Tower!

Cessna 152: "Flight level three thousand, seven hundred"
Controller: "Roger, contact Houston Space Centre"

Controller: "Air Force 53, it appears your engine has... oh... disregard, I see you've already ejected."

Lost student pilot: "Unknown airport with Cessna 150 circling overhead, identify yourself."

Tower: "Aircraft on final, go around, there's an aircraft on the runway!"
Student Pilot: "Roger" (pilot continues approach)
Tower: "Aircraft, I said GO AROUND!!!"
Student Pilot: "Roger"
The student doesn't react, lands the aircraft on the numbers, rolls to a twin standing in the middle of the runway, *goes around* the twin and continues to the taxiway.

Japanese airline taking the p*ss?

In our **You couldn't make this stuff up** section of squawk this month, we bring you the news that Japanese airline All Nippon Airways, trialled a new initiative last year in a bid to reduce the airline's carbon emissions.

From the 1 – 30 October last year, the airline asked their passengers to go the toilet before boarding, claiming that empty bladders mean lighter passengers, a lighter aircraft and there-fore lower fuel burn.

According to Japan's NHK television channel, airline staff were waiting at the boarding gates and would ask passengers if they'd emptied their bladders before letting them board. Presumably there was also an Elf 'n Safety representative present to confirm that they had washed their hands?

Based on an average human bladder capacity of 150z, if 150 passengers relieved themselves before boarding, the total weight saving would be approximately around 64 kilos.

Tardy excuses

We're always looking for a good excuse for be-ing late to work, and can commend the follow-ing told to us by an ex-airline training Captain.

On secondment some years ago, our training Captain found himself based in County Cork in Southern Ireland. Not wishing to be late for his first training flight of the day the Captain booked an early morning alarm call.

We're talking quite a while ago here - back in the good-old-days when early morning alarm calls were booked with the local telephone exchange, rather than the hotel. Morning duly arrived:

"Good morning, Sir, 'tis your seven O'clock alarm call, and oid just like to inform you dat we won't be charging you for the service!"

"Oh, that's most kind of you. Any particular reason why?"

"Yes, Sir, coz it's eight-thirty!"

CAPTION COMPETITION

Once again we offer the opportunity to amaze your enemies and impress your friends with your wit, skill and ability to send an email.

Entries to: editor@ftnonline.co.uk by the 28th June please

Congratulations to last month's caption competition winner Mark Sterritt, who offered:

"Milo wasn't used to handling such a large dummy, but he gave it a go anyway"

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