

# SAILPLANE & GLIDING

VOL. 61 NO. 5

**IRONING OUT THE BUMPS:  
UNDERSTANDING THE  
PLATEAU IN LIFT-CURVES**

**GETTING THE MOST OUT  
OF AEROTOW LAUNCHES**

**HOW DOES FREE FLYING  
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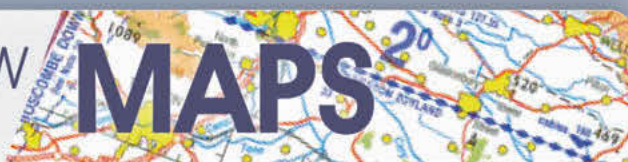
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You will be surprised at how many scholarship opportunities exist. Four recent scholarship recipients reveal the difference this 'free flying' has made to their experience



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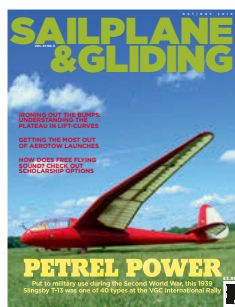
 **THE MAGAZINE OF  
THE BRITISH GLIDING  
ASSOCIATION**

OCT/NOV 2010  
VOLUME 61 No 5

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## COVER STORY

Two of the three Slingsby T-13 Petrels built are still flying. This one, owned by Graham Saw, is thought to have been put to military use during the Second World War. It has been flown at many VGC International Rallies, including at Tibeham this year. Rally report on p28 (Lance Cole)

## DEADLINES

*Dec 2010/Jan 2011*

Articles, Letters, Club News: 8 October  
Display advertisements: 22 October  
Classifieds: 4 November

*Feb/March 2011*

Articles, Letters, Club News: 3 December  
Display advertisements: 22 December  
Classifieds: 6 January

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› A recent incursion by gliders (and other aircraft) into Temporary Restricted Airspace – RA(T) resulted in a Red Arrows display having to be cancelled. RA(T)s are set up for safety reasons and are statutory areas of controlled airspace. No pilot is allowed to enter them. Details of RA(T)s are widely available on the AIS website [www.nats-uk.ead-it.com/public/index.php.html](http://www.nats-uk.ead-it.com/public/index.php.html). This type of very rare incident results in serious undermining of the BGA's long-term and largely successful efforts in support of maintaining our freedoms. All pilots must be familiar with relevant airspace restrictions prior to flight.

› Congratulations to the following 2010 competition winners: Club Class Nationals – Alan Tribe; 15m Nationals – Leigh Wells; Standard Class Nationals – Sarah Kelman; Open Class Nationals – Andy Davis; Interservices – Jon Arnold (open), D J Graham (sport); 18m Nationals – Mike Young; Junior Championships – Tom Smith.

› A programme of CAA/GASCo Safety Evenings has been arranged for winter 2010/2011. Events are open to everyone involved with GA and are usually free. A list of dates and locations is available in the latest edition of the CAA General Aviation Safety Information Leaflet (GASIL) at [www.caa.co.uk/docs/33/srg\\_gasil07of2010.pdf](http://www.caa.co.uk/docs/33/srg_gasil07of2010.pdf)

› There have been several recent incidents around the world involving glider batteries where fires have resulted from some form of short circuit. Possible causes include damage to the battery itself, incorrect connection, or incorrectly fitted lids on closed-box installations. Although glider batteries tend to be relatively small compared to powered aircraft, they still contain a lot of stored energy and the potential for a fire is high. Remember that it is imperative that glider batteries are protected by a standard type fuse of the correct rating as close to the battery as possible and that the box or mounting is constructed to prevent incorrect installation, cross connection or shorting.

› The BGA has issued a safety alert concerning a possible safety issue with the rigging procedure of SZD Foka, Cobra, Bocian, Jaskolka, IS28/29, Mucha, Schempp-Hirth SHK and Austria series, and any other sailplane with an expanding pin/cone main rigging pin. See [www.gliding.co.uk/bgainfo/safety/documents/safetyalert020910.pdf](http://www.gliding.co.uk/bgainfo/safety/documents/safetyalert020910.pdf)

› Shot some stunning gliding footage? Why not share that special flight with others? The top three videos – as selected by an S&G panel – will feature in the launch of the S&G website. Please send a link to your footage to [editor@sailplaneandgliding.co.uk](mailto:editor@sailplaneandgliding.co.uk)

# MEDALS FOR BRITISH TEAM IN HUNGARY

THE British Gliding Team (pictured below) brought home some medals from the World Gliding Championships in Szeged, Hungary, which were held from 25 July – 5 August 2010.

In a very demanding competition, Steve Jones took Silver Medal in the Open Class, and Leigh Wells also took Silver in the 15m Class. In the Team Cup, Team GB took the Bronze Medal place in a field of 33 nations.

A full report from Hungary will follow in the next edition of S&G.

■ See page 38 for Jay Rebbeck's report of the unflapped Worlds, held in Priviedza, Slovakia, 3-18 July.

■ See page 18 for a report from the first FAI World Advanced Glider Aerobatic Championships, held in Finland with the 10th FAI European Glider Aerobatic Championships.



## DATES

NATIONALS, REGIONALS AND OTHERS

Women's Worlds	Arboga (Sweden)	15-27/6/11
Standard Class Nationals	Bidford	25/6-3/7/11
Competition Enterprise	Sutton Bank	2-9/7/11
18m Class Nationals	Tibbenham	9-17/7/11
European Champs (unflapped)	Nitra (Slovakia)	17-30/7/11
European Champs (flapped)	Pociunai (Lithuania)	31/7-14/8/11
Junior World Championships	Musbach (Germany)	6-20/8/11
Club Class Nationals	Pocklington	6-14/8/11
Open Class Nationals	Lasham	20-28/8/11
15m Class Nationals	Hus Bos	20-28/8/11
Junior Championships	TBA	20-28/8/11

■ **BGA Chairmen's Conference and Treasurers' Forum, 20 November, 2010 at Woodside, Kenilworth**  
■ **BGA Conference and AGM, 5 March, 2011 at the Belfry Hotel, Nottingham**

### WINNERS OF 2010 REGIONALS

#### BIDFORD REGIONALS

Steve Jones

#### SHENINGTON REGIONALS

Angus Watson

#### BOOKER REGIONALS

Jon Gatfield/Tim Scott

#### BICESTER REGIONALS

Luke Hornsey (sports)

Dave Watt (open)

#### DUNSTABLE REGIONALS

Tom Pridgeon (blue)

Mark Newland-Smith (red)

#### NORTHERN REGIONALS

Graham Morris

#### LASHAM REGIONALS

Kim Tipple

#### MIDLAND REGIONALS

Gary Stingemore/Richard Browne

#### GRANDSDEN REGIONALS

Andy Beatty/Robert Verdier (sport)

Norman Parry (club)



## Gliding grannies' TV fame

SOME readers may have seen the Wall's Proper Food 'Bring it On Britain' advertising campaign on television recently, which puts the spotlight on individuals who show tenacity and passion for their hobbies, **writes Stuart Black, Operations Manager of Buckminster GC.**

Wall's identified a small number of passionate Brits with unusual interests and strong ambitions to participate in their campaign. Cathy Lawrance, a Basic Instructor at the Buckminster Gliding Club, was selected after previously featuring in a *Daily Mirror* article on pensioners with unusual past times.

They considered that Cathy's dedication and passion for her sport at 78 years old showed that she was an inspiration to anyone looking to break normal boundaries and convention. It was



■ 94-year-old Moyra Johnson, president of Yorkshire GC (pictured centre, above) also made a TV appearance recently. She featured on new ITV game show *Odd One In*.

therefore decided that Cathy would be filmed flying a Puchacz, whilst enjoying a sausage roll or two!

There was a lot of activity on Saltby airfield in early July when the 'Smuggler' film group arrived for three days of filming. A team of approximately 25 cameramen, sound recording specialists, directors and catering staff encamped on the airfield to capture many hours of film that were eventually cut and used in the 30 second advert. At times the launch area resembled a Hollywood film set.

Guy Westgate from the Swift Aerobatic Team was on hand to provide specialist advice for the air-to-air filming, which was done from the club's Rallye tug. Cathy's son, daughter-in-law and young grandsons, who have both flown with 'granny', also took part in the filming.

Cathy went on her first glider flight in 1959 when she was five months pregnant, but didn't join Buckminster Gliding Club until 1981. A year later she went solo at 50 years old. She since remarked: "Other grannies might be content to take it easy, but I'm never happier than when I'm gliding. I have no plans to hang up my flying goggles for as long as I continue to pass my annual medical. The hardest thing at my age is climbing out of the cockpit!"

You can see the full version of the film on YouTube by entering 'Bring it on Granny - Longer fun edit' in the search engine.

## Enterprising new trophy presented



DESMOND PEARCE (pictured above right) recently received The Philip Wills National Enterprise Trophy from Competition Enterprise chairman Jon Hart.

The trophy has been awarded annually since 1985 by the Enterprise Club to the pilot/s achieving the most enterprising flight launching from anywhere in the UK.

Desmond's winning flight was on 24 May 2009, flying an Oly 463 from Skelling Farm, when he flew 195km O/R visiting various turnpoints in the Lake District using ridge, thermal and wave.

The trophy pictured, designed by Mike Smith, replaces the original, now missing.

Full details of all the past winners are listed at [www.comp-enterprise.co.uk](http://www.comp-enterprise.co.uk)

■ Competition Enterprise 2011 will be held at Sutton Bank from 2-9 July, 2011.



■ The smiles say it all for Sam Roddie (left) and Tom Smith, who took home the trophies from the 2010 Junior Championships, held this year at Bicester, 21-29 August.

Sam won the Gordon Camp Memorial Trophy for best under-21, with Tom as the overall competition winner.

Alison Randle

# INIQUITIES OF HANDICAPPING

I WOULD like to comment concerning Andy Davis's article (*Glider Handicaps*, Aug/Sept 10, p12) on the present handicapping system. I fully appreciate that any handicapping system will be something of a fudge and that no handicapping system can be perfect. However, the present system has some glaring deficiencies.

I fly an ASH 26E with a handicap of 110. The 18m Antares has a handicap of 111. This is less than a 1 per cent difference in handicap. The Antares was designed over 10 years after the ASH, has a more modern wing and a substantially better high-speed performance. More significantly, the Antares has a wing loading of between 31.9 and 54.7 kg/m<sup>2</sup> (with a turbo, the wing loading is 36 to 54.7 kg/m<sup>2</sup>) whereas the ASH has a wing loading of between 37 and 45 kg/m<sup>2</sup>. The maximum wing loading of the Antares is over 20 per cent more than that of the ASH. This alone means that the Antares should perform substantially better in strong conditions (irrespective of any aerodynamic advances which have taken place in the last decade). The present handicapping system does not reflect these differences. The new generation of 18m gliders should have a substantially higher handicap.

**Jon Wand, by email**

**Russell Cheetham, BGA Competitions Committee, replies:** John makes some very valid points here, especially in that no handicapping system will be perfect, as the weather experienced at each event can give an advantage to certain types of glider due to span or wing loading range.

On to the ASH 26E versus the newer 18m derivatives, most manufacturers have historically supported the marketing of new products with fanciful calculated high-speed paper polars that normally turn out to exceed the reality by as much as 5 per cent in handicap terms once reliable measured data becomes available – sadly often many years after first introduction.

So, gliders do have to prove themselves before the BGA handicap increment is adjusted and the jury is certainly out as to whether the slightly modified profiles and wing/fuselage junctions of Antares and JS1 (ASG 29 being the same as ASH 26E) do represent the step forward that the manufacturers and owners hoped for that may make them worthy of a bigger handicap variation than the current 1 per cent currently applied.

*The new 18m gliders do have higher*

*wing loadings than the original ones, which will lead to more performance on strong days. However, most have somewhat reduced wing area and are heavier when empty so have lost some of the benefit that could have been achieved in weak weather, so common in UK competition, where the average cross-country speed of a 100 handicap glider is assessed to be only 85km/h with many distance days to be further factored in, which usually have the biggest day point spreads of all.*

John is, however, correct in querying wing loading as our relatively simple handicap system looks at performance on an average British day where only moderate wing loading is required, and does not factor in performance in very weak or very strong conditions. Such a refinement would be difficult but not impossible. However it may well not be worth the complexity?

Additionally, in John's case, he has the issue of a higher than normal minimum wing loading due to being equipped with a self-launching power plant, which will limit performance on weak days.

However, it is a current policy of BGA handicapping not to provide handicap benefit for engine equipped gliders.

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## IT'S TIME TO BURY OLD RIVALRIES

KEITH NURCOMBE (*Letters*, June/July 10, p6) hits the nail on the head. There is no point in advertising for members in a gliding magazine, this is merely re-arranging the deckchairs, we need to reach out to other types of aviator.

Our experience from Booker marketing events, and particularly Aero Expo every June, is that PPL pilots are increasingly finding that flying just enough to keep their licence is not good value for money and can sometimes feel like a chore.

We have for some time been putting our efforts into convincing them that gliding offers much better value, more challenging and more varied flying. But advertising is not cheap, so we have recently linked up with other clubs in the south to share the cost. In particular we have supported Loop in its recent interest in creating a 'gliding' page. If clubs in other areas formed such alliances, and if the BGA also began to promote gliding in GA, hang gliding, aeromodelling and other magazines, we would be able to make a much bigger impact.

We are all in this together, we need to

bury old rivalries and work together to promote our sport as widely as possible.

**Jane Moore, Booker GC Marketing Team**

**Keith Auchterlonie, BGA Communications & Marketing officer, replies:** Jane's views are very much in line with our thoughts in the BGA. Marketing budgets, at both club and national level, are far from infinite and we have got to ensure that they are used to maximum effect. From next year on, our promotional focus is going to be on a number of specific target groups that we feel can deliver the best return in terms of new membership.

These groups are:

- **Air Cadets.** A well defined group that is relatively easy to reach and with a known interest. There is a clear link into our existing junior gliding programme for this group.
- **Aeromodellers.** Again, a well-defined

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✎ group with a likely interest.

● Air show visitors. A very large group who have demonstrated a possible interest.

● Other GA pilots. The reasoning behind selecting this group has already been detailed by Jane.

In addition, we are looking at new ways, that won't cost us a fortune, of giving the general public a better feel of what gliding is really about. We would like to engage with clubs and I plan to hold a workshop for club PROs to find out more about what they want from the BGA and to learn about each others' successes and failures in marketing their clubs and the sport.

Returning to Keith Nurcombe's letter, I do accept that many people who turn up for trial lessons have no intention of ever taking a second flight. However, I believe that a significant percentage is open to the idea and that clubs could significantly increase their conversion rate by capitalising on the 'grin from ear to ear' that is visible at the end of most flights.

● How many people are told at the end of their trial lesson that they can come back and fly at club rates?

● After the trial lesson, the instructor is probably seen as some sort of hero; why not book a follow up flight the next time he or she is on duty (or give out a business card with contact details)?

● Have you a system to capitalise on interest there and then (or do you just let people drift away after their flight)?

● Does your club follow up a trial lesson with a phone call a week or so later?

These and many other basic actions could, I am sure, improve the trial lesson to membership conversion rate beyond recognition.



# KEY CHALLENGES OF EASA FLIGHT CREW LICENSING

THE EASA licensing NPA programme continues to progress and it now looks likely that the transition period will be from April 2012 for a three year period through to 2015, **writes Chris Gibson.**

The two principle components of this NPA are, of course, the part-FCL and the part-medical. The EASA FCL Opinion document was published on 27 August, 2010 and can be viewed at [www.easa.europa.eu/flightstandards/npa\\_fcl.html](http://www.easa.europa.eu/flightstandards/npa_fcl.html)

The comment period for the part-medical closed on 23 August and the opinion document is expected in late November [www.easa.europa.eu/flightstandards/npa\\_part-med.html](http://www.easa.europa.eu/flightstandards/npa_part-med.html)

The part-medical CRD was originally published in June and the BGA has also commented on this document. In particular, we are concerned that no existing pilots should have reduced privileges under the new regulations. The EASA opinion is due to be published to the Commission in late November 2010.

There are still some significant issues associated with the proposed part-medical and it is not popular with many European states. In particular, the proposed requirement is that a medical examination will be required (as opposed to a statement of fitness to fly and/or record examination).

In addition, GPs may also need additional training to carry out the process which is likely to reduce numbers of suitably qualified GPs and drive up costs. There is also a lack of clarity as to the situations where GPs may have to refer cases to AMEs for further consideration.

There is, however, a recognition that the UK GP system is different from most European systems and the BGA continues to address these aspects with a range of organisations to minimise potential impact on the gliding community. We are hopeful that, through our commenting and that of the CAA, that progress will be made in amending the part-medical to be more in tune with gliding and leisure aviation requirements.

The issue of cloud flying and a VFR-only licence has been addressed by a separate EASA sub-group (FCL-008) and

is now incorporated in a separate NPA which is addressing the topic of IMC flying and the provision of a continued rating similar to the UK IMC – the En-route IR (EIR) as proposed.

With respect to gliding, the working group has recommended the inclusion of a cloud-flying rating for glider pilots. The NPA documentation is due to be issued very shortly, with a CRD in first quarter 2011 and the opinion in second quarter 2011. The intention is to align transition timescales with the NPA 17 FCL programme.

Turning to the licence transition itself, the BGA is working positively with the CAA to ensure that the process is as seamless as possible. It is likely to be some time before the process is agreed with EASA and, in the meantime, we are commencing preparatory measures for pilot and instructor transition.

We have reviewed these with the CAA and, as hinted previously, expect to launch the programme later this year. In particular, the structure of our instructor organisation is not in alignment with the changed structure proposed under EASA and we will initially focus on aligning this during the coming year, as individual instructors revalidate, such that there will be minimal change and retention of privileges from April 2012.

This will require a title conversion and a certain amount of instructor education to ensure that changed requirements are promulgated and that our instruction is delivered to the EASA requirements. The BGA is currently developing the training material and you will hear more about this later in the year.

In summary, we have made significant progress in ensuring that our needs are recognised and substantially addressed – although there are still a few key challenges which we continue to address.

We now need to focus our attention on our preparations leading up to April 2012 to ensure the actual transition happens smoothly and with minimal impact to our existing pilots.

To be sure, it will be a busy time – watch for more details later in the year.

## THE UNSUNG HEROES OF OUR SPORT

BGA Chairman **Patrick Naegeli** praises contributions made to gliding, looks at EASA's review of comments received to the initial consultation on future medical requirements, and congratulates the British Gliding Team on bringing home medals



LOOK around gliding and you see a multitude of volunteers. Each and every one is vital to the smooth running and development of our sport. Some are recognised for their work, but the majority is only silently appreciated.

Carr Withall is one of those people that quietly gets on with the job at hand – Airspace in his case – while everyone else, for the most part, unthinkingly enjoys the benefits of his work. He is a man of immense competence, the magnitude of which is only superseded by his modesty. He has a love for our sport that is as great as anyone's and he is driven by a desire to protect our freedoms so that current and future pilots might continue to glide in as free a manner as possible.

Carr's fundamental contributions to gliding have been two-fold. Firstly, for many years, he has been at the forefront of our never-ending sequence of airspace negotiations at local and national levels. As a consequence, he has been instrumental in securing our, and others', rights to fly when they might otherwise have been lost forever.

Secondly, Carr has always emphasised the value of considered, informed and pragmatic policy planning and implementation. This approach has won the admiration and respect of bodies that one does not always consider to be on our side – the CAA, NATS, etc. Carr has established a very credible and influential presence in airspace circles, and these qualities have been attached to the BGA as a whole.

If he is reading this, Carr will be cringing at every sentence and would want to move the spotlight on to the other members of the BGA Airspace Team. In a sense, he would be quite correct; we are gifted with some of the most skilled and competent technicians and negotiators. Great individuals, however, make great teams only when gifted with great leaders.

Carr's contributions to gliding were recognised by the BGA

when he was awarded the Association's Silver Medal a few years ago. You might, therefore, be wondering why I am mentioning him again. A short while ago, Carr told me of his intention to retire from his role as Chair of the Airspace Subcommittee in November. I could not let him retire without marking his contribution one more time. Carr, from everyone in gliding, thank you.

One other person retiring from gliding may be less well known to many people. Beverley Russell has been a central member of the BGA office staff for well over 30 years. She has quietly worked behind the scenes, answering our calls, processing our paperwork, and generally looking after us. Our professional staff's commitment to gliding is always greater than we deserve. We all owe Beverley a debt of gratitude.

As far as regular business is concerned, the BGA's summer "break" has failed to materialise in quite the way we would have liked. This time round, EASA released its review of the comments that it received to the initial consultation on future medical requirements.

The UK has established and operated – perfectly safely – a medical regime for leisure pilots for a number of years. It operates on the basis of practical medical standards – explained in terms of DVLA equivalence – and the use of the GP system. It is, as a consequence, straightforward and cost-effective. The BGA had a hand in developing the system and has been content with its suitability and operation throughout.

There was always a risk that, once medical matters came under EASA scrutiny, things might change. The initial regulations that were issued appeared to allow for the broad continuation of systems such as our own. Once bureaucrats and lobby groups got to work on things, however, the original intent in the Basic Regulations was radically reinterpreted. We are, as a consequence, at considerable risk of having a system that is too complex, too costly and far less practical than the one we presently have.

The BGA put out a calling notice for all pilots to submit their own comments to EASA's latest proposals and I would like to thank those that did. We have also been working closely with other air sport associations that are similarly impacted. Importantly, the CAA and DfT both appreciate the unnecessary aspects of the EASA proposals and are actively working to rebase the debate back to its more pragmatic origins.

This particular topic still has some distance to run. It is, however, likely to do so very quickly and may well mean that the BGA has to raise the profile of the debate to the political level. We will keep you posted.

Finally, and to close on a high note, a big well-done to the British Gliding Team. Once again, it has acquitted itself admirably in the World Championships. Despite having to contend with mixed weather in Hungary, the team brought home two silver medals – Leigh Wells in the 15m Class and Steve Jones in the Open Class. Individual achievements are always the result of broader team efforts. So, congratulations to all of our pilots, crews, coaches and supporters.

Have fun, stay safe.

**Patrick Naegeli**  
Chairman, British Gliding Association  
September 2010

# SAILPLANE & GLIDING



**Andy Davis**  
Competition flying



**Andy Miller**  
SLMG



**Howard Torode**  
Airworthiness



**John Marriott**  
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**Mike Fox**  
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**Carr Withall**  
Airspace



**Alison Randle**  
Development

*S&G is privileged to be able to call on the advice of some of gliding's leading experts. If you have a question for our experts on any of the subjects listed above, contact the editor (details p3).*

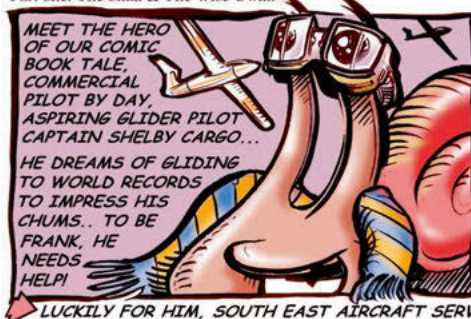
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■ IT'S THAT time of year when people are most likely to review their wills. Last year (S&G Oct/Nov 2009, p10), I wrote in detail about bequests. To recap, the single most essential point is to make people aware that your club is willing to accept bequests:

- › Put something on your club website
- › Publicise any bequests the club has already received
- › Produce a leaflet.

CASC-registered clubs can claim gift aid on bequests, which means any money gifted in this way will be even more valuable to the club.

Perhaps you're reading this and thinking that you might want to leave something to your club. I'm sure the chairman would be delighted to discuss it with you.

Alternatively, why not just talk to your solicitor about it – you don't need to say anything to the club at all.

#### CHAIRMEN'S CONFERENCE AND TREASURERS' FORUM

■ THIS must-attend event for people involved with club management is on Saturday 20 November at Woodside, Kenilworth. At the time of writing, we have numerous topics clamouring for attention on the programme. Come along and spend the day with people who really understand the challenges of keeping your club ticking along nicely. £20 per person, including lunch and refreshments. Accommodation is available, please book direct with Woodside. If you haven't received your booking form, please contact [office@gliding.co.uk](mailto:office@gliding.co.uk). Further information can be found on the BGA website.



**Alison Randle**  
BGA Development Officer  
[alison@gliding.co.uk](mailto:alison@gliding.co.uk)

# Essential role of club governance

AUTUMN is here – now's the time for committees to make progress, sorting out all those little jobs that arose from early enthusiasm and 'good ideas' in that first meeting after the AGM. But what have you found during the year? Good ideas constrained by old habits? Too many unforeseeable things to do? Maybe progress has also been held up by a lack of support from within the club's rules and policies – the club's written governance structure.

Governance, is a dull and uninteresting subject until it becomes essential – usually during a time of animated discussion. Generally much of this 'discussion' can be avoided if the governance documents are clear, concise and have been read by all parties. Unfortunately, what tends to happen is that these documents are stored deep in the secretary's files and they tend to only get dug out (and perhaps changed) in reaction to a period of such discussion – rarely a useful way of managing them.

The governing document is also known as: 'rules' for an Industrial & Provident Society; 'Memorandum & Articles of Association' for a company limited by guarantee; 'constitution' for unincorporated associations; 'trust deed' for charitable trusts. Whatever it's called, it sets out the aims of the club, who will benefit and the powers the club has to achieve these aims. It will then set out membership conditions

and criteria, how general meetings of members are called and run. In order to avoid pandemonium, the members elect people to run the club on their behalf, so the document will describe the election process, the shape of the committee and provide the rules for the committee to operate under, including rules for managing the club's finances. When you read about how the rules can be altered, you know you are nearing the end. There may also be a couple of paragraphs covering indemnity of committee members. Finally, there will be something outlining what will happen in the event of the club's dissolution.

Did you notice? The rules do not go into areas of policy – the club should have a set of policies for this. Unfortunately, the need for a specific policy only becomes apparent when a specific issue arises. Why not view governance in the same way as you would a launch failure or a field landing? It rarely happens, but when it does, it's mighty handy to have given the matter some thought during a period of calm, pre-flight contemplation and to be prepared for it. To help club committees, the BGA has provided a pack of reference material in the club management section of the BGA website. All the word docs in this pack can be amended to suit your club's requirements, hopefully saving hours of research.

Let's be quite clear, club rules and policies should be the servant of the club. When committees change, they provide constancy and are there to be consulted. Having good procedures in place to follow is reassuring and means that the normal club business, ie flying, remains smooth even when there is a totally new committee.

#### Governance hierarchy within a club

In addition, there are many unwritten rules within the gliding club. We all know what is acceptable and generally behave in such a way as to avoid alienation from our club. If we start to push the boundaries, someone will have a quiet word. In this way, we all look out for one another and help to create a safe and fun culture in which to glide.

Over time, drift will occur between the club's business and the written rules. This drift must be monitored and corrected. It is part of the committee's role to do this, amending club business or the written rules as required. Minor changes to policy, such as in response to a change in legislation, can be done at a committee meeting. Major changes to policy and any amendment of the club rules will need to be approved by the club membership at a General Meeting. How will you know the difference? It should be set out in your club rules.

*(Disclaimer: any similarity between this article and any gliding club, real or imagined, is purely coincidental. Any similarity should merely indicate that action is required.)*

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Exploring the T-21 (Matthew Reynolds) and, below, punting in Oxford (Jamie Marsden)

# STUDENTS SOAR

Colin Field reports on the 32nd Inter-University Gliding Competition, which was held this year at Bicester GC, from 7-15 August

**A**FTER a fantastic competition last year at Pocklington, Nottingham University took on the responsibility of organising the Inter-University Gliding Competition 2010. The format of the competition was further tweaked with the soaring competition – an evolution of the Varsity match between Cambridge and Oxford – being introduced alongside the well-established progression and cross-country competitions. This gave many opportunities for the 70 competitors of all abilities to progress their flying and earn points for the 12 universities represented. Sadly, our hopes that the weather would be as good as the last three years were over-optimistic!

After a Saturday occupied primarily by site checks and orientation, we had our first good soaring day on Sunday. Tasks were set between 50km and 500km and notable cross-country flights included Gary McLaughlin's (Queen's University Belfast, QUB) Gold distance, Martin Ling's (Edinburgh) 239km flight in the K-8 and Mike Schlotter's (Bath) impromptu

500km. It was also a successful day in the soaring competition, particularly for our hosts Nottingham, thanks to Michelle Strickland and Mark Loach's performances. But none of us could have imagined that, come late afternoon, one of Edinburgh's competitors, Amy Barsby, would have lost her life in a tragic accident.

Only hours before we were all simply enjoying the joys of soaring flight; now we were united in grief. For many of us this was the first time we had experienced this first-hand; for it to involve such a well-loved contributor to University Gliding was deeply shocking. On Monday, to give us the opportunity to reflect, most of us escaped the airfield to experience punting in Oxford. We must have looked quite a sight drifting downstream as a flotilla of seven punts sharing a picnic.

Tuesday's priority was to get everyone back in the air and many people took flights in the two-seaters. By Wednesday, the weather had improved once more and the



500km task was valiantly attempted by Tom Bell and Mike Schlotter (Bath), Andy Bates (Edinburgh) and Pete Davey (Nottingham). Tim Fletcher (Bath) tried for Gold distance in his K-6 but landed out at Dunstable. The highlight of the day, however, was progression scores, with Cathy Page (Bath) flying to Gransden Lodge to complete her Silver and Toby Ayre (Bath) flying for two hours to claim Bronze duration and Silver height. Boris Kubrak (UCL) also made huge progress in his training in the K-21.

Thursday and Friday were disappointingly wet days, but that didn't stop a number of pilots making good progress towards completing their Bronze, including a plethora of Bronze Tests. Bicester kindly donated a vehicle and trailer for the trailer reversing competition, which predictably resulted in crushed cones, burnt rubber and bent steel, with victory for Emeric Massaut (Southampton).

The evenings were also well utilised with the annual BGA Club Forum on Thursday providing many opportunities to discuss how to improve University Gliding; key issues included getting recognition from British Universities & Colleges Sports and integrating with the BGA's Junior Gliding initiative. Friday saw a fantastic BBQ followed by the hotly-contested quiz night expertly organised by Michelle Strickland.

Saturday, the final competition day, saw occasional showers with sunny spells between. What else to do but get the T-21 out for a flour-bombing competition? After emptying the hangar to access the glider, 16 pilots took turns dropping bags of flour as close as

possible to a target in a corner of the airfield. Ben Manning (UCL) was champion with his ordnance found a mere 35 paces away! The evening brought another BBQ and the final scores and prize-giving, with an inflatable bungee-run and various RAFGSA bar games.

Claudia Krehl's (Nottingham) last-minute claim helped Nottingham pip Bath to the top of the soaring competition, with Loughborough in 3rd place. In the progression competition, Bath came 1st with Loughborough close behind and Nottingham in 3rd place; Bath also won the cross-country competition with Edinburgh and Nottingham closely competing for 2nd and 3rd place. As a final summary, it was proposed that dedicating the progression trophy to Amy Barsby would be a fitting memorial and mean that her memory will accompany us through future competitions.

The Bicester staff and instructors have been hugely accommodating to the Inter-Uni's crowd and their support was invaluable. Thanks also to Terry Mitchell for providing many of us with the surreal experience of flying the open-cockpit T-21 in the rain, and to the caterers for their excellent food throughout the week. However, the biggest thanks must go to Mike Pettican and the Nottingham team (Chris Emerson, Claudia Krehl and Mark Loach) for their work organising the competition. The search begins for a club to host next year's competition...

**THIS GAVE MANY OPPORTUNITIES FOR THE 70 COMPETITORS OF ALL ABILITIES TO PROGRESS THEIR FLYING AND EARN POINTS FOR THE 12 UNIVERSITIES REPRESENTED**



Twenty-two types of glider were represented at the Inter-University Gliding Competition (Jamie Marsden)

Full results are at: [www.interunis.co.uk/comp/scores/](http://www.interunis.co.uk/comp/scores/)

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Frank Pozerskis, pictured in 1948, with the second model he built in England. His construction methods were published in model construction magazines

# LIVE THE DREAM

Lithuanian-born Pranas (Frank) Pozerskis dreamt of becoming a pilot from the age of six. By 15, he had designed and built his own glider (later grounded). He then funded his dreams by starting a business

**B**ORN and raised in Lithuania, my interest in flying was sparked off in 1933 when, at the age of six, I visited my first air display and saw a glider, autogyro and Tiger Moth. I never forgot that and dreamt of flying and becoming a pilot when older.

When I was 10, I was building model planes, developing precision techniques which eventually made me think that I could build a full-size primary glider.

I turned an old rectory into a workshop and, using timber from my father's sawmill, worked day and night for a year to produce my own glider, named PP1 (my initials). I was just 15 years old, but with this glider I formed a gliding club. We just did ground slides, using an old lorry to pull us, sometimes reaching an altitude of 8ft!

We then started flying from a 20 metre high river bank and amassed over 400 flights. My small town soon found out about my gliding club and eventually a national gliding club inspector visited us and grounded the glider as it was unfit to fly. But he invited me and two other selected members to the main gliding club in Lulaoutuva to learn how to glide properly, bungee launching in a Polish elementary glider called a Wrona.

Unfortunately, the next day a bungee hook hit me on the head and I was taken home to recover.

This was 1944, and the Russian military were advancing towards the Baltic States, so I escaped to Germany.

After the war, I studied for three years in a grammar school. But there were no aeronautics courses available so, in 1947, I was invited to work in England. It was for three years to work on a farm and, in my spare time, I made model propellers to supplement my income.

I continued building model planes and my construction methods were published in model construction magazines. But I was always wondering how to become a pilot.

After the three-year contract was over, with low wages and nothing to fly, I thought that the only way I could ever afford a glider was to start my own business.

Remaining in England, in 1951, I started producing and selling firewood. By 1953, I had built a small sawmill and by 1958 I had a share in an Olympia.

Through the 60s and 70s, the business grew quickly, including starting a land drainage business and pallet-making business.

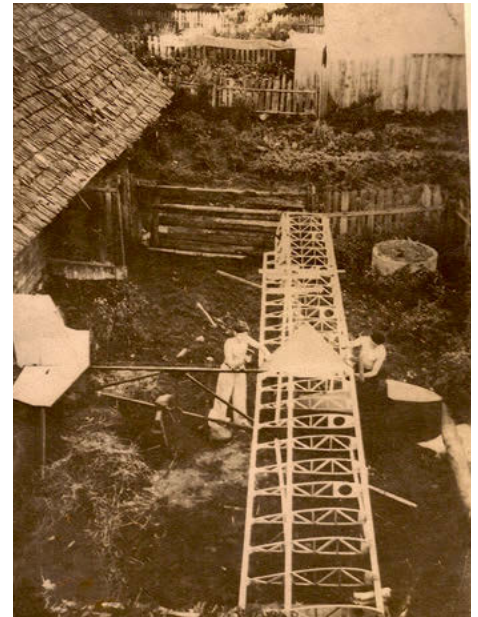
In 1963, I built an autogyro in which I participated in air displays.

Over 60 years, I have had 11 gliders, starting with the Olympia 2b, then, in order, Slingsby Eagle two-seater, Skylark 4, Open Cirrus, Kestrel 19, ASW 17, Lak12, ASW 22, ASH 25, ending with an ASH 25Mi, and currently I have a Dimona motorglider.

After 4,600 hours, a Gold C with three Diamonds and 100 competitions, I have had to call it a day now I am 83.

During one competition I landed in a farmer's grass field. He came up to me after I had just dumped my water ballast (yes I'd forgotten). He looked at the pool of water beneath the glider and said that there must be a spring there. I said nothing, but he went away to fetch a digger!

The moral to my life story is that if you really want something, just persevere and don't give up. I didn't and I got what I wanted out of life, especially in gliding.



(Above) Frank Pozerskis built his own glider when he was just 15

(Below) pictured with his ASH 25 at the 1999 Lasham Nationals



**THE MORAL TO MY LIFE STORY IS THAT IF YOU REALLY WANT SOMETHING, PERSEVERE AND DON'T GIVE UP**

# › TAILFEATHERS

## Timaru Creek 1998 and 2005

IN THE South Island of New Zealand, on 31 December, 1998, after a 15-minute struggle below 500ft agl in a steep-sided valley, I put Justin Wills's ASW 17 down, amazingly without damage, on a patch of ground at the point where Timaru Creek runs into Lake Hawea. The lake is ice-cold, fed by mountain snows – which you can see in the photograph below that I took 10 years later from a safe height in Gavin Wills's ASH 25, with G Dale in the back to keep me out of further trouble.

I'd got into this mess after I'd lost radio contact with Justin, in his Libelle, with whom I had been returning from a safari to Te Anau in the Fjord country to the south; the previous night I had connected up the leads wrongly, not having read the clear and simple instructions on the side of the battery. *For the want of a nail the shoe was lost etc...* Apparently I was being showered with free advice on how to land a glider on the icy water from people at 11,000ft watching the drama unfold way below. Since the battery was dead I received none of these gems of potentially lethal help.

Just six years and two days later on 2 January, 2005, Tim Cosgrove in an ASW 20 took part in a practice Assigned Area Task in the New Zealand Nationals. Tim found himself in difficulties in the same valley and, after a prolonged struggle, put himself down

not many yards from the spot that I flopped down on. There was a difference: Tim came in from the north over small trees and did not groundloop, whereas I came in from the south over tall trees and did groundloop with brutal suddenness, in waist-high grass. The ASW 17 bounced and stopped pretty well in its own length, which at least prevented me from running on into the rabbit-holes, gulleys and ridges which I discovered when I climbed out of the cockpit.

The area was like the Curate's Egg – some parts of it were quite good if one knew about them in advance, which of course one didn't. However, my excuse for the clumsy D-Day-style arrival is first that the ASW 17 has airbrakes both above and below the wing, and the lower brakes are a real hazard in high vegetation, whereas the rather more modern ASW 20 has upper-surface airbrakes only. And, of course, the ASW 17 has 20 metres vs 15 for the ASW 20. Having owned an ASW 20, I think it is absolutely the best possible glass glider to put down in a small space, especially if the space is more or less untamed wilderness. However, what compensated me for the ASW 17's greater weight and span, and its higher approach speed, was a brisk north wind blowing straight down the lake, so I did not have to ponder my choice of landing-direction.

There is no doubt that Tim, in more or

less zero wind, was skilful, and I was lucky. I am not being modest, just factual; I have little time for false modesty; in fact I have little time for the real thing either.

Talking of lack of modesty, I had conceitedly hoped that the 1998 Platypus escapade had entered local legend, especially as Gavin Wills, no less, had written up the story. I imagined that it was widely known that *in extremis* what Gavin called Platypus Patch was landable – and infinitely preferable to a water-landing. However, I was quite mistaken in thinking the fame of this paddock had spread: the contest director whom Tim called on his mobile could not believe where Tim was, and then could not believe that Tim was OK and finally that the ASW 20 was unscratched.

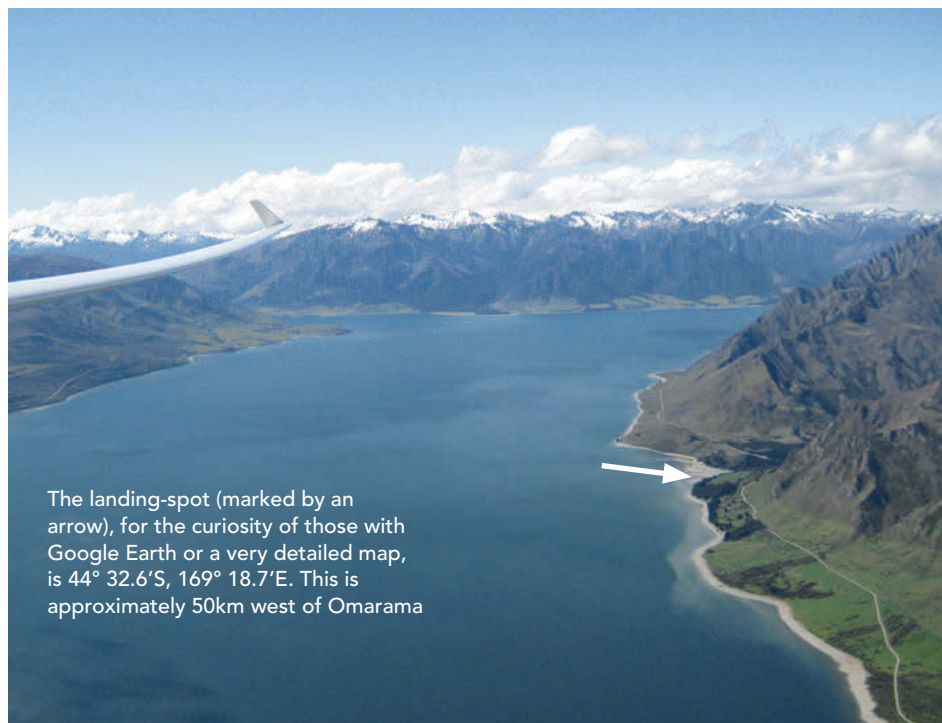
One potential advantage Tim had over me is that he had done underwater-escape training at the Royal Naval Air Station at Yeovilton in our West Country and he was fully prepared to ditch if necessary. You might say that such training might cause more problems than it solves. In the old days fishermen and sailors never learned to swim; you were told not to strike out boldly for the distant shore but to cling to the wreckage and pray for rescue. Excellent advice.

Just think, the increasingly prevalent use of engines in gliders will take all this super fun and excitement out of cross-country soaring!

**SINCE THE BATTERY WAS DEAD I RECEIVED NONE OF THESE GEMS OF POTENTIALLY LETHAL HELP**

## HOW many hours?

In the Aug/Sept issue, Platypus raised the question of how many hours it takes – and what other qualities – to make a World Champion. Several top pilots have written to S&G to give their opinions; we hope to publish these in a special section of the letters page in the Dec/Jan issue



The landing-spot (marked by an arrow), for the curiosity of those with Google Earth or a very detailed map, is 44° 32.6'S, 169° 18.7'E. This is approximately 50km west of Omarama

## EMCK+KA6E=!!!

IF THIS headline reminds you of science's most famous formula, you aren't far wrong. Adrian Emck is the embodiment of energy, and he spends his waking hours extracting energy from the sky in a 1964 glider with a published glide angle of just 34. Since he keeps his logs meticulously and does such a large number of cross-countries, his database is big and the numbers are instructive.

In this glider he has performed 10 500+ km flights, of which one is outside the UK: 772km in Spain at 88km/h in July 2003. As at end-August 2010, he has done 34 cross-country flights in the UK, circling 31 per cent of the time, averaging 310km per flight, taking 5.6 hours at a modest 55km/h. I calculate that his average inter-thermal cruising speed is about 50 knots, not much higher than max glide speed.

He has averaged a Rate of Climb of 2.7 knots this year. From 1988, Robin May,\* John Jeffries and I operated the first ASH 25 in the country, and our overall average Rate

of Climb over the first three years was 2.0 knots. (When a glider costs that much, you feel obliged to fly every day God sends – and quite a few days sent by the other fellow, as I muttered at the time.) Nick Goodhart's standard British thermal, which became the basis for handicapping from the 1960s onwards, was based on a Skylark 3, roughly similar to a K-6 in performance, climbing at 2.4 knots.

So it looks as if Adrian climbs very well, but not spectacularly so. What a shame! I was hoping to prove my thesis that Rate of Climb is everything, but facts are facts.

Where I begin to feel even more uncomfortable is seeing Adrian's average glide angle of 46. Though quite a number of competition logger outputs show better than published L/D, I expect that only from modern aircraft with a vast speed range and massive inertia for conversion into pull-ups. Whatever Adrian is doing I don't think it can be called dolphin-flying. It's just toddling along in good air.

This glide angle means that on average he loses only 700ft between climbs – I imagined he flew from cloudbase down to the deck and miraculously scraped away every time. Not so. His is the opposite of risky flying. I also assumed he must be doing constant air and road retrieves. His lovely wife Trish put me right immediately: not so – he has had just one of each this year; she appreciates the quiet life. He judges when things are about to get difficult, goes to plan B accordingly, and gets home.

He points his glider at the right bit of sky and stays out of trouble. That's all there is to it. No – that isn't all – he knows how to stay comfortable for 10 hours, but that is for another edition of S&G.

\*In 1988, Robin May won the Open Nationals with an average Rate of Climb over five contest days of 1.3 knots. I managed 0.7 knots in my ASW 22 – and I came 14th out of 30 pilots. What the other 16 were staying up in, I have no idea.

## Platypus strolls into the sunset

PLAT may not be shy, but yes, he is retiring. Fifty years ago, a column appeared in the *London Gliding Club Gazette* under the by-line of Platypus. (It was some years before he started to write regularly for S&G.) That first piece was no historical or literary landmark, but the BGA will probably upload it onto the Sailplane & Gliding website when that is created. Main items in the October-November 1960 column:

- A rant by Platypus against transistor radios – today it would be mobile phones. "What the Heck has this to do with gliding?" was no doubt the reaction of our 400 readers. This started a tradition of his sounding-off about issues quite irrelevant to our noble sport. Give a man, or a small animal, a soapbox and that's what you get.

- An expedition with John Jeffries to historic Ivinghoe Beacon, birthplace of cross-country soaring in Britain and of the London Gliding Club, to watch the model gliders soaring the ridge, including a replica of the Jaskolka which "JJ" introduced to Britain in 1958.

Already a legend for all sorts of reasons and confident of his expertise, JJ borrowed a free-flight model from some unfortunate kid and in no time managed to lose it downwind in the general area of Whipsnade Zoo, not a safe place for retrieving gliders, big or small. Platypus wrote, "This is the first time that

JJ has lost a glider without being in it at the time," it being notoriously the case that, while staying up was JJ's unrivalled skill, the art of navigating was not part of his toolkit. (In later years Instamatic cameras did make it possible for experts to work out where he had been after the flight.)

- A complimentary reference to the new task-flying scheme at Lasham administered by Jill Walker; the forerunner of National Ladders. This, and another magnanimous piece by me, *The Other Place*, after the 1961 Nationals at Lasham, caused the London Gliding Club chairman to have near-apoplexy and demand some part of Platypus's anatomy on a platter – or at least the cutting off of his editorial budget. However, since nobody else could be found to bring out the journal – it was very hard work – these threats came to nothing.

■ We have no space here to praise and thank a whole legion of the living – but Platypus does remember with warmth and sadness Doc Slater, Rika Harwood, and Gillian Bryce-Smith. He especially misses his collaborator Peter Fuller, the way that Rodgers missed Hammerstein – Peter's

cartoons often lifted a piece out of the ordinary.

Here is how Peter, years ago, let me make my getaway, without wheels or wings, but on calloused flippers...



**GIVE A MAN,  
OR A SMALL  
ANIMAL, A  
SOAPBOX AND  
THAT'S WHAT  
YOU GET**

# WORLD FIRST FOR AEROBATIC TEAM

Maz Makari opened the first World Advanced Glider Aerobatic Contest and came home with a Silver medal. Team members Pat Greer and Mike Newman report



Graham Saw's 60-year-old Lunak stole the show (Pat Greer)

**ROPE BREAK  
EVENTUALITY  
OPTIONS  
WERE LIMITED  
WITH THE  
SURROUNDING  
FORESTS AND  
SO PROVED  
TO BE QUITE  
FOCUSING!**

**T**HIS time last year, I hadn't heard of Jämijärvi and certainly didn't know where it was, **writes Pat Greer, GB Advanced Team.** This year, it hosted the first FAI World Advanced Glider Aerobatic Championships and the 10th FAI European Glider Aerobatic Championships at the Unlimited level.

Jämi is a small town in the southwest of Finland about three hours' drive from Helsinki and surrounded by forests and lakes, with the airfield to be found where the trees have been cleared due to a forest fire in the 1920s.

Aviation began there in 1935 when magazine *Suomen Kuvalehti* set up a competition to find a central place for glider flying in Finland. A local farmer suggested Jämi, which went on to win and Jämi Aviation School was established.

In 1940, the Olympic Games were supposed to be held in Finland. The plan was to have gliding as an Olympic event with Jämi as the venue. Unfortunately the Second World War intervened and the Olympic Games were cancelled. After the war, in 1952 when the Olympic Games finally went to Finland, gliding was dropped as an Olympic Sport so Jämi never had its moment of glory.

Jämi held an airshow this year to commemorate 75 years of aviation and when we arrived on Sunday lunchtime with the Fox and Lunak, the show was in full swing. Christophe Zahn led the way in his open cockpit gull winged Habicht glider (Feb/March S&G front cover) in formation with an exact half-scale replica flown by remote control.

Also on display was a mark XIV Spitfire from Sweden and a Messerschmitt BF109E.

The Spitfire finished off the flying display in fine style. The 109 though had been brought in by a lorry and was unfortunately limited to the static display indoors. Its pilot landed safely on a lake in Lapland in 1942

and escaped across the border to Russia. His aircraft was safely retrieved by the locals, who then set about it with axes and shovels leaving a rather sorry result.

Competition practice started the next day and we discovered the joys of aerotowing a heavy glider with a high stall speed and low L/D behind tugs struggling against record-breaking high temperatures. Rope break eventuality options were limited with the surrounding forests and so proved to be quite focusing!

Tuesday was Finland's hottest day since the airfield was opened, with temperatures over 35°C. It was even hotter on Wednesday and flying had to stop during the hottest part of the afternoon as the tugs found it hard to climb to height and the tow pilots were suffering from dehydration.

We were treated to amazing sunsets, which lasted for hours. The sun finally dipped below the horizon at about 23:00 and then came up again at 04:00 with no real period of darkness. This, along with the heat, made sleeping difficult, but allowed flying to start as early as 06:00 and go on until 22:30 when needed.

The competition week was frustrating, with a combination of high winds and cloud leaving us barely enough flying time to allow the required three sequence minimum in each class.

There was a fine collection of Foxes, Swifts and Pilatus B4s on show, but Graham Saw's 60-year-old Lunak stole the show with pilots from all over the world queuing up for a chance to fly it after the competition.

The nature of this level of competition is that a small lapse in concentration for a split second can change a potential medal winner to an also-ran in the blink of an eye. Team GB produced a very good debut performance and finished the team standing in 4th place!

Maz Makari had the dubious honour of opening the first World Advanced Glider Aerobatic Contest and showed no signs of losing his nerve when he produced a flight



Jämi is surrounded by forests and lakes, the airfield sited where trees were cleared due to a forest fire in the 1920s (Mikko Maliniemi)

which wowed the judges and won a Silver medal in the Known programme. He was very narrowly beaten by the eventual overall World Champion. This is the first time a British glider pilot has won a medal at an international aerobatic contest.

David John Gibbs produced the required consistency to come 7th overall and was the highest placed Advanced GB pilot.

This, along with the efforts of our team managers, Dick Happs and Judi Jones, means that going into next year's international season we should have a carefully structured training programme coordinated by renowned coach Sandor Katona, who has trained this year's World Champions at Advanced and Unlimited levels.

#### **Unlimited Report EGAC 2010 by Mike Newman**

THE Unlimited half of the Jämi contest flew the 10th FAI EGAC with 29 entrants. This was the first time line judges had been used, deducting 2 points per second for any glider flying outside the 1km aerobatic performance zone – bringing another dimension to an already demanding sport! The battle for the Known programme was fierce, each competitor having trained for it since the spring. Mike Newman's score of 1,522 points was good enough for 7th place but, sadly, a 22 point deduction for edging out of the box during the outside looping element of figure 1 saw him drop to 10th place – still the highest-known programme placing yet by a UK pilot flying at this level.

The out of limit winds then arrived for five days, which left plenty of time to prepare for Programme 2 – the first of a potential four Unknown programmes. These contain manoeuvres from a list produced in a meeting where each team submits three manoeuvres for selection by the jury.

Invariably they are tough to fly and contain elements new to every pilot.

We eventually flew on Friday evening with GB pilot Paul Conran first up. Programme 3, the Free, then followed until 22:30 by which time the judges were struggling to see in the Finnish semi-dusk. So we found ourselves on the grid for 06:00 Saturday morning, the organisers desperate to declare the legal minimum of three programmes flown in order to ratify the Championship!

French star Erik Piriou took the Gold ahead of multiple champion Ferenc Toth of Hungary, with Austrian Dietmar Poll completing the podium in third. Mike finished up 11th overall with team mate Paul in 25th.

■ *We send our best wishes to Mike, who, at the time of writing, is recovering in hospital following an accident during a Swift Air Team display - editor.*



The British Advanced Aerobatic team, pictured left to right: David-John Gibbs, Chris Cain, Maz Makari, Dick Happs (team manager), Graham Saw, Patrick Greer and Alex Haddad  
Inset: Dick Happs with Unlimited pilots Mike Newman (left) and Paul Conran (Judi Jones)

## ➤ **FEATURE** AEROBATIC WORLDS



Record-breaking temperatures of over 35°C were experienced (Graham Saw)

### **FINAL GB PLACINGS:**

#### **Unlimited**

**11th Mike Newman**

**25th Paul Conran**

#### **Advanced**

**7th David-John Gibbs**

**11th Alex Haddad**

**13th Maz Makari**

**17th Graham Saw**

**20th Patrick Greer**

**21st Chris Cain**

**The team would like to thank all those who provided financial and moral support before, during and after the competition! Preparation is already under way for next year's competition – expect more medals!**



# A VIEW FROM THE LEFT-HAND SEAT

When Ian Easson was offered a share in the SGU Falke 2000, he didn't have to think twice before accepting. But first came the challenge of 'going back to school' to gain his NPPL (SLMG) rating

**I**T ALL began with a phone call from Regional Examiner, Graham Smith – “Would you like to buy my share in the SGU Falke 2000?”.

I was just setting off for a couple of days at Aboyne where I had a P2 place with John Williams in the SGU DG-505. John's Antares was in transit to South America and he was taking the opportunity to hone his rock-polishing skills before heading off, and I had a ringside seat.

The call from Graham was completely out of the blue, but the decision was not a difficult one. “Absolutely!”

Aboyne was great fun and, on our second day, John did indeed hone his rock-polishing skills which, no doubt, prepared him well for his World Record flight later in the year.

Back at Portmoak, I had to decide how

to go about gaining my NPPL (SLMG) rating. Ex-CFI Neil McAulay's expert tuition had safely guided me through my Basic Instructor rating earlier in the year, and, as he was now newly qualified as an NPPL (SLMG) instructor, it seemed like a natural progression to go back to him (better the devil you know, etc).

The official paperwork was duly downloaded, the syllabus explained and we formed a plan. As I am not yet a member of the retired fraternity, I would have to fit in the flying whenever I could over the coming months, but the preparation for the written exams would have to start as soon as possible. Other than my Radio Exam, one year previously, it had been a very long time since I last opened a text book in anger but, with Neil's help, I was amazed to discover

that I actually enjoyed learning this stuff. It is important to tackle the written papers in a particular sequence, with Air Law being first, to allow supervised solos to be flown. It is also a good idea to obtain the BGA glider Pilot Licence, as this is recognised by the NPPL Authorities and counts towards your total hours requirement.

Flying the Falke for the first time in the left-hand seat was quite an eye-opener, not least because you take off with your right hand on the throttle quadrant and your left hand on the stick – very strange for a glider pilot! Like everything else, you get used to this – and Neil remained patient as we progressed through the training card. Things like dead-stick landings, simulated engine failures and other glider-like manoeuvres were fine, but it took a bit of getting used to with the new mnemonics associated with power flying and engine management.

The exams were slowly completed and Neil and I were getting more comfortable with my flying – which I was trying to slot in as often as I could. On one particular day, I arrived at lunch time and found Neil watching one of his gliding students make a perfect landing after his first solo. After congratulating his pupil, we set off in the Falke. Following a series of circuits, go-arounds and landings, Neil said those immortal words... “OK, just go and do the same again and I’ll watch from here.” Here was my second, first solo!

All went well, the landing was a greaser and the whole thing seemed like a non-event. Neil had prepared me well, although it was strange to be sitting all alone in the cockpit – the view over the empty seat on the right was surprising. Well done Neil, two first solos, in different aircraft, on the same day. Oh, and guess what the date was? Friday 13 November.

Winter provided some flying opportunities, which were taken, but mostly provided dark nights for much text book reading and exam sitting. As soon as I thought I could absorb no more I emailed Don Irving, who would invigilate, usually at very short notice. The last exam was the Navigation paper and, due to Don being away in America – courtesy of Mr Boeing, George Ross stepped into the breach.

After a minor hiccup with the Nav paper, and – although I am not blaming this for my own shortcomings – the revelation that my flight computer was “out of true” on the wind-side (see footnote), I finally managed to complete the full set in the late

spring. There was nothing left to do except more flying and the foreboding navigation and skills flying tests.

Neil expertly guided me through various cross-country navigation flights and “bad weather” diversions and, although it was hard work, I enjoyed every minute of it. Our minimum target hours needed to be only 10, but I was happy to increase this to nearer 15 before I eventually plucked up the courage to set the dates for the tests. Once again, George Ross stepped up and agreed to “do the deed”.

The appointed day arrived and, most unusual for our part of Scotland, the weather was superb. The Navigation Skills Test (NST) was the first one and George issued me with the route. I checked NOTAMS and weather information then completed the flight plan log, marked up the charts – including the 10° fan-lines to check progress – and gathered my bundle of check-lists. The Falke was checked and prepared; we booked out and climbed aboard.

The Navigation Test lasted for almost two-and-a-half hours and, despite the hot conditions and hard work involved, I actually enjoyed the experience and all of this was before George told me that I had passed.

After lunch, I took the first part of the General Skills Test (GST) – you are allowed 28 days to take all elements of this test. George was happy enough with my flying, but he pointed out that I was relying too heavily on my check lists for “in air” work. He suggested that I memorise the mnemonics for the checks that I would be doing in the air, particularly within the circuit. Absolutely correct! Keep a good look OUT, not IN. It had been a long day and I had completed more than I thought I could, so off I went to get stuck in to the mnemonics. Within a couple of days I had cracked these and was soon back in the air with George, where we completed more circuits and engine failure scenarios – I surprised myself at being able to rattle off the checks with reasonable ease. This must have satisfied George too as, on landing, he told me that I had passed the GST.

I would like to record my thanks to everyone in the Falke syndicate who has encouraged me throughout my training and particular thanks to Neil McAulay, Don Irving and George Ross – oh, and Graham Smith for selling me his share in the first place.

#### FOOTNOTE:

I had purchased a new Flight Computer (aka the Whizz Wheel) and used it successfully for the numeric calculations throughout my training.

It wasn’t until I attempted my Navigation paper that George pointed out that I was getting some answers relating to the wind-side calculations consistently out by 4°.

On examining the wheel, he quickly spotted that the centre disk had been fitted slightly off-centre and, on some calculations, there was a 4° error.

He showed me how to test this... Turn the disk to align with N at the top, and mark a spot on the reciprocal. Turn the disk to align with S at the top, and then see where the spot is. Of course, it should be exactly on the 180° line, but my one was out by that 4°.

So, new students beware – when did you last check a calculator for accuracy?



Ian Easson first tasted gliding with the Highland Gliding Club at Dalachy. Just before going solo, his job took him to Singapore and it was another six years before the gliding bug bit again. Having moved to Perthshire, he joined the Scottish Gliding Centre where he has progressed to Basic Instructor and NPPL (SLMG). Ian has been the editor of the club magazine since 2000 and, in 2008, published *The Scottish Gliding Union – A History* (See Hugh Woodsend’s review in S&G, Dec 2008-Jan 2009)

# INSTI

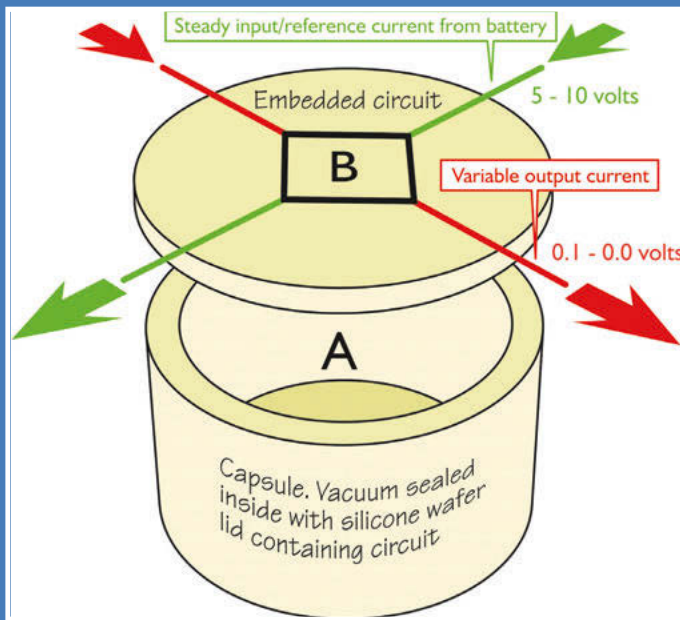


Figure 1

## Counting with light switches (binary numbers)

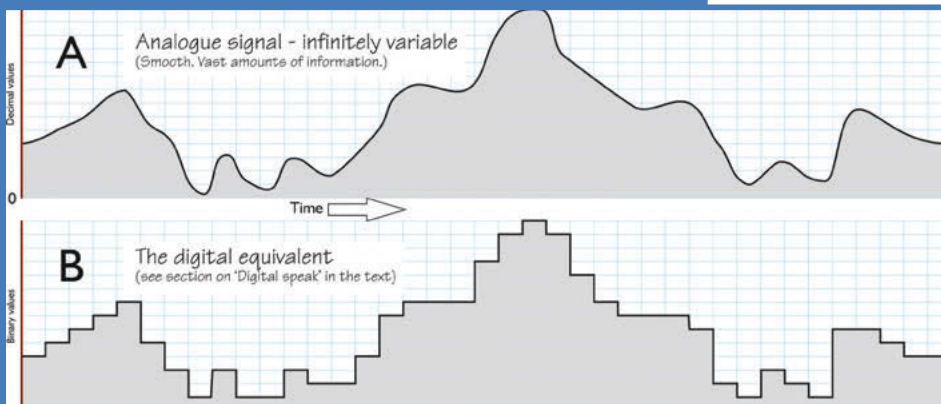
### 8 switches (bits)

1	2	4	8	16	32	64	128	= 0
off	off	off	off	off	off	off	off	= 00000000
1	2	4	8	16	32	64	128	= 1
ON	off	off	off	off	off	off	off	= 10000000
1	2	4	8	16	32	64	128	= 3 (1+2)
ON	ON	off	off	off	off	off	off	= 11000000
1	2	4	8	16	32	64	128	= 73 (1+8+64)
ON	off	off	ON	off	off	ON	off	= 10010010
1	2	4	8	16	32	64	128	= 254 (2+4+8+16 etc)
off	ON	ON	ON	ON	ON	ON	ON	= 01111111

Each bit represents a decimal number, and each number is always double the one to its immediate left. To translate a decimal number into binary, turn ON all the bits whose decimal total equals the number you want, as above. (Written binary equivalent is below each decimal total).

The number of bits available determines how far you can count. A basic group of 8 bits (as above) allows you to count to 255. If you go any higher the count resets to 0. You can count higher by using 16 bits (which gets you to 32,767), or you can use another set of bits to keep track of how many times you've gone past 255, until that too resets to 0.

Figure 2 (above) and figure 3



An electronic variometer can respond instantly to any change in pressure, is more sensitive, and can do many things that mechanical variometers can't – but does quicker mean better? Steve Longland investigates

**T**HIS article is based on a variometer designed and made by Alan Dibdin, a member of the Cambridge Gliding Club. Not every electronic variometer has the same functions or necessarily does things in the same way.

## Enter the black box

Like their mechanical cousins, electronic variometers still connect to the static – and often to the pitot as well (for total energy compensation) – but because air doesn't have to blow through them before they'll work, there's no discernible lag. If they have digital displays there are no moving parts, so there's no friction or inertia to overcome either. They're also more sensitive, and able to do many things that mechanical variometers can't.

Perfection at last? Not quite. The first and completely unavoidable snag is the information processing capacity of the human brain. Quicker may seem preferable, but it doesn't always mean better. An electronic variometer can respond instantly to any change in pressure, no matter how small or short-lived, and even in relatively calm air the display needle will be dancing all over the place. Any pilot who relied entirely on the instrument and ignored 'seat of the pants' input would have a really hard time working out which indications were important, and which weren't. By the time he'd decided what to do, it would probably be too late.

Electronic variometers rarely behave as described because their designers have, via the software and/or hardware, damped out anything too 'fidgety' or 'spiky' that might upset the user. Ironically, this has the effect of reintroducing lag. That apart, probably the greatest advantage of the more sophisticated electronic variometers is the ability of the internal microprocessor to do arithmetic at lightning speed.

## Pressure transducers

A pressure transducer (figure 1) is an electronic version of the aneroid capsule used

# VARIOMETERS PART 2

in standard analogue altimeters and ASIs. It utilises materials whose electrical resistance changes if they are bent or distorted. A thin wafer of silicon acts as the lid to a small vacuum chamber (A), and contains a circuit (B) which measures changes in resistance. Note that (B) represents what this circuit does, not what it looks like. A steady input/reference voltage of between 5 and 10 volts (green arrows) is applied across two opposite corners. If the transducer is raised or lowered a few feet, or a gust, say, creates a brief fluctuation in the local pressure, the lid of the chamber bows, altering the resistance and the output voltage (red arrows). The output is altitude/pressure related, and ranges from a tiny 0.1 volts at sea level to a non-existent 0.0 volts at 70,000ft – ie, near earth orbit. Random noise generated by the rest of the circuitry would quickly wipe out this signal, so it is first amplified – typically by a factor of about 25 – using the electronic equivalent of a megaphone (figure 4, block A).

At this stage, we have a basic electronic altimeter of the kind built into loggers. I'll say a bit more about them later. Part of turning the basic altimeter into a variometer requires doing arithmetic with chips. The phrase might make microprocessors sound a tasty and agreeable subject. For most of us it's nothing of the sort, partly because, unlike mechanical instruments, what happens inside electronic ones is completely invisible even when the lid is off.

Such frustrations apart, there is a technical problem. The transducer's output is old fashioned analogue – a seamless and infinitely variable signal which, plotted on a graph, might look something like the smooth curve (A) in figure 3. If you wanted to record that in all its many subtleties, you'd put it on tape. Awkwardly, microprocessor chips can't 'do arithmetic' with analogue data, and their memory can't 'remember' anything in that form either. So, at some point the output has to be converted into a language that the microprocessor can understand, and the memory hang on to. This is also the point where most of us, understandably, start thinking about something else.

## Digital speak

At heart a conventional microprocessor is just a light switch, and a light switch is either on [1] (illumination), or it's off [0] (darkness). It's a binary device. Binary is the only language that the microprocessor understands. Everything that goes into it, without exception, has to be converted into integers (whole numbers, no decimal points or fractions) and 'written' in binary – see figure 2. It won't respond to anything else.

Represented graphically, the digital conversion of an analogue signal creates a bar-chart lookalike (figure 3). The analogue/digital convertor module on the 'in' side of the microprocessor (figure 5, D) takes regular 'snapshots', or samples, of the incoming analogue signal. Obviously the two values have to be equivalent (maximum value in one has to equal the largest number in the other), but the translation doesn't have to be literal. Five volts analogue, say, won't necessarily be represented by '5' (011) in binary. The binary value depends on the snapshot's 'resolution', which in turn depends on how many bits are available to make the conversion – and to store it. It also depends on how much detail is actually needed.

For example, with only 3 bits available (figure 4) the analogue signal's entire range has to be covered by the numbers 0 to 7, so there's an awful lot of rounding up or down being done. Using a higher resolution of

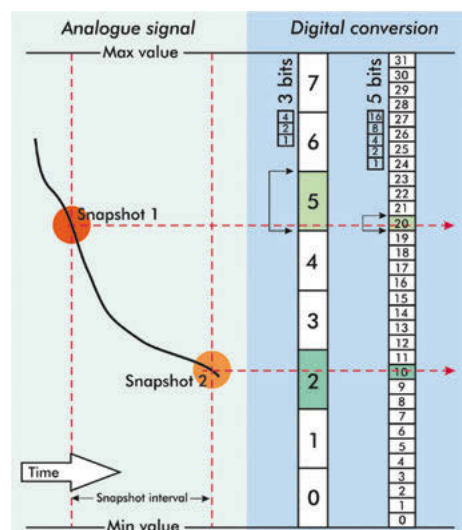
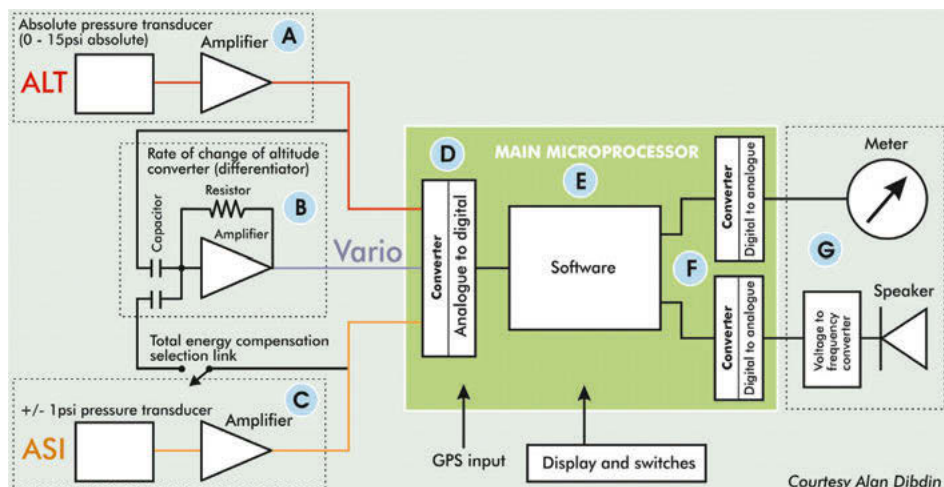


Figure 4

**THE FIRST AND COMPLETELY UNAVOIDABLE SNAG IS THE INFORMATION PROCESSING CAPACITY OF THE HUMAN BRAIN**

Figure 5



Courtesy Alan Dibdin

# PROBABLY THE GREATEST ADVANTAGE OF THE MORE SOPHISTICATED ELECTRONIC VARIOMETERS IS THE ABILITY OF THE INTERNAL MICROPROCESSOR TO DO ARITHMETIC AT LIGHTNING SPEED

✍ 5 bits, say, the same range can be covered by the numbers 0 to 31, and 8 bits would give you 0 to 255. If you wanted a display to do nothing more than tell you whether you were going up, down, or neither, 2 bits would be enough. This ability to alter the 'detail level' not only makes it far easier to scale things up or down as required, but it also means that you can be supremely accurate when it's required, and pretty sloppy when it isn't.

## Do this

As with most electronics, it is the software that tells the hardware how to behave, and most modern variometers are software 'driven'. The advantages are that if the software doesn't seem to work properly, it can be re-written and then updated in the variometer. Changing the hardware is usually more expensive, and can be difficult because on some of the cheaper microprocessor boards everything tends to be soldered to them.

There are many software languages – some easier to use than others – but, mercifully, none of them look in the slightest bit binary, even though they must ultimately produce instructions which are. How well the variometer works can depend to a large extent on the logical clarity, and often the ingenuity of the programmer. It's probably true to say that they are more aware than most of the law of unintended consequences.

Once the software's done its job, everything that pops out of the exit side of the microprocessor is in binary – and incomprehensible. Before a standard dial can

display anything, or an audio unit make the tiniest squeak (figure 4, F and G), digital has to be converted back into analogue. It's the reverse of the process in figure 4, with the result electronically smoothed to remove what would otherwise be displayed as a series of disconcerting jerks.

In the Dibdin variometer, the LCD screen in the main panel (figure 7) is the only display that's digitally driven. Why not drive every display digitally? One reason is that, in general, us humans find it much easier to assess 'rates' of change, even accelerating or decelerating rates, using analogue 'pointy needle on a dial' displays. If you've ever tried filling your car with exactly £x worth of fuel from a pump with a digital display (which is just about all of them these days) you'll know exactly what the problem is.

## Memory matters

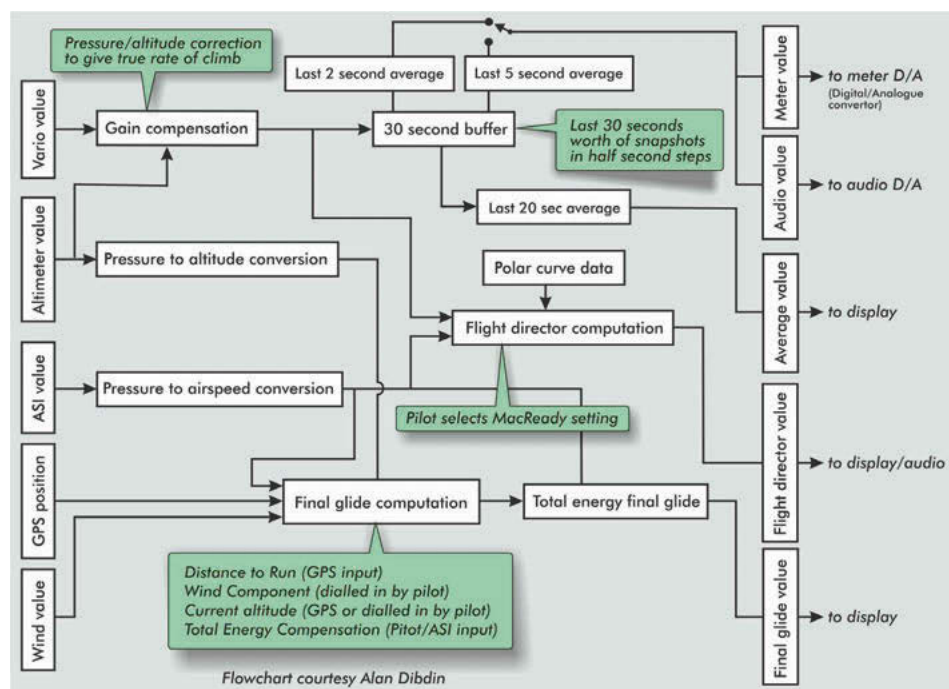
A logger records pressure/altitude information from its built-in transducer, plus any information sent to it via a GPS unit. The sampling (snapshot) interval chosen by the user determines how long it takes before the available memory fills up and earlier entries start being over-written. Various electronic 'you are here' pointers keep track of each snapshot's position in what is an 'order of entry' list, with 'now' as the first.

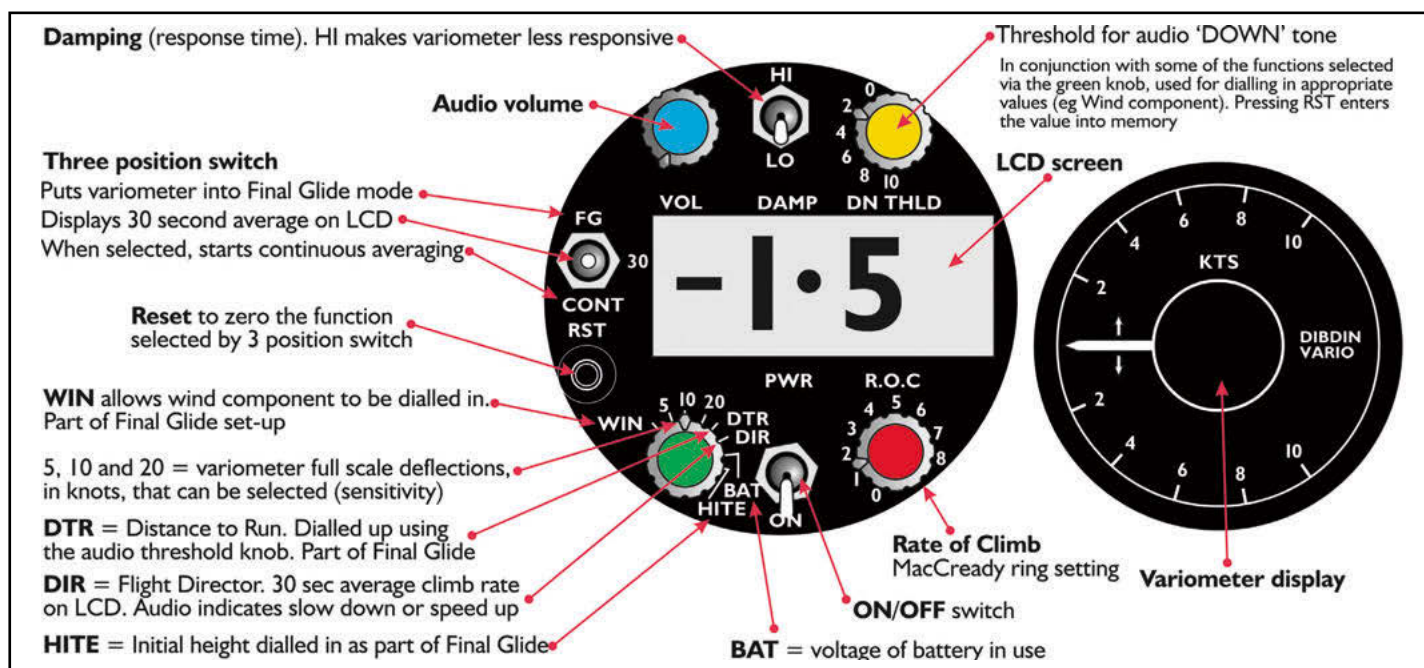
An electronic variometer stores and tracks snapshots in exactly the same way, but takes them at more frequent intervals. There's no point in the variometer remembering as much as a logger because, inevitably, the majority of its calculations will be based on recent 'events'. Variometer snapshots last about 30 seconds before they're over-written by newer entries. There are, however, occasions when a pilot might want to average a climb over several minutes, so provision is made to store the 'now' snapshot taken at the instant the 'Continuous' switch position is selected (see figure 7). When you select another switch position, the snapshot is effectively wiped out.

## Calculations

Working out average rates of climb is a very simple example of how an electronic variometer does the arithmetic. Because altitude/pressure snapshots are taken at regular intervals and their order is known, their list positions indicate exactly how old they are. The microprocessor can grab the newest ('now') snapshot, add to it all the snapshots taken in the last five seconds, say, divide the result by how many there are,

Figure 6





Illustrations by Steve Longland

and then display a five second average that's updated every half second.

There are other sorts of calculation that give electronic variometers a definite edge over mechanical ones. It's not immediately obvious, perhaps, that the transducer's output voltage is no more linear than the ICAO standard atmosphere plot is a straight line. A variometer will become increasingly inaccurate with altitude because the pressure changes for a given gain of height get smaller and smaller, and non-linearly. A standard altimeter copes using clever mechanical design. (I'll say something about how mechanical variometers do or don't cope in the next article). With an electronic instrument you can feed in any correction factor you want at any time you please. All you have to do is program the software to do it. In effect, you can transplant the ICAO chart into the microprocessor and use it as the basis of continuous altitude/pressure related corrections. This is the purpose of the 'Gain compensation' in figure 6.

You can also program in polar curve data, and combine it with a pilot-selected MacCready setting and pressure input from the pitot, to give you a flight director. In the example variometer, this provides slow down/speed up 'suggestions' via the audio unit only; a ploy adopted by the designer to help stop pilots getting their heads stuck in the cockpit. It seems to work. Add in GPS-derived information and you have Final Glide mode.

Other processes written in the software

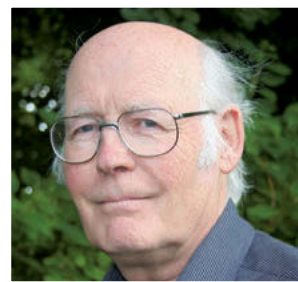
are shown in the flow chart in figure 6. Most of the arithmetic involved is straightforward, but the 'doing of it' relies on sheer speed and some crude brute force. For example, microprocessors don't multiply 7 by 13 in quite the way we'd do it. They just add 7 to itself 13 times.

#### Measuring instantaneous climb rates

In principle, one could work out the rate of climb or descent using the two newest snapshots, but, partly because of 'resolution' issues, this doesn't work correctly for very small changes in altitude/pressure. There are several solutions to this, no doubt, but the Dibdin variometer does it by taking the transducer's amplified output (figure 5, box A) and charging one of the capacitors in box B to the same voltage. If A doesn't subsequently change (ie glider neither climbing or descending) then neither does the capacitor's voltage, and no current flows in B's amplifier. The instant the capacitor voltage alters, a current flows on the amplifier side, its strength related to the rate at which capacitor voltage is changing. Quicker change in A, larger current out of B. One purpose of the resistor is to create a feedback loop that effectively causes the amplifier to leak, preventing it from back-charging, as it were, the capacitor. Like the transducer output, box B's is converted into digital before diving into the microprocessor.

I'll deal with Total Energy compensation for both mechanical and electronic variometers in the next and last article.

Figure 7



Born 1941. First glider flight in 1968 at Meir, Staffordshire. Joined Cambridge University GC in 1970. Soloed 1970. Instructor 1972 - lots of free time and requirements then far easier. Completed Diamonds in 1988. CFI twice (lack of judgement). Stopped instructing in 2005. Currently nearly 5,000hrs and still not getting it quite right. Date of decease, pending





*This page, clockwise from top:*  
An evening visit to Burn captured this stunning image of instructor Terry Tordoff in the back seat having bought ERH (K-21) safe down with a very happy visitor (Kevin Moseley)

Tony Machin brings home the tug after another successful tow at Burn (Kevin Moseley)

Mother nature provides a break, opening a hole in the clouds right above the Fuentemilanos Airfield, in central Spain (Carlos Seoane)

*Facing page, clockwise from top left:*  
More vintage moments from the annual VGC International Rally, held this year at Tibenham, captured by Lance Cole

Wings and things – VGC atmosphere under a big Norfolk sky

Gullwing delights – Rhonsperber and Steinadler

Gary Pullen awaits take-off in the Steinadler

The Hol's der Teufel about to launch

Minimoa moment at the end of the day's flying under a sailing sky

The Krajanek catches the sunset

A Bocian 1e waits its next launch as Norfolk's sky brews up

■ If you would like your previously-unpublished photographs to be considered for inclusion in Gliding Gallery, send them to [editor@sailplaneandgliding.co.uk](mailto:editor@sailplaneandgliding.co.uk)





The 38th VGC International Rally was held at Tibenham. It is just the third time the event has been held in the UK and this year 99 vintage gliders took part, some dating back to the 1930s. Martin Simons reports

**W**ITH about 1,000 members, the Vintage Glider Club must be the largest gliding club in the world. The annual subscription for flying membership is the lowest at £27.50.

The club has no permanent base and no aircraft. The members own and fly a great variety of sailplanes. They spend many hours in workshops restoring, maintaining, rebuilding, admiring and gloating over their beautiful and occasionally downright strange aircraft. They are enthusiastic, friendly, perhaps a little eccentric, and have a lot of fun.

Someone asked recently if the VGC was for old pilots or old aircraft. The answer is yes. However, there is now also a healthy intake of young people and some of the gliders are new, having been built recently from ancient workshop drawings with traditional materials and skills.

There is an annual International Rally which may be anywhere, but usually is held somewhere in Europe. A suitable airfield with all the facilities is necessary to provide for 100 or so sailplanes of widely different ages and capabilities. The owners, crews and families also come in various shapes, sizes and ages.

A VGC Rally takes place in a relaxed spirit of amity and mutual assistance, bringing back memories of years when soaring was a game rather than a kind of fierce combat.

Finding a site for the International Rally is difficult. The club hosting the meeting has to provide launching machinery and ensure the safety of operations for pilots, crews and spectators. Every type of glider taking part is different from every other with special requirements for launching and shelter. Translators are needed at briefings and on the airfield. Space and facilities for campers, caravans and glider trailers have to be found. On-site catering is required; lists of hotel and other accommodation are compiled and distributed in advance. Liaison with local businesses is important to cope with the influx of strangers to the district.

Efficient organisation is vital. A large number of competent and knowledgeable volunteer helpers have to devote hours of thought and work to prepare and manage the complex operation. Local pilots sacrifice at least a week of their normal club flying operations.

There are few sites or clubs equal to the Norfolk Gliding Club,



based at Tibenham, south of Norwich, which provided everything needed for the VGC Rally from 31 July to 8 August, 2010. Preparations had to start weeks and months in advance. The effort reached its climax in the week of the rally. Afterwards there remained more to be done to restore normal activities. Effectively every member of the club was involved in the work. To attempt to name and thank them all would occupy more space than is available in this brief account.

Competitive pilots near home and far away were occupied at this time in other, but not happier, meetings while the VGC were having a wonderful time in East Anglia. A few hours of difficult or impossible weather occurred, but there was soaring every day. Sometimes conditions from dawn till dusk were excellent, although VGC members do not feel obliged to rise anxiously and rig hurriedly before their leisurely breakfast. Tasks may be set but no one has to fly them and nobody loses points by taking a day off, or by landing out.

Ninety-nine gliders were registered as entrants. There were some 40 types. Most numerous, with seven examples, was the Slingsby T-21b two-seater which, after 1947, became the standard trainer with civilian clubs and, known as the Sedbergh, the Air Cadets. In terms of design, the oldest was the Hol's der Teufel (Devil take it) plans for which were published in 1928. The Hol's flown at Tibenham was very new, having been built in 2004 in the Czech Republic from those drawings.

Probably the oldest sailplane still airworthy anywhere is the 75-year-old Carden Baynes Scud III. Flown in 1935, this was the first self-launching sailplane with a fully-retracting motor and propeller. After early successful flights, following an accident it was repaired without the motor, becoming a 'pure' sailplane. It was accompanied here by the second immaculate example of its type. Both rarities showed they were still capable of soaring as high as any other. The opportunity arose for someone to buy the original Scud III for the bargain price of £4,000. A deal was

agreed before the end of the rally.

The Minimoa, Rhönsperber and Weihe represented the best of pre-1940 competition sailplanes.

The first plastic sailplane, the Phönix designed and built by Herman Nagele and Richard Eppler, flew in 1957. A few with modified tail unit were produced later and an example built in 1962 was at Tibenham. Both structurally and aerodynamically this aircraft was revolutionary in its time.

The most advanced of the non-plastic gliders were the Standard Austria of 1959 and the Swiss Elfe S4a (1972). The Austria wings were built in an accurate female mould from wooden laminations. The Elfe wing has a main spar of aluminium alloy with a sandwich skin of plywood and paper honeycomb. Both these aircraft have retained remarkably accurate wing profiles, which almost match the perfection of the modern composite moulded aircraft.

The recently-constructed 1936-designed aerobatic Habicht, showed what sailplane aerobatics can be when flown brilliantly by the youthful Christoph Zahn.

The site was visited by the DH Moth club. In the late afternoons, radio controlled scale model sailplanes and powered aeroplanes, including spectacular jet fighters, were demonstrated and a local team of Morris Dancers performed and initiated some VGC innocents into these pagan rites.

Time was found for a meeting of the International Council and the Annual General Meeting, both presided over by Chris Wills, founder and Life President of the VGC, and chaired by Jan Forster. Decisions had to be made about where the next International Rally would be: 2011, Spitzerberg in Austria and Lithuania in 2012, and some vacancies on the committees were filled.

Thanks to the stalwarts of the Norfolk Gliding Club this was a highly successful and enjoyable meeting. There were no accidents and no gliders were damaged.



Above: The Habicht was flown beautifully by Christoph Zahn (Martin Simons)

Facing page: The Rhönsperber's curves captured at rest (top) and the gull-wing cruiser Steinadler (Lance Cole)

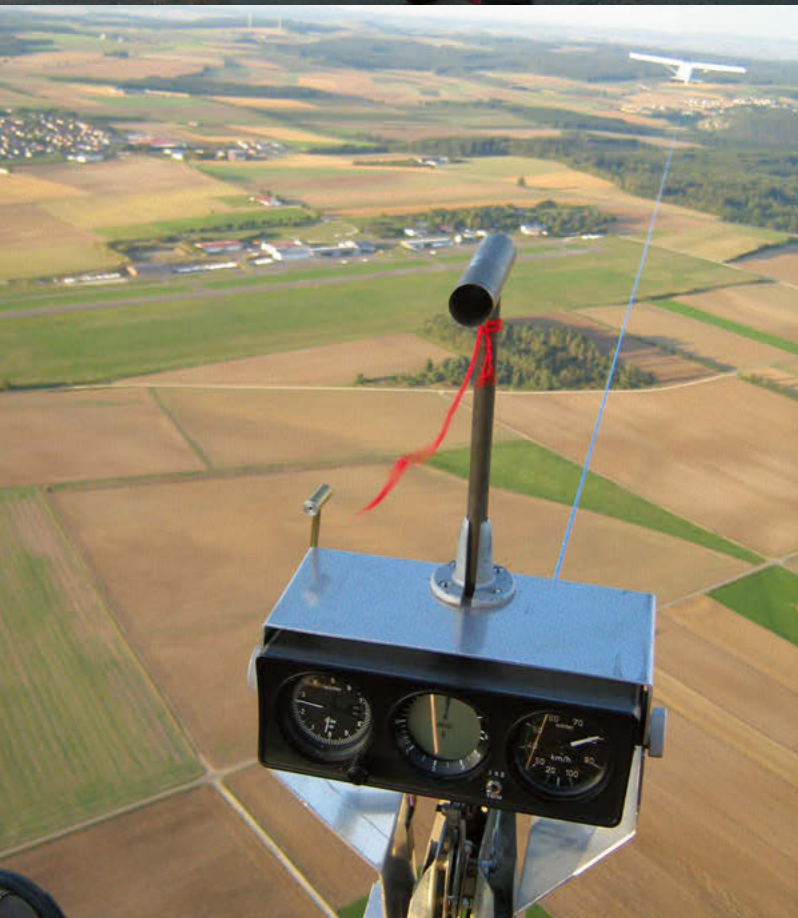


Above: With 40 different types of glider taking part in the rally, there were seven examples of the Slingsby T-21 two-seater

Below: This Hol's der Teufel was built in 2004 from plans published in 1928 (Martin Simons)



# TIBENHAM HOST TO VGC ANNUAL MEET



# SG 38

Jochen Ewald reports on an event perhaps as historic as the glider itself, as the SG 38 (EoN Primary) undergoes a performance evaluation

**A**LMOST every glider pilot knows about the speed polar of his aircraft. This knowledge of the speed-dependant sink rate over the whole speed range enables him to make best use of the glider's performance for thermaling and cross-country flying. Until now, there was no speed polar available for the world's most numerous glider, the SG 38 'Schulgleiter'.

This famous glider type was first presented in 1938 by manufacturer Edmund Schneider in Grunau (now Poland) and in post-war times was also built in England by Elliots of Newbury (EoN) as the EoN Primary. Contemporary data sheets detail only a best glide number of 10 at 52km/h and a minimum sink of 1.3m/s at 48km/h. When the German vintage glider pilot Mario Selss offered his SG 38 to the Akaflieg students during the 2009 Idaflieg summer meeting, he joked: "I hope to get it back fully performance evaluated, including an index factor for competition flying!" A crazy idea, and a challenge, which the Idafliegers finally took up seriously – with a lot of fun along the way.

During the Idaflieg summer meetings, in addition to several other tasks (see *Idaflieg 2009*, Feb/Mar 10, p14), gliders are performance evaluated. This is done by students of the Akaflieg groups working together with the DLR (German Centre of Aeronautic and Spaceflight Research) and the Institute for Flight Guidance and Control (IFF) of the Braunschweig University.

The usual method for evaluation is the comparison flight method, with the glider to be evaluated being flown in close formation with a 'calibrated' glider at different speeds. For each speed, the altitude difference between the beginning and the end of a measuring point is logged, in earlier times by photo documentation, more recently by GPS registration. This is the most precise way to evaluate a glider's performance, because it eliminates the effects of air movements in the atmosphere, which are always there, even in stable air masses. Of course, this method requires a precisely calibrated comparison glider.

The Idaflieg uses the DLR's DG-300/17, specially built for this purpose. Its performance has been evaluated by lots of 'altitude-step-flights'. This method, flying at constant speed for some time and registering the altitude loss, requires many flights to exclude the influence of the previously mentioned air mass movements statistically – the more measuring points exist, the more precise the final polar becomes. Such precision is specially important regarding the good performance of modern gliders: With glide numbers >50, the glide angle is so flat that even some cm/s difference in the sink rate result in a great difference in the glide number. This is the reason why sometimes published 'hobby'-

# EVALUATED

altitude-step performance evaluations of modern gliders with 'highly scientific claims', using data of only one or a few flights, have to be regarded with great care considering the value of their results.

## The method

Using the comparison flight method to evaluate the performance of the SG 38 was not possible, because the SG 38's speed range is clearly below that of the DG-300/17 and its sink rate so high that sensible formation flight keeping the same speed is impossible. On the other hand, the influences of eventually moving air masses are relatively small compared to the high sink rate of the SG 38. So, for the evaluation of such a primary, the expected mistakes caused by using the altitude-step method should remain within an acceptable range – even if there is only a low number of altitude steps possible due to the time and money available.

So it was decided to use this method, and IFF employee Falk Paetzold equipped the glider with the reserve measurement device kit of the IFF. Behind the seat, on the fuselage boom, the GPS receiver, the data-logging computer, the battery and the required pressure sensors were fixed using self-adhesive tape and straps. To get precise speed and altitude data, a Kiel-type pitot probe was fixed above the wing, and a static probe installed in an instrument hose towed behind the tail and stabilised by a cone served to deliver the precise static pressure (the drag of this installation is known, so that its influence on the polar curve can be eliminated mathematically later). Additionally, a temperature probe fixed on the instrument panel delivered the needed data to standardise the results.

## The flight

It was decided to do these flights in the evening, shortly before sunset, after the air had calmed down from its daily thermal activities. The early morning, with even more calm and stable air, would have been even more suitable for such flights, but these morning hours were during the Idaflieg meeting already reserved for the (truly more important) comparison flights with modern gliders. Also, in the evening

hours the air temperature is a bit higher, giving the pilot slightly more comfort when flying a 'garden chair'. Having already done some aerotows on primaries, I was selected to do the first evaluation flight. After a thorough DI of the SG, the measuring equipment, the trim (with me, one ballast weight in the rear and the equipment installed, we reached a central c of g position), well-sealed aileron gaps (with open aileron gaps, aerotows are real work for the pilot...) and well shaved (yes, we wanted to reach best performance, including laminar face airflow...) I install myself on the seat, strap in (or on?) and fix the control unit of the measuring equipment on my leg.

For towing, Jochen Hammele of the local LSR Aalen club chose the B&F FK-9 microlight, which not only performs well with modern, fast gliders, but can also be flown very slowly. I found the tow behind it, using an 80m Dyneema rope, very comfortable – even at 90km/h the SG remained nicely stable behind the tug, although I had to make a quite 'long arm' to push the stick forwards. There were no signs of longitudinal de-stabilisation, as I had previously experienced on the 1927 Ziegling at speeds above 80km/h. Such de-stabilisation can be caused by the high (drag-producing) wing, combined with a low towhook position, and to have some reserve for this case and avoid upsetting the tug, we chose the long towcable. In case of de-stabilisation, you can get into stable flight again by flying a bit higher, so that the cable pulls a bit downwards at the towhook. At 1,400m GND I release – it becomes a bit cooler there, especially with short trousers and sweatshirt only... I decide to fly the high-speed points first, flying against the wind to avoid getting too far away from the airfield and risking a field landing. Accelerating to 100km/h, my first speed to fly, I find that approaching the speed and keeping it constant for the measuring period is definitely not as easy as it is with modern gliders. Flying in a westerly direction, against the sun, there

**ACCELERATING TO 100KM/H, I FIND THAT APPROACHING THE SPEED AND KEEPING IT CONSTANT FOR THE MEASURING PERIOD IS DEFINITELY NOT AS EASY AS IT IS WITH MODERN GLIDERS**



Above: Laminar face airflow? At 85km/h, the airflow leaves its traces on the carefully-shaved face of the author

Facing page, from top: Falk Paetzold and Idaflieg president Peter Weinert install the reserve measurement devices of the IFF on the fuselage of the SG 38

A Kiel-type pitot tube is installed above the wing leading edge

Aerotow to 1,400m above the airfield Aalen-Elchingen

■ **A BIG thank you from all the people involved to Aalen vintage glider pilot/owner Mario Selss ([www.oldtimersegelflug-marioselss.de](http://www.oldtimersegelflug-marioselss.de)), who made this performance evaluation possible by offering his SG 38**



More than 70 years after its introduction, the SG 38 primary was performance evaluated for the first time

is no reference point at the glider visible close to the horizon, the small instrument panel is far below it. Additionally, the original Venturi tube-operated ASI is sluggish, the stick has to be pushed far forwards with no trim available to take the force off it. After reaching and stabilising 100km/h ("Oops", although I taped my short trouser legs, there is cold air blowing in!), I press the marker button on the control unit. Another "Oops" – looking back at the

ASI tells me speed is going down – stick more forwards. I look at the altimeter rotating downwards and decide this first point has to be a short one, not very precise, and press the button again to mark the end of this point.

Next one, 5km/h slower speed, and the same procedure again. So I go on in 5km/h steps downwards, and soon I feel it's time to turn back to the airfield and continue with the now easier-to-handle slower speeds in warmer air. The last sensible point is 45km/h – at

around 40km/h IAS there are already signs of the SG beginning to stall, and the slowest speed indicated is 38km/h in the (nearly too

gentle) extremely stable stall, where the SG appears to accelerate a bit with the stick far back. This speed indication seemed me to be too low – the airflow from below around the Venturi tube appears to cause this mistake (the Kiel pitot tube used for the data recording still remains precise at high angles of attack, results can be seen in the ASI calibration graph).

With the last slow speeds to measure I am back over the airfield, just high enough to fly a tight '8' and have some fun before approaching the launch point diagonally to prevent the towed static probe hooking into the bushes underneath the final. Just time enough for Johannes Anton, one of the Mue-30 test pilots of the Munich Akaflieg, to make another 900m tow before sunset to gain additional data before removing the equipment from the glider and downloading data.

#### **Evaluation**

With the flights completed, the real work for Falk Paetzold began. The stored raw data files had to be prepared, selected and brought into a standardised form for a sensible evaluation. Describing the ways and mathematics used would fill a book and probably bore most readers. For Falk, all this was a second job

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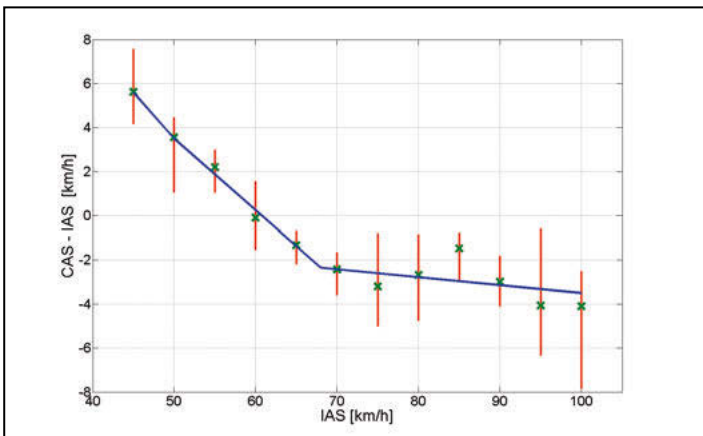


Figure 1: airspeed system error

besides his regular tasks at the IFF, done mainly during long winter evenings. At the Idaflieg Winter Meeting, held in January in Esslingen, he was ready to present the first results, which he refined during the following months. Of course, the data material gained during the two flights was not optimal due to the described reasons, but finally good enough to publish a quite reasonable polar of the SG 38 – 72 years after its presentation. It looks as if the SG 38's performance is really not quite as good as the contemporary published data say! But I dare say there was barely any manufacturer who did publish real data in the time before the Idaflieg started their regular flight performance evaluations for two reasons: a) there was no way to measure precisely, and b) with better data 'on the paper' sales improve...

## Results

Here are the most important results of the evaluation:

● (figure 1: airspeed system error) The ASI calibration shows clearly that the Venturi tube supplied ASI of the SG 38 indicates too slow speeds when in the slow speed range – obviously a result of the increasing angle of attack of the air around the Venturi tube.

● (figure 2: sink rate-CAS) The sink rate-CAS polar, standardised for a flying weight of 200kg, shows a minimum speed of 48km/h and a minimum sink rate of 1.85m/s at 53km/h. The measuring points marked around the curve show clearly that this polar is a statistically averaged curve using a relatively low number of supporting points. (A comparison of the data gained by both flights, standardised to a flying weight of 200kg, appears to show a light performance advantage for the second pilot, who, very slim, weighed 60kg and obviously produced less drag than me with my 80kg body – with this glider, the pilot's shape/drag itself has a direct influence on the performance!).

● (figure 3: glide number-CAS) The glide number-CAS polar shows a best glide number of about 8.3 at a speed of 58km/h.

● (figure 4:  $C_L$ - $C_D$ ) This graph, showing the standardised lift coefficient over the drag coefficient of the SG 38 (blue), details the general aerodynamic qualities of a glider. Here, for comparison, the curves of a modern 18m-glider (red) and of the DLR's plump twin-engine research aircraft Dornier Do-28, with its engines running idle (green) are added, and the Do-28 still appears to be 'better' than the SG 38 (but nobody appears to soar it...).

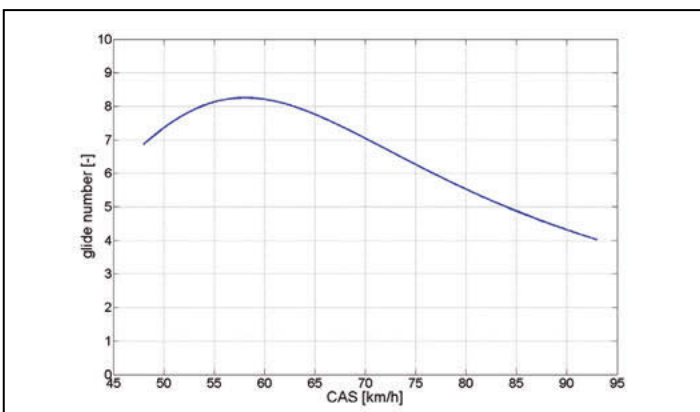


Figure 3: glide number-CAS

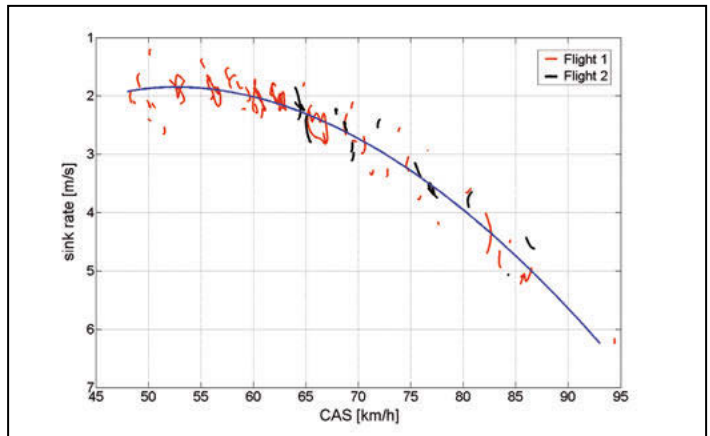


Figure 2: sink rate-CAS

## COMPETITION INDEX

The (DAeC) index of a glider is an interesting (and much used) aid for competition pilots, enabling exclusion of the performance differences of gliders to compare the performance of the pilots in 'mixed type' competitions.

To gain this index number, the DAeC successfully uses a formula developed 15 years ago by Stefan Ronig (Akaflieg Braunschweig, now EASA), based on the glider's performance data.

With the new polar curve, this formula delivered an index of 22 for the SG 38. Although this value appears very attractive (the ETA has an index of 132), I very much doubt that its publication will lead to the extensive cross-country flight use of primaries such as the SG in the future!

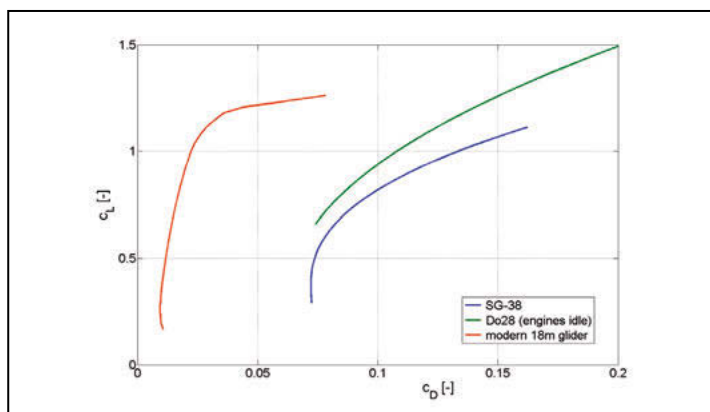


Figure 4:  $C_L$ - $C_D$



UK experience has shown aerotowing to be one of the safer methods of launching, and the most relaxing (Steve Lynn)

# AEROTOWING: A GLIDER PILOT'S PERSPECTIVE

BGA National Coach Mike Fox highlights some misconceptions about aerotowing that can make things harder than they look and spoil your day

**A**EROTOWING is a fantastic method of launching. It allows us to position ourselves precisely where we need to soar, as high as we like to enjoy the scenery, or as far as we like to deliver a glider without a trailer.

UK experience has shown it to be one of the safer methods of launching, and the most relaxing; things happen a bit slower on an aerotow than a winch launch.

The origins of aerotowing are slightly unclear, but may date back to the First World War when Anton Fokker had the idea. The military have been involved ever since. Pilots of the Glider Pilot Regiment saw heroic action during the Second World War and, as recently as 1997, NASA trialled towing an F106 Delta Dart behind a C141 Starlifter. These days in the UK, Service clubs and Air Cadets maintain the military links.

Aerotowing looks relatively simple; and it is if you are trained properly, but don't be fooled. There are some misconceptions around that may spoil your day and make things harder than they look.

Once again, there are plenty of books and articles dedicated to aerotowing. I would like to highlight common misconceptions and dodgy techniques that I have come across.

## Equipment

In his article on aerotowing from the tug pilot's perspective last issue, John Marriott covered much of the equipment we use to aerotow. I would like to emphasise a couple more points.

If there is a weak link fitted at the glider end of the rope, especially the 'staple' type, it is always a good idea to check that link before launching. These links can

slowly wear and break at an inopportune moment. Ask a local instructor for an explanation.

If the rope is unusually short, it makes aerotowing harder; especially for inexperienced pilots. Longer ropes make the tow more stable.

#### **Decisions and responsibility**

Remember that aerotowing is a team activity. There may be as many as five or six people involved in the operation, but always more than one. Diffusion of responsibility starts to occur as soon as you have more than one person making decisions; everyone thinks the other is happy. Get a culture of conversation going, and make sure that everyone is comfortable about the operation before launch. Of course the tug pilot is in command of the combination, but he or she may pull the release! The radio is a very handy tool here, especially during the tow.

#### **On the ground and the ground roll**

Eventualities: In my experience everyone forgets to mention a speed they will maintain if they have a failure during the first bit of the tow. Airspeed is life in this situation. If the speed is one of the last things you have mentioned, perhaps you will maintain it after a rope break or other failure.

Don't forget that if you had a gentle tailwind when you started the tow, you will be lower and have fewer options over the far end of your airfield. If you have a failure, you may be landing into a short field downwind. Think about the terrain over which you are

towing. Is there somewhere to land if you have a launch failure? If not, what are you going to do if the rope breaks?

Better to have a plan for a controlled crash that breaks the glider but not you, than to panic!

#### **Early airborne**

There is a very common misconception that if you don't want to upset the tug, you must keep very low while you wait for the tug to take off. This could actually cause an upset! If you are too low, you may inadvertently touch the ground and perhaps hit a bump. Perhaps you might PIO a bit. Especially if you are on a belly hook, this may pitch you up as in a winch launch. This causes a lot of tension in the rope as you climb, which will easily pitch the tug into the ground. Conversely, you might make a bit of a mistake and get a bit high and gently pitch back down in the early stages of the launch, the rope tension won't be very high, and the tuggy will probably not even notice. Six to 10 feet, or about level with the top of the fin is about the right height. Obviously, if you ever lose sight of the tug, you must immediately release.

#### **How high to tow?**

Often pilots will release a single-seater because they see 8kts on the vario. Unfortunately, this turns to zero once they release. Think about it. What does the glider sink at normally at towing speeds – 2kts? And what is the normal climb rate in still air behind this Pawnee – 6kts? So 8kts will give zeros after release. You really need to see almost 10kts for quite a few seconds ➡

## **ENJOY YOUR AEROTOWING – AND DON'T SKIMP ON TOW HEIGHTS – IT'S A LOT CHEAPER THAN A SELF- LAUNCHER!**

■ **AT A few sites, aerotow launch failures are trained for by pulling the release for real. Unfortunately, this training almost always results in a turn back. The parallels with winch launch failure training are clear. Pilots must first fly their aircraft and then consider landing ahead before even thinking about turning.**

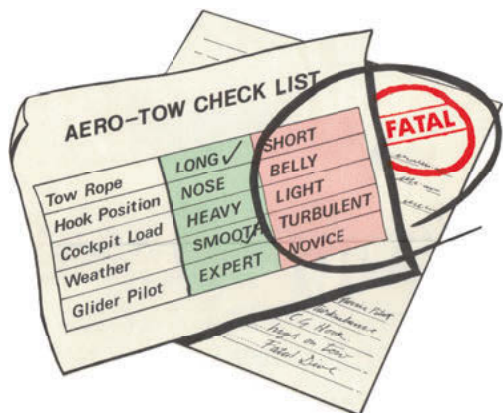
**A motorglider is a great tool for training like this, but needs carefully thinking through in case the engine doesn't 'go' when you open the throttle!**

**Some gliders are more prone to a wing going down on the ground run than others. If you are having problems keeping the wings level during the first part of the aerotow, be picky about who runs with your wing; the more athletic the better! Remember that you need to use very large aileron deflections early, even if the wing has only gone down a little. Get into the habit of pulling the release if the wing goes down.**

**Try to balance the glider in all three axis on the main wheel; ideally with the tail wheel just above the ground. If the nose is too low, the glider will take off after you hit a bump, or just at a very high speed. In this case the elevator will feel very sensitive, and the chances of a pilot induced pitch oscillation is high. If the glider rests on a nose skid or nose wheel at rest, start with the stick right back to try to raise the nose as soon as you can. This gets the glider in the correct attitude early, and reduces drag for an earlier take-off.**



Aerotowing is a team activity – get a culture of conversation going and make sure everyone is comfortable about the operation before launch (Steve Lynn)



You may have seen this poster displayed at your club. Within the grid, all the conditions circled on the right are the dangerous ones



Mike Fox is the BGA National Coach. He flies an LS4 from Seighford and Pocklington

before being sure there is plenty of lift to climb in. If you do see off-the-clock lift for say 10 seconds at say 1,500ft, why not release? You should climb! Conversely, if you need 3,000ft to be sure of staying up – it only costs an extra fiver or so; why not take it – it's a hell of a lot cheaper than taking another 2,000ft tow!

#### The release

Often, after the concentration of the tow, the release is a rushed affair. It need not be. Once you have had a good look around, pull the release and check that the rope has indeed come off! Once you are sure, raise the nose gently. This will ensure separation between you and the tug. Only then turn in the desired direction if required. You may have a club rule as to the direction – you must comply if so, but even if you turn in the same direction as the tug, as long as you raise the nose, the tug will be miles away during the turn.

#### How hard is it?

Aerotowing always looks dead easy when your instructor is demonstrating – the rope pulls the nose towards the tug, and it's always dead in line. Don't be fooled! If you

are having trouble and the glider is swinging about all over the place, don't despair. It's actually a pretty unstable affair – especially from side to side. The key is to always try to keep your wings parallel to the tug's wings. If you can do that, you have more than half the job cracked.

Your instructor may tell you that you are 'over controlling', but often the fault is failing to keep those wings parallel. If you are out to one side, even if the wings are parallel with the tug's, the rope will pull you back into the middle, but you will overshoot a bit. To stop this happening, you need to stop that movement with a slight coordinated roll in the opposite direction to the drift, just before you are in line.

Enjoy your aerotowing – and don't skimp on tow heights – it's a lot cheaper than a self-launcher after all!

■ Something that nobody has ever been able to explain to me is this: Why does my LS4, ballasted up to the gunwales with water (a rare occurrence in the UK) feel fine in a thermal at a little below 50kts, cranked over at 45 degrees, but on tow, feels horrible at anything below 60kts? Letters to the editor...





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# PRIEVIDZA

## 2010 UNFLAPPED W



**F**LYING world gliding championships in mountains is a unique experience. Although Prievidza was my fourth mountain worlds in succession, psychologically it was the toughest contest I've ever flown, with tremendous highs and lows. We were fortunate enough to compete on 12 incredibly challenging and varied contest days amongst stunning scenery ranging from rolling hills to jagged mountains. Whilst this made for a fascinating contest full of challenges and excitement, it also brought moments of enormous frustration, stress and even tragedy.

Our contest training had been excellent. We experienced most of the contest area by competing in the Pribina Cup in Easter and flew well. G Dale and Ian MacArthur came 1st and 2nd in the Club Class. I finished 3rd and Howard Jones came 8th in the 15m class. It was, however, a tough contest for me. I was recovering from reconstructive surgery having torn the 'ACL' in my knee in January. But by avoiding left turns I avoided the worst of the pain. Fortunately my knee was in better

shape by the world champs in July. When we arrived at the worlds in Prievidza, it was obvious that we were dealing with an incredibly well-run and friendly organisation. The attention to detail was sublime. As Howard put it: "Their effort to make everything as perfect as possible was remarkable and they achieved it in nearly all areas."

There was fantastic camaraderie and a sense of shared purpose in the British Team and it was a real pleasure working with such a highly motivated group. My Standard Class team mate Howard Jones was flying his Discus 2 in his first worlds. In the Club Class, Ian MacArthur was also flying his first worlds in his LS4 alongside G Dale in his ASW24. Ex-Club Class world champ Pete Masson was our superstar team captain. Max Kirschner crewed for Howard and doubled up as crew chief. Annie Layley and Dave Greasley crewed for G. Liz Eddie acted as Ian's crew/team nurse. Adam Woolley flew out from Oz to crew for me and was inspirational both in his positive mindset and his ability to go clubbing until 3am and still have my glider on the front of my grid row every day.

# PRIEVIDZA

## WORLD CHAMPIONSHIPS

REPORT BY JAY REBBECK



### **The Standard Class story**

First days of big comps are always nervy and the adrenaline started flowing on Day 1 when Ronny Lindell and Tomas Suchanek had a mid-air collision in the final stages of the Assigned Area Task (AAT). Tomas was climbing fast off a ridge line and Ronny was cruising to the same hot spot from above and behind and simply didn't see the glider climbing below his nose. Despite significant damage (Tomas lost a big chunk of his right wing) they both managed to land safely. Unphased, Tomas simply switched his Discus 2 for an LS8 and continued flying the next day. Ronny was back flying by Day 4 after his glider got fixed. For me and Howard it was steady but frustrating start, particularly for Howard, who finished six minutes under time.

Day 2 brought a short AAT with very unpredictable conditions and occasional weak wave. We had a great run up the first leg to the north, leaving the German team behind us, and took a fast direct route over high hills to the west on the second leg. Despite working with only 2,000ft between cloudbase and various unlandable plateaux, we made

steady progress and snuck in and out of the second sector. Having watched USA pilot Peter Deane land out under us on our third leg, we ran into our own problems in the final sector where conditions became distorted by wave. Despite painstaking efforts to get high, we only just scraped back into the Prievidza valley 20km from home. I had a hell of a fright when I dropped into a valley which I thought was full of landable fields only to be confronted with a forest. With my attention focused on ensuring a safe glide out, I missed the last thermal of the day and had to land on the side of the valley a few kilometres from Howard. It turned out that my left wing water dump valve had jammed shut meaning I had been hauling 70 litres around thinking I was empty. To compound the misery of landing out when 29 pilots finished, my full wing dropped on landing, I groundlooped, and three rock-sized holes were punched into the bottom of my wing. After initially thinking my world championships were over, the talented repair team in the airfield workshop inspected my LS8, confirmed the damage was not structural, and began an overnight repair to get the glider flying the next day.

**THE FIRST GLIDE ON TO A HIGH RIDGE SPLIT THE PACK. WHILST A FEW OF US MANAGED TO SCRAPE ON TO THE PEAK AND CONNECT WITH A SOLID CLIMB, THE MAJORITY OF PILOTS WERE LEFT SCRABBLING ON THE TREE-COVERED SLOPES**



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day. Fortunately the following day was cancelled and the job was complete by the following evening.

Day 3 was so windy and sketchy that we didn't expect to launch. But when the line opened I was ready in wave, so I dove through with Howard for an early start. The task was another two-hour AAT and our plan was to get on to the windward side of a 5,000ft ridge line and run 80km in and out of the first

northern sector. The air was so rough downwind of the ridge I saw several fully-ballasted LS8s tipped upside down. When we began running the ridges at hill top I needed to hold on to the stick with two hands. The hilltops were cloaked in cloud but you had to stay at ridge top because the wind dropped off quickly lower down. Indeed we saw several gliders landing out, including French pilot Marc Seretti. In the last sector we decided to finish six minutes early rather than drop below glide and run the low ridges home.

Annoyingly, the locals worked the low route well and our day win turned into an 8th and 13th for Howard and me respectively. "Lucky" Sebastian Kawa ran the ridges so hard he ended up landing short of the airfield, just sneaking into the finish ring.

On 8 July, we got caught in a waiting game before the start of a long racing task. By starting we triggered a mass exodus and the entire field followed. The first glide on to a high ridge split the pack. Whilst a few of us managed to scrape on to the peak and connect with a solid climb, the majority of pilots were left scrabbling on the tree-covered slopes. With hindsight, a combination of unusual factors had conspired to make this a lethal situation. The gaggle was climbing very low on gently sloping ridges. The thermals were desperately weak and broken. And most of us had kept half our water in

anticipation of improving conditions.

Alexander Martynov, flying his first world champs, was one of the pilots struggling low down. He had little mountain flying experience and was flying a new glider type. The French team and Australian Peter Temple were thermalling alongside Alexander when they saw him enter a spin low down. Christophe Cousseau told me afterwards that "Alexander did several turns in the spin. By the time he stopped spinning he was too low to recover from the ensuing dive. He hit the trees almost vertically at high speed. There was no chance of survival." Christophe and Marc circled overhead whilst relaying Alexander's GPS position back to Prievizda. Meanwhile Peter landed at nearby airfield Martin to coordinate the helicopter recovery operation. But Alexander was already dead.

Back at Prievizda a nervous few hours ensued. Team captains and crews had heard of a serious accident but no-one knew who the pilot was. Luckily we were flying with SPOT trackers (kindly loaned by the Gliding Club of Victoria) and, within 10 minutes, Pete knew that all the British gliders were still flying. We had just disappeared behind a mountain and were out of radio contact for the next two hours. When we finally got back in radio contact with our team captain, we had a surreal conversation where Pete told us to abandon the task but understandably did not want to say why. We returned to a very sombre mood at the airfield. As details of Alexander's death emerged it became clear that the next day would be one of reflection. It was declared an official day of mourning.

We resumed flying on 10 July with a 310km racing task that proved incredibly tough, compounded by two of the turnpoints being set on top of high peaks in tricky weather. Creative flying was required. We started at the back of the pack, and had pulled to the front by the first turnpoint. Ridge soaring in and out of the aerial marking the turn, we had to



Jay Rebbeck puts a task into his PDA. It was quite a challenge for Team GB to be competing against such strong local knowledge and the top pilot's sheer weight of mountain experience (www.glidingimages.com)



carefully avoid the stabilising wires.

The critical moment of the flight came as we ran into the last turnpoint. It was set on a 4,300ft ridge top, but conditions locally were weak and blue – 10km from the turn I was in a gaggle with all the lead pilots. We didn't have enough height to get to the turn but most of the pack headed straight for it anyway. I diverted to a cumulus off track with a handful of pilots including the Czechs, taking the same decision as the day winner Edoardo Tarchini. Seven pilots were so marginal that they couldn't reach the turn and had to take a 50 point penalty by turning at 1km.

Annoyingly, most pilots going straight did make it. Even more annoyingly, my climb only gave me a marginal glide to the turn. As I glided in, I was just behind Polish pilot Piotr Jarysz at the same height. I saw him hit heavy sink, drop off the side of the hill, and miss the turn. It didn't look pretty. I took a slightly different route and somehow managed to get a GPS fix in the sector whilst sliding down the tree-covered lee side of the hill. Unfortunately the situation went downhill from there.

As Howard described it: "We only needed one climb to make the glide home. From 1,000ft above the valley floor gliders climbed in front of us, then gliders climbed behind us, but no matter where we went, a bubble would not burst upwards at the right time. Pilots 20 minutes behind us bimbled up and just plucked a couple of knots from areas we had already searched and searched. We sank lower and lower down the side of the mountain until we were faced with the inevitable landout. Gutted."

Among the 26 landouts, Hungarian pilot Andras Gyongyosi had a nasty accident and ended up in hospital with a back injury.

Days 5 and 6 taught me an obvious, but invaluable, lesson in flying at this level: If you start 10 minutes after a big group of the best pilots in the world you probably won't catch them! On both days, we couldn't get the height we wanted to start when the pack left, and as a result, flew the entire flights by ourselves. Because the skies were overcast and very difficult to read, we simply weren't sampling as much sky as the gaggle. This was particularly illuminating on Day 6 when I had one of my best flights in a glider for several years. I felt I was absolutely on song, pulled out 15 minutes on the gliders I started with, and yet came home with a lacklustre 785 points of 1,000. I was reminded that a poor start with the right people at the right time is better than a great start at the wrong time.

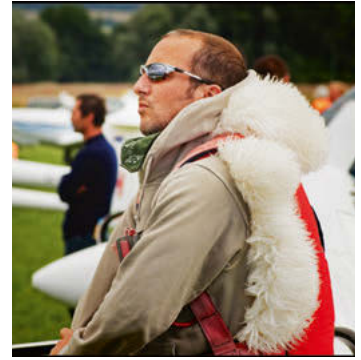
Languishing in 17th and 23rd overall,

Howard and I kept a positive frame of mind, knowing that we were flying much better than our results showed and on Day 7 we finally seemed to click. Howard described the change: "I suddenly felt 'comfortable' (and I use that word with a little caution) to be racing gliders in the mountains. It is difficult to compete properly if you are preoccupied with your own safety, so to lose some of that inhibition and really get stuck into racing right up against rock and trees in a stunningly beautiful environment was quite liberating."

We flew a text book AAT, joining with a gaggle of top pilots running into the last sector. We had yet another impossible decision where we had to keep pressing into deteriorating conditions to run out our time on the AAT, but knew that we were worsening our glide back to unlandable terrain known affectionately as 'death valley'. Once I estimated that I was unlikely to finish early but could still get back to 'death valley' at ridge top, I turned for home even though the pack pressed on. Inevitably, I then ran into 5kts and came home 90 seconds early. But, nevertheless, I avoided a low scrape and for once my caution was rewarded. I got 985 points and Howard got 956. We landed to find that our team captain Pete Masson had been struck down by a mystery virus. He had to be whisked into hospital and spent the night attached to an IV drip.

Day 8 was another strong performance for us. Howard pulled ahead of me and fed a steady stream of useful information to help me catch him up. Running north into the Czech Republic on our second leg, the only good clouds were on the edge of airspace. In world champs, airspace infringements are counted as landouts, so it was with some trepidation that we finally climbed at 5kts 200 metres from the airspace boundary. Sticking with the pack paid off again. I took 959 points and Howard got 962 points, bringing us up to 12th and 15th overall.

On Day 9 we tried to play it safe, by starting with Sebastian Kawa, Mario Kiessling and Michael Buchtal, who were in 1st, 2nd and 3rd overall. But we eventually realised they had got caught in their own game of cat and mouse. With over-development forecast, we had missed a good opportunity to go early and the early starters won the day handsomely. Fortunately our rivals in the overalls also started late and we moved up to 11th and 14th overall. Tomas Suchanek was hot on my heels but I



Above: Howard Jones in reflective mood prior to launch  
(Karol Urban Photography)

Below: The British Team managed an excellent third place in the team prize, behind Poland and Germany.  
(Karol Urban Photography)



**TO LOSE SOME OF THAT INHIBITION AND REALLY GET STUCK INTO RACING RIGHT UP AGAINST ROCK AND TREES IN A STUNNINGLY BEAUTIFUL ENVIRONMENT WAS QUITE LIBERATING**

**WINNING AT THIS LEVEL IS GENERALLY ABOUT DOING THE SAME THING AS EVERYONE ELSE, BUT DOING IT A BIT BETTER. YOU HAVE TO BE VERY SELECTIVE ABOUT WHEN TO DO YOUR OWN THING**



Flying the flag for Great Britain in Prievidza were (left to right) Jay Rebbeck, Howard Jones, Ian MacArthur and G Dale ([www.glidingimages.com](http://www.glidingimages.com))



Karol Urban

Jay Rebbeck comes from a flying family and flies at Lasham. He has been flying in the British team since 1997 and is a senior coach. He won the Junior Worlds in 2001 and came 2nd in the Club Class Worlds in 2004. Prievidza was Jay's fourth consecutive mountain world championships. He has previously competed in Norway, the French Alps and the Italian Appenines

✎ was still pushing for a top 10 finish.

Day 10 was yet another chancy AAT, only this time the lightning had started striking before we even launched. I finally got up to start height by climbing in torrential rain on the edge of an active lightning storm 20km from the start. Visibility was non-existent. When Howard and I saw sunshine on track we started. Competitors scattered in all directions and we took a long glide west into the first sector at max glide. From 5,000ft we glid for 55km without seeing so much as a ripple. As we got lower and lower, we headed for a hot spot on the far side of the Trencin valley. Just when I was convinced we had exhausted our options, I pulled into a solid climb from 300ft above the valley floor and Howard squeaked in underneath. Thankfully we climbed all the way to cloudbase and were able to salvage 140km of distance out of the day.

Unfortunately other pilots had gone to a completely different part of the sector and seven pilots were able to complete the task. But in the overalls it made little difference with Howard and myself 12th and 11th overall.

Day 11, the final day of the contest, was actually enormously rewarding for me. Halfway round a two-hour AAT in excellent conditions, I knew I had made a routing mistake in the first sector and had pushed too hard into the mountains. I was getting low in the hills, had already lost time, and it looked ugly. But I stayed calm, and took a gamble to make a long glide to a line of clouds on the valley edge, knowing I would be arriving very low. I was rewarded by a day-saving climb. Knowing that I was only 19 points off Austrian Michael Rass in 10th place, I had to nail my final glide to optimise my points. I picked the right place to turn in the final sector and ran 65km of energy at high speed to finish 1 second under time. I'd salvaged 13th place for the day, but more importantly had beaten Michael by 4km/h to take 10th place overall. In the final standings, Sebastian Kawa held off Mario Kiessling and Michael Buchtal to win Gold and Howard finished a respectable 13th.

Reflecting on the competition I'm left with mixed emotions. The tragedy of losing Alexander brought the dangers of mountain flying into sharp focus and certainly left me questioning my motivation to fly another mountain worlds in a hurry. As well as the inherent risks, it was also tough competing

against such strong local knowledge and the top pilot's sheer weight of mountain experience. Competing in the mountains is far from a level playing field. Thankfully both the next world championships are in the flatlands.

Although I was really disappointed with my result, it was strangely satisfying to have clawed back into the top 10 by remaining positive even when it seemed that everything that could go wrong had gone wrong. I also came away with a very clear idea about what I need to change if I'm serious about winning world championships. Firstly, when the skies are unreadable, you simply have to stick with the gaggle as it inevitably brings you better results. Secondly, I realise that I have to overcome my allergic reaction to playing the percentages. Winning at this level is generally about doing the same thing as everyone else, but doing it a bit better. You have to be very selective about when to do your own thing. But, above all else, I think my over-riding sentiment was that it was an incredible experience spending a month with a great team doing something that we all loved.

#### **The Club Class story**

Ian and G made a formidable partnership in the Club Class. They arrived at the worlds in great form and came 1st and 2nd on two days. Looking back, their biggest challenge was probably flying the highest handicap gliders in the class. Ian MacArthur (pictured below right) gives the Club Class team's take on the worlds: **Day 1:** We were really unfortunate to miss the bubble in the first thermal after starting from the increasingly unsoarable start zone, leaving us in quite a hole. After achieving only 50ish km/h for the first half-hour, we both flew amazingly to recover and finish near the top.

**Day 2:** Difficult AAT day: we got high in wave in the start zone, which with the unlimited start height seemed to be a massive advantage, however we got a little low and delayed in the overdeveloped first sector. A reasonable run followed and the last sector looked good but was chopped up by wave. We came in way under time but safe.

**Day 3:** We escaped the gaggles in the strong turbulent initial conditions, then made the best of the energy lines, utilising the gliders' performances to the max. 1st and 2nd for the day. (Ian 4th and G 5th Overall)

**Day 4:** We were both doing OK and running well on a very strong but bluish day, G unfortunately missed a couple of bubbles near the end and got delayed at the penultimate turn. (Ian 3rd Overall, G 7th)

**Day 5:** A day of very large ups and downs –



Above: G Dale on tow (Roman Leporis) and, below, Ian MacArthur ([www.glidingimages.com](http://www.glidingimages.com))

some stunning conditions over the mountains, but with weaker blue areas in between. We were separated most of the time, both being ahead or behind on many occasions, but ended up relatively close at the end of the day. (Ian 4th and G 5th Overall)

**Day 6:** Having made a great start on the first leg, we joined the Germans, who started eight minutes before us, by the first turn. We made what turned out to be a bad call by choosing a different routing to the majority after the southern turn. It didn't work out at all and cost us dearly. A very frustrating day and one to learn from.

**Day 7:** G made a great start, managing to start behind, then overtake, the main gaggle at the first showery turn after 20km. After that he remained in front by 10-20km flying consistently well and making good safe decisions. I had a very frustrating day, not being able to escape the gaggle's grasp for much of the flight, and getting stoved on handicap, coming in at 37th. (Ian 6th, G 8th Overall.)

**Day 8:** A fantastic day. I had a great start into the first sector and met up with G in the Tatra convergence and ran down into the southern sector at warp speed. I dropped slightly behind G, so turned earlier in the bottom sector. G made a brilliant run back to the north, where we met up and speedily slid home. He thoroughly deserved the win. Another 1, 2. (Ian 4th, G 5th Overall). Unfortunately, the serious bug which had hospitalised Pete caught up with me as soon as we landed, leading to a trip to hospital and a very late and uncomfortable night.

**Day 9:** With the cockpit crammed with spare trousers, baby wipes and sick bags, we launched into an 8,000ft cloudbase. It was a strong day, but with lots of careful decisions to make to get the best climbs without falling into a hole. We didn't get the best climbs, but we didn't fall into any holes. (G 4th, Ian 5th Overall)

**Day 10:** We started well in strong conditions, but the second turn was overcast and very weak. Here we met the gaggle, climbing at

1.5kts, containing the Germans who had started about 10 minutes before us. I had a loss of clarity and made a bad decision to push out on my own, and, although I got a reasonable climb, it was not as good as the group eventually found. Conditions improved after this and I made good time, but ended up not climbing high enough as the weather started to deteriorate to the south. The moister air just wasn't working low down and I was being forced into the hills towards the only likely sources of lift, where I eventually hit the ground without connecting. G had a clearer head, flying well and getting round with no real problems,

**Day 11:** Being out of medal contention myself, it was now all about G. We made a great early start, making good progress around the thunderstorm in the first sector and into the second. Coming back north, I turned early to give G information ahead. I met with almost the whole of the Club Class field, who had obviously not been doing as well, stacked up before a large gap. Unfortunately, the last sector had been wiped out by a storm, with lingering high cover, and distance turned out to be the only game. G hardly soared ridges, in little wind, as far as he could. I had held back in the soarable weather waiting for a regeneration which never came. Thirty-plus Club Class landed at Martin airfield. Luckily I was one of the earlier ones and got a tow home before sunset.

**Day 12:** Two-hour AAT with a dodgy forecast? Why do they do this? Luckily the conditions were fantastic. We started very, very well, but I just missed every bubble of every good climb and was just not flying too well, everything felt against me today. G fared much better and consolidated his 6th position overall, losing out on 5th by only two points.



## > **FEATURE** WORLDS: PRIEVIDZA

### CLUB CLASS HIGHS AND LOWS

> **Ian's high point** – Other than just being there with such a great team, on day 8 I had a scorching start into the mountains, where there was a strong convergence. Just after hitting the edge of the sector I met up with G. Wing to wing, we absolutely screamed out of the mountains and then around the rest of the task to come 1st and 2nd. A flight to remember.

> **Ian's low point** – Night 8. With myself and G just below medal positions, I was laid out on a hospital bed with an IV drip in my arm, being uncontrollably ill, fearing I may not be able to fly the next day.

> **Ian's lessons learned** – 1. To constantly re-evaluate what is actually occurring, and what you are doing, throughout a flight. Not to let irrational decisions creep in or be influenced by other competitors. 2. I figure that I lost my chance of a medal because of only three instances of poor or hasty decision-making. 3. Having an organised

and reliable crew is a great key to success.

> **G's high point** – Picking up a convergence line on the south Tatra and going like hell in and out of the area – all good high-speed ASW 24 stuff. And flying with a compatible team.

> **G's low point** – Hearing Ian landing

out behind me when I was pulling ahead and seeing his face when he got home. I know so well what that feels like.

> **G's lessons learned** – You won't win the worlds by using the same techniques that will allow you to win a regionals or a nationals. It's a very different game and requires some highly specific skills. Oh, and don't look inside the cockpit, look for traffic ALL THE TIME!!!!

# IRON OUT BUMPS

Karel Termaat explains what pilots need to know for a better understanding of the plateau in lift-curves



Above: XT on final glide

Below: Figure 1: Measured  $C_L$ - $\alpha$  curves (typical for any modern glider)

SOME years ago, I found that when landing our new sailplane it usually made a couple of bumps on to the ground before it decided to stay there; very interesting to friends observing your flying skills with the new toy of course. Another surprising thing happened to me with this sailplane when I made a long cross-country flight, came back a little late and low and decided to divert from my shortest route to the airfield to an area where small flocks of cumulus clouds were still forming. To my surprise I could not climb there, even though the air was moving around quite a bit and going up on average. I tried another identical spot with the same disappointing result. I flew out of this promising area and found a weak smooth thermal which brought me home. Quite a frustrating experience.

After a while, my son and I began to suspect that the lift-curve of the wing had an unusual part at the lower speeds, which could explain our findings that pitch control just prior to touching down had hardly any effect on sink rate and that the good climbing performance of our new sailplane degraded substantially when circling in turbulent thermals.

Because of our observations we contacted

our friend at Delft Technical University, Professor Loek Boermans. "A flatter part in the lift-curves has never bothered me," he told us. "You guys are the first to complain about it." However, he shared our feelings and soon came up with a slightly modified wing profile, reducing remarkably the effects we had noticed.

In the meantime, I developed software of my own to better understand the effects of the flatter part in the lift-curves and came up with practical ideas concerning flying speed, flap setting, bank angle and pitch control when flying in turbulent air or when landing at low speed. Slightly modifying the wing profile is, of course, no option to pilots having one of the current breed of high performance sailplanes.

## The lift-curves:

Rewriting the well-known lift formula:

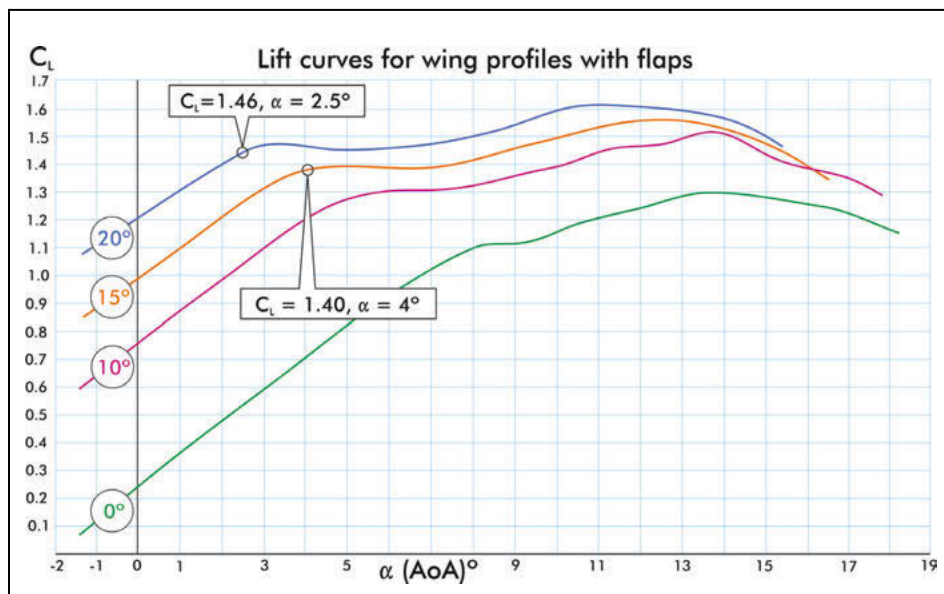
$$L = \frac{1}{2} \rho V^2 S C_L \quad \text{...formula 1}$$

where  $L$ =lift,  $\rho$ =air density,  $V$ =airspeed,  $S$ =wing area and  $C_L$ =lift coefficient, one obtains the lift coefficient,  $C_L$ :

$$C_L = (L / \frac{1}{2} \rho V^2 S) \quad \text{...formula 2}$$

as a function of speed. Exactly what we need, together with the  $C_L$ - $\alpha$  graph to study the performance of a sailplane in smooth and turbulent air ( $\alpha$  = wing angle of attack). Modern wings are quite thin to minimise profile drag and are operated at small values of  $\alpha$  within the so called 'laminar drag bucket' to maintain maximum length of laminar boundary layers on both the upper and under surfaces of the wing. Maximising  $C_L$  at these small values of  $\alpha$  is controlled by a balancing process, where with increasing  $\alpha$  the lift in the forward section of the wing grows as expected, while the lift on the aft part of the wing breaks down at about the same rate because of early laminar boundary layer transitions and flow separations at the flap hinge. The net effect of this is that the mean lift coefficient remains about constant over quite some interval of  $\alpha$ , especially for the larger flap settings, as shown in figure 1.

So, a linear relationship between  $C_L$  and  $\alpha$ , as common in earlier years of wing design, does not apply to modern wing profiles with flaps. Almost all have a more or less horizontal plateau in their lift-curves. Beyond the plateau,  $C_L$  increases again because of a retarding effect in the breakdown process of



the lift until the airflow fully detaches from the wing surface and the plane stalls.

### Landing

Now consider the case of a pilot on finals to the airfield close to touching down. No water in the sailplane (mass=450kg) and  $FL=20^\circ$ , ie in the landing position. Assume an approach speed  $V = 76\text{km/h}$ . Then from formula (2) it follows that  $C_L = 1.46$ . The  $FL=20^\circ$  curve of figure 1 indicates that for this value of  $C_L$ ,  $\alpha = 2.5^\circ$ , which is just in front of the plateau as indicated. In rounding off prior to touching the ground, the pilot lifts the nose of the sailplane to increase  $\alpha$  with the idea of slowing down the descent rate of the sailplane.  $\alpha$  increases alright, but  $C_L$  doesn't do that unless the nose of the sailplane is tilted so high that  $\alpha$  has increased from  $2.5^\circ$  to more than  $7.0^\circ$ . Only then  $C_L$  will increase to above 1.46 and the sailplane will stop its downward motion. Usually a pilot's action in rotating the sailplane over this large angle is too cautious. The sailplane will contact the ground prematurely and will usually bounce a couple of times. Bumpy landings are quite familiar to pilots flying modern competition sailplanes and can frequently be observed. The solution to this problem is to stay more in front of the plateau region by flying a little faster than the minimum approach speed and use airbrakes rather than pitch to control descent rate. Once on the ground, good wheelbrakes should be applied to bring the sailplane to a halt.

### Flying through turbulence

In turbulent air, serious changes in  $\alpha$  occur because of vertical movements of air hitting the wing surface. When gliding straight on at small values of  $\alpha$  close to  $0^\circ$ , which is usually the case, one can see from the  $CL-\alpha$  graphs of figure 1, that upgusts will increase  $C_L$  and downgusts will decrease  $C_L$  in the same manner. On the average  $C_L$  will stay constant with time and no altitude gain or loss appears in this situation where gusts have a random distribution in strength and direction. But especially at low wing loading one may expect a rough ride because of significant positive and negative accelerations due to the more or less strong variations in  $C_L$  with time.

However, now consider a sailplane flying nose up with  $\alpha = 4.0^\circ$  and  $FL=15^\circ$ , where  $C_L=1.40$  as indicated in figure 1. So, right at the beginning of the plateau. Upgusts have no effect on  $C_L$ , since an increase of some degrees in  $\alpha$  falls right into the plateau where  $C_L$  is constant. However, downgusts will reduce  $\alpha$

with the same degrees, thereby reducing  $C_L$ . So  $C_L$  swaps between 1.40 for positive gusts, and some lower value, say 1.20, for negative gusts. On average  $C_L = 1.30$ , ie 7 per cent less than the 1.40 required to carry the weight of the sailplane. Therefore the sailplane starts a dynamic downward motion as long as the turbulence is present. Not what one wants.

### A computer routine

To get a better insight into sailplane climb rate under turbulent conditions, I wrote a small, but effective, computer routine. The first part of the routine is an outer loop, which is rather straightforward and describes vertical speed as the difference between thermal climb rate and polar descent rate in smooth thermals for 300 values of circling speeds in a practical range.

I used a theoretical thermal model with a parabolic shape and accurate speed polars as measured by Idaflieg (the German academic flight test group). I used cubic spline functions to make the polar curves accessible to the computer routine as a function of flying speed.

The straight flight sink rate data of the polar were corrected for mass and bank angle. With these formulae for the thermal model and polar descent rate, stable climbing rate as a function of flying speed can be calculated as:

$$V_{s\_th+pol} = V_{s\_thermal} + V_{s\_polar} \dots \text{formula 3}$$

To calculate the additional effect of turbulence, some sensible dynamics equations had to be defined. In the computer routine, these equations are enclosed in an iterative inner loop having small time steps  $dt = 0.01\text{s}$ . Turbulence is described as sine waves with a time constant of two seconds and random amplitude. In this way the effect of turbulence,  $V_{s\_gusts}$ , is calculated during 30 seconds for each of the 300 flying speeds considered and plotted in graphs. Then total climbing rate is:

$$V_{s\_total} = V_{s\_th+pol} + V_{s\_gusts} \dots \text{formula 4}$$

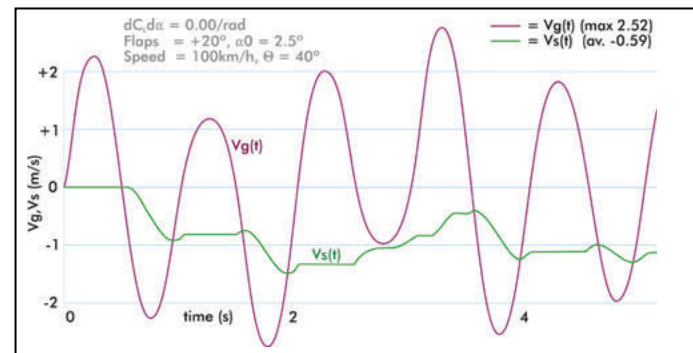
A key issue in the routine is the application of Newton's second law to find the vertical speed,  $V_s(t)$ , of the sailplane from the force acting on the wing due to the airgusts.

### Results of calculations with the routine

Figure 2 shows the development of vertical speed  $V_s(t)$  of the sailplane for the first couple of turbulence gusts,  $V_g(t)$ , encountered. One can say the results are quite dramatic when looking at the  $V_s(t)$  curve which averages out at  $-0.59\text{m/s}$ . The sine wave shapes of

## BUMPY LANDINGS ARE QUITE FAMILIAR TO PILOTS FLYING MODERN COMPETITION SAILPLANES AND CAN FREQUENTLY BE OBSERVED. THE SOLUTION TO THIS PROBLEM IS TO STAY MORE IN FRONT OF THE PLATEAU REGION

Figure 2: Development of sink rate  $V_s(t)$  due to sine wave-shaped turbulences



### ACKNOWLEDGEMENTS

I would like to thank my friends for the inspiring discussions about the plateau in the  $CL-\alpha$  curve of modern sailplanes – especially my son Ronald and Prof Loek Boermans, both of whom gave, in their own specific way, based on practical experience and theoretical knowledge, substantial support in the realisation of this work. Additionally the books and articles of John Anderson, Helmut Reichmann, Fred Thomas, Loek Boermans and others and the many other articles found on the internet, which were also quite inspiring

the turbulence can be recognised, as well as their randomised amplitudes. More erratic forms are likely of course, but these are not expected to make a significant difference to the results of this analysis.

More practical results with the computer routine are given in figure 3, which shows one of the many graphs studied. The  $\alpha$  line shows the plateau as expected. Considering a smooth thermal, a best climbing rate  $V_{s\_total} = V_{s\_}(th+pol) = 1.80\text{m/s}$ , is obtained. Circling with a speed just above something like 100km/h is OK and comfortable, but of course this is dependent on the shape of the thermal.

Considering also the turbulence in figure 2, total climbing rate is now  $V_{s\_total} = V_{s\_}(th-pol) + V_{s\_gusts}$  as indicated. For speeds above, say, 120km/h, the defined turbulence has no effect because  $\alpha$  is small (even negative) and quite less than  $4.0^\circ$  where the plateau in the  $C_L$ - $\alpha$  curve for  $FL=15^\circ$  begins. Then positive and negative gusts cancel out as is shown by the  $V_{s\_gusts}$  curve. However, for speeds less than 120km/h, positive gusts raise  $\alpha$  into the flat part of the  $C_L$ - $\alpha$  curve of figure 1 and give a reduced contribution and at 99km/h no contribution at all to the lift of the wing. Negative gusts however still fully reduce  $C_L$  as usual.

Therefore with turbulences present, the nice total climbing rate of 1.80m/s at 100km/h for the smooth thermal is dramatically reduced to 1.20m/s only, a loss of 33 per cent. The only way out of this is to circle some 10km/h faster. In this case a climbing rate of about 1.40m/s is attained at a speed of 110km/h. This climbing rate can be further improved using a bit more banking angle.

To get a beneficial effect out of random air gusts, a pilot may try to fly with an  $\alpha$  just behind the plateau in the  $C_L$ - $\alpha$  curve where positive gusts push the sailplane up and negative gusts have no effect. Figure 3 promises a nice climbing rate when circling with a speed of say 96km/h. Some pilots seem succesful in doing so, however the sailplane may be rather difficult to control and high drag may diminish this special effect substantially.

Other calculations with the routine show that having a dip in the lift curve is still worse than a flat plateau, but some earlier high-performance sailplanes have that. A small positive gradient in the plateau area improves climbing rate with turbulence present quite considerably, so this looks like the way to go in the design process of new wing profiles. Just now, some new sailplanes having this idea are coming on the market.

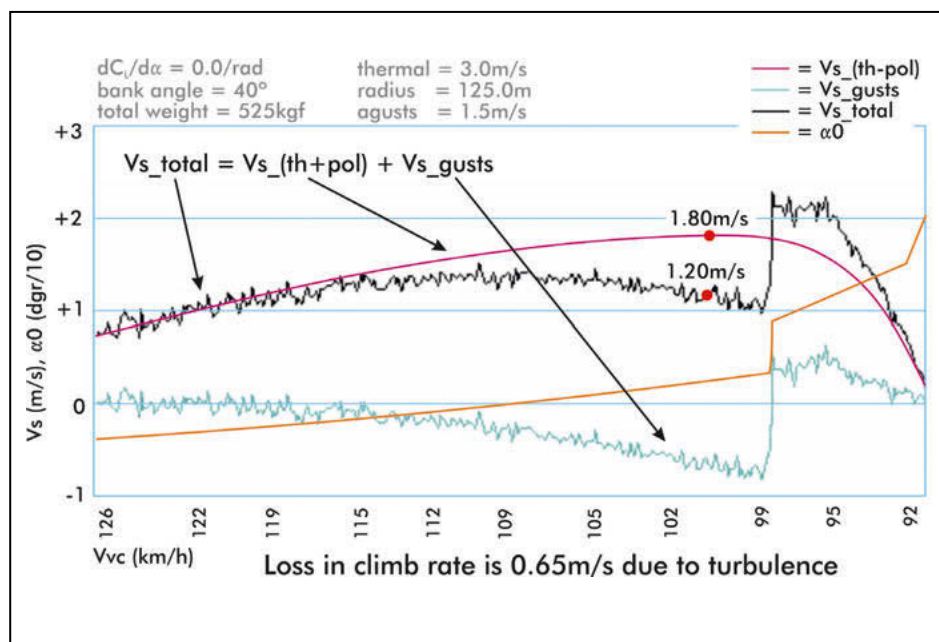


Figure 3: Reduced climbing rate in a turbulent thermal

#### In conclusion

Recent optimisations of wing profiles with flaps have resulted in  $C_L$ - $\alpha$  curves with a more or less "flat part" in the lower speed range. Because of this, landing behaviour and climbing performance in turbulent thermals are somewhat disappointing.

This article shows that pilots can partly take care of these drawbacks by flying with  $\alpha$  (angle of attack) well in front of the 'plateau' in the  $C_L$ - $\alpha$  curve.

The main actions to achieve that are:

- When trying to make perfect landings, approach speeds should be a little higher than usual and speed brakes gently applied rather than pitch to finely control the descent rate in rounding off just before touching the ground.
- When optimising total climbing rate in turbulent thermals, flying speed and bank angle should be higher than a pilot would usually prefer.
- Thermals should be entered with redundant speed to avoid the sudden upflow encountered pushing  $\alpha$  into the plateau area.

This study shows that slightly modifying the  $C_L$ - $\alpha$  curve with a positive gradient in the plateau area will improve sailplane performance substantially. A better control of the descent rate during landing will then be possible and an increase in average climbing rate of some 20 per cent may be expected when circling in turbulent thermals. I understand that only minor modifications of the wing profile are necessary to obtain these improvements without a penalty in the high speed range of the sailplane (as suggested by Prof Loek Boermans).



Karel Termaat studied electronics/physics at TU Delft/Eindhoven. He worked for many years at KEMA research centre as a reactor physicist. A devoted sailplane pilot since 1974, Karel retired in 1997 and became interested in low-speed aerodynamics to better understand how to fly a modern sailplane with flaps in an optimum way. For the past few years Prof Loek Boermans has been a friend and source of inspiration, forming a useful link between the theoretical work at TU Delft and the world of sailplane flying

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# AGE NO BARRIER

John Turner proposes clubs should target the 'Silver Pound'

**I**T IS often lamented in the gliding fraternity that new recruits are difficult to attract and/or retain. I would like to be a bit provocative and say that rather than go for new recruits we should go for old recruits! By this I mean that we should aim to attract the 50+ age group and this should include retired persons of whatever age.

We should not forget the 'Silver Pound' – nowadays not all pensioners are short of cash and the general standard of health and activity has increased in what was formerly thought of as old age. I am sure that there are

significant numbers of such people who are simply unaware of what our sport has to offer and of what they could be capable of.

There are, of course, some limitations and problems that have to be taken in to account, but the purpose of this article is to consider these and show that there are nevertheless great opportunities to take up our exciting sport at an older age. Let's not ignore these opportunities to swell our numbers and increase our profile with the older sector of the market!

As we grow older, the physical side of sport inevitably becomes more demanding. Gliding is no exception. If you don't have a bad back before you start lifting wing roots, you certainly will after – and, as you get older, it gets tougher. However, the great thing about gliding is that many, if not all, of the mental aspects can be just as enjoyable as you get older, because it is entirely possible to maintain a good standard of flying performance for many years. Successfully completing demanding tasks at a similar level to younger pilots can be very satisfying!

A number of things have to be consciously worked at if such a standard is to be reached and maintained when you are older and it is worthwhile identifying these factors and disciplining yourself to deal with them in an honest and positive way. I must point out that I am not medically qualified and most of what I suggest has been arrived at from my own personal experience – read with caution!

A lot of attention has rightly been focused on maintaining adequate levels of hydration, particularly in hot and dry conditions. An older person's physiology may well not be as effective at managing this, or in recovery from dehydration, so you have to play it more safely and drink regularly and in quantity enough to stay well ahead of trouble. Of course, older people do tend to have problems getting rid of excess liquid and it could be tempting to restrict your fluid intake to avoid

uncomfortable difficulties later – nothing could be more guaranteed to get you into trouble! Far better to spend time trying out the various methods of getting rid of the excess liquid until you've found one that works for you and allows you to drink, and keep on drinking, adequately.

Also on the physical side, eyesight often deteriorates with age. Usually, it is just a simple matter of going to the optician and getting the correct prescription glasses, but it is worthwhile getting checked out, for example, for adequate peripheral vision. Not only is this important for flying, but deterioration may give early warning of less common problems, which can become serious if untreated.

Finally, on the physical side, there may be medical issues which become more common as you age, but which are managed adequately with drug regimes etc. It is important not to forget that 5-10,000ft agl with extremes of relative humidity, air pressure, heat and/or cold and intense insolation are not normal ground conditions and we should be aware of any possible ill effects which might be exacerbated by our medication.

Now, what about the elephant in the room? By that I mean mental deterioration as you age! I don't mean a level of disability which should obviously lead you to retire gracefully but promptly from flying, but a more subtle and potentially more dangerous gradual deterioration, which creeps up on you largely unnoticed. When you are younger, you take for granted good memory, quick reflexes with short reaction times, prompt and effective decision-making and so on, but, as you age, any or all of these can gradually deteriorate. It is actually quite difficult to recognise (and probably more difficult to admit) and can come as a nasty shock one day when you realise that you've forgotten one of your checks during rigging, or THOUGHT you had lowered the landing gear...

So, what can we do to minimise the likelihood of such a thing happening? Maintaining fitness is important, but a real help is the mental checklist (and even a written one if it helps!). Along with the checklist must come the humility to accept



John Turner achieved his fastest ever flight over 300km, flying from New Tempe airfield in Bloemfontein in South Africa (Steve Lynn)

**NOWADAYS NOT ALL PENSIONERS ARE SHORT OF CASH AND THE GENERAL STANDARD OF HEALTH AND ACTIVITY HAS INCREASED IN WHAT WAS FORMERLY THOUGHT OF AS OLD AGE**

that you might need one and, most important of all, the real discipline to use it and follow it. Checklists can cover almost anything and be in any format – indeed the more outrageous the better, particularly if you have invented it yourself, as you are more likely to remember it! Checklists also have the benefit of providing a reassuring comfort factor, which helps to avoid undue stress and worry about possible risks. Of course, you still have to be sharp and receptive to signs of possible problems, but this is easier if most of the basics have been taken care of with the help of a checklist.

In case this seems to have made depressing reading, I should point out that I think it is actually the reverse – by thinking about possible problems and taking measures to mitigate them, we can enjoy our flying safely and responsibly as we get older.

To illustrate this, I would like to share with you some flying that I did in December 2008 from New Tempe airfield in Bloemfontein, South Africa, aged 71. I flew a Ventus B (16.6m) hired from Dick Bradley of Soaring Safaris (to whom many thanks for making it all possible) and had 12 flights over two weeks.

First I had some good soaring (by UK standards) clocking up 1,100km over the first week. Then there was an amazing run of weather over five days allowing five flights totalling 2,500km, including three of 500+km at speeds approaching 100km/h (believe me, for me that is very fast!). After this everyone, even the younger ones, were not unhappy to have a rest day!

A short unsettled spell, then a great couple of days to finish. The very last day's weather was outstanding and set the scene for a flight to remember – the flight when everything went right.

A 500km task was set from a remote start/finish 20km north-west of New Tempe airfield, then down to the south-west and back, avoiding a distant line of storms on the north-east horizon. Over the task area it was wall-to-wall beautiful chunky cumulus with black bases around 11,000ft, which would rise to 16,000ft by mid-afternoon (11,500ft agl).

Climbs for the first hour or so were 3-5kts, quite modest by South African standards, but after that I rarely stopped for anything less than 5kts. The average vario for the entire flight was 5.7kts over 25 thermals, including one 2,000ft climb at 12.5kts! Inter-thermal speed averaged 158km/h and it was totally exhilarating to hammer across country in superb visibility, only interrupted by the next

rocketing climb! Of course, it was too good to last as the storm line to the north-east had really got its act together and was generating a vast blow-off, which shaded everything ahead with 150km still to run.

I took my last climb as high as airspace allowed (14,500ft) and set off for what would turn out to be a 142km final glide. Since I only had 10,000ft in the bank it was going to be interesting to say the least. The storm line ahead was spectacularly beautiful with the cirrus blow-off tops blinding white in the late afternoon sun shading down to a deep purple at ground level, with orange dust curtains being pushed out by the gust fronts.

I flew towards the mass in calm air, trying to fly as accurately as possible and wondering if the finish would be too close to the storm to reach. In the end I chickened out, dumped the water about 10km short of the finish and just short of the storm, and turned directly towards New Tempe 20km away. Now I had a modest tailwind and was flying on MacCready zero, but I was only 1,400ft agl, wondering if I would get to New Tempe and nervous about what the storm might do!

By now, civilisation was approaching with lots of cultivated fields offering safe field landing and fortunately I was not finding any significant sink or turbulence. Indeed, it was glass smooth, quiet and quite eerie. At 10km out I was 1,000ft agl, picking fields and passing them successively as I eyed the altimeter. The tension was palpable.

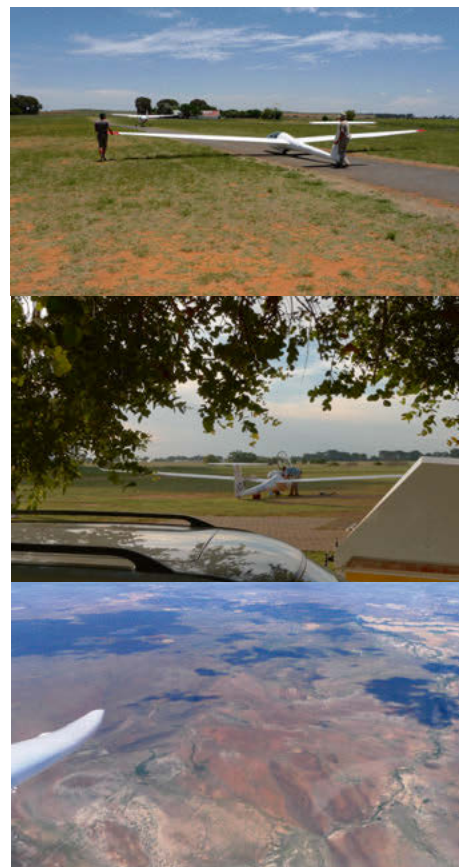
Finally New Tempe field appeared, I plonked the gear down, passed the threshold at 300ft and landed straight ahead downwind after the longest 58 minutes final glide I can remember. The relief was fantastic, but I was totally exhilarated!

Despite being unable to reach the finish, because of the remote start and finish, I had still flown well over 500km at 112kph.

This was my fastest ever flight over 300km and it was just about the best, most exciting and most satisfying flight I had ever flown. As a fitting finale, the storm line gave a glorious purple and orange sunset.

I felt truly grateful that, at 71, I could still be part of such a great sport and all I can say is that I hope to continue for as long as possible – I hope you do too! Three cheers for the older pilot and let's hope we see more of them.

Now, where did I leave that glider?!



Spectacular flying from New Tempe airfield, Bloemfontein, South Africa (Steve Lynn)

#### ACKNOWLEDGEMENTS

Dick Bradley – for trusting me with his gliders

Brian Spreckley – for helpful discussions on checklists



John Turner, 73, mostly flies a club Discus from Booker and has nearly 2,000 hours and all three Diamonds. In 2009, he enjoyed another fortnight's flying in South Africa, notching up 48 hours, 3,800km and three 500km+ flights

# SOLO WINS DAY



Sixteen-year-old Josh Brownlow's first solo flight gained him a Bronze leg and a leg for his Cross-Country Endorsement. He was watched by his proud father – who launched him as his tug pilot – and grandfathers (pictured below right), all former RAF pilots and still flying

Coming from a strong aviation background, it was only fitting that 16-year-old Josh's first solo – a flight of just over an hour – put him in the lead during Norfolk GC's soaring week

**W**HEN Josh Brownlow went solo on his 16th birthday, he completed a one-hour plus flight, which also gained him a Bronze leg and a leg for his Cross-Country Endorsement. Doing this during Norfolk GC's soaring week gained him 1,500pts and put him in the lead for the week!

Josh's father, Steve, and both grandfathers were there to see him go solo. In fact, Steve launched him as his tug pilot. They are all former RAF pilots – and still fly to this day. Josh also had an uncle who was an RAF Tornado pilot and another uncle who held a private pilot's licence. Josh's mum was an air traffic controller in the RAF too!

Here, Josh tells us about the experience: ■ WHEN I joined Norfolk Gliding Club a week before my 15th birthday, going solo seemed a long way off. But thanks to the help and support provided by the club, the year has quite literally 'flown' by!

I was fortunate to be accepted on to the club's cadet scheme, offering free flying in return for helping out with airfield duties. In the past year this scheme has provided me with an amazing 70 flights.

Before I knew it, my 16th birthday was a week away and finally that long-

awaited opportunity to go solo was in sight. I booked in for five days of flying at the club; a promising week ahead... or so I thought. Predictably for a British summer – persistent downpours and high winds! Although challenging, this provided me with valuable experience.

Saturday dawned; the big day was here. Attending the met brief, it looked like the day was going to be OK.... phew! The instructor and I strapped into the K-13 for a check ride. Conditions were even better in the air. In fact, on more than one occasion during the flight, we spun the glider and ended up gaining over 200ft on recovery.... unbelievable!

Landing back, I hopped out to go get my log book, only to be called back to the glider, where I was surprised to see the rear seat being strapped up... this was it. Despite some initial apprehension, the moment I left the ground I loved every second.

Fine conditions helped me secure a 1 hour 5 minutes flight, my first Bronze leg. During my flight, the runway had changed and the wind had picked up, but before I knew it my feet were on the ground. Although I felt a sense of relief, I couldn't wait to have another go. I'd done it!

**I WAS FORTUNATE TO BE ACCEPTED ON TO THE CLUB'S CADET SCHEME, OFFERING FREE FLYING IN RETURN FOR HELPING OUT WITH AIRFIELD DUTIES**



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# THEY'LL NEVER PICK ME

No? You'd be surprised how many scholarship opportunities exist...



An Air League Educational Trust scholarship is enabling Tim Marlow to focus on cross-country training such as soaring and navigational skills

**THE PURPOSE  
OF THESE  
SCHOLARSHIPS  
IS GREATER  
THAN PURELY  
PRACTICAL  
SKILLS, WITH AN  
AIM TO REACH  
INTO AREAS OF  
SOCIAL AND  
PERSONAL  
DEVELOPMENT**

**I** AM REGULARLY asked two things about my flying/gliding career, *writes Andy Perkins*. How did you get into flying?

How did you pay for it? The answer to the former is quite a long story and either captivates or is the perfect cure for insomnia. Those that know me well would concur that "he goes on a bit", so I will leave that one for another day; millennia for the long sufferers.

Importantly, the whole aviation backdrop has changed markedly over the decade or more that I have spent working my way through the system, so discussing my route into a flying career would give an insight but would not be relevant as requirements and licensing have changed. What I will say is that I have thoroughly enjoyed every part of the journey to date, even when there were no jobs and I had tens of thousands of pounds of debt to repay.

To glide off dusty strips and fly down glaciers in New Zealand, gamble in the casino during your qualifying cross-country, watch your mates planking it a field short, playing tennis within 15 minutes of land-out, hour-long final glides into the setting sun... all unbeatably awesome. As Derren Francis would say... WOOOOooooooooo hoo hoo ooooo!

It is recognised that, for the UK to remain a global player in aviation, we need to be innovative and importantly invest in fresh blood so that we will have the technical and knowledge base to shape the aviation industry of the future.

Fortunately, industry and philanthropic individuals agree with this edict and have developed ways to grab hold of the imagination that allows young people the

opportunity to flourish in aviation.

Even more fortunately, this doesn't take the shape of something dull like a text book or test of some kind, but is in the form of paid-for flying! Although there is no statistic to back the following statement, we all know it is true: "Glider pilots make the best pilots!" Well, right up until they get it wrong...

Immediately, people therefore think that if the funding is for flying, surely everyone wants to or will become a pilot. Although the majority of scholarships are directed at gliding/flying skills, appreciation of the frontline of aviation is crucial to engineers, finance officers, air traffic, and PR. The purpose of these scholarships is greater than purely practical skills, with an aim to reach into areas of social and personal development.

■ **The Air League Educational Trust (ALET) was established in 1953 to encourage air-mindedness in the young people of the British Empire. To this day, the missive stands and each year £100,000 worth of scholarships and bursaries are given away by ALET to enable young people to further their flying, engineering and gliding abilities. If you want to know more about The Air League and sponsoring a scholarship, visit [www.airleague.co.uk](http://www.airleague.co.uk)**

#### *Tim Marlow - ALET Gliding Scholarship*

THIS year I was a proud recipient of an ALET Gliding Scholarship. As I am post-solo, my scholarship was focused towards cross-country training, such as soaring and





Natasha Shoesbridge, pictured left, was "over the moon" to learn she had been awarded a Royal Aeronautical Society scholarship

navigation. I took my training over two Saturdays at Windrushers GC, near Bicester, Oxfordshire.

On the first day, we took a flight in the club's motorglider to look at the local airspace and to get familiar with the surroundings. This was followed by a 30-minute soaring flight with my instructor and then a 15-minute solo flight (my first solo aerotow). The weather on that day was good, but with a strong wind dampening the thermals.

The following weekend, with good weather predicted for the afternoon, we took the motorglider in the morning for a navigation exercise over Moreton-in-Marsh and Banbury, finishing with practice field landings. In the afternoon we took a winch launch, followed by an aerotow and used the good weather to soar for an hour and 40 minutes, which was very good practice at thermalling and in-flight planning!

Over the two days, I was able to progress my flying without having to miss out on the good weather offered because of the cost of flying. Training on consecutive weekends also helped to build my experience quickly.

I was lucky to have my sponsor instructing me on the second weekend, which I think made the experience more gratifying for us both, although I'm sure it is quite rare!

I would encourage any potential sponsors to assist young people through the ALET scholarships as I learnt so much from mine. I hope to build on my experience by continuing to work towards my Bronze badge and Cross-Country Endorsement.

■ **The Caroline Trust was established to encourage young people, especially women and those with disabilities, to participate in the sport of gliding. Their funding is purely from private donations. To assist them with their invaluable work visit [www.carolinetrust.org.uk](http://www.carolinetrust.org.uk)**

**Chris Bowden – Caroline Trust Scholarship**

“I AM 15 years old, just, I blew out my birthday candles only last week. My gliding adventure began about a year and a half ago. A well-built, round-faced, middle-aged Scotsman named Don strolled up and introduced himself as my instructor for the day. He offered me a parachute and, having helped me into it, described its operation in the event of our need to bale out of the aircraft, which was of great reassurance! Much of what Don said on that first flight was wasted, the sensory overload which met my eyes meant that, while I heard him speak, it was as much as I could do to nod dumbly at the appropriate time.

We reached the end of the ridge, Don turned and levelled the glider again and then asked if I would like to take the controls. Nervously I uttered the words “I have control”. I couldn't quite believe what was happening. Gingerly at first I moved the stick as Don directed and, as the aircraft responded to my inputs, it dawned on me that I really was “in control” and that this wonderful machine was now doing my bidding. It was a moment which, I suspect, I will remember forever. One thing was certain, I was hooked, I just had to get some more of this action. I remember my Dad telling me that

■ **Royal Aeronautical Society (RAeS) – The Centennial Fund was established in 2003 in celebration of 100 years of flight. Since the awards began, more than 140 have been made, with a value of more than £320,000. Activities range from gliding scholarships, tuition fees, launchpad and courses at the space university. If you would like to know more, or to donate to the fund, see [www.aerosociety.com](http://www.aerosociety.com)**

**Natasha Shoesbridge – RAeS Flying Scholarship**

“It has to be said that gliding is the most magnificent sport – being able to admire and see the true beauty of the English countryside from the air is amazing. I was over the moon when I found out I had been awarded one of the RAeS scholarships. It gave me a great opportunity to fly more! With the financial side of things not restricting my flying hours, I could really enjoy more time in the air and achieve what I wanted the most.

The RAeS Centennial Fund scholarship has enabled me to focus on achieving my Bronze C this summer. So far I have been able to finish my solo hours and complete field landings and the navigation task. I am now expecting to complete my Bronze C with Cross-Country Endorsement successfully, within the next couple of weeks.

I look forward to utilising the last few weeks of summer soaring to complete my Silver distance flight and I can't wait for the adventures I will now be able to take on.



Cultivating a passion for flying – 15-year-old Chris Bowden, Caroline Trust recipient, is pictured here with John Klunder at Pocklington for aerotow practice

✂ when I returned to the launch point, he could not remember me looking more thrilled or excited.

Not long after joining the club, a trustee of the Caroline Trust invited me to apply for a bursary. The bursary has made a world of difference to the frequency with which I am able to fly. Like most teenagers, I struggle to reconcile the dichotomy of “small means” to “large wants”. Pocket money, birthday and Christmas gifts help, but will never fully cover a serious flying habit. The Bank of Mum and Dad forms the backbone of my funding, but boy, it doesn’t half come with strings attached! Without the support of the Trust it is unlikely that Thursday evenings would have been possible.

My club (Derby & Lincs) is very keen to attract new members, especially young ones. Its current membership is, to say the least, mature. The vast majority seem to be in late middle age or in early retirement. Without being unkind, there are times when the launch point seems to resemble a scene from the film *Cocoon*. It seems strange to me that such a fun dynamic and extreme sport is the seemingly exclusive domain of folk who might reasonably be expected to now be taking it easy. My contemporaries have no idea what they are missing. “Yoofs” like myself are able to fly for literally half the cost of the adult flying fees. I love gliding and support from the Caroline Trust has made me more passionate than ever to glide ever more.

■ **ROYAL AERO TRUST** – In 2002, the Royal Aero Club Trust launched a Bursary Scheme for young people aged 16-21 as part of its Flying for Youth Programme (FFY). The scheme provides financial assistance for those wishing to upgrade existing qualifications in a wide range of air sports and aviation-related activities. To be eligible, young people have to

**provide proof that they are a member of one of the Royal Aero Club’s air sports associations. For more info [www.royalaeroclubtrust.org](http://www.royalaeroclubtrust.org)**

#### **Luke Dale – Royal Aero Trust Bursary**

LUKE received a bursary to complete his Diamond badge. At 20, he is going places. Already an accomplished *ab-initio* and mountain instructor, Luke has an ambition to be a world class competition glider pilot. His scholarship has already been put to good use and Luke has been training alongside British Team member G Dale (his uncle) to further his abilities and refine his technique to excel in gliding. At the time of writing, the elusive Diamond distance should be under way!

Luke said: “I am honoured to receive the President’s Bursary, which will give me a better chance in next year’s National Gliding Championships.”

Luke has a huge amount of energy and drive. Let’s hope he can use this funding to rock the peace at the top of the rankings!

Everyone has different ambitions and desires so, if you are interested in getting into an aviation career, check out the organisations listed. They all have slightly different involvements in aviation and, as a result, cover almost every angle of interest to people.

So, to answer the earlier question – how did I pay for it? Well, I scrimped, saved and worked in almost any way that would pay cash to get the money together. I also had some superb help on the way from a share in the “mighty” Open Cirrus instead of a car (who needs to drive when you can glide! Borrow your parents’ car...) The Air League Leading Edge through ALET gave me a boost that allowed me to get my PPL. This set the foundations and the rest, as they say, is history. I have been lucky, but I believe strongly that you make your own luck. Get out there and make your dream a reality.

**THE BURSARY HAS MADE A WORLD OF DIFFERENCE TO THE FREQUENCY WITH WHICH I AM ABLE TO FLY. LIKE MOST TEENAGERS, I STRUGGLE TO RECONCILE THE DICHOTOMY OF “SMALL MEANS” TO “LARGE WANTS”**



With ambitions to become a world class competition glider pilot, 20-year-old Luke Dale is already putting his Royal Aero Trust bursary to good use, training alongside his uncle, British Team member G Dale

■ [www.aerosociety.com](http://www.aerosociety.com)  
 ■ [www.airleague.co.uk](http://www.airleague.co.uk)  
 ■ [www.carolinetrust.org.uk](http://www.carolinetrust.org.uk)  
 ■ [www.royalaeroclubtrust.org](http://www.royalaeroclubtrust.org)



# DAISY DID RIAT

**Y**OU could spot them coming – several hundred over two days, *writes David Weekes*. Men somewhere over 40 who'd been casually ambling past millions (if not billions) of pounds worth of military hardware at the RIAT 2010 airshow. Then they'd spot what was undoubtedly the lowest value aircraft exhibited in the show and make a beeline for it, trailed by bemused wives and grandchildren.

They'd arrive with a smile on their face and start talking – "I haven't seen one of them for 30 years"... "Takes me back"... "The first flight I ever had was in one of them"... "I went solo in one"... "After 19 four-minute launches"... "At Swanton Morley"... "At Gaydon"... "White Waltham"... "The Air Scouts at Lasham"... "623 VGS"... "614 VGS"... "Happy days"... "Too young to be scared"... "Wonderful!"

The cause of all this enthusiasm? Oxford

Gliding Club's T-21 – or Sedbergh TX1 as most of our visitors would have known it – known to us as Daisy and resplendent in her Air Cadet markings. Then the visitors would start explaining the workings of a Cosim vario to disbelieving grandchildren and they were transformed into the enthusiastic 16-year-olds that they'd been over 25 years ago.

All the T-21 rigging and derigging was hard work for the OGC crew (Rob Jackson, Doug Wood, Xin Zhu, Richie Hale, Dave Weekes, Dave Bray, Liisi Laks and Paul Wilford), but the people we met made up for it and our "Aircrew" passes got us into priceless places. Half an hour inside the Avro Lancaster raised respect for Second World War aircrew to even greater heights, and the cockpit of a Sukhoi fighter bomber is definitely different from Daisy's!

Oxford GC exhibited its Air Cadets liveried T-21 at RIAT 2010 at Fairford on 17-18 July, drawing the attention of several hundred former air cadets and other visitors, including (top left) Clone Troopers. Two Polish guys were bemused by the T-21 and had a sit inside (one was a glider pilot). Then they said "Now you sit in our plane" – the Sukhoi Su 22 fighter bomber (see below)! Another visitor looked at the T-21 and said "I used to repair them at St Athan". On being shown the St Athan stencils on the other side of the fuselage, he was nearly in tears. He'd made a good job of it in 1980 because the club has had to do very little to the T-21 since buying it from the ATC in 1986.

(Photos: Richie Hale/David Weekes)





■ Not content with 'just' going solo in a glider on the morning of his 16th birthday on 22 August, Ben Dews was driven north to Keevil airfield that afternoon, where he flew his first solo in a powered motorglider. Ben has been learning to fly with the Bath, Wilts and North Dorset Gliding Club for the last two years.

He is the eldest son of Tim Dews, owner of Airborne Composites, so Ben has been around aeroplanes from a very young age – as has his brother Tom, who is also waiting in the "wings" to repeat Ben's achievement on his own 16th birthday next year.



*This page, clockwise from top:*  
Partially-sighted RNIB people enjoyed a gliding day at Darlton (John Maddison)

Oxford members as you have never seen them before! The club's summer party had a 1967/hippy theme (Raphael Sofair)

The Dutch Soaring Group paid its annual visit to the Mynd earlier this year to sample bungee launching. Despite poor weather, they had a great time, as usual (Roger Reeves)

Booker cadet Will Hillton enjoys aerobatting the club's cabriolet conversion of a K-13

*Facing page, clockwise from top left:*  
The French women's team recently visited Stockholm's Segelflygklubben, Långtora, in preparation for the 2011 Women's World Championships. They flew over the entire competition area, in a variety of aircraft borrowed from Swedish pilots. The week ended with a traditional Swedish midsummer party, involving singing, dancing and the Swedish delicacy, pickled herring (Åke Petterson)

Two-year-old Cameron Waterfall clearly has a keen interest in gliding already, as he studies dad Simon's archive copies of *S&G* (Simon Waterfall)

They also like to start them young at Burn. Tony Machin's son Byron helps out with the club's K-13 as a visitor gets ready to fly (Kevin Moseley)

Dumfries and District GC recently featured in the *Dumfries and Galloway Life* magazine. Reporter Gilly Fraser (ex-Border TV news reporter) went in the club's K-13 with instructor John McIver to get an experience of gliding and thoroughly enjoyed it (Pete White)

Our thanks to all the photographers and to our *Club News* contributors for sending these in. If you'd like to submit your previously-unpublished photographs for possible inclusion somewhere in *S&G*, send them to [editor@sailplaneandgliding.co.uk](mailto:editor@sailplaneandgliding.co.uk)



# CLUB NEWS

**ANGLIA (WATTISHAM)**  
**WWW.ANGLIAGLIDINGCLUB.ORG.UK**  
**520739N 0005722E**

THE past few months have seen some changes in the club, with Alison Eke taking over from Gus Dennis as chairman, and Andy Hill taking on the role of CFI from Edd Weaver. The club thanks both Gus and Edd for all their hard work over the years and wish Alison and Andy all the best. Matt Quanton has done a great job of advertising and organising our summer 'Friday Night' flying for corporate groups, which has provided the club with much-needed cash. Thanks also to all the volunteers who helped. Finally, congratulations to Simon Ginns, our first fixed-price-to-solo member, who took his first flight as P1.

**Andy Smith**

**BANBURY (BANBURY)**  
**WWW.BANBURYGLIDING.COM**  
**520435N 00118784W**

FLYING has continued apace at Hinton with many cross-country flights undertaken, although some have not always made it back! We hosted a flying day for a local school as part of their activity week, preceding the summer holidays. Ashley Valentine, one of our junior members, achieved his long-awaited solo flight on his 16th birthday. Ashley has been flying since he was 12 and has been waiting patiently (ish) to be old enough to be able to fly solo. Well done Ashley! The club has also now achieved accreditation as a Junior Gliding Centre, which will enable us to diversify in the future.

**Martin Gould**

**BATH, WILTS AND NORTH DORSET (THE PARK)**  
**WWW.BWND.CO.UK**  
**510742N 0021445W**

OUR newer cadets and juniors are frequently seen helping and jolly along the instructors. Ben Collins, a cadet, is also a regular helper on the group evening parties organised by Richard Hankey. Despite the difficulties Richard has had putting together a team of helpers, the group parties have been successful. His faithful duo of Andy Huggins and Roy Simms keep the launch point flowing. The club expedition, organised by Mark Player, to Jaca, had mixed weather but some impressive flying. We've had a successful year with the inter-club league, winning the south west league, due to the enthusiasm of our team led by Steve Lambourne and his wife Leslie.

**Jan Smith**

**BLACK MOUNTAINS (TALGARTH)**  
**WWW.BLACKMOUNTAINSGLIDING.CO.UK**  
**515848N 0031215W**

THANKS to our new briefing room facility, we are now able to run an RT course for glider pilots that is CAA approved. Several members are being put through their paces under the eyes of a CAA-approved examiner. Our tug is back on line after an engine problem – despite this we managed to keep flying thanks to the loan of another tug. The annual Task Week took place at the end of August, this time with help from Geoff King. There are still spaces available for the autumn wave season.

**Robbie Robertson**

**BOOKER (WYCOMBE AIR PARK)**  
**WWW.BOOKERGLIDING.CO.UK**  
**513642N 0004830W**

OUR congratulations on recent achievements: Tim Scott's third place in the 15m Nationals and Dennis Campbell's 750km, Mike Gatfield and Phil Kellman's BI ratings and David Hamilton, Will Hilton and John Hubberstey's badge progress, to first solos by Catherine Henderson, Peter Peers Johnson, Oli Poulton and Russell Woakes. Competition between Cadets Will Hilton and Mike Gatfield has become interesting. We had our usual trip to the Upward Bound Trust at Haddenham, and also several members flew very successfully 93 x 500km on same day from Chiltern Airsport's base at Chiltern Park. Our thanks to both organisations for their support.

**Roger Neal**

**BORDERS (MILFIELD)**  
**WWW.BORDERSGLIDING.CO.UK**  
**553514N 0020510W**

GEOFF Forster added BI'ing to his interests, after Lak12 wing inspections and extreme knitting. Pending acceptance by the CFI, Geoff will be Borders' newest instructor. Well done from all of us and welcome to the team. We ran another young people's course with students from Haydon Bridge High School. The day was a great success. Big thanks to all the members that helped. Parties from Borders have been off on expeditions to both Edensoaring and Staffordshire gliding clubs. Again – big thanks from all of us who visited, for looking after us and making sure we had a great time. August promised to be a busy month with our 40th anniversary celebrations. Events are planned for most weekends and more details will follow next time.

**Rich Abercrombie**

**BRISTOL & GLOS (NYMPFIELD)**  
**WWW.BGGC.CO.UK**  
**514251N 0021701W**

ANDY Davis hopes to run another coaching week next year, following on from this year's record-busting event – get your bids in soon. Well done to Matt on coming close second in the Midlands regionals with dad Andy in the Duo Discus. Steve Noujaim was welcomed to the Pawnee drivers' ranks and Carol Smith to the Bls'. Members dug out their spades to repair the gas supply pipe. We had two good soarable days for the inter-club competition in June and Steve Leslie won both days' Novice class. We narrowly missed first place in the Rockpolishers final despite sterling efforts. Alistair Smith has gone solo and celebrated with an hour's flight on his second solo. We've been accepted for Junior Gliding Centre status.

**Bernard Smyth**

**BUCKMINSTER (SALTBY)**  
**WWW.BUCKMINSTERGC.CO.UK**  
**524912N 04228W**

SALTBY hosted The National Glider Aerobatic Championships, and it was encouraging to see younger competitors, especially Rachel Brewin and Sally Cooper who were 1st in the Beginners and Sports classes respectively. David-John Gibbs came 3rd in the Advanced and in July was 7th in the 1st FAI World Advanced Glider Aerobatic Contest in Finland. On the Longest Day, the first winch launch was at 04:10 with maybe the earliest cable break in the UK. The airfield was used to film a commercial for Wall's *Proper Food - Bring it on Britain* campaign. The star was Cathy Lawrance, who at 78 is still an active member. Congratulations to new Assistant Instructor Paddy Yeoman, to Keith Ford and Tim Kendall for their Silver heights and Andy Rattray on his 100km Diploma.

**Stuart Black**

**BURN (BURN)**  
**WWW.BURNGLIDINGCLUB.CO.UK**  
**534445N 0010504W**

THE Open Days in July attracted many visitors, with 86 of them taking advantage of the opportunity to have a flight and some showing an interest in joining. The event was well publicised both before and after the event. Recent publicity and the new website have resulted in 13 new members since June. The good weather has given members opportunities to improve their soaring and Tommy Lynch, John Shaw and Paul Bassett

(Left to right) **Borders'** Geoff Forster (right) on completion of his BI course, with SRE Colin Sword (Rich Abercrombie); Peter Whitehead on his first solo with Bob Pettifer, at **Bowland Forest**; **Cambridge** solos for Dennis Pascoe and George Cheeseman; **Dartmoor's** CFI Don Puttock congratulates Stuart Ayley on a first solo



are to be congratulated on achieving their first five-hour flights. Mike Howey is also to be congratulated on gaining an 8th place in the Sports Class at the Bicester Regionals, having come 3rd on two of the days. At the AGM, it was agreed that our top priority is now to ensure our security of tenure at Burn.

**Chris Cooper**

#### **CAIRNGORM (FESHIEBRIDGE)**

**WWW.GLIDING.ORG**

**570613N 0035330W**

MEMBERS and visitors have been flying the local hills, with intrepid aviators Nick Norman and Alister Morrison going somewhat further afield (the Trossachs and Loch Lomond). Congratulations to young member Sam Newmark for flying five hours in our newly acquired Astir. The recent hangar clearout has left us with more space, and less junk, for inspectors to carry out CofAs and repairs. Thanks go to Nick Norman and his team of helpers for completing another CofA on our Robin tug, and thanks to Alan Middleton and Aboyne for help and hospitality in this matter. This year's celebrated Octoberfest is now fully booked out.

**Chris Fiorentini**

#### **CAMBRIDGE (GRANSDEN LODGE)**

**WWW.GLIDE.CO.UK**

**521041N 0000653W**

THE new club ASW 24 is proving popular and was flown at the Bicester Regionals by Neil Goudie, who came 4th in the Sport Class. Phil Jeffrey also did well, finishing 3rd in the Open Class. There have been three new solos – Stuart Moffat, Dennis Pascoe and George Cheeseman, while Tim Barraclough and Alan Thorne re-soloed after 19 years. Ali Machinchy completed his Bronze, closely followed by his Silver in one flight! Several people have attempted 750km flights this year – Mike Smith, Graham Drury and Robert Welford all coming close in July.

**Lorna Sleigh**

#### **COTSWOLD (ASTON DOWN)**

**WWW.COTSWOLDGLIDING.CO.UK**

**514228N 0020750W**

OUR holiday courses have proved popular this year when between March and June we sent six pilots solo. Congratulations to them all and thanks to Duncan Thomas for his ringing endorsement in the last S&G of his week spent at the club, plus you will have all have read member Andy Cockerell's article on junior

team flying in Cerdanya. We also featured in *Cotswold Life*. Members certainly know how to work the media, guided by Patrick Graham, our marketing manager. We have commissioned our new cable tow out truck, which pulls out four cables simultaneously. This has improved our launch rate considerably. Congratulations to Andy Cockerell and Brian Birlison for their success in the 15m Nationals and to those who flew in the inter-club league.

**Frank Birlison**

#### **CRANWELL (RAF CRANWELL)**

**WWW.CRANWELLGC.CO.UK**

**530231N 0002936W**

A WELL done goes to Christine Davies who completed her five-hours recently and converted to her dad's ASW 20. Well done to Angus Watson (1st) and Ian Campbell (4th) for the Shennington Regionals. The season so far has seen a number of increased solo and dual cross-country tasks boosting the number of kilometres and flying hours being completed by members at all levels, as well as local soaring. Welcome back to Steve Benn after his sojourn with the NHS, who can be seen most of the time in his K-6 scuttling around at cloudbase. With the current continuance of good weather hopefully the season will extend to December.

**Zeb Zamo**

#### **CRUSADERS KINGSFIELD (CYPRUS)**

**WWW.RAFKROTIRI.CO.UK/CRUSADERS**

**3501N 03344E**

CYPRUS is experiencing one of the hottest summers on record – up to 46 degrees in the daytime. With the high humidity it's a little unbearable. The flying consists of three or four-minute circuits in the T-21 barge. Some of our members have taken time out for trips away to cooler climates. I popped to the UK with another of our members and visited Essex & Suffolk Gliding club and also Anglia Gliding at RAF Wattisham. Many thanks to Paul Rice and Gwyn Thomas for looking after us so well – a special thanks to Gwyn for converting me to the LS4 – now I want one!

**Jo Rigby**

#### **DARLTON (DARLTON)**

**WWW.DARLTONGLIDINGCLUB.CO.UK**

**531444N 0005132W**

CONGRATULATIONS to Dave King, who achieved his five-hour Silver leg and Robert Starling for his efforts in the Yellow Bung

Competition at the Trent Valley Club. Our CFI John Maddison and Keith Dykes took advantage of the excellent weather in June and made an epic four-day, 15-hour flight in our touring glider around the South of England, Lands End, Devon and Wales. All with two instructors on board. The club continues to welcome a range of visitors and a group of partially-sighted people from the RNIB had an enjoyable full day's flying.

**Geoff Homan**

#### **DARTMOOR (BRENTOR)**

**WWW.DARTMOORGLIDING.CO.UK**

**503517N 0040850W**

IN OUR last report we mentioned that Stuart Ayley had joined on our 'Fixed Price to Solo' scheme and that David Jesty and Ged Nevisky were undertaking their Assistant Instructor courses. On 30 July Stuart went solo, and on 30 June and 22 July respectively, David and Ged qualified as Assistant Rating Instructors. David and Ged are the first home-grown instructors in the club's history. Ged is also the club's safety officer and recently launched a new Safety Corner to our website. Dave Rippon and Andrew Beaumont have completed their Bronze, Mike Stock his Bronze exam, and Allan Ballard his Cross-Country certificate. The ML Aviation winch is now in need of a major repair, for which thanks go to Allan Holland for stepping up to the challenge – and our gratitude goes to Chris Fagg, who drove a round trip of at least 150 miles in order to deliver a replacement wheel for the quad bike.

**Martin Cropper**

#### **DERBY & LANCS (CAMPHILL)**

**WWW.DLGC.ORG.UK**

**531818N 0014353W**

THE Vintage Rally in June had exceptionally good weather, even tempting Shirley, our Office Administrator, to fly in a T-21. Two five-hour flights were achieved. It coincided with several of our 75th Anniversary events, including a lunch for all the members we could get in touch with from the 1960s and before. Early in July we were visited by the BBC filming our Iron Age fort remains for *Hidden Britain*, Julia Bradbury being quite an attraction to the members. Congratulations to Chris Ramler for completing his BI, and to Adrian Long for his Silver distance. Mike Corcoran competed again in the Aerobatics at Saltby, and continues to improve his placing.

**Dave Salmon**



(Left to right): David Stevenson is congratulated by Robin Wills-Fleming after his first solo at **North Hill, Essex**; Peter Keehan after completing his 5-hours (Steve Rhenius); **Fenland** BI John Doubleday giving Jon Laing his first flight in a glider; **Herefordshire**'s James Snee with father Nigel after his first solo (Dewi Edwards)



## DEVON AND SOMERSET (NORTH HILL)

**WWW.DSGC.CO.UK**

**505107N 0031639W**

CONGRATULATIONS to David Stevenson on going solo. Rowan Smith has passed his Bronze paper and completed his first solo aerotow – all within his first year of gliding! Well done to Fred Marks for winning the novice class in a recent inter-club competition. Many members enjoyed a trip to Long Mynd, where Paul Summers achieved his five-hours. Matt Wright and John Burrow have both been flying at La Motte Du Caire, with Jacques Noel and his team. We had a surprise visit from the 'Swift' Display Team who dropped in for breakfast en-route to RNAS Culdrose Air Day.  
**Cheryl Smith**

## DORSET (EYRES FIELD)

**WWW.DORSETGLIDINGCLUB.CO.UK/DGC**

**504233N 0021310W**

AT last, a task week that was flyable virtually every day! A lot of fun flying was had by many with a few landouts, including Dave Bamber whose Skylark 4 landed in a field with a slight slope, meeting a hedge with a concealed tree trunk. These are the top three task week results: 1st Carol Marshall, 2nd Dave Bamber, and 3rd Gerry Cox/Shawn Reason. Our thanks to all who helped. Congratulations to Dave Piercy for winning the talent contest. We would all like to say a big thank you to our departing chairman, Doug Every for his years of dedicated and able service.  
**Colin Weyman**

## DUMFRIES & GALLOWAY (FALGUNZEON)

**WWW.DUMFRIESGLIDING.110MB.COM**

**545638N 0034424W**

WE started a new month with our chairman/instructor John McIver managing to do his Diamond height. The second week of July saw us take a glider to our local Aviation Museum Open Day, which attracted much interest and many trial lesson vouchers were sold. We had a mention on local radio for our flying week. The magazine, *Dumfries and Galloway Life* also did a feature on the club and its reporter went in our K-13 with John McIver to get an experience of gliding.  
**Wendy McIver**

## EDENSOARING (SKELLING FARM)

**WWW.EDENSOARING.CO.UK**

**544152N 0023506W**

FRANK who went solo earlier this year bought a K-6, converted to it and soon did his five-

hours. Pre-solo pilot Ian has bought himself a K-6 with a view to flying it next spring. Edensoaring club members are tough – buying gliders before they are solo. We have started Eden Airborne, a project to get young people of all abilities together on the site and get them gliding. As October arrives we will be thinking of a place to over-winter and looking forward to 2011 and spring wave!

**Sandy Hawkyard, ARPS**

## ESSEX (RIDGEWELL)

**WWW.ESSEXGLIDING.ORG**

**520253N 0003330E**

WE have had some cracking weather resulting in some very good soaring flights; unfortunately it didn't stretch to our flying weeks, but thanks Shruti for the great curries and to all who helped to make the evenings go so well. Well done to Peter Keehan on his five-hours. Young Sam Fisher thoroughly enjoyed his first experience flying in the recent Competition Enterprise and is looking forward to the next time. Well done to Shruti Thaker on converting to the club K-6 and to Liam Telfer and Mike Harris to the club Mistral. We welcome new members: Clive Blake, Maisie Bott, Gregory Alan Falder and Cadets Louis Booty and Zachary Bott.

**Peter Perry**

## ESSEX & SUFFOLK (WORMINGFORD)

**WWW.ESGC.CO.UK**

**515630N 0004723E**

ALAN Bilby and Andy Wells have made their first solos, George Green was 2nd in the Eastern Regionals and Robbo Roberts 16th in the Club Class Nationals. Meanwhile, Dave Bolsdon (Silver height and duration in our last report) has flown his Silver distance but is currently sweating on ratification after a dodgy connection made a mess of his data logger record. Others have been enjoying cross-country flying over newly harvested fields whenever the weather permits, honing their gliding skills and keeping up a steady flow of trial lessons and similar.

**Dick Skinner**

## FENLAND (RAF MARHAM)

**WWW.FENLANDGC.CO.UK**

**523854N 0003302E**

RECENT achievements by members include a five-hour Silver endurance and Silver height, both in one flight, by Dave Honour. Also in one flight, Pete Sperry converted to the K-21, flew one-hour for Cross-Country Endorsement,

Bronze soaring flight and Silver height. Charles Johnson has flown two Bronze flights and one hour for Cross-Country Endorsement. Congratulations to these and also to Alan Merrilees for his first solo and to Pete Stafford Allen for his 3rd place in the Eastern Regionals. We all are very sorry that Mike Middleton has left the club and also Natilie Day. We thank them both for all the time and effort they have put into the club. Mitch was CFI and Paul McLean will be taking over as CFI again.

**John Doubleday**

## HEREFORDSHIRE (SHOBDON)

**WWW.SHOBDOGLIDING.CO.UK**

**521429N 0025253W**

LAST month we combined with other airfield users to create an Aviation Weekend, coinciding with a Food Festival in the village. A rigged glider at the festival and activity at the airfield brought lots of enquiries. We are now working on prospects created during the weekend. Congratulations to James Snee on his solo. He and his father Nigel are competing for which of them can get their Bronze first. For the first time in years, we fielded a team in every meeting of the Rockpolishers league. As the smallest club involved, we were pleased with our performance and plan to build on it.

**Diana King**

## HIGHLAND (EASTERTON)

**WWW.HIGHGLIDE.CO.UK**

**573508N 0031841W**

THE Fulmar tug had to come offline in July, but there was some good flying off the winch while it was away. Some of those flights got to 10,000ft. The wave should be even better at the Easterton wave week which will be held 9-17 October. Congratulations to Mike Black on completing his instructor rating and also to Bruce Gordon who managed two Bronze legs during a mid-week course. The second leg of the Scottish Inter-Club League comprised a single short task and we could not catch up with Deeside who won the competition. Robert and Stuart collected our Falke from Halton during June.

**John Thomson**

## KENT (CHALLOCK)

**WWW.KENT-GLIDING-CLUB.CO.UK**

**511231N 0004950E**

A GOOD start to the season has seen a crop of new solo pilots ready to spread their wings. Congratulations to Simon Beer, Jake Brattle, Dean Farrugia, John Evans and Steve Burles

(Left to right): **Kent** solos for Jake Brattle (his hair is tied back for flight!) pictured with Chris Grebby, John Evans with instructor Colin Beer, and Simon Beer (centre) with Mike Moulang (left) and dad Colin; **Nene Valley's** plucky hero Martin Reynolds (Kerry Mertz)



who went solo from both our scholarship and normal training schemes. Congratulations also to Colyn Randall who went solo on our one-day to solo programme for power pilots. David Pye and Peter Mather have both become Assistant rated instructors. The club hosted the Rendezvous Rally at the end of July with vintage gliders arriving from all over the UK, as well as many from Germany, France, Switzerland and Netherlands. Thanks to Bob Lloyd and Malcolm Kerley, amongst others who made this happen.

**Stefan Bort**

**LAKES (WALNEY)**  
**WWW.LAKESGC.CO.UK**  
**570752N 0031549W**

WHAT a good start to summer. We benefited from a lack of westerlies so thermals lasted longer over the site, and, on the days with a westerly, the ridges were working. Gliders visited most areas of the Lake District, some even finding wave; Peter Craven gained 11,000ft and there was one flight of over 300km. Training has been progressing with Peter Midwood and Simon Hobson very close to solo. Capstan on Tour continues, Hus Bos, Pocklington, and Camphill gigs completed, next one France. We have almost finished the paper chase following the visit from the CAA, thanks to big efforts from Roy Jones.

**John Martindale**

**LASHAM GLIDING SOCIETY (LASHAM)**  
**WWW.LASHAMGLIDING.COM**  
**511112N 0010155W**

IN July, Competition Enterprise honoured us with their presence and we had fabulous weather. During that week we flew 45,500kms, two x 700kms, two x 600+kms, 10 x 500+kms and eight 400+kms. Six Lasham pilots competed in the World Championships and at the time of writing we eagerly await results. Our evening scheme goes from strength to strength. The black hangar on the south side will display a new name on the roof – Century 21 Films are using it as a studio. The final phase of our new caravan site nears completion with four more log cabins and seven more caravans being taken up.

**Richard Moyse**

**LONDON (DUNSTABLE)**  
**WWW.LONDONGLIDINGCLUB.CO.UK**  
**515200N 0003254W**

CONGRATULATIONS to John Robertson, Edward Dean and Ian Stait on their solos,

and to Sam Hill who achieved his on his 16th birthday. Val Stait has re-soloed, as have Roger Rhodes and Peter Brown. Derek Napier and Nicola Craig completed their Bronzes, while Bradley Hutchins deserves a mention for his epic Silver distance flight to Upwood on a day when most of our regionals pilots landed out. We achieved six scoring days at the Dunstable Regionals. Congratulations to winners Mark Newland-Smith (Red class) and Tom Pridgeon (Blue class), and thanks to director Rupert Puritz, Metman Phil Warner, task setter Carr Withall, and all who made the competition a success. Work to improve facilities continues, with the new electric security gate.

**Andrew Sampson**

**LOUGHBOROUGH STUDENTS UNION**  
**(RAF WITTERING)**  
**WWW.LSUGC.COM**  
**523645N 0002840W**

EASTER saw the club expedition to Portmoak, which was a great success. Congratulations to Colin Warburton on going solo and starting off with a Bronze leg soon after. Well done to Connor Hickey for completing his Bronze and gaining his five-hours and also to Chris Phillips for a Bronze leg. We are now looking for a single-seater to expand our fleet and develop the club. We have a great team ready for the inter-unis and five members flying in the Juniors so it is going to be a busy summer.

**Sam Roddie**

**MENDIP (HALESAND)**  
**WWW.MENDIPGLIDINGCLUB.CO.UK**  
**511544N 0024356W**

A VERY big congratulations to chairman and founder member Barry Hogarth, who recently celebrated his 70th Birthday. Well done to Kerry Dyer and Dave Close, who have both completed their Cross-Country Endorsements. Congrats also to The Park who won this year's ICL, with a huge thanks to all those involved in making this year's ICL a success, despite the weather. True to form, Andy Whiteman managed, after four years of threatening to land in the sports field at the local school, to actually do it and took the entire MGC ICL team with him in the retrieve!

**Terry Hatton**

**MIDLAND (LONG MYND)**  
**WWW.LONGMYND.COM**  
**523108N 0025233W**

IN the final round of the Rock Polishers competition, The Mynd finished second in all

three classes, pundits being flown by John Stuart and John Parry, intermediates James Fisher and novices Brian Connaughton. In July, we held a party with BBQ and live band for John Stuart, who recently retired as our senior professional instructor. Having cut the cake, John kept us amused describing the various "events" illustrated. Our DG-505 went to the Midland Regionals with Mike Witton and John Stuart flying P1. Nine days' flying provided valuable experience for three other Mynd members, taking it in turns to fly as P2.

**Steven Gunn-Russell**

**NENE VALLEY (UPWOOD)**  
**WWW.NVGC.ORG.UK**  
**522612N 0000836W**

WITH one mini-task week and Open Weekend out of the way, upon us is another next task week and Open Weekend during the Ramsey 1940s Event. Congratulations to our newest member, Michael Muir, who recently re-soloed at the NVGC. Michael is no newbie to the sport as he was previously an instructor at 616 VGS RAF Henlow, along with our ex-CFI Roger 'Romo' Morrisroe who sent him solo. Also, well done to Martin Reynolds who managed to return to us at NVGC in one piece earlier this year following time away working very hard for 'Queen and Country' in the desert.

**Kerry Mertz**

**NORFOLK (TIBENHAM)**  
**WWW.NORFOLKGLIDINGCLUB.COM**  
**522724N 0010915E**

OUR summer season of fully-booked courses has kept Mick Hughes busy, with first solos for Mark Fiske, Paul Birkett, Robin Burden, Paul Nixon, Alan Merrilees, Jeremy Keeling, and Josh Brownlow on his 16th birthday being towed into the air by his dad Steve. The club has been awarded Junior Gliding Centre status and we look forward to our junior members and cadets organising their own events. On 21 July, Mike Lindsay contacted wave overhead Tibenham at 3,000ft and took a climb to 9,700ft before the cloud closed in. Adrian Prime managed 8,000ft. The International Vintage Glider Rally kept us busy with 150 pilots from 13 countries registering with 99 gliders.

**Mike Bean**

**NORTH WALES (LLANTYSILIO)**  
**WWW.NWGC.ORG.UK**  
**530239N 0031315W**

WE have been listening to weather forecasts using the word "mixed" and that sums up a



(Left to right): An interesting visitor drops in at **North Wales** (Brian Williams); **Nottingham University's** Chris Adamson is congratulated on his first solo; **Portsmouth Naval's** Colin Hardy following his aerotow solo in a K-13 (Neil Shaw); Johnny Paterson with **SGU** instructor Don Irving ( Ian Paterson)



✂ lot of flying days of late. Our land-owner caused us to miss a couple of excellent looking weekends by his not cutting the airstrip; this will be taken up when we talk about a rent review in September. Congratulations to Neil Hughes on completing his Bronze. He and his father are great supporters. The country show season is here and we have been asked by a local village to provide a static display and we have donated a £70 voucher for their raffle. We continue to fly many interesting visitors including one Mr Thorley, nearing 80, who drove up with his wife in a Morgan sports car.  
**Brian Williams**

**NOTTINGHAM UNIVERSITY (RAF CRANWELL)**  
**WWW.NUGC.NET**  
**530231N 0002936W**

IT'S been another busy year with over 150 members joining throughout the year, a new record! Four members have gone solo: Matt Lumley, Mike Wallace, Chris Adamson and Michelle Strickland. Other achievements have included Louise Beech completing her Bronze, and Silver heights awarded to Mark Loach and Alistair Green, who also got a Cross-Country Endorsement. A great amount of effort was spent rebuilding the Skylark trailer, which was ready just in time for Portmoak during the Easter break, along with Oxford and Cambridge Universities and Windrushers Gliding clubs. Here Claudia Kreul managed to complete a wave flight to over 10,000ft. The Acro's wing has also been refurbished.

**Fiona MacConnacher**

**OXFORD (RAF WESTON ON THE GREEN)**  
**WWW.OXFORD-GLIDING-CLUB.CO.UK**  
**515249N 0011311W**

CONGRATULATIONS to Richie Hale, who flew to Hus Bos for his Silver, and James Lewis who completed his Bronze and is now happily flying an Astir. Well done also to our pilots who were competing in Regionals and Nationals this summer. Our T-21, Daisy, has been swanning around the countryside in her trailer. She was first exhibited at Fairford where OGC members took full advantage of the 'aircrew' level passes! Then she spent a week at the Tibenham VGC rally, along with a Skylark and Capstan. We hosted a small group of small Scouts one evening and, by flying and setting them a test, managed to award most of the group a Gliding Badge.

**Neil Swinton**

**PORTSMOUTH NAVAL (LEE ON SOLENT)**  
**WWW.PNGC.CO.UK**  
**504855N 0011225W**

THE past two months have been unusual with lower numbers of club members flying, but strong support of short courses for Sea Cadets, CCF, Grapevine, St Dunston and others. Our Annual Marie Curie event was sadly cancelled due to formalities that arose at the last minute. The following day our popular Family and Friends event was blessed with good weather. Thanks to everyone who helped. Meanwhile a successful RNGSA expedit to Broeggen in Germany took place. Congratulations to Stephan Rogers and Colin Hardy on their first solos; to Paul Carder on his Bronze, and Tony Taylor on his Silver duration. Tom Edwards is leading a second expedit to Edensoaring in September.

**Neil Shaw**

**RATTLESDEN (RATTLESDEN)**  
**WWW.RATAIR.ORG.UK**  
**521001N 0005216E**

CONGRATULATIONS to Lorna Wilcox on gaining her Bronze Cross-Country Endorsement. A curry and quiz night was organised by Kim and Tia Smith in August. The weekend continued with family and friends enjoying flights and then a BBQ. Rattlesden had seven new members and two returning members join in June and July, and we warmly welcome them all.

**Helen Page**

**SCOTTISH GLIDING CENTRE (PORTMOAK)**  
**WWW.SCOTTISHGLIDINGCENTRE.CO.UK**  
**561121N 0031945W**

WE are always pleased to welcome pilots returning to the sport. We are all looking forward to the autumn wave season but if you are planning to visit us, please contact Irene at the club to ensure you get a space. Our second hangar is coming along nicely and we hope to have it operational by the end of the year. Achievements since last issue include: Ian Gresz, Richard Belton and Elliot Stenhouse – re solo, Johnny Paterson – solo, Brian Cox and Paul Wigginton – Silver duration, and Ian Easson – NPPL (SLMG). Congratulations to all.  
**Ian Easson**

**SOUTHDOWN (PARHAM)**  
**WWW.SGC1.ORG**  
**505532N 0002828W**

THE group that visited La Motte and Puimoisson in France may well have rejoiced

in their opportunities for mountain flying, but they missed one of the finest spells of soaring weather enjoyed at Parham for decades. To celebrate, Maggie Clews arranged an al fresco party, with Dave Connaway running the BBQ with a willing band of volunteers. Congratulations to Daryl O'Flanagan on becoming an Assistant Rated Instructor. We will need him since we are increasing our activities with young people in the area and the club has been designated an approved BGA Junior Gliding Centre. One of the outstanding achievements at Southdown this summer has been the Standard Class National 100km record-breaking flight by Paul Fritche in an LS8. He covered the distance in 37 minutes at an average speed of 162km/hr., breaking the previous record set in 1984.

**Peter J Holloway**

**SOUTH WALES (USK)**  
**WWW.USKGC.CO.UK**  
**514306N 0025101W**

THE club has put in a respectable performance at this year's Rockpolishers, with Dave Thomas winning Novice on his debut appearance at Talgarth. As well as himself and Richard Slater flying intermediate, both took 1st place in their respective classes at the Long Mynd. James Metcalf has been dispensing his knowledge of alpine flying from the back seat of our Twin Acro on its annual visit to Gap. Congratulations to Rob Coulson on achieving his Silver duration by a nail-biting 30 seconds. Ian Kennedy has become a NPPL SLMG instructor. At the end of July, our annual winch course was held, where, after a four-year lay off, Simon Lewis re-soloed and David Lewis converted to the Astir.

**George Robertson**

**STAFFORDSHIRE (SEIGHFORD)**  
**WWW.STAFFORDSHIREGLIDING.CO.UK**  
**524940N 0021212W**

LOTS of activity this summer and a pleasing increase in new faces. Our new Pilatus B4 has proven very popular and has already chalked up a cross-country and a parsnip field. This landing was a masterpiece – Tony Gillard put her straight down in a deep furrow without a scratch. As we struggled out with the trailer grounding again one of the farm workers told us he had tractors he wouldn't take in that field. We have run a task week and two soaring weeks which yielded a five-hour and some first cross-country flights. The highlight

(Left to right): **South Wales'** Twin Acro III, 609, taken in the French Alps (George Robertson); the third annual **VOWH** hangar party and hog roast was a great success. Jay Myrdal is pictured (right) with the band; Will Parr with John Carter after Will's solo at **Yorkshire**



was Warren Johnson, who got his Silver Distance the heroic way – K-6, rubbish day and never much over 2,000ft. No need for GPS since he was often low enough to ask the way. The Falke has seldom been still and has introduced many keen members to the joys of field selection and getting lost. Graham Burton gets 'best mad keen pilot' award this month after a 5,000ft aerotow to chase a mythical wave – the sink chased him back to the airfield like a pack of hungry dogs. And he did it again shortly afterwards. We celebrated the retirement from instructing of club hero Peter Lowe with a Chile party. Without his many years of unfailing enthusiasm, we would not be the thriving club you see today.

**Neil Frost**

**STRATFORD ON AVON (SNITTERFIELD)**  
**WWW.GBUTLER.DEMON.CO.UK/SOAGC**  
**521406N 001431W**

MEMBER flying continues broadly at the same levels as last year. Visitor flying is slightly down but we do continue to see a steady stream of individuals popping in. We held our annual task week at the end of July and were able to fly each day. The second Sunday in August, however, provided weather conditions that saw a plethora of tasks being completed – distance flights, durations and height gains. At the moment we have an unprecedented first – two pilots who joined in the last year have stormed ahead and are neck and neck at the top of our Badge Ladder. Both have completed their First solo, Bronze exams, 1st Bronze half-hour duration, 2nd Bronze half-hour duration, Bronze flight tests, Bronze badge, two-hour duration, X/C endorsement, Silver distance, Silver five-hour duration, Silver height, Silver badge and X/C diploma part 1 – all in a year. Congratulations to Daniel Brown and Dave Martin.

**Richard Maksymowicz**

**TRENT VALLEY (KIRTON IN LINDSEY)**  
**WWW.TVGC.ORG.UK**  
**532745N 0003436W**

WE'VE been having a good summer at Kirton, with several 500km (Robin Parker, Steve Nock) and 300km flights. We also triumphed in both legs of the 'Yellow Bung' Trophy, our fun cross-country competition with neighbours Buckminster and Darlton. Despite high winds, we just managed to fly on one day of the two at Kirton, having also won the earlier leg at Salby. We had our annual hog roast on the Saturday evening. Elsewhere

we've had members flying in the Northern, Nationals, Juniors and the Two-Seater Comp at Pocklington. The better weather seems to have sparked some interest locally, resulting in several new members in the last month alone. Our next project is for new toilets.

**Geoff Davey**

**VALE OF THE WHITE HORSE (SANDHILL FARM)**  
**WWW.SWINDONGLIDING.CO.UK**  
**513614N 0014030W**

A LOT has happened in the Vale these last few weeks. Without doubt the most exciting for many of us was HP III – our third annual hangar party and hog roast. We had five full bands and four smaller groups playing from mid-afternoon until nearly two in the morning. Other wonderful successes of a more individual kind include, Peter Jackson and Jeff Lynes – five-hours; Peter Berridge – 300km+ giving him his Gold badge and Diamond goal and Jane Nash, who came 10th in the Club Class Nationals at Hus Bos in a field of 44. She was also the second fastest woman.

**Jay Myrdal**

**WOLDS (POCKLINGTON)**  
**WWW.WOLDS-GLIDING.ORG**  
**535541N 0004751W**

CONGRATULATIONS to Jonathan Phillips, who completed his Silver distance and 100km Cross-Country diploma in one flight, and to Karen Binney, who has become our most recent Basic Instructor. In July, we were delighted to welcome some of the veterans of the RAF 102 Squadron (Halifax Bombers), who flew from Pocklington in the Second World War, to our clubhouse for their annual reunion dinner, hosted by Pocklington Town Council. In the summer holidays we held four successful days for young people from across East Yorkshire, and thanks go to all the members who give up their time to help with these events and our evening trial lessons programme.

**Avelyn Dell**

**WYVERN (UPAVON)**  
**WWW.WYVERNGLIDINGCLUB.CO.UK**  
**511712N 0014700W**

WYVERN Wings 2 was the most successful task week we have had, with eight consecutive days of cross-country tasks flown! Matt Graeme-McMurdoch achieved his 300km, earning him the second highest scoring single flight on the club ladder and, from Keevil, Steve Tape achieved his Diamond distance, even though

he didn't return to the bar to celebrate. Tim Dutton got his five-hour Silver duration and Neil Godson achieved his Silver distance after his first attempt failed due to battery problems. Ali Carpenter got both Cross-Country Endorsement flights and her Silver height. Brothers Sam Prin and Paul Tribe also got their Silver height and Rhid Bowen his Bronze duration flights and Silver height. On the social side, the Italian-themed Chairman's Supper topped off one of the best months we have had.

**Matt Graeme-McMurdoch**

**YORK (RUFFORTH)**  
**WWW.YORKGLIDINGCENTRE.CO.UK**  
**5357100N 00111332W**

OUR next major financial task is replacing a well-worn tractor used to haul the grass-cutting machine over our vast area of turf. The existing tractor has given excellent service for more than 20 years. The clubroom is being made available for private functions, the aim being to boost our finances at a time when members have limited budgets. Visitor flying, however, is proving very popular. Six members took part in a gliding course arranged by our club during which Richard Humprey went solo.

**Chris Brayne**

**YORKSHIRE (SUTTON BANK)**  
**WWW.YGC.CO.UK**  
**541338N 0011249W**

OUR 'TV Personality of the year' is our president Moyra Johnson, who, at the age of 94, appeared on the TV programme *Odd One In*. Moyra began flying at Sutton Bank in 1935. Mike Smith has achieved his BI Rating and young Will Parr went solo on one of our many courses. Our membership continues to rise with Junior Members benefiting from free air time on all training flights. Another Astir has been added to our fleet, making four two-seaters and five single-seaters available to members. The vision of our Board is to make us 'the best Soaring Club in the North'. Our fleet and facilities clearly do just that. Why not come and enjoy Winter Membership? Bring your own glider or fly ours. Contact Josephine or Vicky for details.

**John and Sarah Marsh**

**S&G's thanks as usual to Debb Evans for editing this issue's Club News – Susan Newby, editor**



Photo by Katie Simmonds

## > CLUB FOCUS SOUTHDOWN

### AT A GLANCE

#### Membership:

Full: £290pa  
Junior: £83pa  
Cadet: £37pa

#### Launch type:

Aerotow: £27.75 to 2,000ft  
Winch: £6.50

#### Club fleet:

2 x K-21, DG-505, Astir Cs,  
LS4b, Falke 2000,  
2 x Pawnee, Super Cub 180

#### Private gliders:

Approx 50 on-site

#### Instructors/Members

41/210

#### Types of lift:

Ridge, thermal, wave, sea  
breeze

#### Operates:

Sat/Sun/Weds/most  
other good days

#### Contact:

01903 742137  
www.sgc1.org

#### Long and Lat:

50.55.217N 0.28.436W

**S**OUTHDOWN Gliding Club was formed in 1930 and, at 80 years old, is one of the oldest club's in the country. The club has operated from several sites situated on or near the historic Southdown Hills, where the world's first recorded gain of height occurred in 1909, and the site of the 1922 Itford gliding meeting.

The club settled at its current home, Parham Airfield near Storrington, in 1974 and successfully purchased the site during 2009.

The site allows access to ridge, thermal and wave soaring and has a strong cross-country core, with the first 750km UK diploma being flown in 2003 and several more achieved since. Despite being only a few miles from the coast, the sea breezes have little impact on the cross-country potential of the site on most good days. The site also offers excellent ridge soaring all year round and attracts visitors from clubs throughout the South of England. BGA Ladder claims for flights of 440km at speeds of over 110kph are not uncommon, and often achieved in the winter months, making the trip really worthwhile and earning the club the reputation for

providing access to one of the (if not the) longest ridges in the UK.

We operate from a 55 acre site (with an additional 22 acres to come online soon), although our main runway (oriented 04/22) is only about 650m long. This means that we usually aerotow and have three tugs, so launch queues are normally dealt with promptly and with a minimum of delay.

Winch launching usually happens on dedicated days, or as part of our Wednesday or Friday evening summer activities, and it is easily possible to launch a K-21 to allow it to reach the ridge, which is about one mile south of our airfield.

We have a strong Cadet youth group, which receives heavily subsidised flying, and the club is now an accredited Junior Gliding Centre.

The club operates at weekends and Wednesdays all year round, but runs a number of courses for members and short courses for the public during the summer, meaning we inevitably fly most days in the key thermal soaring season. To complement the flying, we have a well equipped clubhouse and active social diary.

**Craig Lowrie**

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# NOT FLYING SOLO

Faced with a year out, Bernard Hicks put the time to good use brushing up his flying skills with a safety pilot in the back seat



Rather than giving up, Bernard Hicks made the most of his year-long flying restriction, improving his cross-country techniques

I AM a relatively inexperienced newcomer to gliding and re-soloed in 2005 with Fenland GC. In 2008, I achieved my Bronze badge and Cross-Country Endorsement. I had plans to go for the two legs which I still needed for the Silver badge. Unfortunately, the autumn of that year was very mixed and I didn't get any further, so I spent the winter months doing circuits and looking forward to going for the Silver in 2009.

Then, at the beginning of March 2009, I suffered a medical problem which, although not serious, meant that I couldn't fly solo again for a year. Catastrophe, I thought with pangs of despair. But, with our CFI and other club members encouraging me that I could still fly with a safety pilot in the back seat who would only be there 'just in case' and that I would do all the flying, I carried on.

Although I had misgivings about not being able to fly solo, it proved to be both an invaluable and thoroughly enjoyable experience. It was a great soaring season.

In previous years, I had had difficulty in establishing myself in thermals and even when I did, staying in them, unless they were huge 6kt stonkers! Having a series of experienced glider pilots sitting in the back seat made all the difference. For a start it gave me the confidence to try much harder, knowing that there was someone who could take over if I really got it wrong.

Also having someone there made me try harder as I didn't want to appear a complete plonker by falling out of the thermals all the time. They gave me lots of encouragement and advice on improving my flying techniques. Lastly, as my flying improved and I stayed in the air longer more often, it was nice to have someone to talk to and pass the time with while I enjoyed my flying.

At the beginning of March this year, I got the all clear from my doctor to fly solo again and, after a quick check flight, had a short reunion flight with the Astir. On the second flight, I found a thermal and after a bit of scratching, stayed up for an hour – what joy! On 1 May, I did my first 50km cross-country flight. The year of not flying solo had not been a waste of time.

I would recommend that any recently soloed pilot who, like me, is having difficulty in centering and thermalling in general to ask for help from their instructors. Mine readily helped me.

It's nice to fly solo. It's even nicer to do it properly. I was lucky in that my restriction on not flying solo lasted only a year. If there are others out there who find themselves in a similar situation to mine, ie are not allowed to fly solo and feel like giving up, it is worth carrying on with a safety pilot in the back and can be more fun.

My thanks go to all my instructors at Fenland GC over the past year, especially to John Doubleday for his long-suffering patience while I pitched and rolled him about trying to get into lift and to Paul McLean for his encouragement to make use of the year.

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Ted Norman

## CAA SLMG Instructors and Examiners

The BGA has approved a number of CAA rated examiners and instructors under the management of the SLMG SRE to support SLMG activity. Contact details are at [www.gliding.co.uk/bgainfo/instructors/motorgliding.htm](http://www.gliding.co.uk/bgainfo/instructors/motorgliding.htm)

## Regional Gliding Examiners

BGA gliding examiners are appointed on a regional basis and directed by Senior Regional Examiners. SREs are listed on the BGA web site at [www.gliding.co.uk/bgainfo/instructors/contacts.htm](http://www.gliding.co.uk/bgainfo/instructors/contacts.htm)

## Regional Safety Officers

RSO club allocations are listed on the BGA web site at [www.gliding.co.uk/bgainfo/safety/rsolist.pdf](http://www.gliding.co.uk/bgainfo/safety/rsolist.pdf)

## Airworthiness Inspectors

There are BGA inspectors across the UK. Many of them are approved to issue an EASA ARC. The Regional Technical Officers and the ARC signatory 'Chief Engineers' are listed by BGA region at [www.gliding.co.uk/bgainfo/technical/contacts.htm](http://www.gliding.co.uk/bgainfo/technical/contacts.htm)

## Airworthiness Guidance

Guidance for owners of Annex II and EASA aircraft is at [www.gliding.co.uk/bgainfo/technical/news.htm](http://www.gliding.co.uk/bgainfo/technical/news.htm)

## Accident Investigation

### Chief Accident Investigator

Chris Heames

## Other Information

### Courses

BGA course information is at [www.gliding.co.uk/bgainfo/bgacourses.htm](http://www.gliding.co.uk/bgainfo/bgacourses.htm)

### Fees

BGA fees are detailed at [www.gliding.co.uk/forms/bgafees.pdf](http://www.gliding.co.uk/forms/bgafees.pdf)

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# BGA accident/incident summaries

AIRCRAFT		Damage	Date, time	Place	PILOT		P1 hours
Ref	Type				Age	Injury	
47	ASW 20	substantial	3/05/10 13:10	Cairngorm GC	65	serious	not reported
Glider hit ridge while thermalling. The visiting pilot was attempting to climb away from ridge height but turned into sink close to the ground.							
48	Grob Astir	substantial	12/05/10 13:15	Southdown GC	71	none	26
Undershooting approach ended with the glider hitting a tree on the airfield boundary. The low hours pilot was slow to recognise a developing undershoot and failed to close the airbrakes.							
51	DG 300	minor	15/05/10 15:00	Black Mountains GC	49	none	not reported
DG undercarriage collapsed on landing. One of the undercarriage doors was torn off during the field landing.							
52	Grob Astir	minor	15/05/10 16:00	Wrekin GC	51	none	302
Canopy opened and detached at 300ft during a winch launch. The pilot was distracted during pre-flight checks and may not have properly secured the canopy.							
53	Grob 102	substantial	15/05/10 16:00	Lasham GS	51	none	20
A steep approach and late roundout combined to end in a PIO and heavy landing. The wheel support frame detached from the fuselage.							
54	LS 4	minor	21/05/10 14:00	Wolds GC	51	none	350
The pilot retracted the undercarriage during the round out, tearing off an undercarriage door. The CFI reports that as the glider sank into the half-grown crop the pilot suffered an illusion of being too low to the ground and automatically moved the gear lever.							
55	ASW 28	destroyed	22/05/10, 16:00	Bristol & Glos. GC	61	minor	997
Wing hit hedge/tree during low approach after late field landing selection, breaking wing and rotating glider into a backwards crash landing. The pilot had been following during an X-C 'lead & follow' flown mostly at low level and had to make a hurried and poorly planned approach into the field.							
56	Grob 103	substantial	23/05/10, 14:40	Norfolk GC	53/45	none	1,630/58
Substantial damage to the nose wheel housing and surrounding structure as the glider impacted the raised edge of a runway after touching down on a grass landing area. The visiting P2 had been given a simulated winch launch failure.							
57	Libelle	substantial	20/04/10, 15:30	Southdown GC	55	none	1,017
Underside of fuselage nose damaged and wing spar main pin bent after a heavy landing. Late field selection and a slow approach into an uphill field ended in a bounced touchdown and subsequent heavy landing							
59	MDM Fox	minor	26/05/10, 11:10	Wolds GC	35/37	none / none	453/0
Tailwheel assembly dislodged after the glider hit a rut during the landing ground run.							
60	SZD Pirat	substantial	31/05/10 12:30	Southdown GC	not reported	minor	not reported
Glider went too far downwind, was too low to clear the ridge on returning and landed in a field on top of the ridge. The glider hit a fence after landing, smashing the canopy, breaking a wingtip and damaging the fuselage.							
61	LS4	minor	09/05/10, 16:20	London GC	56	none	30
Wheel housing cracked after a heavier than normal landing onto a rough, unmown grass airstrip. Damage went unnoticed until annual inspection.							
62	Ventus	minor	24/05/10, 13:55	Lasham GS	63	none	1,460
Wheel up landing after cross country flight in blue conditions. Dehydration cited as a factor.							
63	Grob Astir	minor	30/05/10	Trent Valley GC	71	none	not reported
Very heavy landing caused pilot's head to impact and leave a hole in the canopy. The pilot had forgotten to lower the undercarriage until on final approach.							
66	Grob Astir	minor	28/05/10, 13:10	Bristol & Glos GC	26	none	88
Minor gelcoat damage to underside and undercarriage doors. The pilot left the wheel down during the flight and then retracted it prior to landing in a field.							
<b>Incidents</b>							
160	Antares	none	Aug 2009, 16:00	-	-	none	-
Landed with undercarriage not fully down.							
21	Grob 103	minor	28/03/10, 15:00	-	-	none	-
Canopy broken during ground handling.							
45	DG 505	none	11/04/10, 14:15	-	-	none	-
Another DG undercarriage retraction on landing. The CFI recommends that pilots visually check that the lever is in the correct, locked down position.							
46	K-6	--	17/04/10, 14:05	-	-	none	-
Very low and slow turn onto final approach after a low and slow start to the circuit.							
49	Discus	minor	4/05/10, 14:00	-	-	none	-
During the tow-out, one wing stuck a hedge, damaging the wingtip and yawing the glider until the other wingtip struck the tow out car, damaging the aileron and breaking the tail dolly.							

## AAIB BULLETIN 7/2010

**THIS is an abridged version of the UK Air Accident Investigation Branch report into a fatal Discus accident. The full report can be found in the AAIB Bulletins at [www.aaib.gov.uk/publications/bulletins.cfm](http://www.aaib.gov.uk/publications/bulletins.cfm)**

**Aircraft Type and Registration:** Schempp-Hirth Flugzeugbau GMBH Discus B, G-CHOM  
**Year of Manufacture:** 1985  
**Date & Time (UTC):** 9 July 2009 at 15:52  
**Location:** West of Gransden Lodge Airfield, Cambridgeshire  
**Type of Flight:** Private

### Synopsis

Approximately 10 minutes into a flight following a winch launch, the glider was observed to be in a spin to the left. The indications were that it entered the spin while soaring and did not recover before it struck the ground. The pilot sustained fatal injuries.

### History of the flight

Before taking a winch launch in the glider, the pilot received a brief on the latest BGA advice on winch launching. The briefing, with an instructor, did not include any discussion of intentional spinning during the pilot's forthcoming flight. The visibility was in excess of 10km and there was cumulus cloud above 3,500ft. One instructor described it as "a good soaring day". Another instructor, who witnessed the glider's take-off, commented that it was a "textbook" launch. The aircraft was not carrying water ballast.

Data recovered from GPS equipment carried in the aircraft, showed that the glider soared to the west of Gransden Lodge for approximately 10 minutes after being released from the winch cable. Witnesses on the ground then observed

the glider established in a spin to the left; the angle of their observation and the GPS evidence indicated that the glider was passing approximately 600ft agl when they first saw it. The glider then passed out of their line of sight, still spinning. Shortly before the end of the flight, the GPS recorded a series of positions close to each other, consistent with a spin.

An instructor, who was airborne and soaring nearby, saw the glider in a field and alerted another glider pilot by radio. They both landed, went by car to the accident site and found the glider in a field of rape. The pilot had sustained fatal injuries in the impact. The radio in G-CHOM had been tuned to the same frequency as the radios in the instructors' gliders, but no distress call was heard from the pilot.

### Analysis

The flight appeared to have progressed normally until the glider entered a spin to the left from which it did not recover. The investigation established that the glider was serviceable and that the controls were intact prior to the accident. The dense crop of rape at the accident site appeared to have dampened the motion of the glider on impact. Nevertheless, there was sufficient evidence to establish that the glider struck the ground with relatively little forward speed, in a nose-down and left wing low attitude. The evidence at the accident site was consistent with the glider being in a spin to the left at the moment of impact.

The CG of the glider was calculated after the accident to have been on the aft limit and therefore in the permissible range. The manufacturer advised that the aircraft had been tested with a CG 15 mm beyond the aft limit and that no 'exceptional flight characteristics' had been reported. The advice given also indicated that recovery from a spin would be achieved in not more

than half a turn, during which the height loss would be about 260ft.

No malfunction or failure was identified to account for the entry into the spin, which was either intentional or unintentional, and the pilot did not make any distress call on the radio during the accident sequence.

### Intentional spin

The absence of height data meant that it was not possible to determine the vertical profile of the accident flight. The weather conditions were suitable for a spinning exercise and it is conceivable that the pilot soared to a safe height from which he could have executed an intentional spin and recovery. However, there was no evidence that the pilot planned to spin during the accident flight and, if the entry to the spin was intentional, it is not clear why a successful recovery was not achieved. He had demonstrated 'exceptional' skill in recovering from a spin during his last annual check in 2008, when it had been a planned manoeuvre.

### Unintentional spin

There was no evidence to suggest a cause for an unintentional spin. Distraction may have been a factor, though no distracting event could be identified. An unintentional spin may have begun at too low a height to permit recovery but the level at which the glider was first observed in a spin to the left suggests that there was sufficient height remaining for the pilot to effect a successful recovery.

In summary, there was insufficient evidence to account for the entry into the spin and the absence of a recovery from it. The possibility that the pilot may have suffered an incapacitating abnormal heart rhythm could not be entirely discounted as this can occur without leaving any pathological evidence.

## BGA accident/incident summaries *continued*

AIRCRAFT Ref	Type	Damage	Date, time	Place	PILOT Age	Injury	P1 hours
50	K-21	none	15/05/10	-	-	none	-
Uncommanded release of aerotow rope at 1,000ft due to broken spring in mechanism. The TOST mechanism had completed 4,822 launches.							
58	Pilatus B4	none	23/05/10, 18:30	-	-	none	-
Wheel-up landing caused slight damage to the TOST hook cage.							
64	ASW 19	minor	30/05/10, 16:30	-	-	none	-
Canopy broken during de-rigging. After the wings had been removed, a gust of wind rotated the fuselage in the belly dolly allowing the canopy to hit the ground.							
65	Pilatus B4	minor	28/05/10, 16:15	-	-	none	-
Aileron damaged after being caught by a tow rope. The tug was taxiing back to the hangar at the end of the day when the rope passed over the wing of the parked B4.							
67	Mosquito	minor	30/05/10, 16:00	-	-	none	-
Fuselage blown over during derigging by a gusting wind from a passing squall.							

## BGA BADGES

No.	Pilot	Club (place of flight)	Date
<b>FAI 750K DIPLOMA</b>			
90	William Payton	Yorkshire	28/05/2010
91	Iain Evans	Bristol & Glos	28/05/2010
92	John Williams	Trent Valley	21/04/2010
93	Denis Campbell	Booker	21/06/2010

<b>BGA 750K 2-SEATER DIPLOMA</b>			
18	Hugh Kindell	Lasham	20/04/2010
19	Steve Lynn	London	28/05/2010

<b>DIAMOND BADGE</b>			
	Ian Paterson	SGU	13/03/2010
	Jonathan Huband	Cotswold	28/05/2010
	Peter Robinson	Dorset	02/04/2010
	Frank Roles	Gliding Centre	28/05/2010

<b>DIAMOND DISTANCE</b>			
1-1141	Roger Smithers		22/06/1976
1-1142	Jonathan Huband	Cotswold	28/05/2010
		Aston Down	
1-1143	Robert Moss	Bristol & Glos	28/05/2010
		Nympsfield	
1-1144	Andrew Turk	Bidford	28/05/2010
		Bidford	
1-1145	David Jesty	Dartmoor	28/05/2010
		Dartmoor	
1-1146	Andrew Butterfield	Oxford	25/06/2010
		Bicester	
1-1147	Nigel Gough	Bicester	03/07/2010
		Bicester	
1-1148	Frank Roles	Gliding Centre	28/05/2010
		Hus Bos	
1-1149	Alexander Ward	Cambridge	03/07/2010
		Cambridge	
1-1150	Steven Tape	Bannerdown	02/07/2010
		Bannerdown	

<b>DIAMOND GOAL</b>			
2-2395	Roger Smithers		31/05/1975
2-2396	Anthony Sanders	Midland	28/05/2010
		Midland	
2-2397	Stephen Foster	Midland	15/05/2010
		Bidford	
2-2398	Peter Cunnison	Cambridge	10/06/2010
		Cambridge	
2-2399	Will Greenwood	Southdown	20/04/2010
		Parham	
2-2400	Timothy Highton	Norfolk	22/04/2010
		Norfolk	
2-2401	Graham Bambrook	Bicester	20/06/2010
		Bicester	
2-2402	Stafford Lintott	Kent	25/06/2010
		Hus Bos	
2-2403	Debbie Thomas	Bicester	25/06/2010
		Bicester	

No.	Pilot	Club (place of flight)	Date
<b>DIAMOND GOAL cont</b>			
2-2404	Peter Berridge	Essex	25/06/2010
		Vale of White Horse	
2-2405	James Paine	Kent	03/07/2010
		Kent	
2-2406	Steven Tape	Bannerdown	02/06/2010
		Bannerdown	

<b>DIAMOND HEIGHT</b>			
3-1727	John Mclver	Dumfries & District	21/04/2010
		Scottish Gliding Union	
3-1728	Peter Robinson	Dorset	02/04/2010
		Minden	
3-1729	Lukas Brandt	Bicester	31/05/2010
		Minden USA	

<b>GOLD BADGE</b>			
	Ian Paterson	SGU	13/03/2010
	Paul Wright	Wyvern	01/10/2009
	Peter Yeo	Wyvern	01/10/2009
	Peter Berridge	Essex	25/06/2010
	Haluk Yildiz	Cambridge	16/07/2010
	Mark Player	Bath, Wilts & North Dorset	21/06/2010

<b>GOLD DISTANCE</b>			
	Roger Smithers		31/05/1975
	Anthony Sanders	Midland	28/05/2010
		Long Mynd	
	Stephen Foster	Midland	15/05/2010
		Bidford	
	Peter Cunnison	Cambridge	10/06/2010
		Cambridge	
	Timothy Highton	Norfolk	22/04/2010
		Tibbenham	
	William Tandy	London	02/06/2010
		London	
	Graham Bambrook	Bicester	20/06/2010
		Bicester	
	Stafford Lintott	Kent	25/06/2010
		Hus Bos	
	Debbie Thomas	Bicester	25/06/2010
		Bicester	
	Peter Berridge	Essex	25/06/2010
		Vale of White Horse	
	James Paine	Kent	03/07/2010
		Gransden Lodge	
	Steven Tape	Bannerdown	02/06/2010
		Bannerdown	

<b>GOLD HEIGHT</b>			
	Paul Wright	Wyvern	01/10/2009
	Peter Yeo	Wyvern	01/10/2009
	David Lisk	Ulster	03/05/2010
	Haluk Yildiz	Cambridge	16/07/2010
	Mark Player	Bath, Wilts & North Dorset	21/06/2010

No.	Pilot	Club (place of flight)	Date
<b>100K DIPLOMA PART 1</b>			
	Alan West	Wolds	22/04/2010
	Allan Arthurs	Lasham	20/04/2010
	John Smith	Gliding Centre	28/05/2010
	Peter Smith	Devon & Somerset	27/05/2010
	Andrew Rattray	Buckminster	12/06/2010
	Jonathan Phillips	Wolds	10/07/2010

<b>100K DIPLOMA PART 2</b>			
	Timothy Highton	Norfolk	22/04/2010
	Allan Arthurs	Lasham	04/06/2010
	Debbie Thomas	Bicester	25/06/2010

<b>SILVER BADGE</b>			
	Greg Corbett	London	28/10/2009
	Malcolm Dean	Bowland	18/05/2010
	Dylan Trinder	RAF GSA	13/05/2010
	Andrew Smith	Bannerdown	15/05/2010
	R Kehr	Booker	18/04/2010
	John Macgregor	Aboyne	07/05/2010
	Nigel Mallender	Lasham	20/04/2010
	Robert Rose	Yorkshire	21/04/2010
	Justin Bronk	York	21/04/2010
	Robert McEvoy	Lasham	21/04/2010
	David Sabourin	Essex	18/04/2010
	Daniel Chidley	Nene Valley	09/05/2010
	Mark Palmer	Upavon	22/04/2010
	Jonathan Sharp	Anglia	29/08/2009
	John Smith	Gliding Centre	28/05/2010
	Timothy Highton	Norfolk	22/04/2010
	Alex Clarke	Nene Valley	02/06/2010
	Andrew Kitchen	Burn	26/05/2010
	Mark Crompton	Edensoaring	28/05/2010
	Peter Smith	Devon & Somerset	27/05/2010
	Guy Wilson	Hus Bos	28/05/2010
	Bob Calvert	Yorkshire	17/04/2010
	Michael Gatfield	Booker	02/06/2010
	Charles Jessop	Bicester	20/06/2010
	Peter Hunt	London	21/06/2010
	Jeremy Heath	Bicester	23/06/2010
	Trevor Emms	Hus Bos	25/06/2010
	Steven Chapman	Needwood Forest	20/06/2010
	Adrian Long	Derby & Lincs	25/06/2010
	Sean Gaunt	Lasham	20/06/2010
	Adrian Baillie	Lasham	25/05/2010
	Charles Anderson	Gliding Centre	30/06/2010
	George John Baxter	Southdown	05/07/2010
	Adrian Giles	Cotswold	12/06/2010
	James Innes	London	03/07/2010
	Neil Godson	Wyvern	21/06/2010
	Philip Kellman	Booker	03/07/2010
	David Hendry	South Wales	27/05/2010
	Roger Tallowin	Welland	27/06/2010
	Claire Helme	South Wales	02/08/2010
	Jeremy Birkbeck	Bidford	14/03/2010

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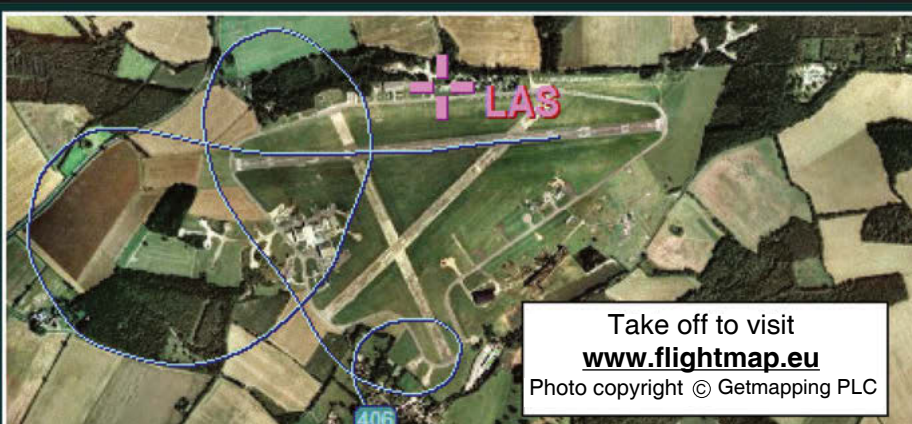
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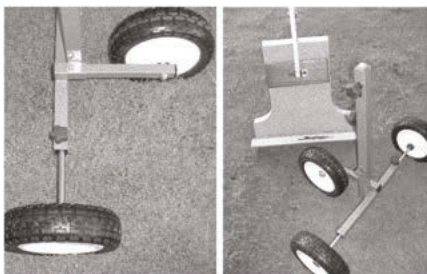
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## New Products • Latest Editions • Special Offers

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The move to our new premises has also allowed us to expand the workshop and aircraft/glider accessories side of our business – so whether you need an oxygen refill, aircraft instrument, gliding accessory or complete new panel, we are even better placed to serve you.

We could go on – and in future we will keep you informed of the latest developments at the shop – but best of all, please just come in to say hello. The new AFE Oxford Pilot Shop is four minutes walk from the Oxford airport entrance (turn down the road adjacent to the Mercedes showroom) and 10 minutes drive from junction 9 of the M40.

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