

SAILPLANE & GLIDING

VOL. 61 NO. 2



**SPINNING: HOW TO
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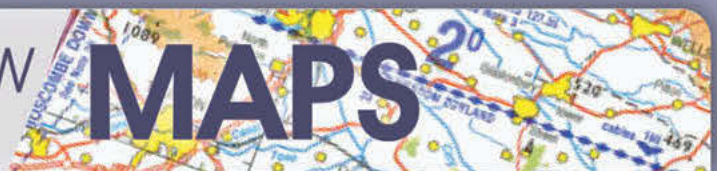


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Justin Wills experiences flying at Kiripotib in southern Namibia, one of the world's most outstanding soaring areas and yet a well-kept gliding secret

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Much soaring time is spent in search of them, but what makes the perfect thermal? **Alan Lapworth** investigates

50 GOING FOR A SPIN

Regular spinning practice can save lives. BGA National Coach **Mike Fox** looks at how to avoid becoming an accident statistic



MEMBER OF THE ROYAL AERO CLUB AND THE
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COVER STORY

Looking for an alternative to cross-country gliding or just keen to improve your skills? Aerobatics could be the answer - and it's great fun too! Turn to page 20 and find out what is involved. (Paul Johnson)

DEADLINES

June/July 2010

Articles, Letters, Club News: 9 April
Display advertisements: 23 April
Classifieds: 5 May

Aug/Sept 2010

Articles, Letters, Club News: 10 June
Display advertisements: 25 June
Classifieds: 6 July

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> The BGA is strongly recommending action by clubs and members in response to the significant threat posed by Eurocontrol proposed Standardised European Rules of the Air (SERA). These rules will affect us all from 2012. Safe and effective integration of the various elements of aviation has evolved over many years through national differences to ICAO Rules of the Air. Eurocontrol proposes that all differences must be cancelled. The safety, operational and economic impact of the new rules, coupled with the removal of all differences, will be significantly damaging to gliding. A BGA working group has been reviewing the SERA proposals with the aim of producing a detailed BGA response as well as guidance material for the membership. The BGA is additionally working with its UK and European air sport colleagues. Details of the consultation and how to respond can be found at www.gliding.co.uk/bgainfo/consultation.htm

> In some glider types it is possible for a pilot to slide backwards and upwards on the launch under certain circumstances, for example a rapidly accelerating winch launch. When this happens, the control column may be pulled back, with an inevitable stall/spin potential. In the past there has been a serious incident due to this cause. Gliders with purpose designed seat backs tend not to be affected. It is suggested that, where sliding backwards could be an issue, an anti slip surface and/or solid cushions are used behind the pilot and the seat harness is especially tight before the glider is launched. There is a view that small pilots are particularly at risk. It was hoped that a technical solution could be developed for this problem. This has proved to be impractical.

> The 2010 Royal Aero Club Awards ceremony will be held at the RAF Museum, Hendon on 27 April. This prestigious event celebrates the achievements of UK aviators and behind-the-scenes workers from all branches of sport flying. Held in the midst of the historic collection at Hendon, the awards will be presented by the Club's President, HRH the Duke of York. A number of achievers from the gliding world will receive awards. Tickets, priced by the RAeC at £35 (£60 for a pair), are available via the BGA shop. More details of the awards are at www.gliding.co.uk/documents/raecawards2010.pdf

> Glider pilots who do not hold any other forms of licence can now renew their Flight Radio Telephony Operators Licence using a BGA CFI for verification of experience. Previously, renewal could only be done via an Air Traffic Control Officer. The renewal application form (SRG 1106G) is available on the CAA website www.caa.co.uk/docs/33/SRG1106FFEnabled.pdf



■ THE number of female BGA inspectors has doubled with the recent appointment of Jo Hoy, pictured above. At 19, Jo is the youngest instructor to have been appointed by the BGA.

She has been working with dad Stu Hoy in the family business, Anglia Sailplanes, for just over two years. In that

time she has been busy learning about aircraft engineering, both airframes and engines.

Jo's first venture into aircraft servicing was at Norfolk GC where she went along to help her dad repair the club's Grob 109 engine. Now a member of the club, Jo is hoping to go solo in the near future.

BGA Waypoint List for 2010

THE 2010 BGA Waypoint list was published on the web pages in March, and included over 30 new points, *writes Ian Strachan, BGA WP List Co-ordinator*. The total is now nearly 1,200 accurately-plotted points for you to choose.

In terms of accuracy of new points, in addition to using the computerised version of the OS 1:50,000 map, Google imagery is now used to cross-check the feature and make final adjustments if necessary.

Areas in which there are new points include Berwick, E of Doncaster, Edgehill, Gainsborough, Hungerford, Ipswich, Kent, Norfolk, North Hill (Honiton/Taunton area) and E of Portsmouth. The full list is in Amendment 13, which is also published on the web page.

If you do not want all of the BGA Waypoints, download the version in MS Excel and use the 'sort' function using the columns for either the nearby Main Feature, N-S and/or E-W Lat/Long or Grid Ref.

The definitive BGA list, including the latest updates and any 'Stop Press' items, can be accessed through a link from the BGA website: www.gliding.co.uk. The list is held at www.spsys.demon.co.uk/turningpoints.htm and can be read directly at this reference. It is also published internationally on John Leibacher's Turning Point Exchange website <http://soaringweb.org/TP> that also has many other interesting Waypoint lists. For Europe, see <http://soaringweb.org/TP/EU.html>

First year success for fixed price flying

MIDLAND GC has concluded a year-long trial of fixed price flying and mandatory booking for weekend training. Fewer than 10 per cent of the members who replied to a recent survey wanted to revert to either "by-the-minute" charges or training allocated on a "first-come-first-served" using a traditional flying list system and both schemes will be continued.

The initiatives were conceived to give

members more flying and better value while increasing the utilisation of the fleet and making the club more financially secure.

The club's objectives have been met unequivocally; in 2009 club members flew 25 per cent more hours in club two-seaters and 15 per cent more flights in club single-seaters compared with the average of the previous four years.

WHAT MAKES A PERFECT THERMAL DAY FOR YOU?

IN THE Feb/March issue, Platypus reminisced fondly about the simplicity of star ratings used to forecast promising cross-country soaring (four or five being great - "take lots of sandwiches, water and pee bags:").

This prompted Paul Scorer, of RASP-UK, to consider resurrecting Jack Harrison's star ratings. "Jack, of course, had years of experience which must be distilled into an 'algorithm' for coding," said Paul.

Paul's current thinking is that a perfect thermal day (in the UK!) has:

- Thermals of 225fpm to at least 3,500ft
- Cloudbase greater than 3,500ft
- 20 per cent cloud cover
- Winds less than 15kt at flying height
- All the above to apply for at least five hours.

On this basis, a map could be provided which, if nothing else, would indicate "where to go".

Paul is actively soliciting feedback on both what makes a 'perfect day' (a 5-star rating) and what would spoil it to make it only 4-star, 3-star, etc. "The feedback must be quantitative to be of value: 'Not as good as a 5-star day' won't help me much!" said Paul.

"I am also very aware that clubs may be concerned that publishing star ratings could mean that members will only come

out on 4-star or 5-star days, and so they potentially lose income. My current thinking is to make ratings available only for two+ days ahead. If it looks promising, people should investigate further. What do folk think about this?"

If you would like to make your opinions known on this matter, please send your feedback via email to editor@sailplaneandgliding with the subject line "Perfect Thermal Day", or write to the editor at the address on page 3.

■ RASP-UK (<http://rasp.inn.leedsmet.ac.uk>) has continued to develop. It now has bigger maps and a Zoom and Drag facility in RASPTable. There is also an interface indicating if the ridge sites are expected to work. The Track Average facility has been enhanced, and it is now cognisant of forecast information for all available forecast times. It uses "speed to fly" theory to indicate the speed, time, etc, achievable for a task specified by BGA TriGraphs. It is aware of (ballasted and unballasted) glider polars. A development from this indicates the best time to start the task.

■ Dr Jack Glendening - author of RASP - is not continuing development work on RASP, due to medical problems and not flying for over a year, largely due the unserviceability of his ASH 26E following an in-flight fire.



Philip Bradbourn, Conservative MEP for Worcester, visited Nympsfield and pledged to see EASA plans amended

MEPs urge EASA to rethink plans

CONSERVATIVE MEP for Worcester, Philip Bradbourn, visited Nympsfield earlier this year and was quizzed about the problems with European legislation which is impacting on gliding.

Mr Bradbourn, a leading member of the Transport Committee in the European Parliament said: "This legislation is a typical example of where a hammer is being used to crack a nut.

"The tried and tested system which has ensured safety for years works without added paper work and costs which are pricing enthusiasts out of gliding.

"I am committed to raising these issues within the European Parliament and with the European Commission and I intend to see these disproportionate and bureaucratic laws amended."

■ In a speech to the European Parliament on 8 March, the Eastern Counties MEP, Stuart Agnew (UKIP), strongly urged EASA to "think again" about its plan to abolish the Instrument Meteorological Conditions (IMC) rating.

Mr Agnew said: "In developing a harmonised European pilots licence, EASA is about to wipe out the IMC rating, leaving many private pilots unable to fly, unless they can guarantee cloudless skies for the entirety of their trip. This is a bit like guaranteeing that England will win the World Cup, on a penalty shoot out!

"The abolition of the IMC rating is a serious threat to the safety and the future of private flying. EASA must think again."

DATES

NATIONALS, REGIONALS AND OTHERS

Competition Enterprise (not rated)	Lasham	3-10/7/10
Worlds (unflapped)	Prievidza (Slovakia)	3-18/7/10
15m Class Nationals	Nympsfield	3-11/7/10
Club Class Nationals	Hus Bos	24/7-1/8/10
Worlds (flapped)	Szeged (Hungary)	24/7-8/8/10
VGC International Rally	Tibenhams	31/7-8/8/10
Open Class Nationals	Aston Down	7-15/8/10
Standard Class Nationals	Aston Down	7-15/8/10
25th National 2-seater comp	Pocklington	22-29/8/10
18m Class Nationals	Lasham	21-29/8/10
Junior Championships	Bicester	21-29/8/10
UK Mountain Soaring comp	Aboyne	5-11/9/10
2010 glider aerobatic competitions:		
Dan Smith Memorial Contest	Dunstable	27-28/3/10
Bicester Open	Bicester	7-9/5/10
Nationals	Saltby	10-13/6/10
Saltby Open	Saltby	10-12/9/10

EASTERN REGIONALS	
Tibenhams	29/5 - 6/6/10
BOOKER REGIONALS	
Booker	29/5 - 6/6/10
BIDFORD REGIONALS	
Bidford	19-27/6/10
HUS BOS REGIONALS	
Hus Bos	19-27/6/10
SHENINGTON REGIONALS	
Shenington	3-11/7/10
DUNSTABLE REGIONALS	
Dunstable	24/7 - 1/8/10
BICESTER REGIONALS	
Bicester	24/7 - 1/8/10
NORTHERN REGIONALS	
Sutton Bank	31/7 - 8/8/10
LASHAM REGIONALS	
Lasham	21-29/8/10
GRANSDEN REGIONALS	
Gransden	21-29/8/10

A reflection of the times?

I HAVE been a regular reader of *Sailplane & Gliding* ever since I started flying in 1954. Much has changed since then, including your excellent magazine, but isn't it time you changed the title?

I seem to be able to recall from the furthest recesses of my mind that there had been two magazines, one *Gliding*, and the other *Sailplane* and that these two magazines had combined at some time to become *Sailplane & Gliding*. I also seem able to recollect that very occasionally gliders were referred to as 'sailplanes'; but in these days this misnomer is never used, and the only places in which I see it used is in references to *Sailplane & Gliding* and, very occasionally, in the business titles of advertisers in the magazine.

To the uninitiated the word 'sailplane' must convey a mental impression of a flying contraption that sails on the wind and over which very little control is exercised. Such an impression can hardly be inspiring to anyone contemplating taking up gliding. By comparison, and I hardly need to say it, a modern glider is an extremely efficient flying machine which is, aerodynamically, very sophisticated, and which is flown with a high degree of precision and accuracy by its pilot.

May I suggest that a better title might be just simply *Gliding* or perhaps one that truly reflects the pleasure to be had from flying in today's high performance gliders. I would welcome readers' views.

David Hill, Yorkshire GC

The editor replies: *Wally Kahn tells a fascinating tale of S&G's origins, which unfortunately I do not have space to publish here. In 1955, Sailplane and Glider combined with the BGA's Gliding to create Sailplane & Gliding. These days, elsewhere in the world the word sailplane is more commonly used than glider. Our European colleagues always refer to sailplane, so it could be argued that the title Sailplane & Gliding has never been more appropriate. What do readers think?*



The Weihe flown across the Channel by Lorne Welch in 1950 requires a new home and some TLC

LOVING HOME SOUGHT FOR A PIECE OF GLIDING HISTORY

I READ with interest the article on crossing the Channel (Feb/March, p25), as I have recently acquired the remains of the Weihe (BGA 448) flown across the Channel by Lorne Welch on 12 April, 1950.

This glider had been in the possession of Derek Phillips (see obituary p70 Feb/March issue) for many years since being bought from Rick Myhill in 1992. I have known about the glider for a while, but until helping to sort Derek's gliding possessions following his sad death, I had not appreciated its possible historical interest.

As well as the Weihe itself, I have also taken possession of the UK log books (from 1947 on).

This prompted me to do some digging on the internet, the most useful information to date coming from the Scale Soaring site, which posts an article which would appear to have been supplied to them by the VGC, but which I believe contains some inaccuracies.

As far as I can tell so far, this Weihe was built by Jacobs Schweyer in Darmstadt in 1943 and was brought back to the UK from the Wasserkuppe in 1945, along with another complete glider (BGA 433, subsequently exported to NZ, only the fuselage now remaining) and some other parts which were amalgamated to form BGA 642.

It was given its first CofA in June 1947, and flew at Surrey Gliding Club at Redhill for some years, the logbook bearing the signature L Welch on most entries up to about 1954, including that of 12 April 1950, which shows a flight of 6hrs 27mins "Brussels Melsbroek LW". On the 14th it had two flights totalling 3hrs 35mins "tow back".

At some point it was given the registration G-ALJW, which I understand was necessary for trips abroad, which it certainly made use of, including being flown by Lorne Welch at the 1950 World

Championship in Sweden.

I haven't had time to go through its complete history, however its flying career ended on 20 July, 1979, when it was blown over "by whirlwind" at Thun, Switzerland.

The glider is now in very poor condition, though basically complete, the only major part missing is the canopy, and I still have some hope of unearthing that from Derek's workshop! I even have the jettisonable wheel dolly.

The main damage is to the tail area, where the fin has broken off and the tailplane and elevators are broken, and to the port wing where the spar has snapped at the end of the metal root fittings. I assume that this damage was incurred during the whirlwind accident. I would be interested to know what happened to it between the accident and Derek buying it from Mr Myhill.

I believe that the main reason the Derek never persevered with repairing it was due to severe glue failure, though he clearly contemplated repairing it as I have also obtained some copy technical drawings dating from 1942, mostly of the wings and tail, apparently sent to him by Chris Wills, though I do not know when.

I would be most grateful for any further information about this glider, including its German history, of which I have none.

Also, I would be very pleased to see any photographs, especially of the complete glider. I have one of LW sitting in it, but only a cockpit view, and also a picture of, I believe, Wally Kahn sitting in another one, which I am almost certain is not mine.

My main interest in this glider, apart from its historical interest, is to save it from destruction! I would be delighted if anyone is interested in taking this glider off my hands, as I have neither the expertise or space to do anything with it!

Nick Jaffray, Stratford on Avon GC

A SECRET? CERTAINLY NOT

KEITH Nurcombe (Aug/Sept 09, *letters*, p7) describes gliding as a well-kept secret; it certainly is not!

Just look at the temporary member numbers (June/July 09, *BGA Club Annual Statistics*, p46) – over 20,000 temporary members in a typical year. Now if we consider that each first lesson flighter tells (say) three other people of their thrilling experience then year-on-year 60,000 – yes sixty thousand – people know of gliding.

So, why don't they take up the sport? Put succinctly, cost.

Air sports have never been cheap, but were once affordable before expensive to insure and maintain plastic ships were the norm and before a series of price hikes in the cost of fuel in recent years. As an example, looking through my old log books

I see I was taking as many as four aerotows in a single day in the late 80s and early 90s.

So, 20,000 people take a trial first lesson; many of these flights are paid for by relatives and friends in the form of gifts for anniversaries, birthdays and Christmas presents. They are too polite to ask them how much it cost and look forward to the day of their free flight.

Following the flight they emerge from the cockpit, more often than not smiling from ear-to-ear, obviously very much having enjoyed the experience. You then explain to them that, as temporary members of the club, they can return and do it all again in the next 28 days at current club rates. At this point they usually enquire what these rates are and, when told, their facial expression changes to one of

disbelief and the sound of them swallowing hard is almost deafening. They then drive off into the sunset, seldom, if ever, to be seen again.

The pensioners realise that their fast-windling savings will not run to a course of flights leading to solo (using the old rule-of-thumb, age plus 20 flights) and the younger element decide they would prefer to spend £2,000 to insure their old banger, worth only £1,000.

However, unlike the utterance of Private Frazer of *Dad's Army*, we, as an organisation are not doomed; gliding will always be kept alive by the racing pundits where cost is only a secondary consideration and by those generous 20,000 relatives with their first lesson vouchers.

Michael Sismey, Stamford, Lincs

THREE-STAGE SCAN HELPS

I READ with interest Mike Fox's recent article in S&G about the approach (Feb/March, *The Approach*, p42). I was very pleased to see that he pointed out that the aim is to manage the aircraft's ENERGY during this critical phase of flight. To this end he discussed in detail two elements that must be monitored carefully (Speed and Reference Point). However, he did not mention the third element: that being the planned Approach Track Line over the ground, which enables the pilot to precisely monitor any drift due to crosswinds. This may be fairly straight forward at airfields with good natural perspective cues such as runway edges, but much less obvious when flying from large grass airfields or when making a field landing.

When instructing I define the planned Approach Track Line as the (imaginary) line which runs from the planned Final Turn Point – through the RP – and out through the far end of the landing area to the Vanishing Point (ie to the horizon). As an instructor who often teaches field selection and landings I find it very useful to emphasise that we must carefully monitor and manage the aircraft's kinetic energy (speed) and potential energy (height) in order to make a well controlled and safe approach and landing. However,

since the student pilot is now flying a motorglider s/he has the additional burden of also dealing with an unfamiliar aircraft type. To this end some years ago I analysed exactly how I monitor the approach and have for some time taught the the following methodical scan (and prompt keywords) with great success to both FLEx Candidates and *ab-initios*:

Keyword	Action
SPEED	Check ASI needle for position and trend.
REFERENCE	Look up to check RP for position and trend.
LINE	Look up from the RP along the planned Approach Track Line well ahead to the VP to assess drift position and trend.

This simple three-stage scan is repeated throughout the approach until just prior to round-out. In the round-out phase the RP is no longer of use and we look up our Track Line to monitor/manage the touch-down and roll-out. I have found that this scan works successfully for all the (fixed-wing) aircraft I have flown, whether glider or powered, irrespective of design, size, speed, etc.

I hope this is of some help.
Ian Atherton, Norfolk GC

Students have got it taped

I READ with interest the "Testing Times" article (Feb/Mar 10) and Jochan Ewald's report of Akaflieg students' quest to improve glider performance. Of particular interest in the article were the pictures of our European cousins happily taping all sorts of modifications to their gliders.

Can we safely assume that these modifications are all EASA-approved with all the requisite paperwork in place?
Alistair Gillson, Shropshire

Please send letters (marked 'for publication') to the editor at editor@sailplaneandgliding.co.uk or the address on p3, including your full contact details. The deadline for the next issue is 9 April

AIRSPACE ACCESS AND VITAL ASSETS

BGA Chief Executive **Pete Stratten** comments on the importance of avoiding airspace infringements and on growing membership by meeting the needs of all glider pilots, regardless of their experience or level of interest



P

ROBABLY the most important asset in gliding is the airspace through which we fly. The highly-respected European Gliding Union (which has 22 national gliding federations in its membership including, of course, the BGA) has for years stated loud and clear that 'Gliding Needs Airspace'.

Together with our air sport friends in the UK and across Europe, the BGA is working effectively to defend our rights to airspace access in the face of increasing commercialisation.

Infringements of controlled airspace are a major cause for concern. In the UK, glider pilots are responsible for some 0.5 per cent of the UK total over a 10-year period. This figure represents a number of incidents, each of which may well have led to unacceptable increase in risk, significant cost and, far more seriously, had the potential to cause damage and loss of life.

Glider pilots are largely successful in keeping out of trouble, not least because of widespread and established use of GPS and moving maps. But we do still get it wrong. A surprising example is where a glider pilot, perhaps getting low and under pressure, enters an ATZ without permission and thus fails to comply with ANO Rule 45 'Flight within ATZs'. It's easy to imagine the chaos and danger that can be caused.

It's incumbent on all of us to make sure that the few who are not careful should be educated and, in no uncertain terms, be firmly pointed in the right direction. Infringements are dangerous, unacceptable and undermine the huge amount of effort employed to maintain our freedoms.

Few would argue that another of the

sport's vital assets is people. Unless the flow of people coming in to the sport matches or exceeds the natural outflow, the sport is hardly likely to thrive and develop. A review of the big numbers shows how from the late 1950s through to the 1970s and 1980s, gliding club membership rose from some 3,500 flying some 300 gliders in total to around 11,000 in total flying some 1,900 gliders. It then reduced sharply over the following decade and has continued to slope gently down to around 8,000 people flying around 2,300 gliders these days.

There are many factors that have influenced club membership numbers over the years, including lifestyles, economics, increasing regulation and a steep reduction in the military and its service gliding membership. A previous study by the BGA identifies the natural turnover of membership that occurs in any activity. However, the same piece of work, which is as valid today as it was 10 years ago, notes that participation levels are closely linked to people's perceptions and experience of whether or not gliding meets their needs. Hold on to that point.

Clearly the vast majority who each year try their first gliding lesson do not take up the sport. Twenty thousand plus new members per annum at our clubs could be an interesting challenge given the reducing amount of sky available to us! If 15 per cent of the membership moves on each year, to stand still in membership terms we need to have impressed around 6 per cent of those newcomers such that they want to continue in the sport. Reduce the numbers of regulars moving on, impress 6 per cent of newcomers and we begin to make progress.

There is no doubt that a year-on-year increase in membership is a hugely significant challenge, but one that we should set ourselves. Behind that easily made statement is a whole set of complex issues associated with meeting the needs of all glider pilots, regardless of their experience or apparent level of interest, revisiting our approach to newcomers and, indeed, looking at our own clubs more critically, but constructively.

The BGA is launching a stream of work that will indirectly, for example by ensuring that existing processes and services do not present unnecessary barriers, and directly in other ways support clubs' efforts in attracting and developing participation.

If you have some time during 2010 to get involved with this or any of the other vital work carried out by the BGA, please contact me at pete@gliding.co.uk

SAFETY COMMITTEE CHAIRMAN

The BGA is looking for a volunteer BGA Safety Committee chairman to take over from Phil King as soon as practical. The task of the BGA Safety Committee is to develop policies for the achievement of safe gliding and to influence those in gliding so as to bring about a reduction in the accident rate. The Safety Committee chairman's role is to;

- Lead the management of the necessary routine of safety committee business
- Encourage the creation and steering of projects addressing big targets and based on plausible hypotheses for achieving fewer accidents
- Promote the identification and exploitation of initiatives towards fewer accidents
- Effect the integration of safety management into other BGA processes within the BGA Operations Group

The Safety Committee meets approximately 4 times per year. Out of pocket expenses are paid by the BGA. Please apply in confidence or seek further information from Pete Stratten pete@gliding.co.uk



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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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Fly more, for less



At the **Midland Gliding Club** we want our pilots to achieve their full potential by flying as much as possible. To help them, we have changed the way we do things:

Our members pay a fixed fee that covers all flying time in club aircraft. The 2010 -11 Flying Fee is the same as last year, just £24/month (£288 per annum), or £12/month (£144 per annum) for instructors, private owners and juniors, all paid by direct debit. Even extended cross-country flying in the club's Discus is included. Private owners no longer pay to keep a trailer on the hitch.

Our two-seater booking system and large fleet ensures student-pilots get the training they want, when they want it. Post-solo pilots developing their cross-country skills are given priority use of our high-performance two-seater DG505 glider for tasks and competitions.

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DERBY & LANCS GC - ENVIRONMENTAL MANAGEMENT

CAMPHILL lies within the Peak District National Park. The option of joining the Countryside Stewardship Scheme had been rejected by the club because of the level of commitment required over 10 years. However, the National Park Authority has money to assist with land management.

The club built a good working relationship with the Authority Fund Manager and has been receiving assistance since 1995 with three projects: field conservation, tree surgery, and dry stone walls. The field conservation relates to a managed 'wild area' of the site and attracts a small grant each year (£15,000 so far).

Many of our airfields offer low-chemical sanctuary for British fauna and flora. If you want some money for your club, there are several environmental organisations offering schemes and financial assistance for sensitive environmental management.

Fire up your favourite search engine, get on the blower and ask around.



Alison Randle
BGA Development Officer
alison@gliding.co.uk

Improving your lot

(With the help of someone else's money)

THERE have been requests for information on successful fundraising by gliding clubs. Here are four examples which should help to inspire your club (that's you!) to look for your local opportunities. Time spent on realistic planning (know your limits), research and building goodwill is never wasted.

Although not planned as a feature on CASC status, all the gliding clubs featured here are registered with HM Revenue & Customs (HMRC) as Community Amateur Sports Clubs (CASC). This is equivalent to charitable status and has been specifically designed for sport. Amongst other financial benefits, CASCs are automatically entitled to: 80 per cent business rate relief; exemption on corporation tax on income, capital gains and interest; claim Gift Aid on donations.



Orchids growing at the airfield help Camphill attract grants (Dave Martin)

Yorkshire GC - reaping Gift Aid

Did you know that instructors can claim travel expenses for duty days? At Yorkshire GC, volunteer instructors have been donating their travel expenses to the club and the club has just claimed Gift Aid on those donations. To date they have raised £5,500 from 23 instructors, going back five years.

How? HMRC has a very useful Gift Aid Toolkit CD, which sets out all the conditions, rates and procedures with clear instructions. These procedures were followed by the club (without deviation or attempting clever shortcuts).

Instructors had written a letter to the club stating that they wished to donate their travel expenses to the club. The club has records of instructor duties and expenses were paid to those individuals, who then donated the amount back to the club. Once the donation had been made, the Gift Aid was claimed.

You will need a patient, methodical person to do the paperwork - it may even be worth employing a book keeper. Further information is available from www.hmrc.gov.uk/charities/gift_aid/casc.htm

Buckminster GC - green toilets/showers

Everyone had had enough of the bog standard toilets at Buckminster. So plans were drawn up to build a new toilet and shower block, but with a difference - in addition to being compliant with the Disability and Discrimination Act (DDA), and being attractive to prospective members and their families, the new facilities utilise environmental technology at every opportunity, aiming to become a zero energy building. This includes highly insulating building materials, high thermal efficiency heating and water system, grey water harvesting from the hangar roof and a heat recovery system, with plans to include solar panels soon.

The project is costing £50,000. The club has secured £17,000 in grants and Gift Aid. In addition, under the Enhanced Capital Allowance Scheme run by DEFRA, £30 in every £100 spent on certain areas can be reclaimed. The club anticipates significant savings in future bills. The waterless urinals save 87,000 litres of water each year. The club has already made a 25 per cent saving on their contract LPG price. The club uses LPG for launching.

Mendip GC - a new winch

The gradual introduction of modern gliders, combined with an increasingly elderly home-built winch whose horses had been quietly escaping over the years, had made for a decreasingly enjoyable launch experience. Plans were excitedly drawn up to raise money to buy a new Skylaunch. A period of rational reflection resulted in a search for viable alternatives. The solution: the club used reserves to buy a second-hand Tost winch and had it refurbished by Skylaunch. The new winch has invigorated many aspects of club life.

This example shows the importance of *realistic* project planning and the value of club reserves for being able to take rapid advantage of strategic opportunities.

■ **Useful documents: the BGA CASC information sheet and Project Funding Guide are available to download from www.gliding.co.uk/bgainfo/clubmanagement/documents.htm**

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BGA

With rain over most of the country, it was the perfect day for this year's conference. Pete Stratten reports on a successful event

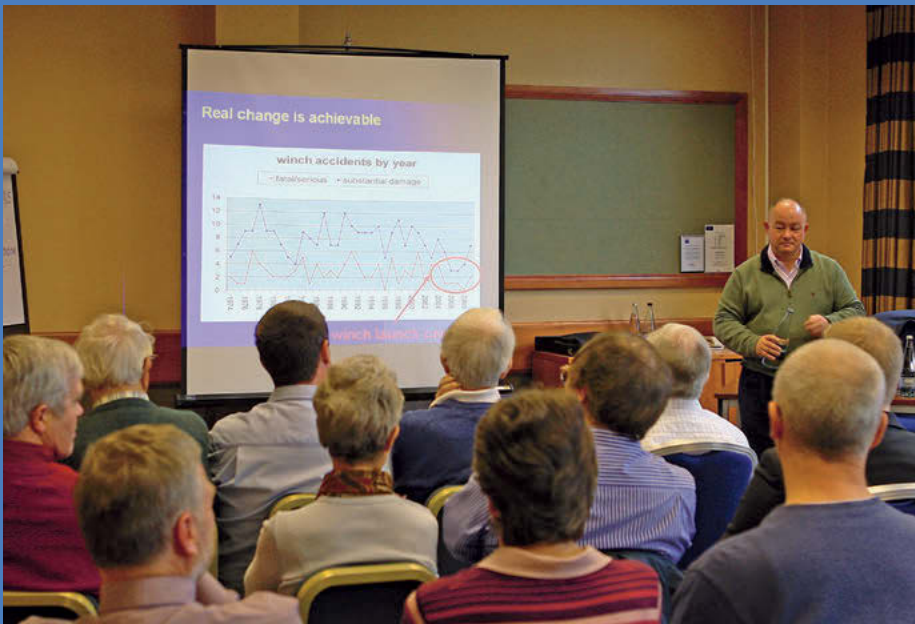
SOME 450 glider pilots, as well as colleagues from other air sports and the CAA, gathered on 20 March for this year's BGA Conference and AGM at Daventry.

The day kicked off with two parallel sessions for club officials; a Club Chairmen's forum and a CFI/Senior Instructors' forum.

Peter Harvey, a BGA Executive Committee and British Team member, welcomed everyone and presented a brief introduction of the main conference programme. Development officer Alison Randle and Executive Committee member Andy Perkins presented an overview of the Junior gliding initiative, including the official launch of the BGA's Junior Gliding Centres. National Coach Mike Fox then presented the annual Caroline Trust awards to yet another group of talented young pilots who will benefit from the trust's support.

Brian Spreckley took to the floor to present some of the FAI's air sport promotional developments. Highlighting the two-way relationship between top level competition gliding and national club level activity, as well as between different air sports, Brian showed how the Gliding Grand Prix and the World Air Games present a very real high-level marketing and promotional opportunity for gliding, including the potential for mass media exposure through the web and TV. Brian went on to present the premier showing of the stunning new Gliding GP promotional HD film.

Describing his amusement of holding a world record, only to have it surpassed by an even more amazing flight in the area a day later, John Williams shared his recent experiences of gliding in Argentina. The sheer distances flown and the speeds achieved in



Club chairmen agreed that club management has a key role in improving safety



John Williams entertained the audience with the tale of his recent world record flight in Argentina



Delegates were offered a hands-on opportunity in the exhibition hall with some of the latest gadgets on display

CONFERENCE

the wave were as breathtaking as the scenery seen in John's presentation on a soaring paradise that is becoming a world record hunting ground.

After lunch, Patrick Naegeli reflected on past and future BGA activity, noting the enormous amount of effort undertaken at clubs and centrally in supporting, developing and protecting our sport. Focusing on the activities of the BGA Operations Group and the BGA Performance & Development Group, Patrick highlighted the work of the various associated sub-committees and working groups. Patrick noted the ongoing load on the Airspace sub-committee in particular and how BGA marketing of gliding is currently subject to a review that will result in discussion with clubs later this year. Patrick then described how *S&G* is moving forward under Susan Newby's editorship, highlighting how important the magazine is within the BGA's communications toolbox.

Outgoing BGA Treasurer John Birch reported on the healthy state of the Association's annual accounts and on the future budget, noting that the BGA is budgeting for a small loss in 2011 and that maintaining the affiliation fee at the level it has been for four years may become difficult if club membership levels do not level out or increase in the coming years.

BGA Chief Executive Pete Stratten then outlined some of the ongoing regulatory issues and noted how the BGA organisation will continue to work closely with everyone involved with the aim of achieving proportional, workable and affordable regulatory outcomes for gliding.

Moving on to the formal business of the AGM, the Minutes of the AGM held on 7 March, 2009 were approved; the Annual Report was adopted; the Revenue Account and Balance sheet for the year ending 30 September, 2009 was adopted; the budget for the year ending 30 September, 2011 and annual subscription rates (unchanged) were adopted and the Auditors King Freeman were reappointed for a further 12 months.

Next was the appointment of officials; it was noted that Patrick Naegeli was re-standing as BGA Chairman, Robert John was standing as Vice Chairman and Matt Cook was re-standing as a nominated Executive

Committee member. Phil Burton had retired mid-term and Bruce Tapson was stepping down due to personal circumstances. In accordance with the articles of association, co-opted members Keith Mansell and John Birch were stepping down. Ron Bridges and John Williams were nominated as new members and, as the number of nominees did not exceed the number of vacancies, there was no need for an election and all those nominated were accepted as members of the Executive Committee. The formal business closed with the re-election of all the BGA Vice-Presidents.

BGA Diplomas were presented for services to gliding to the following: Roger Matthews (Dartmoor GC), Roger Morrisroe (Nene Valley GC), the Parham Purchasing Team (Southdown GC), the BGA Airworthiness Transition Team (BGA), Mike Wood (Yorkshire GC), Guy Westgate (Southdown GC) and Norman Revell (Buckminster GC). A BGA Bronze Medal for meritorious service to the BGA was presented to John Birch. Patrick Naegeli announced that the BGA has awarded a BGA Bronze medal to Bruce Tapson for his meritorious services to gliding instruction in particular, and went on to identify the RAeC honours recently awarded to Helen Evans, Bruce Tapson, Roger Morrisroe and the British Team.

The AGM was followed by a remarkable story of fear, humour and fast thinking, presented by Eric Moody, pilot of the B747 that suffered total engine failure after passing through a volcano plume.

John Bally then provided an insight into his Middle Eastern and African gliding adventures flying very high performance two-seat self-launching sailplanes over some of the world's most beautiful and challenging landscapes.

The conference continued with a formal dinner, the presentation of BGA trophies and thanks from Patrick Naegeli to the conference sponsors and to Claire Emson and the team of conference organisers and helpers. The party went on to the early hours...

BREATHING NEW LIFE INTO GLIDING

Gliding in the UK is special, but as our average age continues to increase how long will it remain so? What can we collectively do to ensure that our sport continues to flourish in the future?

Alison Randle and Andy Perkins launched the Junior Gliding Centres (JGCs) and shared news of the BGA's Junior Strategy, reporting on the scope of work under way. New partnerships with youth organisations are growing and additional funds are being located to provide more subsidised flying opportunities.

Junior Gliding Centres are BGA clubs that cater for young people, laying on more than just a trial lesson experience and aiming to introduce young people to the sport, building solid foundations for the future of gliding. See www.juniorgliding.co.uk for the latest news and events.

Whether we fly at a JGC or not, the future lies with us - we can all encourage fellow pilots to get the most from our sport.



The BGA simulator was a big attraction at the conference, drawing the crowds between sessions
(All photos by Paul Morrison)



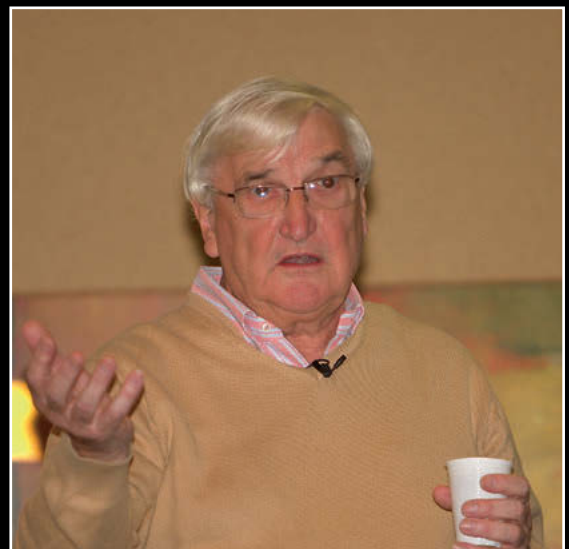
This page, clockwise from top left:
The BGA's Debbie Carr (left) and Lizzie Pike, who manned the BGA and S&G stands

John Birch received a BGA Bronze Medal for meritorious service to the BGA from Patrick Naegeli

Speakers included Eric Moody, Brian Spreckley and John Bally

Pete Harvey welcomed delegates and presented an introduction of the main conference programme

A Jonker Sailplanes JS1 Revelation was on display. The 18-metre class sailplane has recently received South African Civil Aviation Authority Type Certification. This is the first South African designed and manufactured aircraft certificated to modern airworthiness standards. The certification requirements for the JS1 Revelation are the latest issue of EASA CS-22 Certification Standards for Sailplanes and Powered Sailplanes





This year's Caroline Trust Cadet of the Year winners are three young pilots from Wolds GC. (Left to right) Jonathan Phillips, Sophia Hunt and Jamie Thompson are pictured with the Trust's Dave Martin (far left) and BGA National Coach Mike Fox, who presented the awards. The three cadets each received £150 of flying vouchers to use at the club to help improve their flying and achieve goals



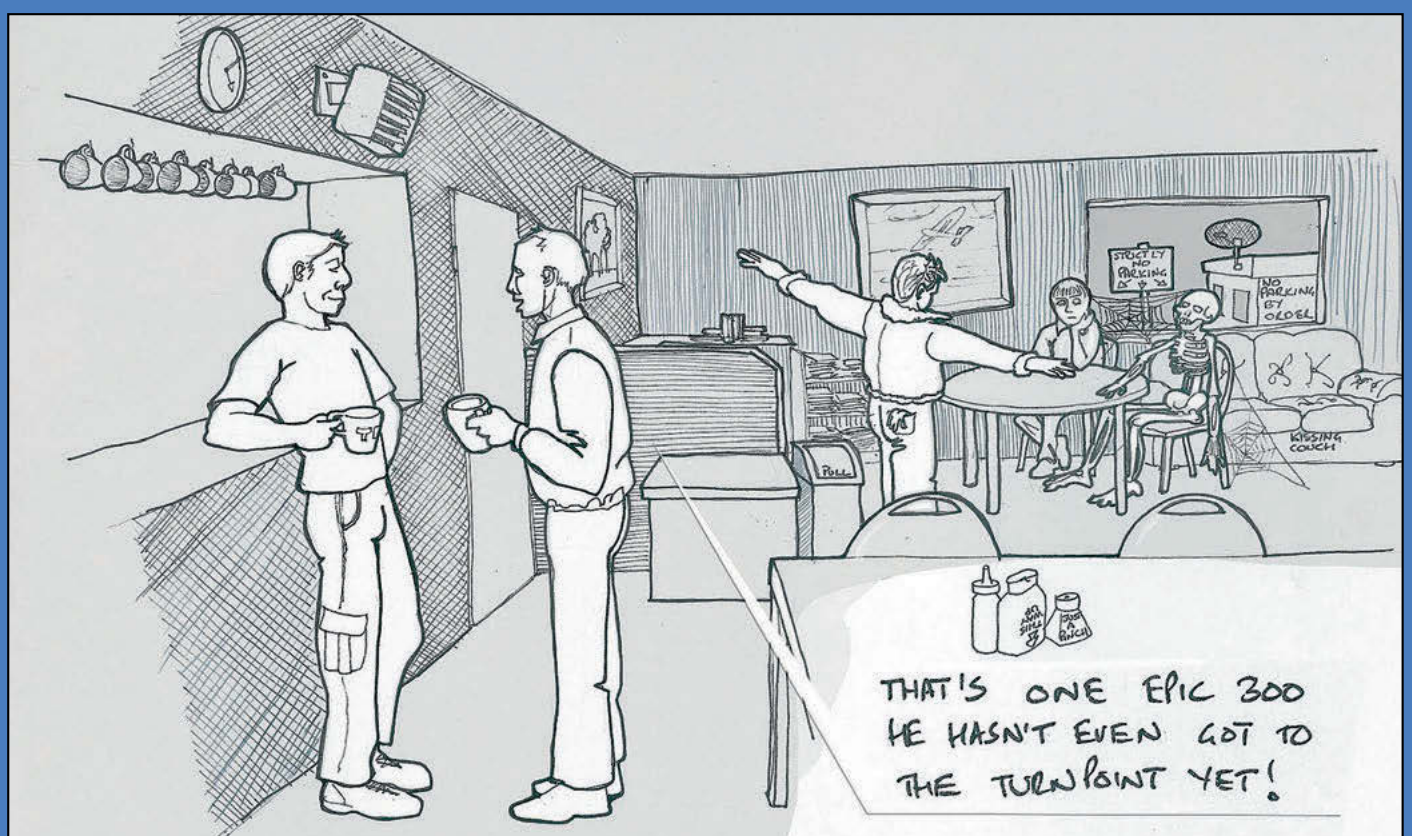
> **GLIDING GALLERY EXTRA**
BGA CONFERENCE



(Left) Delegates signed in and collected their free fleece, courtesy of sponsors Joint Aviation Services

(Above) Russell Cheetham, left, was presented with the Slingsby Trophy by David Roberts for achieving second place in the Weekend National Ladder

ALL PHOTOS BY PAUL MORRISON



The BGA Conference always provides the perfect opportunity to catch up with friends and recall tales from the clubhouse (Cartoon by Matt Wright, Devon & Somerset GC)

THE RIGHT FORMAT TO COMMUNICATE

BGA Chairman **Patrick Naegeli** reflects on this year's BGA Conference and AGM, a well-attended event which achieved the perfect balance between the imparting of information, recognising achievement and having fun.



THE BGA Conference and AGM has become one of the principal features in the UK gliding calendar. Whilst it works perfectly well as a stand-alone event – and that is, after all, how many people think of it – the conference also forms an important part of the BGA's overall communications activities.

The make-up and format of the event have changed over time as the things that are important and/or particularly interesting in our sport evolve. The aim, however, has always remained constant – to strike the perfect balance between the imparting of information, recognising achievement, and, quite simply, having fun.

Anyone that is involved with UK gliding has an open invitation to the conference. Each year, we also invite a small number of people from among our principal external stakeholders. The CAA, GASCo, and other airport associations are examples of regular external attendees. They appreciate the opportunity to get to know more about gliding. For our part, we try to arrange meetings around the formal agenda so that we can discuss specific issues of current concern. Given the amount of regulatory-related work that we have under way at the moment, this sort of contact is invaluable and a key factor in the BGA's ability to establish and maintain extremely strong relationships.

This year's event achieved everything that we set out to accomplish at the outset – attendance levels were very good; the choice of venue seemed to work well for the various meetings, presentations and talks; and, exhibitors found the facilities well-suited to their needs. The BGA team responsible for the conference also picked the perfect day weather-wise. With absolutely no chance of flying over much of the country we were never going to receive many, if any, complaints about wasting a good day.

Claire and Chris Emson, Debbie Carr and "BGA Central", Pete Harvey and many others, organised a superb conference and I'd

like to thank them all for their hard and very productive efforts. This year was poignant in that Claire had decided that this was to be her last conference as lead organiser. After 15 very successful years, Claire's desire to sit in the audience in the future is entirely understandable. She will, however, be sorely missed.

There is a full report on proceedings elsewhere in this issue. I would, however, like to mention a couple of items that are worthy of particular note.

Firstly, the BGA awarded Bronze Medals to two individuals that have given extensive, dedicated service to the management and development of gliding. Bruce Tapson and John Birch have both served on the Executive Committee for a number of years. Alongside their normal Executive responsibilities, Bruce and John have also chaired BGA subcommittees and have provided invaluable support and advice. Both have now retired from the Executive and take our very best wishes with them.

Secondly, there have been a number of significant changes to the make-up of the BGA Executive Committee.

After three years in which the Association has not had a Vice Chairman, Robert John has been elected to the post. The role is especially important. Apart from being prepared to cover duties if the Chairman is not available, the Vice Chair also carries out a number of specific BGA roles directly. I am looking forward to working closely with Robert and very much appreciate his decision to take up the position.

We also have two new members on the Executive Committee. Ron Bridges and John Williams will bring a wealth of experience and expertise, as well as new sets of perspectives, to the work of the BGA.

Finally, we have a new Treasurer. John Birch has retired after serving in the role for a number of years. In that time, John has helped steer the BGA through a number of complex and important financial decisions. He has now handed over the post to Les Kay. Les has been working alongside John for a number of months and has already made a significant contribution to the continued development of the BGA's financial systems.

Aside from being a significant event in its own right, the BGA Conference typically takes place at just about the time where the weather changes from its winter to spring patterns. Not exactly a marker for the beginning of the new gliding season, it does, however, seem to correlate with changes in the basic behaviours of many glider pilots – in particular the onset of increased levels of weather/sky-watching, grumpiness in the face of non-gliding tasks on a possible gliding day, twitching tendencies when in the proximity of cumulus clouds but not anywhere near a glider. Well, anyway, that's how I begin to feel and I am sure that I am not alone.

Whatever your plans and aspirations for the year ahead, I wish you every success in your endeavours.

Stay safe, have fun.

Patrick Naegeli
Chairman, British Gliding Association
March 2010



Trophy winners for 2009 collecting their awards at the BGA Dinner were: (left to right) Roy Wilson, John Williams, Victor Leitch, Ed Downham, Tom Smith, Claudia Hill, John Gilbert and Peter Wyld (Paul Morrison)

BGA PERFORMANCE TROPHIES

BGA 1000km Trophy

Fastest Flight over 1,000km
Not awarded in 2009

Furlong Trophy

Longest Handicapped Triangle
Ed Downham, London GC
709km (823km actual), 14 June,
ASH 25 EB28

Frank Foster Trophy

Fastest Handicapped 500km
John Williams, Scottish Gliding Union
156kph (176kph actual), 25 March,
Antares 20

California in England

*Longest Handicapped Flight by a
Female Pilot*
Claudia Hill, Oxford GC
573km (515km actual), 14 June, DG-100

Volk Trophy

Longest Handicapped Out & Return
Ed Downham, London GC
542km (629km actual), 21 May,
ASH 25 EB28

Seager Trophy

*Longest Handicapped Distance
in a Two-Seater*
**Ed Downham and Dave Cornelius,
London GC**
709km (823km actual), 14 June,
ASH 25 EB28

Wakefield Trophy

Longest Handicapped Distance
Tom Smith, Norfolk GC
756km, 14 June, LS8

Manio Cup

Fastest handicapped 300km
John Williams, Scottish Gliding Union
156kph (176kph actual), 25 March,
Antares 20

De Havilland Trophy

Greatest Gain of Height
John Williams, Scottish Gliding Union
22,777ft (Max height 24,079ft), 22 March

BGA NATIONAL LADDER TROPHIES

www.bgaladder.co.uk

Enigma Trophy

Winner, Open National Ladder
Ed Downham, London GC
23,372 pts

Firth Vickers Trophy

2nd Place, Open National Ladder
Roy Wilson, Deeside GC
21,952 pts

L.duGarde Peach Trophy

Winner, Weekend National Ladder
Peter Baker, Cambridge Gliding Centre
19,275 pts

Slingsby Trophy

2nd Place, Weekend National Ladder
Russell Cheetham, The Soaring Centre

19,256 pts

Spitfire Trophy

Winner, Junior National Ladder
Mike Collett, Booker GC
14,334 pts

Chris Wills Trophy

Winner, Wooden Ladder
John Gilbert, Essex & Suffolk GC
14,994 pts

OTHER BGA AWARDS

Rex Pilcher Trophy

Earliest Diamond Distance in the Year
Victor Leitch, Scottish Gliding Centre
22 February

Goldsborough

*Highest placed pilot(s) in previous World
Championships*
Ayala Liran, Lasham GC
4th FAI Club Class Women's World
Championships

Phil Lever

Most Promising Junior Pilot
Matt Davis, Bristol & Gloucestershire GC

John Hands

*For outstanding support for the organising
and running of competitions*
Peter Wyld, Booker GC

*Trophies presented by David Roberts at
the BGA Dinner*

> NICK GOODHART

Platypus talks to the gliding ace who spent 20 years at the top

FOUR younger pilots know of Nick Goodhart only as a hazy figure wrapped in legend like King Arthur, it is because Nick did an unusual thing for a leading glider pilot. After 20 years at the top, he quit. That was 37 years ago in 1973, when he was 54 and had just retired from the Royal Navy as a Rear-Admiral. This abrupt cessation of a soaring career is perhaps characteristic of a clear-minded and unsentimental approach to life's challenges: *Do your best, then move on, without any wistful looking back.*



Nick showing Prince Philip a model of Sigma, first flown 1971. Sigma's special feature was Fowler Flaps that massively increased the wing area, thus lowering the wing-loading and stalling-speed for thermalling. Delay after a fire at Slingsby's and rapid progress in glass-fibre by Schempp (Nimbus 2, 20.3m) and Schleicher (ASW 17, 20m) meant that the 21m Sigma, with no capacity for water-ballast, never flew in international contests. However, it has been flown extensively in North America and, after modifications to the flaps, set a US triangular 300km speed record

Nick's last contest: mountains and thunderclouds

Like a Harold Pinter play, this piece will start not with the beginning but with the very end of Nick's gliding activities: Yugoslavia in the 1972 Worlds. When it became clear that Sigma would not be ready, Slingsby lent Nick a new Kestrel 19; he had to put the instruments in (especially artificial horizon, turn and slip, and oxygen) then get to the contest site and compete immediately, never having flown a Kestrel.

Under these pressures an ordinary pilot would be a nervous wreck before the start of the most hair-raising soaring ever done on the world stage. But Nick was an engineer who had repaired a huge hole in his ship after it had limped back from Crete to Alexandria having been hit by two German 1,000lb bombs, so that it could survive a trip round Africa to get to the USA for repair; and in 1945 had ditched his Hellcat in the Pacific after engine failure and been rescued by a Royal Navy destroyer. He coped.

Nick reported in *S&G* December 1972: "The biggest climb was to 29,000ft and I only broke off the climb, despite still going up at 2,000ft/min, because I had more than enough height to complete the task." Flaps and ailerons froze almost immobile, and the last turn point was photographed at 17,000ft through a small hole in the lower cloud – and a small hole scraped in the ice on the canopy.

Remember, there would be no GPS for another 20 years: all navigation was by dead-reckoning. Climbing and navigating in cloud have, of course, become lost arts.

On another day, Nick had two climbs to 19,000ft and on a third day he climbed to 17,000ft and 19,000ft. Outlandings were sometimes wheel-down across brutal ruts, or wheel-up into a sea of mud.

Sometimes it took eight hours to get to the glider and bring it out, even though the crew was only three miles away when it landed.

Two pilots were killed in the contest. Two other pilots survived baling out in cloud: one, David Innes, broke a leg.

Nick came fourth. In the same issue of

S&G as Nick's story, Helmut Reichmann stated that cloud-flying, though beautiful and very worthwhile, should no longer be allowed in international contests because of the collision risk. Cloud-flying in world champs was banned. (Twenty years later Reichmann was killed in a collision in the Alps, in clear air.)

PLATYPUS: *What happened after the 1972 World Championships? I see no mention of you in contest reports after that.*

NICK: I dropped out of gliding completely. I only flew for competition.

PLATYPUS: *Having won the Standard Class in the Nationals at RAF Newton in 1971 (in which Platypus also competed, but the less said about that the better) and having come fourth in 1972 in the World Champs at a youthful 53 years of age, you were still at the top of your game.*

NICK: Despite what you say, I knew I was over the top and, in any case, I had been dropped from the British Team. Just flogging around in a glider was boring as well as being anti-social. I had a new wife and there was lots to be done in setting up a home, which turned out to be on my parents' estate.

My parents were old and I very soon found myself managing and doing the work on the estate. We had expected my parents to live another five years or so and then we would go down to the West Country and potter in boats. In particular, a steam launch was my dream. But my mother lasted until she was 100+ so that did not happen.

PLATYPUS: *What does a retired aviator-admiral do to keep busy?*

NICK: I had a fascinating job for seven years after retiring from the Royal Navy, looking after Boeing's military interests in London. I sold the Chinook helicopter to the RAF and *HMS Speedy* to the Navy. The latter was a hydrofoil boat for fishery protection and could outrun illegal fishing vessels with ease, but too often the sea state in the northern fishing areas was such as to prevent her operating in the hydrofoil mode.

PLATYPUS: *I was what was traditionally called "the lowest form of human life" in my two years in the Navy – a midshipman, in other*

words – and I was well aware of the snobbery that extended towards specialist officers and especially engineers.

NICK: When I went to Dartmouth Naval College in 1933, at age 14, before going on to naval engineering school, it was made quite clear that engineers had the lowest possible social standing – but it applied not only in the Navy but throughout society.

The education of a gentlemen was strictly classics and it was almost required of him that he was a duffer in numerate subjects. Over my lifetime I have watched with interest as literacy and numeracy have changed places in the pecking order.

The change happened quite quickly in the Navy as the equipment got progressively more sophisticated and everyone needed to understand it and what could be done with it.

PLATYPUS: Back to gliding – you had a great time in the mid-50s in the USA, where you were based as part of your Royal Navy duties.

NICK: I got a lot of help from American gliding friends. Bill Ivans and Paul MacCready were the two US soaring pilots I knew really well. I remember going to see Bill in hospital after his crash in the French Alps in 1956.

PLATYPUS: That was the contest when you and Frank Foster became World Two-Seater Champions in the Slingsby Eagle, which the French mocked as a “soap box”.

NICK: In January and May 1955, Bill and I teamed up to do wave flying at Bishop, California. He had fitted up his Schweizer 1-23 with a copious supply of oxygen intended especially for wave at Bishop where 42,000ft had already been reached.

On the first trip, I got to 30,700ft, which gave me my Diamond C and on the second trip I did 37,000ft for the British Absolute Altitude record. Then, in July the same year, I was top scorer in the US National Championships.

PLATYPUS: As a foreigner you obviously could not be official US Champion.

NICK: But they gave me a fine trophy nevertheless. Finally, in August I did Dallas to Amarillo in a Weihe for British Distance and Goal records, 536km.

This flight completed my third Diamond for the much sought-after British No 1 Diamond C. Philip Wills was quite put out by this: he had always planned to be the No 1. Looking back on it, I guess 1955 must have been my peak year.

PLATYPUS: I first saw you in action in the Nationals at Lasham on May 10, 1959 when

I drove down with a bunch of early-solo pilots from Dunstable.

NICK: Oh, we’ve bored the pants off everybody with that story!

PLATYPUS: *It’s worth retelling a hundred times. In the poor conditions that morning, our chief excitement was rescuing fellow London Club member Dan Smith from the trees after his Skylark 3’s ailerons became disconnected. (Fred Slingsby’s team filled in the holes in time for Dan to fly the next contest day.) The aces – Philip Wills, Geoffrey Stephenson, Nick and others – kept landing back and took their three tows before heading north at around 13:00. Using cloudstreets, cu-nims on oxygen, ridges and wave, Nick landed at his goal, Portmoak, 579km distant – a 500km goal speed record that still holds. In those days competition reports were exciting reading, and utterly thrilling to us beginners!*

NICK: Especially the stories told by crews – retrieving is another lost art.

PLATYPUS: Now you are 90 what are you doing?

NICK: I’m working on the design of a new hurricane-busting aircraft. It’s large: 3km span [Yes, three kilometres – this is not a typo: Plat] and weighs around 5,600 tonnes. Some people who know about these things think it might work, so I may not be totally off my rocker.

The life-saving mirror

In autumn 1952, Platypus went aboard *HMS Illustrious* as a trainee Russian-language specialist. The day before, the pilot and navigator of a Fairey Firefly had died attempting a deck-landing. Even in peacetime, carrier operations killed around 20 per cent of the aircrew, so in retrospect Plat is quite thankful that his application for flight training was turned down.

Around this time, the Royal Navy and the US Navy were wrestling with the problem of making deck operations safer. Nick Goodhart’s mirror-system, first installed in 1954, showed the approaching pilot a spot of light that appeared too high or too low according to the deviation of the aircraft above or below the correct glide-path.

The US Navy claimed an 80 per cent reduction in accidents three years later, and duly awarded Commander Goodhart the Legion of Merit.

POTTED BIOGRAPHY

Nick’s CV is so long and varied that we must direct you to the 2008 edition of Wally Kahn’s *A Glider Pilot Bold*. Wikipedia’s information on Nick is also generally reliable, though much less entertaining than Wally’s.

- > Born 1919
- > Entered Royal Naval College, Dartmouth 1933
- > Graduated Royal Naval Engineering College 1940
- > Empire test pilots’ school 1946. Tested Westland Wyvern fighter
- > Invented mirror-landing system for aircraft-carriers 1954
- > Gliding: UK National Champion 1962, 1967, 1971 (Standard Class) World Champion two-seaters 1956, 2nd 1957, 4th 1960, 1972
- > Developed Sigma glider and two-man human-powered aircraft
- > Retired from Navy (Rear-Admiral) and from gliding, 1973



Nick at 90, near his home in Devon (Barry Gomer)

ALL NAVIGATION WAS BY DEAD-RECKONING. CLIMBING AND NAVIGATING IN CLOUD HAVE, OF COURSE, BECOME LOST ARTS

TRY SOMETHING DIFFERENT



Competitive aerobatics is exhilarating. It also stretches your skills and improves confidence. Charles Baker looks at the benefits of aerobatics as a mainstream alternative, or addition, to soaring

AEROBATICS is an exciting and growing area of flying in the UK, and this reflected in an increasing level of interest amongst glider pilots. Last year, membership of the British Aerobatic Association (BAeA, the organisation that runs UK aerobatic competitions) was up on the previous year, with 75 associated individuals or clubs and 31 glider pilots, plus 135 power pilots.

Many glider pilots will remember the first loop or chandelle they flew in a glider, and it's at this point that a small number may become 'hooked', going on to compete in one or more of the aerobatic competitions each year in the UK.

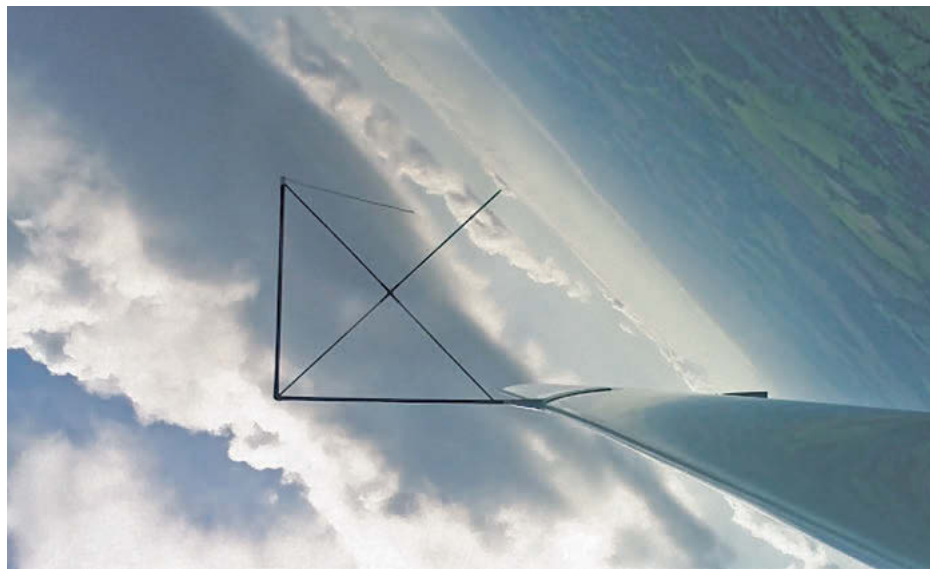
Perhaps the reason that more glider pilots do not get involved with competition-style aerobatics is that they don't understand what's involved. Competitive aerobatics is about displaying a sequence of figures to ground-based judges, with precision and accuracy. It has nothing at all to do with display flying – a common misconception.

Entering a competition gives a purpose to practise and a standard to aim for, and makes a fantastic addition – or alternative – sport to train and excel at for those pilots who perhaps aren't so interested in soaring. In the UK, there are competitions in March and September so it need not interrupt the soaring season though, personally, the aerobatic nationals in June is my favourite contest.

Because of the relatively small number of pilots involved, aerobatic contests are very relaxed and friendly affairs, and because land-outs aren't part of the competition, there's a much better social side to proceedings. Furthermore, experienced pilots are happy to give advice and help. Aircraft need not be a problem either – I always hire from the host club, and with the K-21 able to take you all the way to intermediate competition level, there's no specialist equipment required.

This all helps to make the sport very accessible, with beginners' level consisting of a requirement to master basic – but exciting – aerobatic manoeuvres such as loops, chandelles and canopy-down humpty bumps, all positive-g moves. The BGA Standard Badge is the key basic requirement for entry to a beginners-level event, and this may be signed off by any Full Cat instructor approved for that purpose by the local CFI.

The next, and most popular, competition class is sports. That includes all the rest of the positive-g figures, the stall turn and the push (or canopy down) Humpty. The K-21



is an ideal aircraft for that class and there are plenty of instructors available across the country able to teach these manoeuvres.

Subsequent entry classes include intermediate, advanced and unlimited, with the sequences becoming progressively more difficult. It is in these classes that there have been exciting developments recently, with the UK putting together the first advanced glider aerobatic team for the 2010 World Aerobatic Championships taking place in Finland this summer.

But back to basics for a moment. For those looking to get involved for the first time, the first port of call is the vast wealth of information on the BAeA website www.aerobatics.org.uk. Although the judging notes are written for power pilots, the same principles apply to gliders with minor adaptations. Under "Proficiency Scheme" there is an explanation of the simple procedure for getting competition clearance and a list of the check pilots. We are all BGA instructors and are very happy to give advice and help. Indeed, it is the friendly and helpful nature of the aerobatic family that has kept me involved in the sport over the years.

Furthermore, if you bring a member of your family to an event, they need not sit around idly. An aerobatic competition relies heavily on people helping with the scoring, judging etc, so extra help is always welcomed.

In short, precise, accurate competition-style aerobatics will help you stretch your skills, hone your precision, and give you greater confidence in your (and the glider's) ability. Whilst soaring is undoubtedly a satisfying form of gliding, and it's always great as a glider pilot to use the weather to its full, aerobatics

is an exhilarating and challenging addition, or alternative, to gliding and I'd encourage everyone to give it a go!

■ Charles Baker is a Full Cat instructor, based at Lasham. He is a committee member of the British Aerobatic Association and in the 2009 Glider Aerobatic Nationals was the highest placed K-21 pilot.

THE POWER AEROBATIC PILOT TO GLIDER CONVERT VIEW

"WHAT are you doing at the weekend, DJ?" "I'm going to fly some glider aerobatics," I said. "Don't you do enough of that during the week?" came the quizzical reply.

I am fortunate enough to be a pilot in the Royal Navy and, in that role, have spent a reasonable amount of time flying military training aircraft, both as a flying instructor and also flying air experience flights for the Air Cadet organisation. Both of these tasks involve quite a lot of time flying aerobatics. Is this background an advantage to someone wanting to fly in glider aerobatic competitions? Not as much as you probably think.

I live about 20 minutes from Saltby Airfield, which is the established home of glider aerobatics in the UK and, as a Bronze glider pilot with no real cross-country ambitions, I didn't have to think twice when I saw an advertisement in S&G for a two-day aerobatics course using a K-21.

The first big difference for me to contend with was the lack of engine and propeller. This can be a good thing as there are no gyroscopic and slipstream effects to worry about, but the lack of any slipstream over the tail means that if you try to stall turn a

(Facing page): Entering a competition gives a purpose to practise and a standard to aim for, and makes a fantastic addition – or alternative – sport for those pilots who perhaps aren't so interested in soaring (Paul Johnson)

(Above left): David John Gibbs prepares to make hearts race with his aerobatic sequence at Wickenby's Glider Vs Power contest (Nick Buckenham)

(Above): Looking down the wing of the Fox glider during an inverted 45 degree up line. The wing triangle allows you to line up at exactly 45 degrees to the horizon, rather than having to judge the angle by eye. This is important in comps, as every 5 degree error gives a one point downgrade on the score out of 10 for that particular figure (Pat Greer)

**ACCURATE
COMPETITION-
STYLE
AEROBATICS
WILL HELP YOU
STRETCH YOUR
SKILLS, HONE
YOUR PRECISION,
AND GIVE
YOU GREATER
CONFIDENCE
IN YOUR (AND
THE GLIDER'S)
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✎ glider using power techniques you will be rewarded by a moment or two of silence followed by a tailslide. New skills to master!

The next difference is that in the military you fly aerobatics for the benefit of the chap in the cockpit. In a loop, for example, the nose is pitched around the sky at a constant rate. This looks very nice for the pilot, but results in a rather unimpressive egg shaped loop when viewed from the ground. A nice circular loop required by the contest judges actually looks fairly wrong from the cockpit. Flying for the benefit of people on the ground is another essential skill to master. Of course the familiarity with being the wrong way up and feeling 'g' are an advantage, but it really did feel like learning from scratch again!

So how did it all go? Entering the 2008 Dan Smith contest convinced me that glider aerobatics were the way forward, and I spent the rest of that season on a fairly steep learning curve, where I also started flying a Lunak. My efforts were rewarded by winning the 2009 Dan Smith contest in a K-21, coming second at intermediate level flying the Lunak at the National Championships and winning the Saltby Open contest flying the Fox at intermediate level. I'm currently working up to advanced level for the 2010 season.

So to answer my friend's question, am I not getting enough (flying!) during the week? I reckon that in almost 3,500 hours, having qualified on types ranging from the iconic Slingsby T-31 through to the Jet Provost and flown tasks varying from pleasure flights in a Harvard to helicopter rescue missions on dark stormy nights over the sea, the element

of flying that has probably given me the most enjoyment, satisfaction and overall 'grin factor' is glider aerobatics. Try it for yourself. You won't be disappointed. Promise!

David John Gibbs

THE DISPLAY PILOT VIEW

DISPLAY flying presents an exciting, unique challenge and is more complex than it might appear – the flying obviously has to be entertaining and dynamic but tempered by very stringent height and crowd line separation limits that the CAA imposes. So self-discipline features highly on the display pilot's CV! Throw in a strong on-crowd wind, inevitable stage nerves and occasionally the time pressure of a late slot change and you will find yourself working pretty hard – and because we're a Lycoming short of a party, the actual display content is 80 per cent focused on positioning so flying the manoeuvres has to be an automatic process and, in my view, the contest environment is the only way to develop that ability.

Multiple British champion Guy Westgate invited me to join Team Swift and mentor and authorise my conversion to display flying. Positioning presented the steepest learning curve – in a contest you will lose points for poor positioning, in a display you could put the crowd at risk and lose your display licence! Guy's input was valuable beyond words and his hard-earned list of do's and don'ts saved me a few seasons of red-faced learning!

The planning and logistics involved are alarming – depending on the venue and organiser it can easily take a month to arrange crew, tug, transit, fuel and paperwork to produce one four-minute display flight!

So is it worth the effort? Showcasing silent flight to new audiences is a huge privilege and we have managed to inspire a handful of spectators to learn to glide, which is a great reward. I've been lucky to visit great places in the UK, Europe and UAE and meet some unique and interesting people in the process!

Mike Newman

■ Aerobatic courses are available at the following clubs: Booker, Buckminster, Lasham, London (Dunstable), Midland, Windrushers (Bicester) and Yorkshire. Aerobatic glider competition information can be found at www.aerobatics.org.uk

SHOWCASING SILENT FLIGHT TO NEW AUDIENCES IS A HUGE PRIVILEGE AND WE HAVE MANAGED TO INSPIRE A HANDFUL OF SPECTATORS TO LEARN TO GLIDE, WHICH IS A GREAT REWARD



Mike Newman is pictured above vertical (Mike Newman) and, left, doing his customary pre-flight Haka (Nick Buckenham)



Paul Johnson

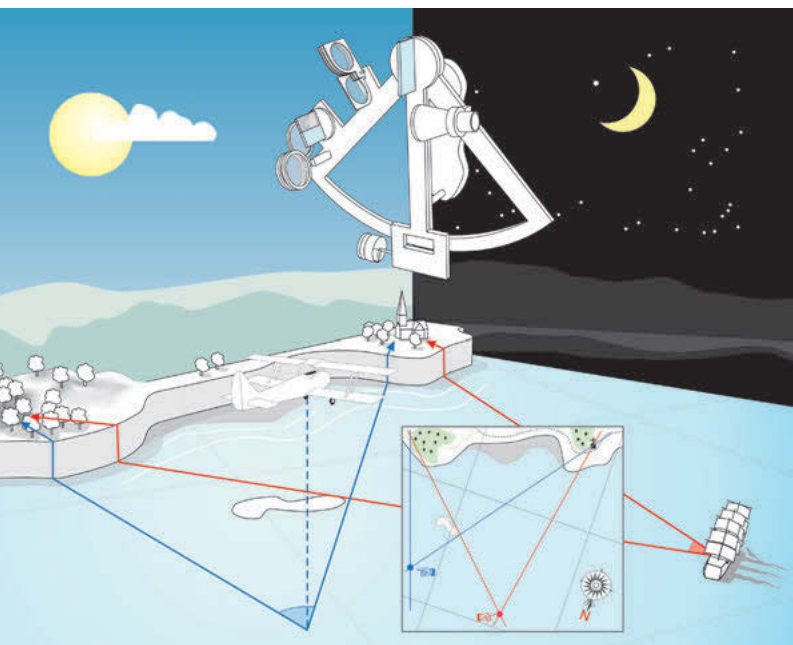
INSTRUMENTATION

GLOBAL POSITIONING SYSTEM (GPS)



Arguably now the glider pilot's default navigation device, the GPS comes under the spotlight as Steve Longland continues his series on how aircraft instruments work

(Above) Figure 1: Basic GPS
(Below) Figure 2: Old-fashioned triangulation



THESE days it's difficult to find a privately-owned glider that isn't equipped with GPS and a logger. GPS is the wanderer's dream tool, and has become the glider pilot's default navigation device. As for the logger... hooked up to a GPS unit it becomes a flight diary to be replayed, not always to useful effect, through flight analysis programs such as SeeYou.

Excellent stuff, of course, but GPS and loggers – never mind the software – can still fall over for no apparent reason. You probably won't know your logger's gone belly-up until just after the best flight you've ever had. Most pilots connect GPS and logger into the glider's batteries. Apart from making sure that the units' internal batteries are sound, and work when the glider batteries don't, the only way round other types of failure, at least for loggers, is to have two of them on board. As for the GPS, a magnetic compass and a current edition aviation map somewhere in the cockpit are a sensible backup, as well as being a legal requirement. The standard map also contains far more useful detail than it's possible to cram on to most GPS displays.

GPS has made navigation far easier and more accurate than ever before, and most of the donkey work is now done for us. Simply recall the appropriate trigraph (where's the list telling us what and where they all are?), press a button or two (oops! Wrong one) and several pathetic beeps later, we have an answer! Or we can type in the coordinates of our destination, if we know them, and enter the details into the waypoint database for later recall. True, we may not know exactly where we are if we're using the most basic GPS (figure 1), but we certainly know where we're going, even if it turns out to be the wrong place when we get there. Just follow the hypnotic little arrow.

Once upon a time

Until the advent of GPS, navigation was largely 'flat map' and relied on triangulation. Take sailing. In the early days, ships remained within sight of land, navigating much as you would if you were out walking in the country. See two or three objects in the distance, work out their bearing in relation to you – perhaps using a compass (if you have one) – draw lines on a chart (if you have one) and, where the lines cross, that's probably where you are (figure 2). The more landmarks used, the more accurate the fix.

When we started going to sea in a big way, navigating the open ocean required the use of a sextant to measure either the sun's elevation or the position of the stars. This worked quite well for N/S (latitude) fixes – if the weather wasn't too overcast or the sea too rough – but E/W (longitude) fixes weren't reliable because they need accurate clocks and, for a large part of maritime history, they didn't exist.

Ships on long voyages out of sight of land were frequently tens, if not hundreds of miles from where they thought they might be. This potentially fatal uncertainty continued until about 1750, when master clockmaker John Harrison, after years of hard work, designed and built a ship's chronometer accurate enough to solve the problem. Ships didn't stop running aground, but now they did it far less often.

Timing has probably always been important in navigation, but it is critical in GPS systems where small errors have big consequences.

MENTS

We're not talking the 30 seconds or so that was the farthest out John Harrison's clocks ever were, but fractions of millionths of a second.

The basics

The basic principle behind the GPS is that if you know how long it takes a radio signal to travel from a satellite to a receiver, you can work out the distance between them (inset, figure 3); broadly similar to working out how close a storm is by counting the time between seeing the lightning and hearing the thunder. In a vacuum, radio waves propagate at the speed of light (670,616,629 mph, or 300,000km/sec), and a timing error of one thousandth of a second equals 186 miles – about the distance between London and Hull. Accurate clocks are obviously essential. But, if the GPS basic principle is straightforward, its overall implementation certainly isn't.

The network

Most of the important data which ensures the system works at all reaches the GPS receivers we have in our cockpits via high frequency, low power (20W) radio signals, broadcast from a network of up to 30 working satellites in very precise orbits, 11,000 miles above the Earth. At this height they are beyond the clutch of aerodynamic drag and, in theory, their positions ought to be predictable for tens, if not hundreds, of years ahead – a key premise of the GPS setup. There are six orbital paths, and normally four equally spaced satellites in each – the numbers vary. Figure 4 doesn't show them all. Each satellite orbits once every 12 hours. The coverage is arranged so that at any time, from anywhere on Earth, at least four satellites will be 'visible' (in line of transmission if not exactly line-of-sight) to a suitably located receiver.

To provide super-accurate timing, each satellite contains several atomic clocks, as do the ground stations (figure 3). The clocks are not atomic in the sense of blinding flash, instant ash. Skipping the details, they measure what can be loosely described as the 'tick rate' of a caesium 133 atom, which is their equivalent of the far cheaper quartz crystal vibrating at the heart of a GPS receiver and most digital watches. The international definition of a second is 9,192,631,770 'ticks' of the caesium atom. Despite the mind-boggling number, the most relevant point about the ticks is their absolute regularity.

Also essential is that every clock in the GPS network, ground monitoring stations and receivers included, synchronise. A clever but complicated trick which involves comparing the codes embedded in the satellite signals with a similar one generated in the receiver, helps maintains system-wide time synchronisation. The result is that the adequately accurate clock in any receiver that's switched on is transformed, for the duration and for free, into a precise atomic one.

Each satellite transmits data that includes something called a pseudo random code, which isn't random at all. It just looks as if it is, hence the name. It has a number of functions – clock synchronisation being one – but it is also a kind of ID which allows the receiver to tell which satellite is transmitting what data. The receiver contains an almanac – rather like a road map marked with places of interest – indicating where satellites can be found at any time, which helps

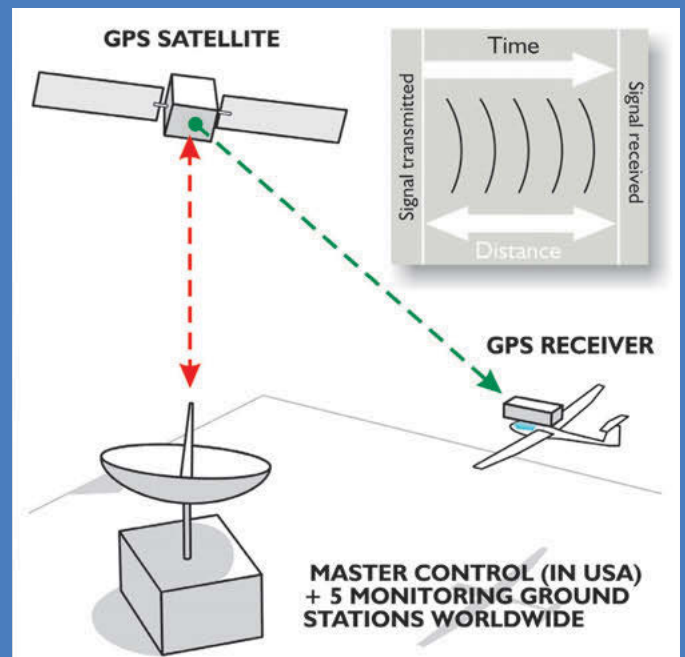


Figure 3: Satellite orbits

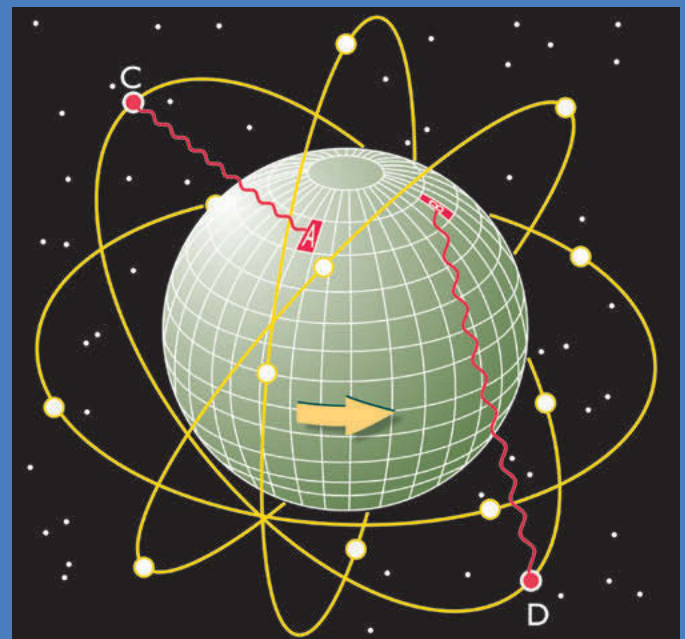
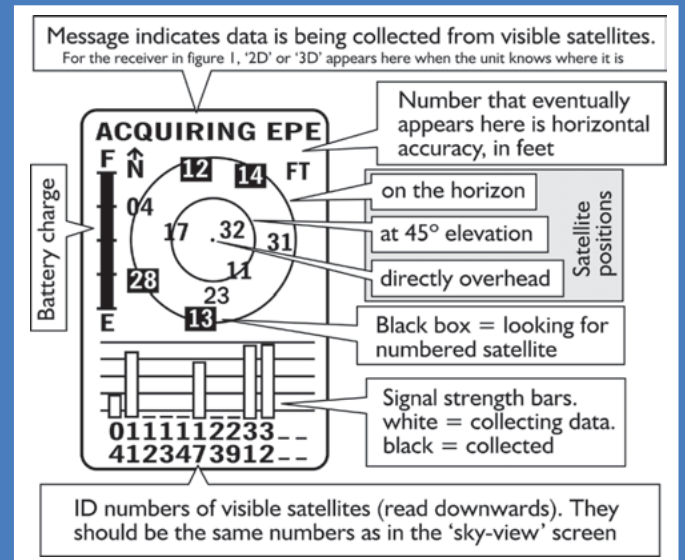


Figure 4: Satellite orbits (above) and Figure 5: GPS satellite page



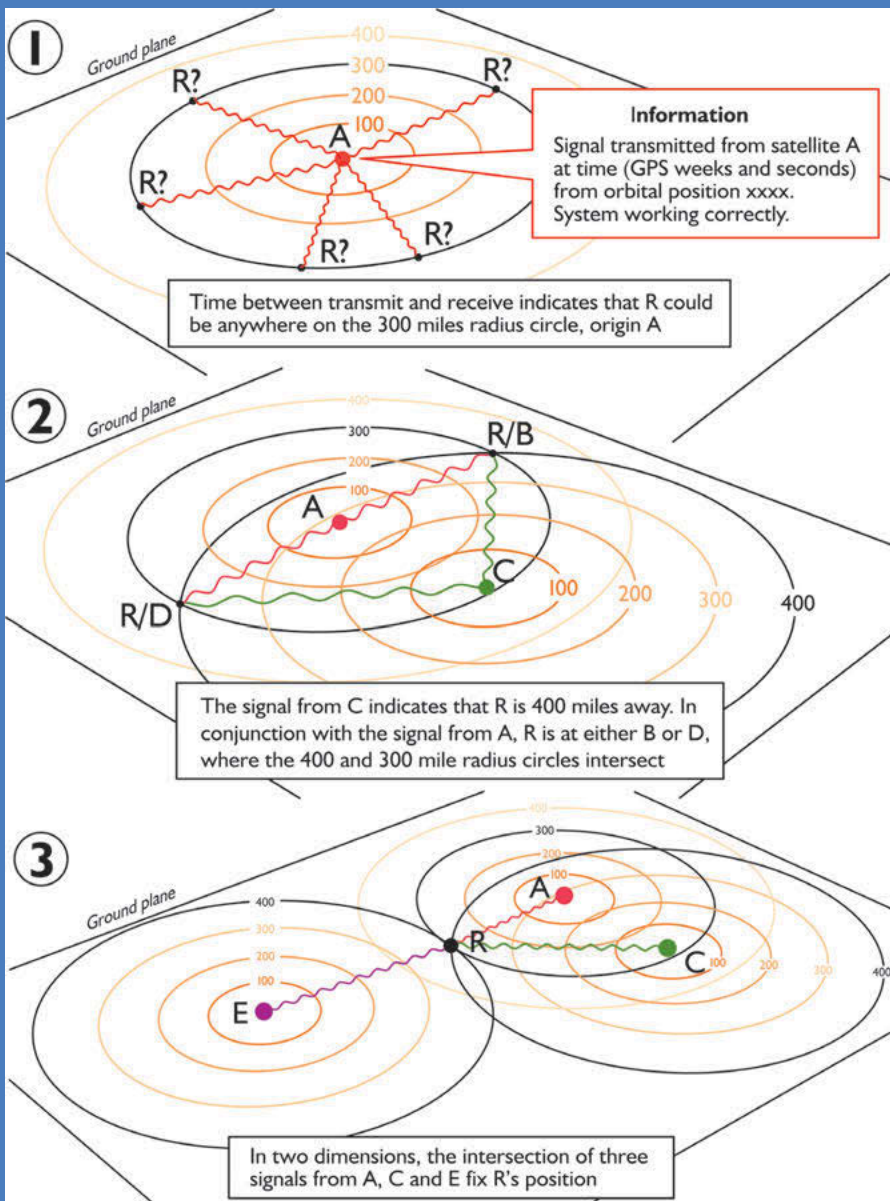
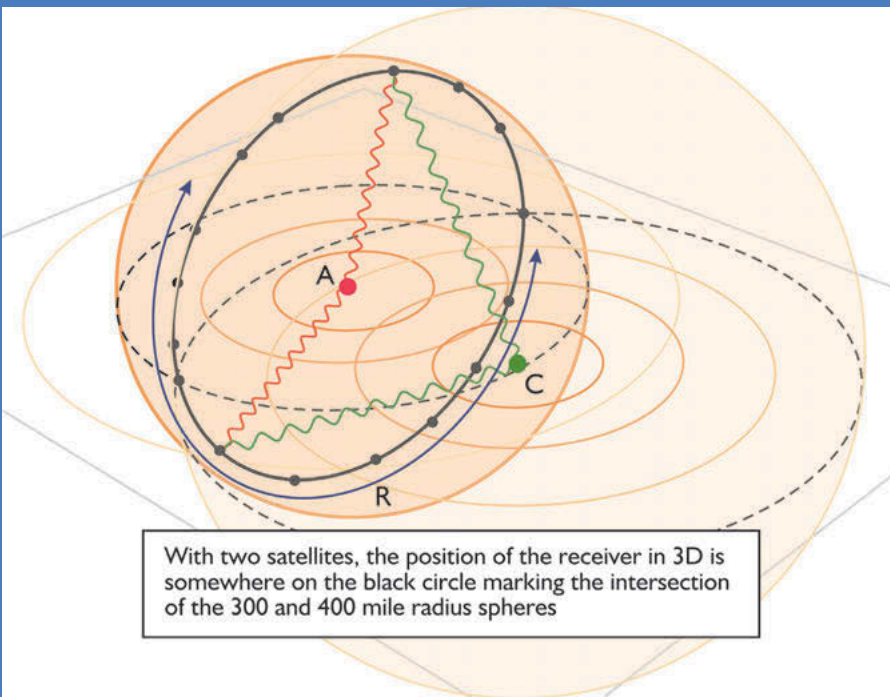


Figure 6: Trilateration (above) and Figure 7: trilateration in 3D – two satellites only



↪ speed up their detection. Depending on where the receiver was initialised (London, say, or Lhasa), or last switched off (it remembers where), when you switch it on again it assumes it's in the same place, and first tries to match what's in the sky with the almanac data for that general area.

If the initial search doesn't find a match, which is very likely to be the case if the unit's been moved hundreds of miles since it was last used, it continues peeking at the sky and rummaging through the almanac until one is found – all of which can take ages. If no matches are found – which can happen if the satellite signals are blocked by buildings, even by the glider itself – or if it fails to acquire the minimum of three necessary for a 2D positional fix, you'll be told.

Once the receiver has acquired and identified a sufficient number of satellites to be sure of its position, the almanac is subsequently updated on a regular basis with data from all the visible satellites, each of which is transmitting its own position information.

One of the first screens you see when a GPS receiver is switched on is the 'satellite page'. The layout may vary slightly between make and model, but it should indicate how many satellites can be seen, their ID 'numbers', approximately where they are both vertically and horizontally, the strength of their signals (figure 5), whether they've been found or not, and if their data's been downloaded. It should also indicate the accuracy of any position fix. This page will change continually during a flight as satellites pop in and out of view.

Getting your fix

There's no point in the receiver calculating your precise location in relation to the satellites unless at least one of them knows exactly where it is in relation to the world you're trying to navigate. As it happens, the satellites know exactly where they are, but they are completely unaware of the receiver, even when it's on. Any kind of inter-system chat, as it were, is limited to 'I'm alright' or 'Please make this adjustment' communication between the satellites and the ground stations – leaving the receiver to do the 'where am I?' calculations for itself, based on the data broadcast by the satellites. (In figures 6 and 7, though the circles are marked in miles they represent signal transit times in one direction and the receiver's distance calculations back in the other. The numbers on the rings are 'frinstances' only.)

For an accurate 2D fix – lat and long

only – the receiver needs good signals from a minimum of three satellites, preferably not too close together in the sky. Figure 6 (1 - 3) illustrates how receiver R's position is pinned down by trilateration (triangulation without using angles). In (1), R can be anywhere on the 300 mile radius circle. In (2) it's at one of the two points where the 300 and 400 mile radius circles from satellites A and C intersect. It is the signal from E, 400 miles away, which finally clinches R's position (3).

In 3D, the ripple circles in figure 6 become spheres. Now R's position in relation to a single satellite isn't on a ring (figure 6 (1)) but somewhere on the surface of a sphere. In relation to two satellites (figure 7) R's position will be on a circle formed by the intersection of two spheres. Adding another satellite sphere, as it were, narrows R's position to two possible locations, and a fourth fixes it to one.

The receiver calculates heading, track and speed by comparing each new position fix with the most recent previous ones. The accuracy of the results depends largely on how often the fixes are updated; once a second for the unit in figure 1.

GPS time

GPS time is transmitted by the satellites as part of their data updates and, rather than counting in hours, counts in terms of GPS weeks and the seconds in each week; the first GPS time cycle began at 0hrs UTC (Universal Time, Coordinated=GMT=ZULU) on 6 January, 1980. Currently GPS time is ahead of UTC by about 14 seconds. The system transmits correction factors so that receivers can display accurate times in UTC. A counting quirk based on the way the numbers are stored digitally means that after week 1023 the week counter starts again at zero.

This isn't a problem with modern receivers which know which time cycle it is and continue counting upwards as if nothing had happened, but when the last reset occurred on 22 August, 1999 it caused problems ranging from minor errors to receivers not working at all. The next is due on 6 April, 2019.

Neat and tidy - mostly

As usual, nature never allows our attempts to measure things to be entirely straightforward. The Moon's gravitational pull, the solar wind and relativistic effects, to name a few, all introduce small timing errors. Relative position likewise. For example, by the time the red satellite in figure 3 has orbited from C to D, the Earth's rotation will have carried ground point A to B. This alters the length of

the signal path and the depth of atmosphere through which it has to travel, introducing further timing errors.

High-precision ground-based radar in the monitoring stations constantly checks the satellite positions. Any orbital errors, in timing or position, are corrected from the ground and the satellites' databases updated accordingly.

Error sources aren't always as predictable as some of the above. GPS signals are relatively easy to jam because they are very weak and almost indistinguishable from the background noise native to all electronic devices. From time to time the UK defence authorities, as part of their merry japes, have a go at jamming the system. These events are usually NOTAMed, but they can cause the system to fail, or, less obviously to the user, show an incorrect location. More disturbingly, jamming equipment, though illegal for the rest of us, is available on the Net and people are buying it!

Probably the easiest way to mess up GPS reception is to mount the receiver and aerial in the cockpit in such a way that the satellites' signals are blocked; they're line-of-sight, and while they can go through perspex – providing it's not too thick – just about anything else that's solid blocks them, particularly carbon fibre. For obvious reasons, the aerial looks up more than down, so a badly positioned receiver may work in straight flight, but lose contact with some of the satellites the moment the glider banks.

Huge numbers of people now rely on GPS in one way or another. There are other GPS networks, but most units in the UK use the one run by the the US Department of Defense, whose stated aim is to keep the system as accurate as possible. Despite that, most civilian GPS units, such as those used in gliders, receive signals that are rather less precise than those available to the military. If you're not intending to lob ordnance down somebody's chimney without it touching the sides, this probably doesn't matter much.

Glider pilots certainly seem to think GPS is good enough for them, and they should be suitably impressed that it can fix their horizontal positions anywhere useful, let alone to within about 30 feet. GPS altitude fixes are only accurate to within about 60 feet, on a par with a standard pressure altimeter. However, the system is not 100 per cent reliable and you may not know when it's playing up, hence the continuing need for a paper map and a compass. Has getting lost gone out of fashion? I doubt it. There are just different ways of doing it now.

FOR OBVIOUS REASONS, THE AERIAL LOOKS UP MORE THAN DOWN, SO A BADLY POSITIONED RECEIVER MAY WORK IN STRAIGHT FLIGHT, BUT LOSE CONTACT WITH SOME OF THE SATELLITES THE MOMENT THE GLIDER BANKS



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 left:
Paw print from the Beast of Burn - rumoured to be a Black Panther? That's a size 10 walking boot! Spotted by Duty Instructor Martin Ellis (Alastair Mackenzie)

Up in the Diamant in February, I was conscious of something over my left shoulder. As I turned right, I glanced left and this Kittiwake was with me and stayed for a few moments (Kevin Moseley)

Tibenham's G109 SLMG parked in the snow (Ian Atherton)

Taken on 30 January at the Long Mynd - first soaring day of the year with two 1-hour soaring flights after a long winter closure due to snow and ice (Alex Rowlands)

Lasham experienced the worst snowfall in 28 years (Chris Sterritt)

If you would like your previously-unpublished photographs to be considered for inclusion in Gliding Gallery, send them to editor@sailplaneandgliding.co.uk





This page, clockwise from top:
Burn wave flight at sunset (Alastair Mackenzie)

Glider 131 flown by John Roberts at Hay Bluff, near Talgarth. The photo was taken by a hill-walking photographer called Ron

Taken from the airfield boundary at the North Hill airfield fence as the K-13 went over, it was freezing! (Joe Drury)





GLIDE

Justin Wills experiences flying at Kiripotib in southern Namibia, one of the world's most outstanding soaring areas and yet a well-kept gliding secret amongst connoisseurs of the sky

SOME of life's most irresistible opportunities arise suddenly and unexpectedly. Thus it was just three weeks after receiving John Bally's invitation to fly an EB28 in Namibia that my wife Gillian and I arrived in Windhoek at the beginning of December, somewhat weary after 23 hours travelling from our home in New Zealand and a 12-hour time change.

In the meantime, we had done some homework. Namibia is three times the size of Britain (this factor also applied to average thermal strength, cloudbase, and distance flown) and straddles the Tropic of Capricorn between Angola and South Africa. With a population of only two million, it is the driest country in Africa south of the Sahara.

Its western seaboard comprises the famous Skeleton Coast, much feared by mariners as evidenced by numerous rusting hulks of shipwrecks. From here, the Namib Desert sweeps inland in an extraordinary series of wind-sculpted sand dunes of remarkably varied colours ranging from dark red to white. After 200 kilometres the desert meets the coastal escarpment, which rises to peaks over 8,500ft, divided by deep canyons created by the occasional flash floods from thunderstorms that form above the mountains.

Beyond lies the great Namibian plateau, which slopes gently downwards from around 5,000ft to 3,000ft at the Botswana border 450km to the east. This plateau has a few lower hills, particularly around Windhoek, but its most remarkable feature is lines of low parallel ridges that stretch for hundreds of kilometres north/south at a constant amplitude, further evidence of the wind effect on this fragile landscape.

Much of Namibia is farmed, often by descendants of the original German settlers (South West Africa was a German colony up to 1915). Thus, in addition to the salt pans, there are roads and scattered buildings with some airstrips and worked fields, a few of which are suitable for open class gliders. The situation is very different in Botswana, which appears to be largely uninhabited scrubland with only very occasional isolated salt pans. However, conditions are so good that landing out is only a consideration at the start and end of the day when one is near one's home airfield.

All the gliding takes place at three sites close to each other approximately 150km south of Windhoek. The largest and longest established is Bitterwasser, which is owned by a syndicate of



IN NAMIBIA

international glider pilots. Situated on a large saltpan, it has excellent facilities and can handle up to 40 gliders. Nearby, on another saltpan, lies Pokweni, whose owner has developed another operation to take advantage of the demand. Finally, there is Kiripotib, where we were based. The farmer has just completed building a substantial airfield with superb facilities which caters for a maximum of eight self-launching gliders.

Almost all the gliders in Namibia are shipped in each year, and the vast majority are open class self-launchers. Of the 10 EB28s built to date, six were in Namibia, three at Kiripotib. The runways need to be very long (as well as wide) since taking off at maximum weight and 4,500ft amsl in 30°C with little wind proved a pretty protracted affair.

The principal attraction of Namibia for glider pilots is, of course, the weather. With diurnal temperatures ranging from 24°C to 40°C and very low humidity, thermals can be 14 knots and cloudbase over 18,000ft. However, the most exciting aspect is the formation of two convergence lines which, on the very best days, almost meet at their southern ends.

The western line forms above the coastal escarpment as a result of the desert air meeting the mountain air and runs for about 600km with a tendency to over-convect in the north later in the day. The eastern convergence forms between the moist tropical air from the equatorial forests to the north east and the dry air over the Namibian plateau and Botswana. This line tends to run from the north-north-west where it creates massive thunderstorms in Angola until it peters out over the Kalahari Desert in the SSE, a distance of approximately 750km. Soaring along these huge cloud streets is both exhilarating and spectacular.

Whilst a very good day is, by definition, a rarity nevertheless the weather in Namibia is, at least in our experience, pretty consistent. During the 15 days of our visit one day was exceptional (1,250km FAI triangle completed, 1,400km best distance), another was very good (1,350km best distance), eight were good (all 1,000km+ distances), three were moderate (750km) and two were poor, but fine for visiting the

other sites and nearby game ranches.

The daily routine consisted of getting up at 6.45am to prepare the gliders in the cool of the morning, including refuelling and refilling the oxygen systems. The breakfast bell was rung at 8am and this was followed by the multilingual weather briefing. Everyone was focused on flying the longest distance possible, ideally an FAI triangle, but otherwise an OLC (On-Line Contest) distance flight. One of the directors of the OLC was at Kiripotib and reported that, since the OLC distance formula was established, cross-country flights by German pilots have increased by 40 per cent. Perhaps it is time for greater UK participation.

The earliest take-offs occurred at 9.45am under a blue sky. John and I, with our relatively powerful engined EB28, would follow around 10.15am and climb to 10,000ft before shutting down, diving across the start line, and setting off down the first leg, which was usually to the north east. Here we had a number of outlanding possibilities should we fail to locate the early thermals.

By 11am, the first clouds would appear ahead so that by midday we would be cruising fast above 12,000ft. Conditions then continued to improve and we often chased the tropical convergence line deep into Botswana where the airspace was available to us, subject to filing a flight plan before take-off.

By 6pm, we aimed to be starting the final glide back to Kiripotib from around 170km out. At low speed (70kts) the EB28 appeared to have a very flat glide angle, and by slowing down further through the wide areas of evening lift we always managed to pick up on our required height and finish with a good safety margin, arriving back at 7.15pm, leaving a 30-minute buffer before dark.

The limitation of the soaring day to 10 hours at this latitude, coupled with the excellent facilities and flat terrain, has led to the widespread popularity of open class gliders. At 28 metres, John and I were

THE LANDSCAPE IS SO UNIQUE THAT WHEN I FIRST SAW THE NAMIB DESERT I THOUGHT IT MUST BE SEA FOG BY THE WAY FINGERS OF WHITE SAND PROBED INTO THE CANYONS OF THE MOUNTAIN BARRIER



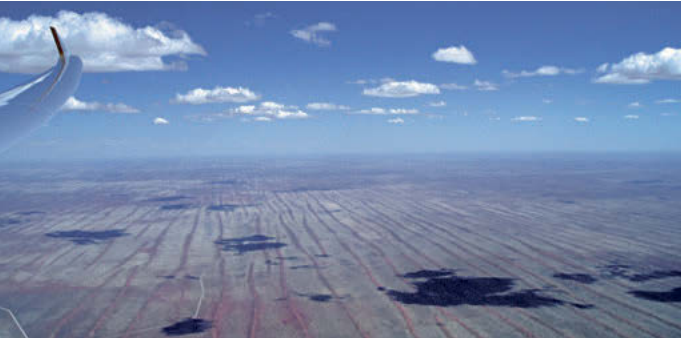
Above:
Watch out for the African Tiger!

Facing page, from top:
The weather is a principal attraction for glider pilots. Thermals can be 14kts and cloudbase over 18,000ft

Arriving back at Kiripotib airfield at 7.15pm, 30 minutes before it got dark

The Namib Desert features an extraordinary series of wind-sculpted sand dunes (Justin Wills)

TO THE EAST THE BASE SLOPED DOWNWARDS TO AN INDIGO WALL INTERSPERSED WITH BOLTS OF LIGHTNING



A remarkable feature of the Namibian Plateau is the lines of low parallel ridges, which stretch for hundreds of kilometres

MORE INFORMATION
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✎ flying an aircraft with significantly greater wingspan than a Wellington bomber. Apart from the gliders themselves, the cockpits were a riot of electronics and their associated acronyms: GPS, LX 8000, Flarm, Zaon, Butterfly, EDS, to name but a few. It was all very different from my first flight in a T-21 on my mother's lap 60 years ago.

So, does $c+c=f^2$, where c = cost and complexity, and f = fun? The answer is a non-causal yes: the technology (and its attendant cost) is simply the means whereby one can observe an amazing environment. The landscape is so unique that when I first saw the Namib Desert I thought it must be sea fog by the way fingers of white sand probed into the canyons of the mountain barrier.

The skyscape was equally spectacular; when flying along the edge of the tropical convergence the sky to the west was largely blue whilst overhead the cloud street varied from dazzling white to dark brown. To the east, the base sloped downwards to an indigo wall interspersed with bolts of lightning and scattered showers capped by towering

thunderheads, and the entire phenomenon stretched as far as the eye could see.

Equally important was the convivial social atmosphere on the ground. John Bally was a constant source of capable enthusiasm and entertainment. Most pilots were accompanied by their wives. Gillian enjoyed the luxury of not having to prepare any meals (the tariff was full-board, including morning and afternoon tea), relaxing by the pool during the heat of the day, and going on game drives in the evening.

The farm operation included a craft centre in which African-style carpets were produced on hand looms using wool from the Karakul sheep that graze the property. Evening meals were enlivened by inputs from five different nationalities, including our Namibian hosts, Hans and Claudia von Häse.

We also spent an extraordinary day driving down into the Namib Desert. Many of the local population were strikingly attractive whilst exhibiting both dignity and charm, and all were friendly and helpful. The roads were surprisingly good, and what little traffic there was often comprised donkey-drawn carts known as Kalahari Ferraris. The whole added up to an unforgettable experience.

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JOIN IN THE FUN

Celebrating 25 years of the national two-seater competition

WAY back in the last century, a group of then young instructors was discussing ways and means of persuading pilots to go cross-country or improve cross-country skills, together with how they might get people to eventually progress to competitions and future fame and glory, *writes Mike Armstrong.*

One bright spark said “why don’t we run a two-seater competition?” and the idea was born. The concept was simple: take as many club two-seaters as possible together with an equal number of good cross-country

instructors and a few early solo pilots per aircraft as crew. Lay on met briefings and task setting and invite lots of people to join in. Allow multiple P1s and P2s per aircraft.

Decide the date as late August with the last day the Sunday before Bank Holiday Monday. This not only allowed for club gliders to get back without additional holidays but, as all major crops would be harvested by then, the very large fields around the area would be nice and empty.

So it was that the very first national two-seater competition was launched at the Wolds Gliding Club in Pocklington, near York, in the summer of 1985.

There were some 10 aircraft, mainly K-7s and K-13s, together with lots of crew and enthusiasm. Unfortunately, we at Camphill didn’t get to hear about it till too late, but we were determined to enter the following year.

So in the summer of ’86, two teams set off from Derby & Lincs GC with a newly-acquired K-21 and a K-10 to do battle in Yorkshire. The K-21 was privately-owned and the K-10 was a club glider, piloted by Ken Blake with the help of four or five early solo

pilots. We came second and vowed to return again to hopefully win the next time. And so here we are, anticipating our next competition in 2010. It will be our 24th entry of the 25 possible!

The competition has evolved since the early days, with a wide range of gliders and skills entering. These range from ASH 25s and Nimbii through Duos, Januses, lots of K-21s to K-13s, Bergfalques to Eagles and Capstans and has even included overseas entries. A Puchacz and an Eagle have been known to fly with polystyrene winglets, which was great entertainment (although EASA might have taken a dim view!).

A typical field these days is some 35-40+ gliders with an average of four to five people per glider, so there is plenty of socialising!

The tasks are set with multiple turning points and the option to return from any to shorten the task if the weather deteriorates,

or for lower handicap gliders. Usually the hot ships have to do the longest task to have a chance of beating the lesser performance ones.

The scoring has also evolved over the years, and seems to provide a remarkably flat playing field with Pete Redshaw’s Capstan often capable of giving Duos and ASH 25s a run for their money. Lots of prizes and fun are the order of the day.

The competition is non-rated to ensure it does not get too serious. There are no held starts, relights after a field landing are permitted with certain safety “rules”, launching commences as soon as weather safely permits and rules can be changed at the director’s discretion if the changes enhance the fun and fairness.

One of the prizes is the Ken Blake trophy, awarded to the best wood glider, and was donated by Camphill in memory of Ken and his many happy years competing at Pocklington with highly appreciative students.

The club itself has also evolved over the 25 years from a small wooden hut as clubhouse to a very fine new large building with lots of showers and facilities, much appreciated by the 200-plus attendees in a typical year. Lots camp on site or go to the many local B&Bs.

The Camphill syndicate entry has moved on to flying a DG-500 and is looking forward to trying to win in 2010, having been pipped at the post by a Duo flown by Simon Barker, Gordon Basey and Roy Dell in the last comp – quite fitting really as Gordon was one of those intrepid people who came up with the idea all those years ago. Camphill will also be fielding a club glider (Puchacz) together with some inexperienced pilots.

This is really where it all started as a means to get people enthusiastic about cross-country and competitions. That people return year after year from places as far afield as Kent and Scotland is a sure sign of a formula that works.

It has clearly also worked for Pocklington, who have produced two world comp junior pilots over the past few years, so why not try it yourself?

If you want to experience enjoyable cross-country flights, grab a two-seater and a few crew and join in the 25th year celebrations on 22-29 August.



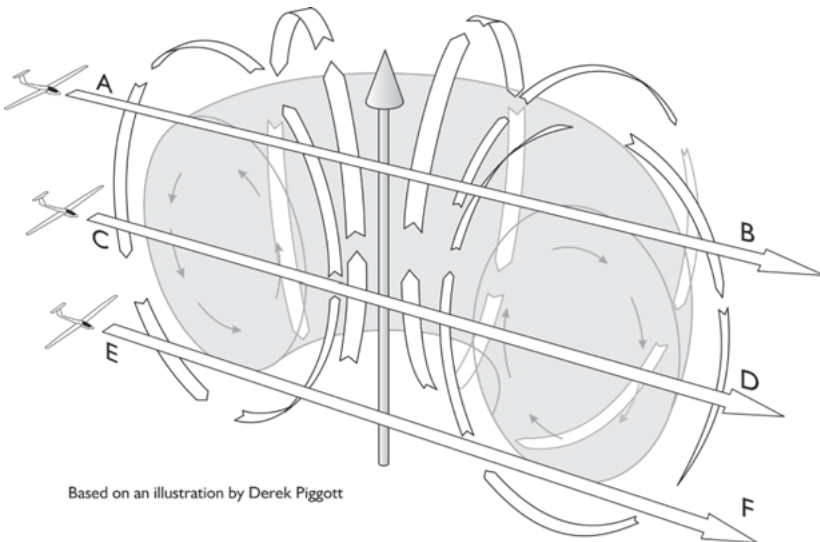
Around 35-40+ gliders take part in the two-seater competition at Pocklington these days



THIS IS REALLY WHERE IT ALL STARTED AS A MEANS TO GET PEOPLE ENTHUSIASTIC ABOUT CROSS-COUNTRY AND COMPETITIONS

STRUCTURE OF

Much soaring time is spent in search of them, but what makes the perfect thermal? Alan Lapworth investigates



Based on an illustration by Derek Piggott

Figure 1: Cross-section of an idealised thermal, based on an illustration from *Beginning Gliding* by Derek Piggott (Steve Longland)

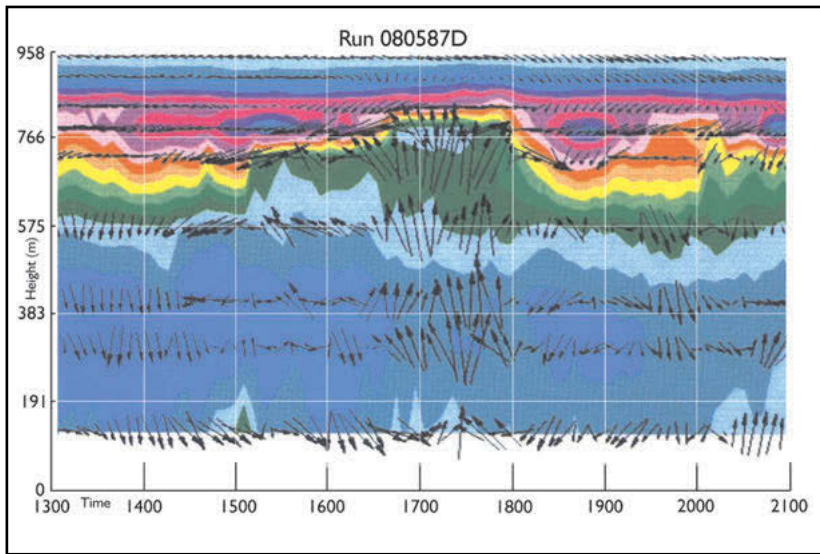
GLIDERS have used the coherent convective elements known as ‘thermals’ within the lowest thousand metres of the atmosphere for soaring flight since the 1920s. Thermals are by far the most common means by which gliders stay aloft and have enabled flights of over a thousand kilometres to be made.

Many gliding textbooks have used a very idealised thermal structure to explain the general principles of soaring in a convective atmosphere – a typical example appeared in Derek Piggott’s popular *Beginning Gliding* (see Figure 1). The flow structure shown consists of a symmetrical doughnut shape, with a central core of strong updraught surrounded by a region of downdraught.

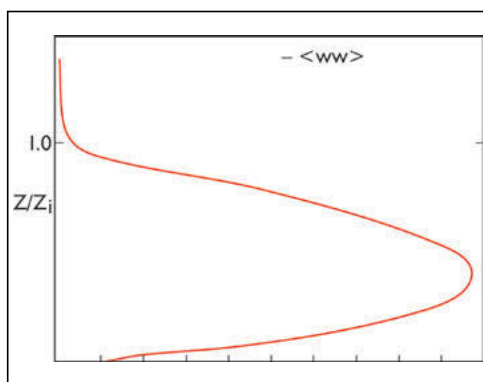
This idealised flow is a useful concept to have in mind when attempting to keep aloft in a glider, but practical experience shows that it cannot be the whole story and various methods have been used to try to determine the realistically complex structure of a convective element. These have generally been of two types – there are field observations in the atmosphere, and there are measurements of modelled systems.

Field observations range from instruments suspended on a tethered balloon cable (see Figure 2) to various remote sensing techniques – lidar, sodar or radio measurements. However, it is difficult to make velocity measurements that are both sufficiently simultaneous in all three dimensions and of a sufficient resolution to be useful. Modelled systems are of two types – convecting liquids in tanks can be measured, with many of the problems of observing in the real atmosphere, or the flow can be simulated in a numerical model.

Numerical modelling of the atmosphere is a subject that became practical only with the advent of the electronic computer and is, of course, the method by which most weather forecasts are now produced. It does have its own problems, but has none of the difficulties associated with experimental measurements. In a numerical model of the atmosphere, the equations governing the motions of a fluid are solved on a three dimensional array of grid points. Errors are introduced by approximations used to estimate the flow between the grid points and, to minimise these, the grid points should be as close together as practicable.



(Above) Figure 2: Vertical section through a thermal as measured by a number of probes clamped to the tethering cable of a kite balloon in a wind. Arrows show gust strength and direction, colours show temperature contours with lapse rate subtracted



(Left) Figure 3: Vertical profile of mean square vertical velocity in the numerical model

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THERMALS

Limitations are set by the number of points that can be accommodated in the computer memory, and the time needed to perform the calculations. In a model used for weather forecasting, the grid points are 10 or more kilometres apart, but for the smaller domain needed to model the convective lower atmosphere they can be a few tens of metres apart.

The results to be described here are from computations that were carried out by Mason (1988, 1992) more than 20 years ago, but have been chosen because they are available in a useful output format.

Windless conditions

The first results are from a model run in which there was no wind. The model run started simulating typical early morning conditions with cold air near the surface, and the surface was heated until the air up to a thousand metres (3,300ft) was convective with an inversion at the top. Figure 3 shows a vertical profile of the average strength of up and down draughts and it can be seen that the maximum strength occurs just over one-third of the way up to the inversion level – something generally found in practice.

When the thermal strength reaches a maximum you know you are nearly halfway to the top of the climb. The actual strength of the updraught is simply related to the rate at which the surface is being heated by the sun, when allowance has been made for the heat lost in evaporating surface moisture (often half – a wet surface means weaker thermals!).

The strength of an average updraught is given by the formula:

$$w_s \approx 0.03(HZ_i)^{1/3}$$

where H is the heat flux carried up from the surface by the thermals and Z_i is the inversion height. At midday in midsummer, the solar input from a cloudless sky is about a kilowatt per square metre in Britain. With an inversion height of 1,000m (3,300ft) and assuming that about half of this is absorbed by evaporating surface moisture, then a value for w_s of about 2.5m/s (5kts) is obtained.

What about the structure of the thermals themselves? Figure 4 shows horizontal sections through the domain at various heights where the inversion height is 1,000m. The domain size is 3.2km. The contours

in these figures are of vertical velocity – continuous lines show updraughts, and dashed lines, downdraughts. A value for H of 240 watts/sq metre has been used.

It is apparent that the updraughts in the lower half of the convective layer are far from being cylindrically symmetric – rather the peak updraughts are at the intersection of a series of lines of convection, rather like starfish.

What is causing this? It appears in the model that when the downdraughts from previous thermals hit the surface, the resultant outflows from neighbouring downdraughts clash and create lines of rising convection where they meet. Where these lines intersect there is slight enhancement of the updraught and these points of intersection become the new thermal centres. It is only when these thermals approach the inversion that they begin to assume any appearance of being cylindrically symmetric. It is certainly common experience that thermals at height are much smoother than lower down.

The effect of wind

What happens to all of this when there is wind blowing? The wind gradient, which is strongest lower down near the surface, acts to elongate the regions of lift in an up-down wind direction, and this effect increases with increasing wind strength. This is shown in Figure 5 (see next page), which shows updraughts at a height of 200m with increasing near surface wind speeds.

This elongation of the updraughts leads to the formation of the commonly observed cloud streets. The turbulence created by the wind gradient also has the effect of breaking up the thermals at lower levels, the height L below which turbulence dominates over thermals being given by:

$$L \approx 30 \frac{U^3}{H}$$

where U is the near surface mean wind speed measured at a height of 10 metres. The actual value of the constant in this equation is very dependent on the surface grass type. When this height L increases with increasing wind speed to the inversion height, then all thermal motion tends to be suppressed and the turbulence dominates throughout. For

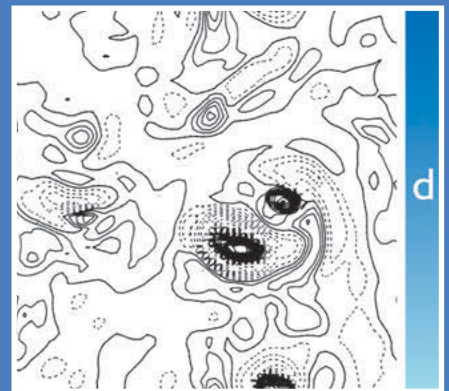
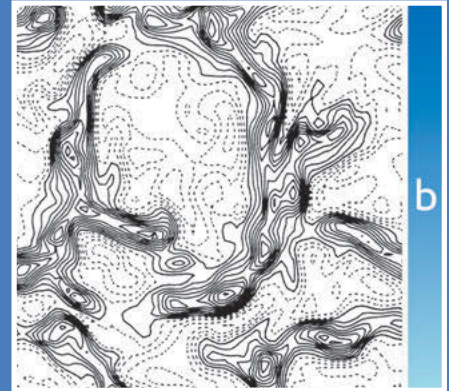
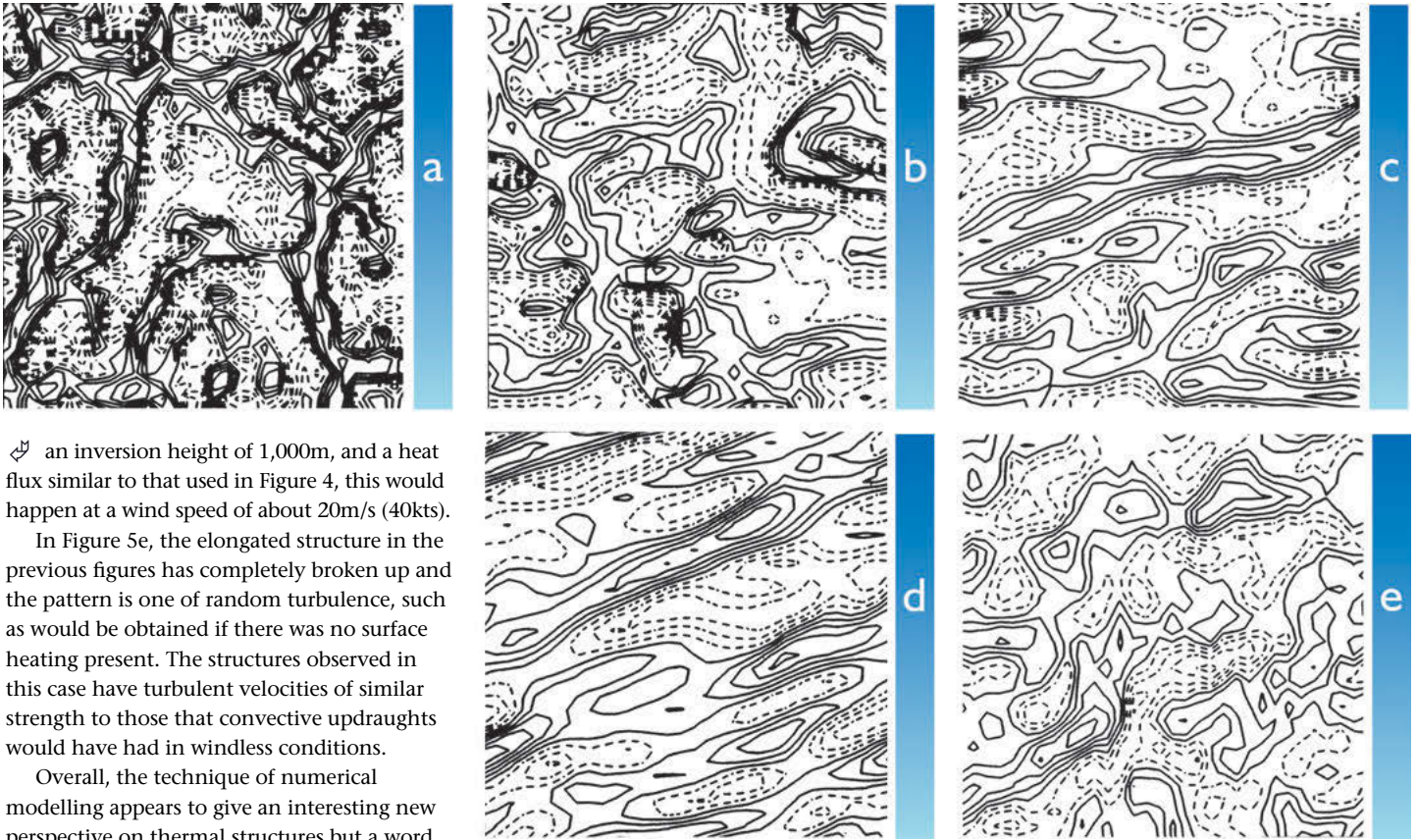


Figure 4: Horizontal sections through the convective atmosphere from the numerical model in the windless case. Heights of the sections are 50m, 400m, 900m, and 1000m respectively. Solid contours denote upward velocities and dashed lines negative velocities. In each case the contour interval is one tenth of the greatest velocity (2.2 m/s, 4.2 m/s, 0.5 m/s, and 0.2 m/s respectively)

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↪ an inversion height of 1,000m, and a heat flux similar to that used in Figure 4, this would happen at a wind speed of about 20m/s (40kts).

In Figure 5e, the elongated structure in the previous figures has completely broken up and the pattern is one of random turbulence, such as would be obtained if there was no surface heating present. The structures observed in this case have turbulent velocities of similar strength to those that convective updraughts would have had in windless conditions.

Overall, the technique of numerical modelling appears to give an interesting new perspective on thermal structures but a word of caution is necessary here. After all, the numerically-modelled weather forecast is not always right. It is very easy for the numerical modeller to forget the inherent errors caused by the limitations of grid-point spacing and to think that he or she is really simulating atmospheric motions. However in the end it is necessary to compare such results with measurements in the field.

In the numerical modelling community there is a saying that:

*The stimulation of simulation
Is better than
The pleasurement of measurement
But it makes you go blind.*

Figure 5: Horizontal sections through the convective atmosphere from the numerical model at 200m for a series of increasing wind speeds. The near surface wind speeds are 0m/s, 4m/s, 7m/s, 10m/s and 20m/s respectively. Solid contours denote upward velocities and dashed lines negative velocities. In figures (a) - (d) the contour interval is 0.3m/s, while for figure (e) the contour interval is 1m/s

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Alan Lapworth has been gliding on and off since 1972, mainly with Oxford GC. He joined the Met Office in 1974 and retired in 2005

75

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NUTS ABO



OUT BRAZIL

A group of friends with a passion for soaring set out to explore the Central Highland. Sergio Andrade tells the tale

INTEGRATING 15 m/s! Through the radio came Egon's ecstatic voice, as he climbed like a home-sick angel, circling a dense column of smoke generated by a huge fire fed by burning bush trees, the queimada. At least we can derive some benefit from this ecological stupidity, I said to myself...

For the second year, a group of friends with a common passion, soaring, were exploring the north-west end of Brazil's Central Highland. It's a region best known for its huge production of soybean, cotton and corn. A plateau sometimes as flat as a billiard table interspaced by canyons and ravines, it's a complex region extending about 2,000km from south to north and circa 200km wide, with altitudes varying between 600 and 1000m (2,000-3,280ft). Last year we did an expedition in which we flew a total of 3,000km, covering several places in the north-east region, spending two nights ☺



(Above) Returning to Luis Eduardo from a 700km flight

(Below) Sergio concentrating in a thermal

(Overleaf) Nader climbing a strong thermal

(All photos: Nader Couri)



Sergio Andrade (above) founded Brazilian ultralight manufacturer, Microleve. Logging 1,000+ hours in ultralights, he began soaring in 2006 and has since logged 500+ hours flying mostly in Rio de Janeiro, São Paulo and Brasília

Nader Couri (pictured overleaf) has flown hang gliders for 25 years. He has also flown ultralights, helicopters, gliders and paragliders

✈ at Luis Eduardo. As we live in different parts of the country, we choose to meet at Formosa, located 60km from Brasilia, our capital, on 26 September.

Our plan was to first be based at Luis Eduardo, 500km to the north – a town said to be the one with the fastest growth ratio in Brazil due to agribusiness – to explore the plateau and then push forward another 600km to Picos, at the centre of the arid north-east, where the paraglider distance world record was flown last year, 465km. Due to widespread *queimadas* to the north, we decided to stay at Luis Eduardo, flying out and returns, FAI triangles, etc. Egon was 20km short of doing 1,000km in his ASW 22.

Luis Eduardo, with a population of 80,000, has a very good paved runway and a second airport, also paved with 2,000 metres length, is being built by a group of local entrepreneurs. The plateau is punctuated by airstrips where agplanes operate, but a glider can outland in any of the thousands of cultivated patches.

Many Americans from the midwest and Great Plains have bought land and are producing there. The best hotel is called Saint Louis, after Missouri, and has the same parabolical arch as that city's symbol.

Our “airforce” was formed by seven motorgliders: three Stemmes, one ASW 22, one ASH 25, one DG-800 and a Ximango. During the six days we stayed there, we flew more than 15,000km.

Part of the flights can be downloaded from OLC, if one searches for flights at LUIS MAGALHAES, between 27 September and 3 October.

Although it is not a desert and doesn't receive the same amount of daylight hours as Namibia, Improta, one of the pilots, concocted the name MAGANIBIA, a fusion of Magalhaes and Namibia.

As I have said before, this was our second expedition. As we did the first time, we had a cameraman and a sound technician with us in order to produce a documentary so friends and wives could see and understand our passion.

A small trailer can be seen at YouTube, if you search for “planadores rumo ao nordeste”. Or you can search for PUOFT and see several other soaring clips in this and other Brazilian regions.

We intend to repeat this every year, discovering new places to fly and stay, showing local people the marvels of powerless flight. Luis Eduardo already has a wooden Quero Quero and a Blanik. The expedition stimulated a lot of young people, as well as private pilots, to try their skills at gliding.

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(Left to right): Top Gun Bollywood-style: the instrument panel took a while to comprehend; the club has a single winch, which has one cable

PASSAGE TO INDIA

Beach umbrellas for launch point and a man with a flag providing signals made gliding at Deolali an interesting addition to Alec Watt's log book

AT THE end of 2008 I volunteered to take part in an exchange visit between the Royal Artillery, for whom I work, and the Indian Artillery (I know what those of you who have served are thinking, a volunteer is somebody who doesn't understand the question, but hey, nothing ventured...), the idea being that I didn't join up to stay at home the whole time.

As soon as it was confirmed that I would be the nominated candidate from the British side, I jumped on the internet with the intention of researching where I would be going and what I could look forward to

such as temples, monuments and the like. Actually, what I did was Google 'Gliding in India'. To my delight I found the Deolali Gliding Club, which was based at a military airfield a few miles down the road from where I was to be visiting. I promptly dispatched a letter on Army Gliding Association headed paper to the CFI. The response was deafening in its silence.

A few months later, after many delays, I finally found myself at the Indian School of Artillery, a day earlier than they were expecting me. Finding myself with time to kill and accompanied by a driver and



✈️ escorting officer I went exploring in the local town, all the while keeping my eye open for an opportunity to visit the gliding club.

This came in the afternoon when we drove past a large board at the gates of the Indian School of Army Aviation advertising the Deolali Gliding Club (I am at this point resisting the urge to suggest that I am Deolali for gliding!). Making my hosts understand what I wanted to do was a little difficult, but with the aid of the advertising hoarding I got my message across.

Deolali Gliding Club is run by the CFI, Capt S.S. Chahal, with his son Anubander Singh. They operate two Super Blanik aircraft with a single winch, which has one cable.

The launch point is a couple of beach umbrellas with some chairs and signals between the launch point and the winch are provided by means of a chap with a flag. The club employs a winch driver, a retrieve crew, a signal guy and a launch point supervisor (wages in India are considerably less than those in UK).

The feel of the club is a relaxed one with families from the Army base coming along for 'joyrides' in the evenings. The weekday flying is restricted to after working hours in the evenings due to having to share the airfield with the Army and its helicopter school. The weekends, however, provide plenty of time to fly with the club being open all day.

This being India and the pace of life slower than we are used to, operations are suspended in the early afternoon for a good hour in order to take lunch.

Having established who I was, and that they had received my letter, I was ushered towards a glider. My first flight was a case of get in the front with the CFI in the back, no brief, no checks, just get in and fly.

It took me a while to understand that the altimeter was in metres not feet and the zero position was at the bottom of the dial not the top as I am used to, also there was no yaw string and the vario was not of the audio type. There was, however, a turn and slip ball so that was OK.

The initial launch was to about 200m (656ft) and from this we did a gentle circuit in which I tried to prove I knew what I was about. Needless to say, what with everything being a little strange, I didn't impress anybody.

On the second launch, I was asked if I had ever done any aerobatics in a glider. I replied that I hadn't, what an ill-thought-out answer that was. No sooner had we come

off the wire at 200m than the CFI threw us into a wingover, followed by a full loop and finishing up with a low pass (and I mean LOW! – people were diving out of the way as we beat up the launch point).

Having landed and paid, I was invited back to go soaring on the following Sunday.

Sunday arrived bright and clear (as did all days during my visit) and I was dropped at the club by my driver. This time I was teamed up with Anubander and he was keen to know what my previous personal best height gain had been – 5,500ft (1,666m) agl last year for Silver height. With a grin, he suggested that we should go and beat it.

Coming off the launch at the customary low level we trucked round the hot blue sky, contacted a thermal and started going round in circles, Anubander at the helm. After I had finished taking photos, I was handed control and, seeing an enormous tarmac parade square below us shimmering in the haze, I headed towards it and was rewarded by a kick in the backside signifying a strong thermal.

As we passed 1,660m Anubander was quick to point out that we had exceeded my previous best. We topped out at 1,750m (5,775ft) and stayed drifting around the local area admiring the view and having the local landmarks pointed out.

One in particular was of interest, it was one of India's high security jails. This was notable mainly for its proximity to the Indian mint, probably less than a mile. I couldn't help feeling that putting a gaol next to a money factory was a little akin to putting a kindergarten next to the chocolate factory. Maybe they did it to act as a deterrent.

After about an hour, with no cross-country in the offing due to airspace restrictions, we turned our height into speed and I had my stomach churned up by Anubander as he executed some aros to bring us down to earth.

All in all, a very hot but successful trip and I can now boast of having India in my log book as well as another aircraft type.

My thanks go to all those I met at Deolali Gliding Club and, in particular, to Capt Chahal and Anubander Singh for making me welcome, tolerating my sometimes erratic flying and allowing me into their aircraft.



All out – signals between the launch point and the winch are provided by a man with a flag



The launch point is a couple of beach umbrellas with some chairs



Army Officer Alec Watt has been flying since 2005. He soloed after a week's course at Nympsfield and then transferred to Wyvern Gliding Club at Upavon. Alec has his Silver 'C', is a BI and owns an Astir CS77 in which he represented the Army at the Inter-Services Regional Gliding Competition last year, coming 8th out of 15

WINCH DRIVERS:

DON'T FORCE YOUR MATE'S CRATE TO ROTATE

Better winch driving can help pilots to fly safer winch launch rotations. Andy Holmes, BGA winching adviser, explains

KEY FACTORS WHICH MAKE A WINCH LAUNCH PITCH-UP LIKELY:

- Powerful winch
- Winch throttle opened too quickly
- Winch throttle opened too far
- Lightweight synthetic cable
- Stretchy type of cable (particularly rope)
- Light glider
- High CG position (eg turbo, water ballast, high wing glider)
- Aft CG position (eg light pilot, tail ballast, two-seater flown solo)
- Low winch hook position
- Aft winch hook position

IT IS more than four years since the BGA Safe Winch Launch initiative began. All pilots should now know the key message regarding winch launch rotation:

Maintain a shallow climb until adequate speed is seen, with continuing acceleration.

Ensure the transition from level flight at take-off to the full climb is controlled, progressive and lasts at least five seconds.

The aim of flying a winch launch rotation according to these guidelines is to maintain a safe margin above the stall throughout, and to ensure sufficient energy to deal with a low-level launch failure.

Great! So now everyone knows how to fly a winch launch correctly, that should be the end of it, right? Well, not quite. Our colleagues in Switzerland recently examined another possible cause of pilots rotating too quickly. Or maybe I should say gliders rotating too quickly? Their findings reinforced the existing views held by members of the BGA Safe Winch Launch team.

Who is in control?

The Swiss investigation suggested that on a high-acceleration launch, the pilot may not be in control of rotation rate as the glider lifts off! This is true regardless of stick position. Surprisingly, the cable tension can be high enough to cause this problem without breaking the weak link.

The cause

During initial acceleration on a winch launch, the cable tension acting on the belly hook can cause the glider to pitch up (see figure 1). This is compensated for by the pilot's use of elevator to achieve a controlled, progressive rotation. Everything works fine as long as the available pitch-down authority from the elevator exceeds the pitch-up moment caused by the cable tension. This is the case if the glider is accelerated normally.

The problem occurs if a powerful winch is used to accelerate a glider too quickly, resulting in high cable tension. In this situation, the available elevator power at typical lift-off speeds is insufficient to control the associated pitch-up. The end result is that, for a second or two, the glider rotates into the full climb faster than the pilot would like, regardless of what is done with the stick (see figure 2).

After this initial excitement, the increasing airspeed improves the effectiveness of the elevator. Also, as the glider rotates, the changing cable angle reduces the pitch-up moment caused by the cable pull. These changes combine to give the pilot sufficient pitch authority to regain control of the rotation rate and the drama is over.

However, if the uncontrolled rotation is sufficiently rapid it will stall the glider. Even if a stall doesn't occur, a launch failure during this segment of the launch is likely to leave the pilot with insufficient energy to recover. Either of these scenarios is sufficient to create an unrecoverable accident.

I believe high acceleration launches like this are fairly common and mostly end without incident. The pilot reacts correctly to minimise the forced rotation, and the cable and weak link remain intact during the critical phase near the ground. However, during this critical initial phase there is "no way out" if the launch fails. Clearly we need to stop this from happening and put the pilot back in control of his own destiny!

The solutions

The main solutions come in four categories – what winch drivers should be doing, launch controller input, winch characteristics and

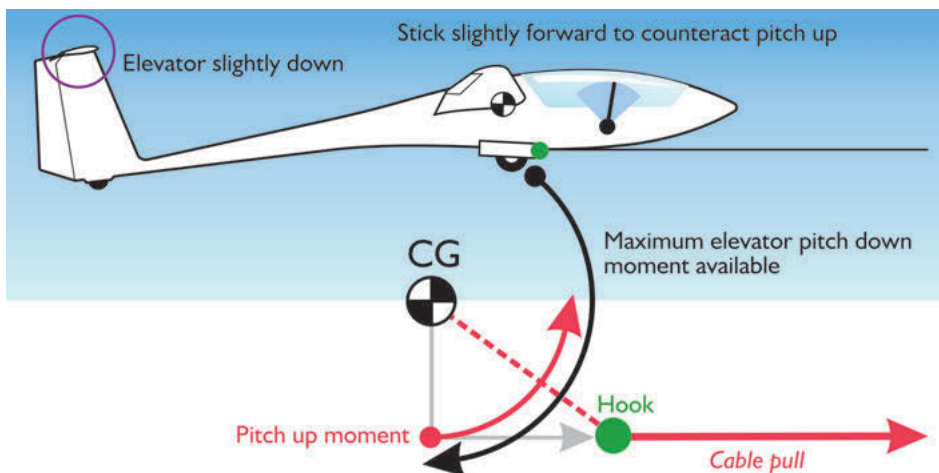


Figure 1: Progressive acceleration from winch

what pilots can do to minimise exposure to this problem.

Winch driver:

- Carefully check glider type to be launched and expected power required.
- Open throttle smoothly and progressively at ALL OUT.
- Accelerate at correct rate – typically three seconds to chosen power setting.
- Practise correct rate with engine off and stopwatch.
- Four seconds is more appropriate for powerful winch and synthetic cable.
- Become familiar with engine sound for correct acceleration.
- Ask for feedback from pilots.

Launch controller:

- Ensure the winch driver is aware of glider type to be launched.
- Monitor launches carefully, particularly initial acceleration and rotation.
- If a significant change in wind conditions is noted, inform the winch.
- Actively seek feedback on behalf of the winch driver.
- If a glider is seen rotating rapidly despite down elevator, or initial acceleration seems excessive, inform winch driver before the next launch.

Winch characteristics:

- Engine should idle evenly to ensure smooth transition to ALL OUT.
- Throttle lever should be smooth to operate.
- Throttle lever travel should be approximately 6in/15cm minimum.
- If throttle lever resistance too weak, fit stronger return spring.
- Consider fitting damper to resist rapid opening of throttle.
- Ensure automatic gearboxes change gear smoothly.
- Reliable, clear communications with launch point essential.

Pilots:

- Try to avoid winching with aft CG position – add nose weights.
- Check seat adjustment carefully and strap in tight.
- Be ready to control rotation by carefully considering initial stick position. (Ask an experienced instructor for advice on your glider and winch type.)
- If acceleration is excessive, give appropriate feedback to the winch driver after your launch is complete, or once you have landed.

- If your glider is susceptible, then brief winch driver before launch.
- Take extra care if launching with a turbo or water ballast.

Other benefits for pilots

There are other benefits to a more progressive, controlled acceleration from the winch:

- Better for teaching – more time for the student to absorb information.
- Better for instructors – more time to prompt or take over.
- Tailwheel/skid doesn't slam on the ground at ALL OUT.
- Pilots don't slide back in their seats, away from the controls.
- More time to react to a wing drop by releasing.
- Smoother gearchanges during acceleration with automatic gearbox winches.

Another, perhaps surprising, benefit is that there is hardly any reduction in launch height if winch drivers accelerate smoothly and progressively. Is an extra 50ft of launch height really worth the risk?

Does this apply to my winch?

Three-second acceleration works well with most winch types, including any winch with a large petrol/LPG engine (Skylaunch, Tost, etc) and most large turbodiesel winches (eg Van Gelder). With some lower-powered winches, typically non-turbocharged diesels or winches with soft fluid drives, two to three seconds is more appropriate.

The pilots you launch, and experienced winch drivers at your club, will be the best informed to help you achieve optimum acceleration with your winch. Consider what glider type is being launched. A low-powered winch still needs to be handled carefully when launching a K-8 or K-6, for example.

SUMMARY

Our aim is not to have extremely long ground runs with the associated risk of dropping a wing, reduced launch heights and trickier launch failure options. Neither do we want low speed launches – we still need to give gliders a good safety margin over their minimum launch speeds.

However, it IS possible to accelerate too quickly. Please consider how this applies to YOUR winch and YOUR site.

Next time you are winch driving, remember it is your mate on the end of the cable, who is hoping to be in control of the rotation into the climb. You wouldn't want to force his crate to rotate, would you?



Andy Holmes is the BGA Winching Adviser. He learnt to drive winches as a teenager at the Long Mynd, where he was learning to fly. Andy now flies an LS8 at Lasham

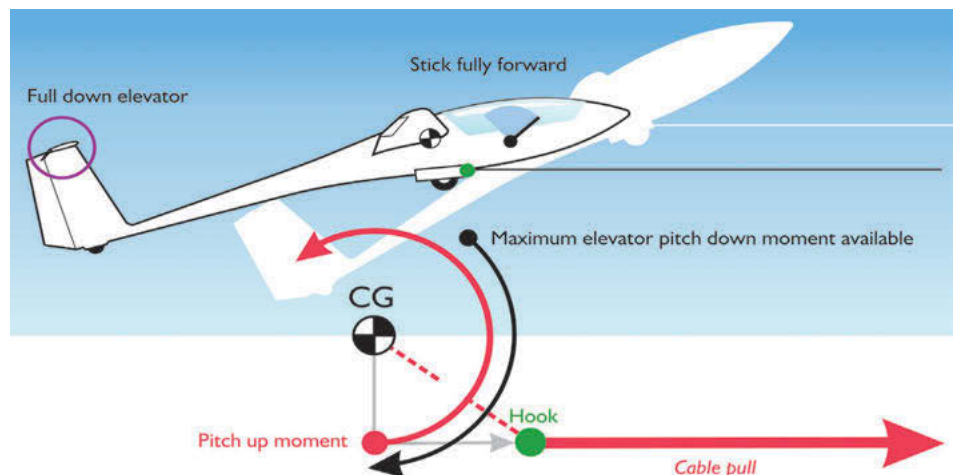


Figure 2: Harsh acceleration from winch

Illustrations by Steve Longland

GOING FOR A SPIN

Regular spinning practice can save lives. BGA National Coach Mike Fox looks at how to avoid becoming an accident statistic

ONE of the most important roles of the BGA is to try to reduce accidents; especially the most serious. The BGA provides information on how common accidents occur and how to avoid them while flying. One of the common ways to have a serious accident in a glider is inadvertent stalling and spinning. BORING! I hear the masses cry! Well, it is boring unless – like me – you have a passion for trying to keep your mates safe while partaking in a sport that they love. I like keeping my friends safe, so I'll continue.

might do, then read on:

You take a launch and attempt to soar some distance downwind of the airfield. The climb doesn't work, so you straighten up to return to the site. You have barely enough height to get back and you realise that there are limited field landing options between you and the airfield. There is a nice stubble field further downwind – away from home. * Well – you could probably sneak into one of the little grass fields on the way home, but they may have stock in them at this time of year. * Sod it – you go for it anyway. Fortunately the air is ok on the way back, so you arrive low but ok. Ahead lies a runway which is safe to land on, but is on the opposite side to the operation and your trailer. It'll take ages to walk back, get the car and towout kit – you could just sneak back round to the normal circuit and land closer to everything. * Sod it – you're not that low.... Oops – you are now after that sink, but if you turn in here, you'll look really silly, and stop them launching for 15 mins. * Sod it – you'll be fine. You stagger round the final turn at 100 feet and land near the trailer line. Great!

Background

We are still in the throes of a winching safety initiative which has led to fewer accidents. The winching initiative looked at the accident stats and decided that there were a few common risks and incorrect techniques that led to those risks. The team then went ahead and tried to educate in order to introduce better techniques to avoid the common risks; easy. Let's do the same for spinning.

So what are the common elements of stalling and spinning accidents? There are dozens! Unfortunately, we seem to be spinning 'in' from all sorts of different circumstances. They

include field landings, during and after winch launches, in the circuit, off final turns, spinning during aerobatics, spinning into the hill, etc. The only commonality is that, before most of these accidents, it appears that the pilot stopped flying the aircraft due to being distracted and overloaded by something that was going on outside the cockpit. Sometimes that other thing was a low final turn, a field landing perhaps left too late or possibly failing to handle a turn that wasn't required off a launch failure.

Example

How can we avoid these accidents? Let's start by telling a story. It is fictitious, but I'd be willing to bet that many pilots have found themselves in not dissimilar situations. Have a think at the star markers as to what you

Analysis

How do you feel? Good? Or do you feel a bit daft for taking the risks and using your skills a little too much? I know I have ruined a nice flight in this way several times (many years ago of course!). Did you monitor the string and speed around those last turns, or were you a little more fixated on the view outside down the wing with the world looking very close and whizzing past?

This is how those stalling and spinning accidents occur, but we have all been there or seen others in similar situations – right? Have another look at the scenario above. How could you avoid the obvious dodgy bits? You could ask yourself in the first instance "what are the chances that I can glide back with sufficient height to spare?" If the answer is 50/50, then you could say "what are the chances of being able to land out successfully short of the airfield?" This might also be 50/50. So, if you add both risks, you find that there is a good chance of breaking the glider and therefore perhaps injuring yourself. If you make the same decision to go for it say 10 times in your gliding career, you are very

THE CASUALTY LIST (1974 to 2008)

All of the stalling casualties were as a result of accidents, ie none were as a result of practice stalls. All but two (possibly only one) of the spin accidents resulting in three deaths (possibly only one) were accidental.

	Serious injuries	Deaths	Total
Stalls	47	4	51
Spins	79	56	135
Totals	126	60	186

It is thought that around one million practice spins have been conducted in this period, and a greater number of practice stalls.

AN AMAZING NUMBER OF PILOTS OVER-RUDDER TURNS WHEN THEY ARE STRESSED. AN EQUALLY AMAZING PROPORTION ALLOW SPEED TO BLEED OFF WHEN WORKLOAD IS HIGH

likely to break more than one glider. Why not accept that a mistake has already been made, find a nice field and buy the beers tonight? It won't be a long retrieve anyhow! You will then avoid all the other decisions and frights that are otherwise going to occur if you press on. If you do press on and get away with it, don't 'push it' more than you have to! Land on that first bit of airfield, breathe a sigh of relief and start walking.

Avoiding form filling (or worse)

Have a look at the following to see how you can avoid being the next spinning accident pilot:

- Try to plan your flight so that you don't get distracted from flying the aircraft accurately or so overloaded you fail to notice you are about to stall or spin! How can you do that? Well – some of you may have heard a great little aviation saying: The superior pilot uses his superior judgement to avoid those situations that require his superior skills (apologies to the ladies). This is not classical flight planning while on the ground – this is planning while airborne to avoid stress. You could also call this flying defensively.

- If you do need to use superior skill despite careful flight planning; do you possess it? When under pressure it is well known that handling skills deteriorate. Are you monitoring coordination? What about the speed? An amazing number of pilots over-rudder turns when they are stressed. An equally amazing proportion allow speed to bleed off when workload is high. If you are not sure, then get an instructor's opinion – they will be able to give you exercises to improve your basic handling.

- Get more practice with an instructor by flying a club glider. You must make sure you are competent before attempting any stalling or spinning on your own. If you haven't approached the spin lately, fly with an instructor in a suitable aircraft, and get the ok before trying it solo. Remember – the stats tell us that spinning deliberately while current, and at an appropriate height, is SAFE. Not being in current practice at stalling and spinning is the unsafe practice!

- I know what you are thinking: "how can I possibly not know that I'm about to stall and spin? – it's obvious." Well I have been there myself. I can tell you that it's not obvious when you have messed up and are trying to get round a low final turn into a small field. I can tell you because I have nearly spun in myself. I was saved by being current at stalling and spinning my glider. All I had to



Practise regularly so that if the worst happens you will know what to do to save the day (Pete Masson/glidingimages.com)

do was relax the backward pressure and take off some bank. But it was close. You may own a glider which isn't cleared for spinning. You must not contradict a command in the flight manual, so don't spin it. What you can do though, is get it to the point of departure so that it drops a wing, and then recover by moving the stick forward. You will then have most of the story, so that you may recognise the symptoms when you need to most. (See above about getting some training first.)

Join in!

So join us in thinking a little more about how you plan your flying so that you always keep sufficient capacity in hand to concentrate on flying accurately. Talk to an instructor and get involved in exploring what the sensations are like as you stall and depart into a spin. Practise regularly, if possible in your own aircraft, so that when the worst happens, the alarm bells will ring loud and clear, and you will know what to do to save the day.

None of this need detract from the fun but 'safety initiatives' are often seen as boring, and perhaps stifling. Surely this is all about thinking about your flying and attempting to arm yourself with as much knowledge as possible to keep yourself safe, even when you have to use some of your superior skills!

■ **Instructors – we need your help! Please do not pay lip service to the stalling and spinning elements of flying training. We need your help to better train our pilots.**

Try to come up with realistic scenarios to link in with your training, especially when it comes to the further stalling and spinning. Don't just do all the stalling and spinning in one block. If possible, break it all up into bite-size chunks, and link in to flying that a student may have seen.

Please remember that practising stalling and spinning when properly thought out and briefed is statistically very safe.

The aim of the exercise is to arm your students for flying single-seaters – most of which spin like tops!

Please see www.gliding.co.uk/safespinning for more advice.

■ The author would like to thank the other members of the spinning Initiative group (Graham Morris, Colin Sword,

Tony Parker, Hugh Browning and Phil King) for their input into this article



CODE BREAKER

Do you know your VFR FIR brief from your PIB? If you're unsure, read on as Andrew Roch unravels the mysteries of NOTAM

THROUGHOUT Europe there are classes of airspace that can be used freely by gliders, there are classes of airspace that can be used only with permission and there are bits of airspace in which gliders are not permitted. Over the years there has generally been a reduction in the volume of airspace available to glider pilots and some other forms of General Aviation.

The large chunks of airspace that are required for commercial operations are fought for by operators of aircraft, airports and NATS (National Air Traffic Services), which control the movements of aircraft within these volumes of air.

There is usually some representation from factions for and against the application for controlled airspace and the whole negotiation is looked after by the Directorate of Airspace Policy (DAP), whose job it is to see that fair play takes place.

NOTAM (Notices To AirMen)

The purpose of this article is to explain where the "other" more temporary bits of restricted airspace fit in. It is the responsibility of ALL pilots to ensure that they operate only in bits of airspace that are available to them. NOTAM are published to deal with these matters and cover a vast range of eventualities, some of which are significant to glider pilots and some are not. Some NOTAM are purely for information and

are there to help us with our situational awareness whilst others legally prohibit our entry into notified volumes. By way of example, we might not be particularly interested to know that our local car distributor has a promotional helium balloon tethered to fly at 100ft above their forecourt when they are six miles into a built-up area from every direction, but we need to know that the Red Arrows have a display taking place a few miles up the road.

Types of NOTAM

There are a number of other types of similar notices – SNOTAM, ASHTAM and BIRDTAM, which unsurprisingly relate to snow, volcanic ash and large areas of birds. In this article, we'll ignore all but NOTAM.

Aerodrome, en-route and navigation warnings

NOTAM can be considered as either relating to aerodromes, en-route or navigation warnings. I will come back to the details of each type or you will be fast asleep before we get to the important bits. For now we will stick with navigation warnings.

Navigation warnings

It would seem that navigation warnings let us know of dangers from other airspace users such as parachutists, fast jets, activation of danger areas, GPS jamming and, very

importantly, RA(T)s – Restricted Airspace (Temporary). Some navigation warnings are just that – for example, a warning that unmanned balloons are being launched and the remnants will be recovered by parachute. It is entirely up to you if you wish to take the risk of flying in these areas. But with a RA(T) you would be breaking the law if you were to fly in a notified area.

There are all sorts of variations in between. As glider pilots, we would choose to avoid notified parachute areas and published air displays that are not protected by airspace restrictions. But there is no legal mandate to prevent any airspace user from using these areas. We operate within the constraints of "good airmanship".

Then there are the massive volumes of air that are the subject of NOTAM informing us of a single aircraft that will not want to change course if you get in its way. Many airspace users will accept this as a useful piece of information and plan their route through this area just remembering to consider that they might need to give way to another aircraft regardless of rights of way. Captive balloons, kite-flying and other such things also appear under this heading, as do gliding competitions.

En-route

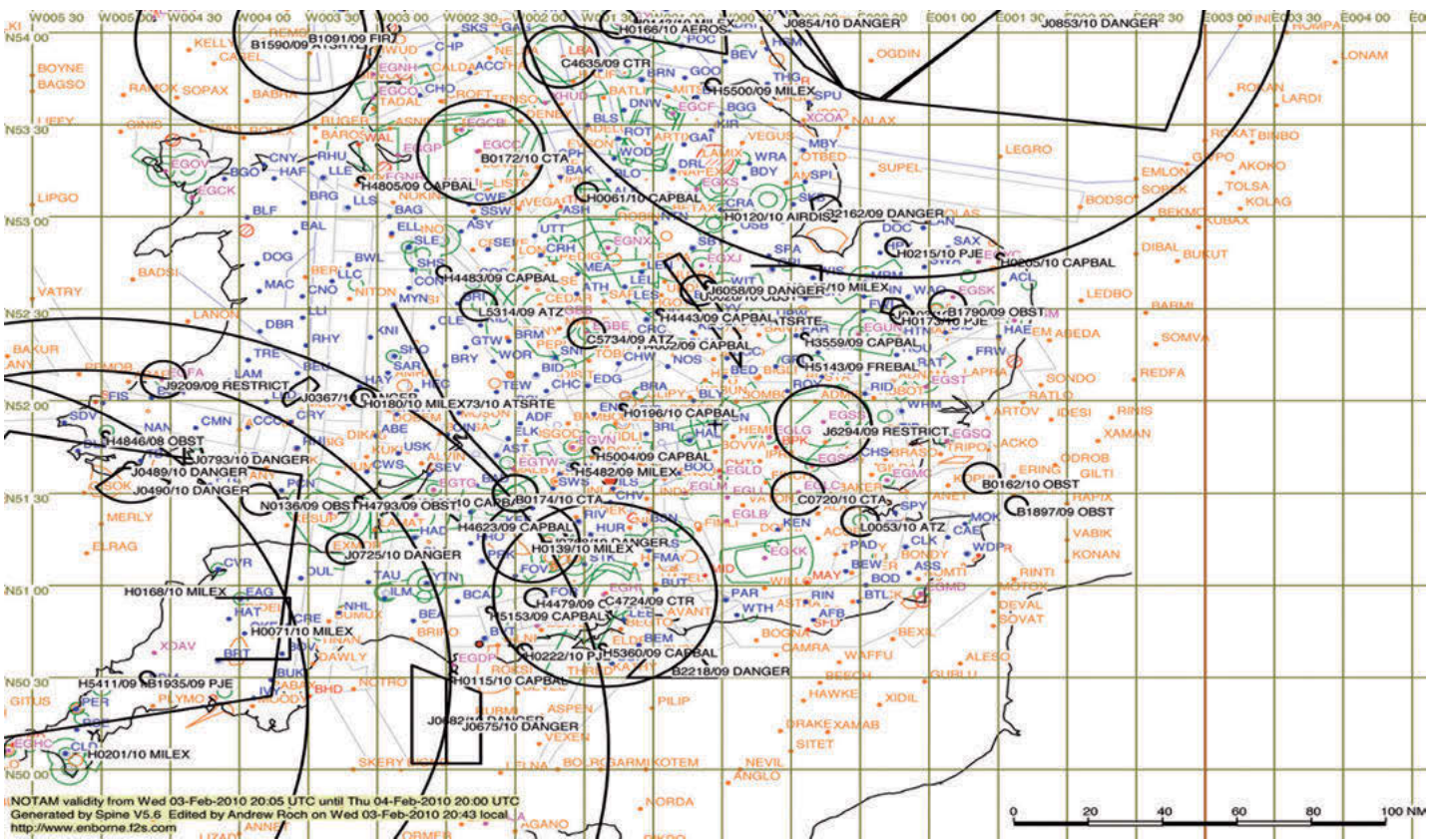
These NOTAM are generally for information relating to reduction of or increase in services available. A change to the operating hours of a radar service might fit into this category. Most things in this category that will be of interest to glider pilots will be repeated in the navigation warnings section so a quick scan is usually all that is required.

Aerodrome information

Pretty much what it says, but be warned. Whilst writing this article I have been flicking between the AIS (Aeronautical Information Service) website and this document. One of the aerodrome information notices tells of a 10nm radius change to airspace which has been temporarily graded to Class A at Farnborough. This NOTAM was



SOFTIE
Emergency Parachutes
UK Agents
www.parasential.co.uk



duplicated (or at least referred to) in en-route information but NOT in the navigation warnings. Checking only navigation warnings is NOT good enough.

Source of information

All airspace users wishing to establish a NOTAM apply to the AUS (Airspace Utilisation Section) of the CAA (Civil Aviation Authority). This application goes through some form of selection criteria and is forwarded for publication to the AIS, which is part of NATS. Pilots access this published information on the AIS website (www.ais.org.uk), which will actually redirect users to the NATS website and then automatically refer to the European AIS database.

In order to get to the required information you need to register with AIS so that you can log in to the system. You will then have the opportunity to extract the detailed NOTAM by using one of a number of options designed to assist pilots.

Unfortunately there are some significant limitations which make the whole system rather cumbersome for glider pilots and it suffers in a similar fashion to this paragraph, in that it is full of three, four and five letter codes. For example (or should I say eg), once you have logged in you will be invited to get

a VFR FIR brief – EGTT as one of the many options. Now, this might be meaningful to some but might be gobbledygook to others.

If you struggle with this, the PIB that you will be presented with will possibly be beyond your comprehension, because most of the content is in code (oh sorry, that was a Pre-flight Information Bulletin and the bit before was a Visual Flight Rules Flight Information Region brief for EGTT – ah sorry again, EGTT is obviously short for London – which actually means most of the UK, except for Scotland in this context, but then you probably guessed that bit!).

There are alternatives to using the AIS website but they are not “official”. The significant advantages are that they take the coded information and do something useful with it, like plot it on to a shape of the UK and plot other useful things like airfields so that we can see where the notified areas are relative to places that we understand. Some even give a description of the activity that is taking place there in reasonably plain English or at least a more predictable code.

The innovation used in some of these computer applications is excellent and many will allow you to view the source data as well. I am told that these applications use the “Q” line code, details of which can

Some graphical packages, such as SPINE (see above), will allow you to load the details of the NOTAM into your GPS so that you can see the boundaries whilst you are flying, but please consider this to be an additional benefit and **not** a substitute for a good pre-flight briefing

**GET YOUR
NOTAM
INFORMATION
EARLY, MAKE
SURE THAT
YOU KNOW OF
ANY RA(T) AND
BEFORE YOU
TAKE OFF YOU
CAN ALWAYS
CALL THE
FREEPHONE
SERVICE ON
0500 354 802
FOR A LAST-
MINUTE UPDATE**



Born (or created) in 1956, I had wanted to glide from the age of four. Started with the ATC at 13 – Halton, became instructor with them at 16. Got PPL at 17 and packed the whole lot in for work, family and mortgage reasons soon after. Started again in 1993 at LGC. Bronze and Silver in 1994. Never claimed a Gold or Diamond height. Became BI (AEI) in 1994, Ass Cat in 1995, Full Cat 1998, CFI 1999 to present. Gave up real work in 2001 and became manager of London GC, which is still my role. Presently a Regional Examiner and CAA Motorglider Examiner

be found at www.nats-uk.ead-it.com/aip/current/misc/qlinensc.pdf if the winter is so long that you get bored before the start of the soaring season. If, however, the weather has improved and you wish to go soaring instead, then take a look first at the BGA website where there is all the information that you might want to ensure that you only fly where you should.

There are links to some of the graphical packages at www.glidering.co.uk/bgainfo/airspace/notamdisplay.htm but a quick look in the search engines will give you an endless list of software that will perform this task. Some will even allow you to load the details of the NOTAM into your GPS so that you can see the boundaries whilst you are flying, but please consider this to be an additional benefit and *not* a substitute for a good pre-flight briefing.

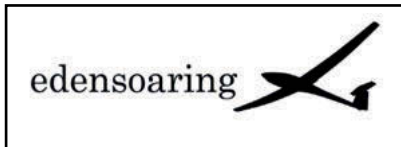
The names of some packages are NavPlot, NOTAM Plot, Spine and NOTAM Check. All these packages carry a health warning, but in fairness so does the AIS website. I am sure that the ideal solution to avoiding bits of airspace that we do not want to be in is for the AIS to provide the information in a format that would suit us better.

Unfortunately the system was put together at vast expense with no consultation with glider pilots (or any other GA pilots to my knowledge) and the result was inevitable.

This failure is now well recognised by the DAP and there is an undertaking to address the matter as soon as there is international agreement regarding the data needed to sort it out. In the meantime, although I can only really suggest that you should go to the official source for the information, it would be much better to get help from one of the graphical packages than to simply not bother because it is all too complicated.

Whilst it may seem that I have been harsh towards the AIS, while preparing for this article, I telephoned them to get some clarification on a couple of issues. I doubt that anyone could have been more helpful than the chap that I spoke to. So if you really get stuck, please do not hesitate to call the AIS. The individuals who work there really do want to help.

Get your NOTAM information early, make sure that you know of any RA(T) and before you take off you can call the freephone service on 0500 354 802 for a last-minute update.



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CAN YOU WALK AFTER FLYING?

The first glider pilot comfort survey highlighted problem areas and indicated where research should be directed, reports Adrian Emck



Looks familiar? Would you drive your car sitting in this space for five hours, without stopping? (Adrian Emck)

PILOTS FREQUENTLY EXPERIENCE DISCOMFORT DURING LONG CROSS-COUNTRY FLIGHTS. THIS DISTRACTION CAN COMPROMISE SAFETY

WHY bother working on pilot comfort? Good question. “Comfort is a complete waste of time – you will only get 15 replies!” a senior member of Lasham told me as I was putting pilot comfort questionnaires into envelopes to send to Lasham’s members in the winter of 2004. Perhaps he was right – no one had been interested before to bother to make a study of glider pilot discomfort. So why was I bothering?

Pilots frequently experience discomfort during long cross-country flights. Sometimes this distraction can compromise safety, particularly in the later phases of flight, just when concentration and judgement need to be particularly sharp. Experienced pilots regularly spend longer in their cockpit than they would ever dream of doing in one stretch in their cars without a break – just glance at the top-performing pilot flight hours on the BGA Ladder. At the other end of the scale, beginner pilots are expected to endure a flight of five hours.

As discomfort can reduce mental performance, if it matters on a cross-country flight, it also ultimately matters for beginners.

In stark contrast to gliding, the military, who have the same problems, have been working seriously for years to improve cockpit comfort. The B2-A stealth bomber had extensive testing of its pilot safety cushions so that discomfort on 13-hour missions would be minimised. The SU34 Suikoi fighter-bomber even comes equipped with a pilot massage seat.

Many gliders are designed so that the base of the pilot’s spine is very close to the bottom of the fuselage, combine this with the fact that *poor seat design produces a cascade of negative effects ... in some cases contributing to aircraft mishaps¹*, such a ‘mishap’ injury could

well be spinal. Such injuries can have terrible and life-transforming consequences. Safety measures minimising these are obviously vital. However, it is just in this very area of the body that comfort matters.

To cut a long story short, I decided a survey was needed.

What did Lasham pilots have to do?

A small survey was carried out first of all. To avoid the criticism that only uncomfortable pilots would respond, a seminar was organised, ostensibly about 750km flying. Participants were surprised to find that they were completing preliminary survey forms regarding their flight comfort. At a later date, a more comprehensive survey of Lasham’s pilots was undertaken.

Pilots were asked to fill in a simple questionnaire. Discomfort was rated on a six-point scale where 0 corresponded to a perception of perfectly comfortable and 5 to extreme discomfort.

Pilots were also asked to comment on their cockpits. The recognised weakness of such an approach is that one person’s score of 1 could be another’s 2. In addition, there was no guarantee that pilots would accurately replicate their original scores if asked again. Nonetheless, the goal was to obtain good indications of where the problem areas were for glider pilots and therefore show where research should be directed.

The survey had 196 replies reporting on 820 combinations of pilots and their cockpits – many pilots had experience of several gliders. Dr Colin Jackson and I analysed the results.

The main findings

The main findings were (see *An Informal Survey of Flying Comfort of Glider Pilots: Some Observations Concerning Pilot Discomfort Generated by Glider Cockpits* Emck, Jackson, *Technical Soaring* Vol33 No 1 Jan-Feb 2009 p28-33) that:

- almost all pilots became uncomfortable with the passage of time
- there was no correlation between pilot ↗

LOWER-LIMB DISCOMFORT GENERATED THE HIGHEST NUMBER OF SURVEY COMPLAINTS. WE THEREFORE DECIDED TO INVESTIGATE THE UNNATURAL FORCES THAT GLIDER COCKPITS AND THEIR CONTROLS EXERT ON PILOTS IN THESE REGIONS

- ↪ height and discomfort
- cramped cockpits were by far the most important single source of complaint,
- lower limb discomfort was revealed to be by far the most important area of discomfort
- beginner pilots were the least comfortable
- comfortable pilots flew significantly more hours than others.

Cramped cockpits were cited as the main source of discomfort approximately twice as many times as seating, the latter being the next most important cause of pilot discomfort. Gliding particularly stands out in aviation as designers have striven to create high-performance aircraft and wrestled with the problem of having to carry around at least one person without, in the process, wiping out their hard fought for performance advances. The result is that glider cockpits can be relatively hostile environments in which to sit and pass several hours of the day.

Given this state of affairs, what part of the body is most affected? Well, as seen above, it turns out to be the lower limbs. Interestingly, even tall pilots found that this was the dominant area of discomfort.

Incremental growth in stature of the adult population occurs through increase in lower limb length rather than the torso. The developed world adult population grows in stature by about 10mm per decade. (NASA use 10mm per decade as a benchmark). It is even greater in Eastern Europe, where the figure is 30mm. This directly conflicts

with the performance requirement to make the glider fuselage cross-section as small as possible for competitive advantage. An increase in cockpit space for the pilot by raising the cockpit height by 10 per cent, say 50mm, would increase the fuselage drag by 13 per cent.

Glider cockpits are always squeezed – and so are the unfortunate pilots who are getting taller and larger.

It is worth noting that beginner pilots were the least comfortable. Derek Piggott estimated that, during his period as CFI at Lasham, around half of trainee pilots failed to renew their club membership after their first year. It is not impossible that uncomfortable training and early solo experiences could have partly contributed to this.

In contrast to this, pilots who professed to be completely comfortable flew approximately double the number of hours of those experiencing even mild discomfort (see figure 1).

Follow-on work triggered by survey

First, it became obvious that subjective opinions were of limited value. We decided, therefore, to try and put comfort on to an objective basis. As a result, the first scientific measurement of glider pilot comfort was completed with the help of Dr Mike Hunston using Tekscan pressure mapping equipment and with many Lasham pilots sitting on different energy absorbing foam cushions. Dr Colin Jackson explained in the last issue of S&G how we did this.

It resulted in the testing of more comfortable and safer energy-absorbing materials, Confor foams^{2&3}.

Secondly, lower-limb discomfort generated the highest number of survey complaints. We therefore decided to investigate the unnatural forces that glider cockpits and their controls exert on pilots in these regions. This includes forcing feet and ankles to adopt attitudes at the extremes of their normal range of movements. It also involves low-level but constant lateral strains on knee joints. This is the next area that we are currently embarking on.

Thirdly, in the past (see *Sitting Comfortably?* S&G Dec 2002/Jan 2003, pages 28/29), I had explored the use of a spine shell for comfort to be worn as an article of clothing between a parachute and a pilot. This idea was originally proposed and used by the late Dr Teddy Stedfeld. Such a concept has been increasingly adopted for spine-impact

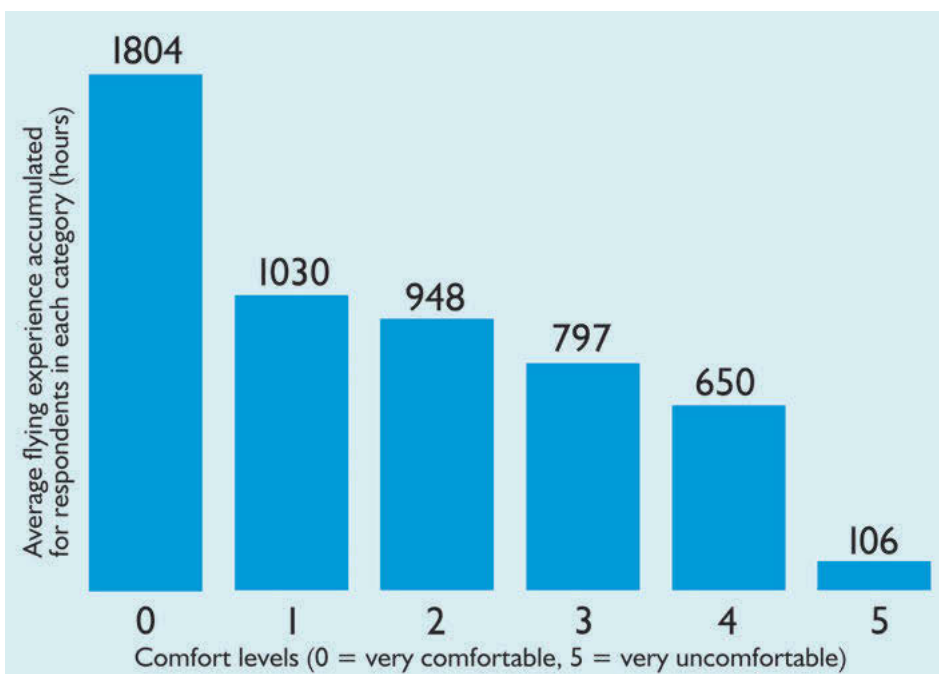


Figure 1

protection by other high-risk sports. We therefore decided to examine how safe a glider spine shell would be in the case of a crash impact.

A model was constructed by Dr Tony Firmin and the current focus of research is to use dynamic finite element analysis to examine a spine shell's behaviour under crash-impact loads.

The movers and shakers conundrum

Many senior pilots tend to see discomfort as irrelevant. These high-hour individuals are usually "movers and shakers" in the gliding world and serve to reinforce a fundamental fallacy: if cockpits are comfortable for them they must be comfortable for everyone else.

With my experience in design I know professionally that this is a classic and well-known trap, so much so that it is worth spelling out below.

Five fundamental gliding fallacies

I believe the following factors help perpetuate five fundamental gliding fallacies (with apologies to the late Stephen Pheasant⁴):

- The glider design is satisfactory for me – it will therefore, be satisfactory for everyone else
- This glider design is satisfactory for the average person – it will therefore be satisfactory for everyone else
- The variability of humans is so great that it cannot possibly be catered for in any glider design – since people are wonderfully adaptable, it doesn't matter anyway
- Ergonomics is expensive and since glider products are actually purchased on performance and appearance, and already passed fit to fly by regulatory authorities, ergonomic considerations may conveniently be ignored
- Ergonomics is an excellent idea. I always design things with ergonomics in mind – but I do it intuitively and rely on my common sense so I do not need tables of data or empirical studies. It is quite good enough to ask employees for their personal opinions.

In 2008 the OSTIV Sailplane Development Panel was shown a modern, world-class winning championship glider that did not fit the majority of young Dutch male adults. Thus pursuit for competition performance was made at the expense of the pilot.

Helmut Fendt, chairman of the OSTIV Sailplane Development Panel, reminded me of a quote attributed to legendary glider designer Wolf Hirth: "I can make any mouse win a world competition!"

Conclusion

Cockpits will continue to be a hostile place for pilots, for as long as aerodynamicists and design engineers take decisions that ergonomists should be taking. Comfort and safety are frequently two sides of the same coin.

Pilots should not just sit back and suffer in silence. Tell your glider manufacturer what you think. There won't be an immediate result, but there certainly will be in the future. Gliding needs new pilots. This means gliders need to fit real people with normal tolerances to discomfort pain.

1 Cohen D . An objective measure of seat comfort. *Aviat Space Environ Med* 1998 ; 69 : 410 – 4.

2 Jackson C, Emck AJ, Hunston MJ, Jarvis PC. Pressure measurements and comfort of foam safety cushions for confined seating. *Aviat Space Environ Med* 2009; 80: 565 – 9.

3 Jackson C , Emck AJ , Hunston MJ , Firmin A . A simple comparison of the characteristics of energy-absorbing foams for use in safety cushions in glider cockpit environments . *Technical Soaring* 2009 ; 33 (2) : 47 – 53.

4 Stephen Pheasant "Bodyspace. Anthropometry, Ergonomics and the Design of Work Second Edition" CRC Press 1996 p10-12.

GLIDING NEEDS NEW PILOTS. THIS MEANS GLIDERS NEED TO FIT REAL PEOPLE WITH NORMAL TOLERANCES TO DISCOMFORT PAIN



Adrian Emck is a member of the OSTIV Sailplane Development Panel. He flies a K-6e from Lasham

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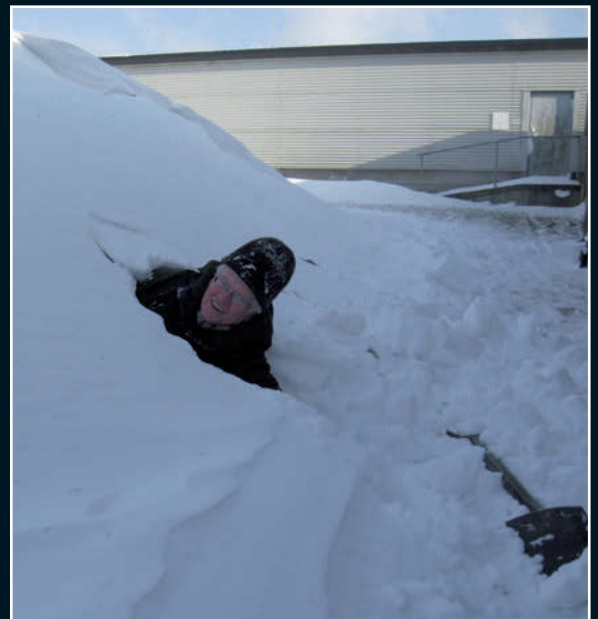
■ During January, 100 men from No 7 Company Coldstream Guards marched from Coldstream to London to celebrate the 350th anniversary of General George Monck's march to restore the monarch to the throne at the end of the Cromwellian era. With the Battalion currently deployed in Afghanistan, the 2010 march was being used as an opportunity to raise money for the Coldstream Charity and the Army Benevolent Fund.

On 15 January, the march passed through Selby and, as there are no army barracks in the area, Burn GC was pleased to let them set up camp around the clubhouse. Just after 4pm

the marchers arrived after their 25-mile march that day and immediately arranged themselves around the club K-21 for photos. Sadly it was too dark to offer any flights.

Their CO, Major James Coleby said: "Everyone at Burn Gliding Club seems delighted to be able to assist us and it's been a hugely successful visit on our long journey." He presented the club with a Coldstream Guards shield as a memento, which is now mounted in the club bar, together with a framed copy of the photo showing the Company with the K-21. (Photo courtesy of the *Selby Times*.)

Chris Cooper



This page, clockwise from top:

Getting away from the snow-covered UK – passing over an excellent thermal generator, a Chilean coppermine (Andrew Hyslop)

Highlands GC saw unprecedented levels of snowfall early this year. On 12 January, member Jim Tait made his daily visit to check on the club to discover that the roof of the oldest hangar, an old Romsey hut, had collapsed with five gliders inside. Two de-rigged gliders were extracted the next day (against advice) through the back door of the hangar – an Astir with minor damage and an unscathed K-6. By 17 January, much of the snow lying on the collapsed roof had melted and the roof had sprung back a few inches, enabling the Grob Acro to be rescued. There was some damage, but repairable. By 23 January, enough snow had melted to allow vehicle access to the airfield. The remaining gliders were extracted from the hangar. It took the whole day because the gable-end where the main hangar doors used to be had to be dismantled first for safety reasons. The Highland GC K-21 has serious damage to the port wing, fuselage and tailplane and may well be a write-off. The privately-owned Bocian is certainly a write-off with the fuselage crushed almost flat between the rear cockpit and the tail. The Highland Gliding Club would like to thank everyone who offered assistance in the wake of this incident.

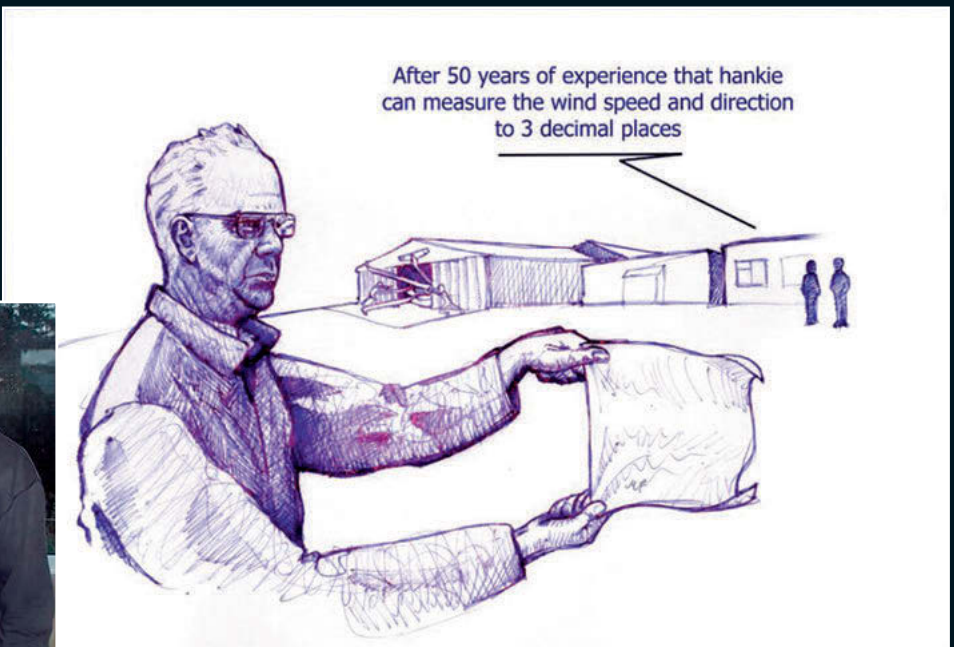
A special award was given to Mike Fitzgerald at the Devon & Somerset AGM in recognition of his 50th year of instructing with the club. Mike also received a cartoon (below) by Matt Wright

Facing page, clockwise from centre left:
New Year at Camphill (John Mckenzie)

Devon & Somerset GC had a new mascot (until he thawed!) during the January snow, while Graham Barden attempted to dig his way to the hangar (Cheryl Smith)

Flying the T-21 from snow at Bicester (Alan Smith)

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



CLUB NEWS

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

AFTER several years of hard work, James Dean has stepped down as CFI to move into the role of deputy chairman and secretary. Edd Weaver has taken over as CFI, with Andy Hill as DCFI. The club wishes them all the best with their future roles. This winter's snowy conditions have limited the amount of flying we've achieved over the past couple of months, but, where the weather permitted, some dedicated club members braved the 'big freeze' to take a few flights above the snow!

Andy Smith

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

THE club has been busy this winter with members taking advantage of our dry-all-year runways. We have only lost one flying weekend through weather this winter season, due to deep snow. Our K-21 made its now traditional trip to Talgarth in December, so far there have been two club expeditions to take advantage of the exceptional flying offered in the area, with several more planned before we bring the K-21 back to Hinton in the spring. We're also finalising our events diary for the year with two open weekends planned, the first over the weekend of 24-25 April. Many other bookings are being made for various shows and events around our region, which will help to promote both the club and hopefully increase interest in gliding amongst the general public.

Martin Gould

BICESTER (WINDRUSHERS) **WWW.WINDRUSHERS.ORG.UK** **515458N 0010756W**

ALTHOUGH the weather has been pretty dire this winter, we've managed to fly at every opportunity we can. The Christmas party was held for the first time in our new briefing room and was a big success, as was New Year's Eve. Thanks to Danny Lamb for his popular series of winter lectures. We have now added a Discus and a K-8 to our single-seater fleet to cope with our growing membership and we should have another Robin tug available to us for the coming season. A big thank you to all of our "soup-dragons" for the hot breakfasts in our bus launch point that have kept us going on these cold winter mornings. Based on the success of last year, we will be continuing to offer our intensive, going-for-solo and NPPL courses.

Alan Smith

BIDFORD (BIDFORD) **WWW.BIDFORDGLIDING.CO.UK** **520803N 0015103W**

OUR Christmas Dinner and Annual Dinner were well attended and enjoyed by all. Thanks to the Arrow Mill, Alcester, for hosting the dinner, and all who decorated, peeled, chopped, served and washed at the dinner. Congratulations to the following pilots for achieving club trophies in 2009: Frank Jeynes – Club Ladder Pundit Winner; Andrew Turk – Club Ladder Intermediate Winner; Steve Foster – Club Ladder Novice Winner; Dave Sandells – Pilot Most Likely To...Winner; and for non-flying, Keith Brackstone – Quiz Champion 2009. We look forward to holding our regional competition again this year from 19-27 June and the second year of our two-seater challenge, which will also be joined by a single-seat class for those feeling left out. You can get more details from our website or email us at office@bidfordgliding.co.uk

Lynne Burkert

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

AFTER a very wet run-up to Christmas, the festive period gave the treasurer a boost with over 60 launches. But then no flying until the last weekend of January when our visitors from Mendip, Dunstable, Bicester and Tibenham enjoyed the ridges in a gentle north-westerly wind. Our series of winter lectures was disrupted by the ice and snow with Peter Saundby's talk being postponed until March. Thanks to Gordon Dennis, the online linkup for the talks is proving very successful. The field is in great condition thanks to efforts with the roller by Robin Howarth and, thanks to Keith Richards, G-AZPA is back from its annual. Don Gosden and Mike Rossiter have completed refurbishment of the K-21s' cockpits. We plan to run a cross-country week in May.

John Clark

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

OUR regionals this year start on 29 May; we seem to have been blessed with above average competition weather in recent years, so we're hoping for more of the same. Before then we have our annual spring expedition to Shobden. We have continued to fly through most of the winter with aerobatic training at a snow-covered Booker. A lecture programme has also managed to keep interest alight. Tim Scott, British team member and former nationals champion, is starting a cross-country

mentoring group aiming to taking participants from first flight to first nationals in five years. Perhaps the even more important aim is to confirm Booker as the most fun place to glide in Britain. Last year we achieved 20 first solos and trained seven new instructors so there is plenty of material for Tim to support.

Roger Neal

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

THE weather has put paid to the majority of flying from Milfield so far this year. But we're all geared up and ready to go. January was a very sad month for both us at Borders and our friends at Northumbria GC with the sudden death of Brian Milburn. Words can't sum up what a genuinely fantastic person Brian was. He will be hugely missed by all that had the pleasure of knowing him. After the success of the first Department of Innovation and Skills initiative for the 'Adult learning' days, we're now on to running our second. Although funded differently, the results are hoped to be the same. A big thanks to our CFI Keith Latty for all his efforts in organising the event.

Rich Abercrombie

BOWLAND FOREST (CHIPPING) **WWW.BFGC.CO.UK** **535301N 0023714W**

BOWLAND Forest saw its fair share of the snow and ice, but we managed to keep flying and the new hardened area, patiently built by Geoff Guttery and Dean Eden leading the grounds team, served us well. The club is preparing for its AGM at the end of March and there will be at least one change, as long-standing treasurer Ian Hamilton has decided to stand down. Ian has been a tremendous servant of the club and will be a hard act to follow. We understand that Ian is now considering using his time to take up gliding! The airspace arrangements remain extremely useful with Bob Pettifer being the first member to ask for the airway to be opened in 2010, as he ascended through 5,500ft into the Chipping box in early February. A good omen we hope.

Russ Weaver

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

THE club is financially and spiritually more secure than a year ago, chairman Colin McEwen told the AGM in December. He still heads the new committee, which now has Andy Townsend as treasurer and new

Left to right) Mary Jullien converts to the K-8 at **Bicester** (Alan Smith); Chandra Fernando recounts the 710-mile **Nympsfield** saga that won the Meyer Trophy for the best retrieve story of the year (Bernard Smyth); A flour bomb leaving the **Crusaders'** T-21 (Anne Marlow); **Darlington** members - "look what we built..."



members Steve Eyles, Simon Robinson and Elaine Townsend. Andy Turner flew the K-13 solo – well done. Our K-8s have suddenly become popular with novices and pundits now they are free of soaring fees. At the annual dinner Colin announced the cup winners: Trevor Stuart, Russ Francis, Tim Macfadyen, Matt Davis, Rob Thompson, Ivor Bace, Graham Bowser, Barry Liles, Alan Montague and Martin Frey.

Bernard Smyth

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

DUE to the popularity and success of our NPPL and motorgliding training, we have purchased a second Falke T-61. We have formed a Vintage Group and currently have two projects on the go to restore and fly an EoN Baby and an Olympia 2B, and a growing number of privately-owned vintage machines. We have helped the Air Cadets to deliver a package of lessons to a local Scout group. There's a busy year ahead with aerobatic competitions in June and September, and the annual Wood and Glass Challenge against the Trent Valley and Darlington Clubs. For those that haven't heard – we have recently introduced an aerobatics only membership category, which allows members of other gliding clubs to conduct aerobatics at Saltby. Why not come along – we are open 24/7, 364 days a year.

Stuart Black

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

IN December, we held a combined Christmas and 90th birthday party for member and former chairman Frank Thompson. Flying awards were presented to Matt Ellis, George Goodenough, Alastair Mackenzie and Bob Robertson. Awards for services to the club were presented to Betty Clayton, Heather Ellis, Margaret Stoddart, Edna Sharples, Pat Stirk and Elaine Shaw. An order has been placed with Skylaunch to convert one of our two winches and we are launching a new look to our website. Local awareness of the club has been enhanced by the appearance of several news stories in the press. Due to the close proximity of Doncaster Class D restricted airspace to the plumes from local power stations, our CFI has asked all pilots, including pre-solo ones, undertake training on recognising and entering the locally agreed Burn soaring box.

Chris Cooper

CAIRNGORM (FESHIEBRIDGE)
WWW.GLIDING.ORG
570613N 0035330W

MEMBERS have been enjoying the Feshie wave up to 12,000ft whenever the airfield has been free of snow. Our very popular Mayfest runs from 1-15 May. The second week is fully booked with only a few spaces available for the first week, but hurry as these will be taken very quickly. The conditions here in May can only be described as fantastic with many visitors returning home clutching their Diamond/Gold claims. We offer free camping on site, free trailer parking, 2,000ft aerotows for only £20, no booking fee, smiling happy tug pilot, and superb onsite catering. Dates for our Octoberfest are 2-17 October.

Chris Fiorentini

CHILTERN (RAF HALTON)
WWW.RAFGSA.ORG/CGC/
514733N 0004416W

Congratulations to Stefan Szuszkiewicz (better known as Ski) on completing his Silver duration on his fourth attempt, especially as it was in January with a ground temperature of +1°C and he never got above 1,500ft! Training continues apace, ranging from Ground Radio Operators licensing to NPPL ground exams (where Matt Davidson and Paul 'Ed' Zakary are taking great strides forward); staff continuation training took place at the Long Mynd, while a small expedition to Lleweni Parc is due to take place in early April, and a few stalwarts are going to Sisteron in late April/early May.

Andrew Hyslop

COTSWOLD (ASTON DOWN)
WWW.COTSWOLDGLIDING.CO.UK
514228N 0020750W

THE heavy snow over Christmas prevented flying on even our tarmac runways, but now the big thaw is with us we should soon be airborne again. Regrettably, a last-minute hitch caused the postponement of the dinner dance but we hope to rearrange it. Tony Parker replaces Simon Buckley as our new CFI and we thank Simon for his hard work and welcome Darrel Tucker to the committee as deputy chairman. Cups for meritorious flying were presented to: Rob Corbin, Chris Gough, Ken Lloyd, Lara Small, Andy Cockerell and Brian Birlison. Roger Bagley received the Chairman's Award for service to the club while the holder of the coveted White Stick shall remain anonymous. As I write, club members who chose a flying visit to Portmoak rather than attending the AGM occupy very satisfactory places on the BGA ladder!

Frank Birlison

CRANWELL (RAF CRANWELL)
WWW.CRANWELLGC.CO.UK
530231N 0002936W

HOPEFULLY by the time this goes to press we will be well in to the soaring season? However this does not detract from John McAuley's wave flight in December where he took a steady 5kt thermal to contact wave, which he took to the maximum height permitted without oxygen. For this achievement, John was awarded the Paddy Kearon Trophy for wave soaring from the RAFGSA. Tim Davies was awarded the Andy Gough Memorial Trophy for RAFGSA member of the year, and the club was awarded the Founders Trophy for the most solos during 2009 – congratulations to all. We send our best wishes with Bruce Ball as he moves north to take up his new post in Scotland. Finally, a welcome back to Chris Franklin who is no doubt looking forward to the new season at Cranwell.

Zeb Zamo

CRUSADERS KINGSFIELD (CYPRUS)
WWW.RAFKROTIRI.CO.UK/CRUSADERS
3501N 03344E

THE winter months are upon us. It's cold, but we are blessed with some good soaring days. Also, the end of the tourist season has meant that our visitors' day has been moved back to Wednesday. New Year saw us flour bombing and our newest member, Matt Moores, was closest to the target, which was our brave instructor Glenn Turpin! After flying we ended the day with a buffet and Avos infamous 'Flaming Panties' – Cyprus spirits mixed and set fire to! Finally, our loyal member, Dimitri Savva, has been off on a trip to Benalla, Australia and returned with his Silver – well done and welcome back.

Jo Rigby

DARLTON (DARLTON)
WWW.DARLTONGLIDINGCLUB.CO.UK
531444N 0005132W

IN common with many clubs in the area, weather conditions severely restricted flying over several weeks. Flying resumed in late January, off frozen runways, much to the relief and delight of members. However, time was not wasted with tremendous effort in the final construction phase of our second hangar. This is now virtually complete, in full use and making us a proud two-hangar club – but not without the odd incident on the way. In our efforts to clear the site, we generated an impressive fire, attracting the attention of the local Fire & Rescue Services who arrived with a tender and a very enthusiastic crew keen to rescue our new hangar. Flying activities are



(Left to right) A proud moment for **Dartmoor** instructor Bob Pirie when he took his grandson, Freddie Fricker (8), for his first glider flight; **Camphill** Neighbours Night; Rowan Smith soloed at **Devon & Somerset** (Tim Johns); Colin Fretwell sent son Brad solo at **Kent**, watched by Brad's mum Karen



↪ now increasing steadily with members eager to embrace the soaring season. Hopefully, there will be more exciting flying events to report next time.

Geoff Homan

DARTMOOR (BRENTOR)
WWW.DARTMOORGLIDING.CO.UK
503517N 0040850W

THE first of January saw the arrival of a new CFI. After 15 years in post Roger Matthews (or his wife, Christine, thank you) decided that 15 years was long enough, and we are pleased to announce that Don Puttock has returned to Dartmoor as our new CFI. Roger now intends to spend more time with his Nimbus, er, family! In the air we had some interesting wave flights on 3 January, with Martin Smith in his SF-27 attaining 6,000ft over the course of two hours. On the ground, work continues to improve the 'Guslaunch' home-built winch and, at the time of writing, Ged Nevisky, David Jesty and Martin Cropper are 'enjoying' a very warm welcome, but extremely cold and windy conditions during a one-week Ass Cat Instructor coaching course at North Hill.

Martin Cropper

DEESIDE (ABOYNE)
WWW.DEESIDEGLIDINGCLUB.CO.UK
570430N 0025005W

CONGRATULATIONS to the winners of the latest club awards: Most Meritorious Flight – Roy Garden (335km on UKMSC Day 5); Best cross-country by SGA member – Roy Wilson (729km (Kyleakin/Banchory/Ullapool)); Club ladder – Roy Wilson (21,952 pts). The dates for the next UK Mountain Soaring Championships are 5-11 September, 2010. Full details, including entry forms, on our website.

James Addison

DERBY & LANCS (CAMPBILL)
WWW.DLGC.ORG.UK
531818N 0014353W

IN THE last report I said that we fly all winter, well not this year. From mid-December until end of January, Camphill was almost cut off. However, the last Friday and weekend in January brought some gentle wave, and occasional 4kt thermals, much to everyone's relief (including the treasurer). At the AGM, Dan Reeves retired from the post of chairman after his second term – thank you Dan. Keith Armitage has taken over. We held another successful Neighbours Night with about 40 guests. By the time this appears, our shiny new hangar apron will have been completed. We are busy organising several events to celebrate our 75th anniversary and, fittingly, the Slingsby

Sky that once belonged to the late Bernard Thomas, almost a founder member, has returned to Camphill.

Dave Salmon

DEVON AND SOMERSET (NORTH HILL)
WWW.DSGC.CO.UK
505107N 0031639W

CONGRATULATIONS to Rowan Smith, who was sent solo in January. Also to James Hood who has passed his Bronze exam. Our AGM saw a good turnout with a packed clubroom. Peter Smith has taken over as chairman from Mike Fairclough, and Pete Harmer has eagerly taken on the duty of CFI from John Burrow. Amongst the many awards given this year were Paul Summers for the most improvement, Dave Reilly for the club ladder, Henry Ford for the best flight in a wooden glider and Peter Field for best performance in two-seater competitions. The Wily Old Bird trophy was awarded to retiring treasurer Peter Callaghan. A special award from club members and original caricature by Matt Wright was presented to Mike Fitzgerald in recognition of his achievement of 50 years' dedicated instructing with the club.

Cheryl Smith

DORSET (EYRES FIELD)
WWW.DORSETGLIDINGCLUB.CO.UK/DGC
504233N 0021310W

THE wet and snowy weather has left our field in early February almost unusable for the moment. We've tried only pulling out one cable and deviating our track to the less boggy areas, but it still cuts up pretty badly. Our second K-13 fuselage is now stripped down to its bare bones ready for cleaning, painting, and re-covering by some willing helpers under the expert tutorage of Barry Thomas. A small group is working on renovating our 'second' control wagon, as the beautifully revamped small control wagon now puts it to shame. We have used this 'old' wagon continuously for nearly 15 years, so it owes us nothing. It was originally a re-worked Luton van adapted for us by Dave Bamber who, together with myself and Jon Marshall, is doing the refurb.

Colin Weyman

DUMFRIES & GALLOWAY (FALGUNZEON)
WWW.DUMFRIESGLIDING.110MB.COM
545638N 0034424W

DESPITE the snow and freezing conditions, we have managed to get some flying at the start of the New Year. Our two oldest trainees Bill and Terry, both in their 70s, are progressing well, and our new winch continues to provide very good launches. We hope to start work

soon on a new ramp to enable disabled access to the clubhouse, and are starting to plan our annual flying week (dates to follow). Our Christmas party was enjoyed by us all, and it enabled us all to let our hair down and recharge our batteries for the hopefully busy flying year ahead.

Wendy McIver

EDENSOARING (SKELLING FARM)
WWW.EDENSOARING.CO.UK
544152N 0023506W

WHILE we are at our remote site in Wales, I will take this opportunity to encourage you all to think about taking a short break in Cumbria this summer – the site at Skelling is great for wave, thermal, ridge and mountain flying. Cross Fell, the highest point on the Pennines is our back drop and the place to be for wave when the wind blows. Booking in advance is the only way to use our site. We have a great team of local chaps who are keen to learn as well as help run the site. We are always looking for instructors who have mountain flying experience. As a very new club we are full of hope for the future. Cumbria has welcomed us with open arms and that's just the landlord of the local pub!

Sandy Hawkyard

ESSEX (RIDGEGWELL)
WWW.ESSEXGLIDING.ORG
520253N 0003330E

ALTHOUGH it has been wet and cold during the last few weeks, this has not prevented us from continuing to enjoy our flying at Wattisham with the Anglia GC. What a blessing to have a hard runway. Over one of the weekends we were also pleased to help Anglia GC in moving their equipment to another hangar. With the work going on at Ridgewell, converting a container into a workshop, we have finally given up our workshop at North Weald, although it is sad to completely sever our connection with such an iconic airfield after some 30 to 40 plus happy years there. We can still be contacted via the North Weald telephone number 01992 522222 until further notice. Thanks to members who have continued to work on various jobs at Ridgewell during the winter snows.

Peter Perry

ESSEX & SUFFOLK (WORMINGFORD)
WWW.ESGC.CO.UK
515630N 0004723E

OF late the weather has not been kind to us, with snow, rain and standing water on the airfield, low cloud and poor visibility – but we will not be deterred. Steve Cleaver made

(Left to right) **Lasham** experienced the worst snow in 28 years but a rapid thaw saw a return to business as usual (Paul Haliday); Graham Nixon is congratulated on his first solo at **Dunstable**; **Mendip's** Terry Hatton took this pic during a recent 5-hour attempt



his first solo despite low cloud, and Andy Sanderson abandoned the flat country of Essex for a trip north of the border, where he achieved a height of 22,000ft. Next time he will remember to wear warmer clothing. The K-21 has returned from being re-gelled and will be back in action shortly giving us a full complement of two-seaters for training and trial lessons. Bookings are already coming in to keep us busy in the forthcoming season and two operational winches should ensure good launch rates. We look forward to warmer weather and the soaring season.

Dick Skinner

HEREFORDSHIRE (SHOBDON)
WWW.SHOBDOGLIDING.CO.UK
521429N 0025253W

THE snow and icy surfaces in January closed the airfield for a week, but since then we have had a good start to the year with wave on several weekends and some cross-countries already on the national ladder. The only drawback to the soaring was that the fields were either snow-covered or flooded, so our cross-countries were very cautious! We have started occasional weekday flying, dependent on the weather forecast. We held our annual New Year dinner in January and those who were able to get there through the snow had a good time. We are looking forward to spring visits by several clubs and plans are under way for our task week in August. Other clubs would be welcome to visit at any time of year for thermal, wave and ridge soaring.

Diana King

HIGHLAND (EASTERTON)
WWW.HIGHGLIDE.CO.UK
573508N 0031841W

DUE mainly to the terrible weather conditions, there has been almost no flying from November through to January. This is completely unprecedented. Worse than that, on 12 January there was around two feet of snow on the airfield when the green (older) hangar collapsed under the weight of snow on its roof. Inside the hangar at the time were the Highland club's only two-seater (a K-21), the Fulmar Astir and three privately-owned gliders: a Grob Acro, a Bocian and a K-6c. The Bocian is damaged beyond economic repair and the other gliders suffered varying degrees of lesser damage. Thanks to the GSA we have a K-21 on short-term loan so that the pre-solo pilots can continue to fly. We also had offers of help from many sources, including the BGA, Deeside GC and our own club members – thanks to all of you.

John Thomson

KENT (CHALLOCK)
WWW.KENTGLIDING-CLUB.CO.UK
511230N 0004945E

DESPITE the quiet and often snow-filled days, we have been successfully sending some of our new recruits solo. So, congratulations to Mike Davis, Oliver Beams, Adam Palmer and Bradley Fretwell. Meanwhile, Peter Charatan succeeded in getting his Gold badge with a Diamond goal in the warmer climes of Australia under the supervision of our former CFI John Hoye, who escaped these shores several years ago. Another 10 pilots have got their RT licences, so there will be no superfluous chatter on the airways in the Garden of England. The club is gearing up for a new intake of scholarship students and looks forward to hosting the Vintage Rendezvous rally in July.

Stefan Bort

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

FLYING got off to a great start this year with 1 January being a beautiful sunny day with lots of club flying. Things soon went downhill when Lasham got the heaviest snow for 28 years. The hangar doors remained frozen shut for nearly two weeks. The rapid thaw, however, soon saw a return to business as usual. Plans for this year include completing the last two phases of our log cabin and caravan site, two new trailers for the single-seaters and the purchase of an 18m single-seater. We are hosting Competition Enterprise for the first time and we are holding the 18m nationals and regionals at the end of August. Finally, we are spending a little money on clubhouse refurbishment this winter.

Richard Moysé

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

CONGRATULATIONS to Graham Nixon on his first solo and to Richard Hewett and Derek Napier on their first single-seater (K-23) flights. The winter programme is drawing to a close with those attending the Bronze lectures sharpening their knowledge for the quiz night. The safety presentation by Peter Claiden, supported by Tom Sage and Andrew Roch, drew a large audience, and provided a very useful start of season reminder of this serious subject. To reinforce the message, we are offering members a special winter deal – the "Full Monty", consisting of five winch launches (including simulated cable break exercises), a 4km aerotow for spin awareness training, and a field landing training flight in our motorglider,

all for just £100. I'm hoping that by the time you read this, the Dan Smith aerobatics competition (due 27/28 March) has been blessed with clear and calm weather.

Andrew Sampson

LOUGHBOROUGH STUDENTS UNION (RAF WITTERING)
WWW.LSUGC.COM
523645N 0002835W

AS with all university clubs it has been very quiet over the last two months with Christmas and exams through January, but there was just time before the holidays for Chris Phillips to go solo, so well done to him. We are about to start flying again with what proves to be an exciting year for us. The Easter Portmoak trip is being finalised, the inter-unis and juniors are never far away and we have plenty of people well on their way to solo.

Sam Roddie

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

A huge thank you to Andy Whiteman and his merry band of helpers who undertook the massive huge task of adapting the new K-13 trailer in time for the winter Talgarth trips. It became a much more involved task than expected, including an arctic expedition in 6ft high Mendip snow drifts in January. Thank you to the Black Mountains Gliding Club for once again for making us welcome during our visits. Terry Hatton is fast becoming the record holder for the most nearly 5-hour flights ever completed for his Silver badge.

Terry Hatton

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

THERE was a good turnout for our Christmas party and we were especially fortunate to have a visit from Santa. Later in the evening it started to snow hard so those not staying the night had to leave quickly. Soon after Christmas, more snow made The Mynd inaccessible to vehicles. Five-foot drifts in front of the hangar and buildings meant there was no chance of flying. Valiant efforts by several members prevented serious damage to heating and water supplies, but gas reserves ran worryingly low and had to be used sparingly. The scenery, however, was spectacular and worth the walk. Flying resumed on 24 January and since then no opportunities have been missed. A daily record of activities is now available. Click 'What happened yesterday' on our website.

Steven Gunn-Russell



(Left to right) Roger Morrisroe congratulates Edwin Jenkins on his first solo flight at NVGC (Andy Souter); Philip Pratley of Oxford was sent solo by Gordon Craig; history repeats itself at Stratford on Avon (see below) - Martyn Davies, Daniel Brown, David Martin and Steve Brown (Neil Campbell)



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

MANY congratulations to our newest solo, Edwin Jenkins. Edwin had his first glider flight at the Bundaberg Club in Australia with our dear friend and regular NVGC task week long-distance visitor Alan Ing. The NVGC clubhouse has been a hive of activity over the period of our January shutdown, with plenty of repairs and maintenance work being carried out on the club's fleet, including re-covering a large section on FHN, interspersed with even more hard work in the kitchen with a fabulous roast dinner cooked by our very own 'Rocket' Ron Sibley. Well done to everyone for all their hard work during January, especially to our resident inspector John Bennett for his tireless efforts in preparing, checking and general fettling of NVGC's gliders.

Kerry Mertz

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

WE are seeing a steady influx of entries for our regionals at the end of May and the International Vintage Rally at the end of July. Our K-21 is being totally refurbished and should be back with us by the end of March. Graham Ashworth our chairman is standing down at the AGM and we thank him for all his hard work and wise counsel during his three year tenure as he hands over the baton to John Roche-Kelly and the new committee who will continue to explore diverse ways of generating income to keep flying costs to members at a minimum.

Mike Bean

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

I'M tempted to say "nothing to report" and leave it at that as since 19 December we have had only two possible flying days. I am sure that many clubs have had a less than auspicious start to the 2010 flying year and look forward to spring and better weather. Our Christmas dinner was a most enjoyable affair. It seems that our online voucher bookings for this year have been selling well on the run-up to Christmas, so this will be a help to offset the lack of flying fees this last few weeks. As a result of Keith Auchterlonie's suggestion regarding the BBC Dropzone (now called Thrillseeker) publicity we have now managed to have our club listed on their website and hope it creates some interest in our sport.

Brian Williams

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

THE deep snow and wet field in January prevented flying for a week or two, but not before our T-21 had flown on 4 January. The post-lecture quizzes were fun, with the eventual series winner taking away a handful of launch vouchers. My thanks to the people who presented the evenings. During a quiet Saturday, the vice-chairman appeared with paint, brushes, ladders and a complete lack of ability, and organised a working group to repaint the clubhouse. Three of our hard-working Ass Cats did their completion course at Weston, thanks to Adam Clarke and Alan Smith for the coaching. We were all delighted to see Philip Pratley go solo – well done Phil. The maintenance team has been hard at work midweek with the CofAs – a big thanks to them – and the club workshop seems full at all other times with private owners busy fettling.

Neil Swinton

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

AS for many clubs, the winter has been unusually cruel with arctic conditions and many flying days lost to cold, ice, rain and snow. Our proximity to the south coast usually means we avoid the worst, but not this year. We have operated aerotows whenever possible using the tarmac runway, but winch operations have been curtailed to protect the grass and equipment. Congratulations to Steve Bonner on his recent solo. The usual annual fleet maintenance is being progressed, and Wednesday evening Bronze lectures have been popular. In March, we have our AGM and annual dinner dance, and the club has a number of expeds and courses planned for 2010.

Neil Shaw

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

CONGRATULATIONS to Bod (Tony) Blanchard on flying a 500km flight in South Africa. Although the weather has been cold, there has still been plenty of flying at Rattlesden.

Helen Page

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

THE method I use to collect achievements for *Club News* is fairly simple. It's a list on the notice board and I constantly remind

club members and visitors alike to add their achievements under the heading "If you don't tell me about it, I can't write about it!". The list is a plethora of solos, or badge flights – each one reflecting a personal goal. It was with enormous pride that I looked at the first entry on the current list which had a matter of fact entry which read "World Record 1,500km – John Williams" – absolutely brilliant! Other names on the list include Dave Rampton (NPPL) and Martin Marshall (solo). February saw the following people pick up awards for their achievements during 2009: Santiago Cervantes and Paul Wiggington (two trophies), John Williams (six), Kevin Hook (three), Z Goudie, Jim Thomson, Kate Byrne, Joe Fisher and Ian Easson (one each).

Ian Easson

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

IT has been a good year for the club financially, with the purchase of a new engine for the Pawnee, an Astir and the repayment of some of our loans since buying the airfield. The winter weather was as bad here as elsewhere in the country, but some brave souls risked frostbite and took to the Downs for some ridge soaring. Our Christmas party was held at a local golf club by way of a change, and it promises to be a popular venue for the future. Among the awards presented was the 750km Diploma to Ian Ashdown and he was congratulated on gaining third place in the Open Class Nationals. Brian Bateson won the Harry Fharting trophy after a splendid ridge dash over the 128km course in 49 minutes. Finally Gordon Brunton won an award for his great contribution to glider maintenance at Parham over many years.

Peter J Holloway

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

DESPITE rain, snow and plague, our winter has included some exceptionally good wave days, with heights of 10,500ft achieved. The year's first thermal day, 30 January, coincided with our AGM where Ian Kennedy stood down as secretary after six years. We welcome Chris Cole to the position. Our website is undergoing a face-lift, with additional features, including good quality promotional videos about the club, created by David Haxworth from Monmouthshire TV. The clubhouse is getting a lick of paint, through the efforts of Adam Deacon. Sadly, we have to report that a long-associated friend and club patron, Lord

(Left to right) James Wilgeroth lines up his first landing with no one in the back seat and, on landing, is congratulated by VOWH instructor Stuart Pepler (Jane Nash); York's Pawel Zawal is congratulated on his first solo



Raglan, has passed away. He allowed the club to operate from his land after moving from the Mynd Mayo, and eventually sold us the land to secure the club's future at our present site.

George Robertson

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

DESPITE the challenging weather, we have been flying as much as possible. Phil Shuff has been repairing the access track and car park drainage – congratulations are also due as he has completed his Bronze. The club now has access to a syndicated Venture motorglider. Early signs are that it is in high demand. Syndicate member Derick Miles has already obtained his NPPL SLMG. *Ab-initio* training is currently at its busiest level for a number of seasons – mainly due to several new student members. A small group of members visited Borders GC, the highlight of which was Peter Gill's ascent to 12,800ft in wave. We are hosting the first BGA Instructor Course of the current season during the first week of April. Late news is that we are soon to acquire a Pilatus B4 to add to the club fleet.

Barney Crump

STRATFORD ON AVON (SNITTERFIELD)
WWW.STRATFORDGLIDING.CO.UK
521406N 001431W

ALMOST 30 years ago (1981 actually), our current CFI, Steve Brown, went solo. The instructor who sent him solo was Martyn Davies. Steve flew a K-13 – CCT. It was as if history was repeating itself when, in January of this year, Steve's son Daniel was sent solo by the same Martyn Davies in the same K-13. So, in terms of succession planning we at least know who's going to be our CFI in 2040! Congratulations to 16-year-old Daniel – a testament to the club's very successful cadet scheme. Congratulations also to David Martin who went solo on the same day – our future deputy CFI perhaps! It's good to see the end of winter, although we did manage some quite good flying over those cold, damp months. Thanks to those instructors who gave up their time to deliver the usual round of Bronze lectures during the long winter nights. Our normal 'curtain raiser' to the new season, namely our spring meeting, was well attended.

Richard Maksymowicz

THE GLIDING CENTRE (HUS BOS)
WWW.THEGLIDINGCENTRE.CO.UK
522626N 0010238W

THE Gliding Centre is busy with a winch refurbishment project. Our caravan park has

been rewired, courtesy of Ed Jenkinson. Burns Night, organised by new manager, John Olds, was highly successful. The season will be kicked off on 27 March with a safety day, which will include group discussions on BGA safety focus topics, an emergency response exercise with the AA and Fire Service and airmanship talks by experts; all to be followed by a meal and entertainment in the evening. Our task week has been moved to 14-21 August. If interest is sufficient, there will be two classes and cups to compete for, as well as day prizes. We have two-seaters available for novices to take part with experienced cross-country pilots, so book your place early.

Tricia Pearson

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

I'M pleased to announce two new solos; James Wilgeroth and Ed Gibney. Our annual dinner and awards will be accompanied by beer and skittles to help keep the competitive atmosphere going, a task our new CFI Jane Nash will be taking up when the flying season gets under way. During our recent general meeting, she expressed a desire to get more members involved in goal setting and especially competition flying. Good Friday, on 2 April, will signal the start of Friday flying for the season and, with at least one tug pilot now available most days, keen pilots and weather watchers will be encouraged to exploit any good looking midweek days by arrangement.

Jay Myrdal

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

AFTER a slow start to the flying year with the airfield covered in snow for nearly three weeks, on several clear blue days a number of intrepid members flattened enough areas to launch the K-21s and enjoy the views of the Wolds under deep snow in January. A Supercat winch has been purchased as our backup, and Colin Milner and the midweek team have been busy fine-tuning it. The annual dinner and awards evening will be held in the clubroom on 27 February and our usual Bronze C lecture programme started in mid-February. Graham Wadforth soloed in the Motorfalke in January.

Avelyn Dell

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

THE bitterly cold January has impacted flying and ground maintenance, but the

new workshop is almost finished so annual glider maintenance is possible, despite lack of hangar space. We discovered that gliders stored outside in trailers are more prone to mould than under all-weather covers, so the LS8 and LS4 have been taken indoors until their new covers arrive. For the hardy, the weather provided a few magical days of flying from a snow-covered airfield. At the AGM, two new trophies linked to club member positions on the BGA Ladder were introduced and awarded for the first time to Will Chappel and Allan Tribe. In February, members enjoyed the club's only formal occasion – the annual dinner in the Upavon mess. The club has a very full programme of courses and competitions planned for the coming season.

Andy Gibson

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

THE main task of our new committee, appointed at the annual meeting, is to raise the finance required to complete the sewage system so that our clubhouse toilets, already installed but not linked to a mains supply, can be used – eliminating the often uncomfortable open-air trek across the site to the existing facility. During the bad winter, when many Yorkshire clubs were snowbound, we were able to provide flying opportunities for visitors from Lasham, Oxford and Bowland Forest.

Christopher Brayne

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

THE deep snow and extreme cold put a stop to any flying earlier in the year, but gave everyone time to reflect on their outstanding achievements during 2009, carefully documented by our Ladder Steward, George Rowden. The harvest of our trees located to the eastern boundary have proved a useful form of income and changed the look of our airfield for years to come. Plans are under way for another Open Day after last year's success, although here at the YGC every day is an open day for visiting pilots and their families. Why not come and enjoy our fleet and facilities during 2010?

John and Sarah Marsh

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



An unusual visitor (inset) drops in on Welland during an Army field exercise. The club is within standard class gliding range of seven gliding sites and, with concrete runways, is sometimes confused with nearby GA site Deenethorpe (Paul Sallis)

> CLUB FOCUS

WELLAND

AT A GLANCE

Membership:

Full: £180pa
Reciprocal membership is free

Launch Type:

Winch: £6
Aerotow: £24 (about to be revised)

Club Fleet:

27-29p/min
K-13, K-7, K-8, Grob Acro, Junior

Private Gliders:

11

Instructors/members:

10/43

Types of Lift:

Thermal

Operates:

Weekends, Bank Holidays and most Wednesdays

Contact:

07944 822201
www.wellandgc.co.uk

Long and Lat:

522758N 0003430W

BY AIR, with a reasonably good cloudbase, we are within standard class gliding range of seven gliding sites in all directions, making airfield-hopping cross-country flights a relative breeze. We have close links with the Upwood and Four Counties clubs. The airfield is a mile or so south of GA site Deenethorpe on our boundary, which we sometimes get confused with as with concrete runways it is easier to see.

Our field runway, east west amongst the woods and fields, is rather difficult to find, but with planning for five windturbines a mile away to the south this may change a little. Corby three miles to the north-west is clearly seen in the picture above and Thrapston Lakes are five miles to the south-east. We have regular visits from Husband Bosworth's competition pilots as the Oundle turnpoint five miles to the east lines up the competitors to their western runway, and Gransden pilots sometimes drop in on their way back from up north. Our most unusual visitors have been a Hercules and accompanying helicopters on an army field exercise early one summer morning.

The runway is slightly uphill at both ends and approaches in a south or westerly can be surprising, with the curlover from the woods and a north south ridge, which unfortunately has not

yet supported ridge flying. With south and east-facing slopes and woods sheltering undulating local fields, thermal production is reliable.

By road, we are best found by the National Trust map with Lyveden New Bield almost opposite our airfield. Brigstock is our nearest village to the west, with powered aircraft briefed to avoid overflying.

After an itinerant beginning at various sites as a soaring group, the Welland Club was formed in 1980 at Middleton in the Welland River valley after the Perkins engines club separated at Crowland. The club has been at the Lyveden site since 1990. We have a hangar for the club fleet and tug, a 1,200m grass runway and a chalet clubhouse which was opened in 1990 by Derek Piggott. At the launch point, whichever end, we have a huge mobile caravan which serves for briefings, Lisa's famous kitchen and shelter from the elements.

We are launched primarily by winch with a private tug arrangement. Our membership is small with mixed aims – learning to glide, local sightseeing, mutual flying, competing on the cross-country ladder, inter-club and regional competitions, and regular visits to Feshiebridge and Millfield. We also enjoy regular barbeques at weekends and during our flying week in August.

John Strzebrakowski

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Advanced Soaring Made Easy

IN THE Australian and New Zealand gliding community (and to those who have flown there), Bernard Eckey is very well known as a pilot, instructor, record holder and head coach for South Australia. His famous ASH 25 two-seater sailplane 'BE' and his brilliant photos of amazing scenery are common place in gliding magazines, as are some of his writings.

With almost 3,500 hours of safe gliding experience to his credit (including multiple 1,000km flights and one 1,116km FAI triangle) he is more than qualified to explain the entire theory behind advanced cross-country soaring.

To me it is no surprise that the first edition of his book *Advanced Soaring Made Easy*, sold out very quickly. But rather than just reprinting it and resting on his laurels Bernard has now released the second edition. It contains almost twice the number of pages and is printed in full colour.

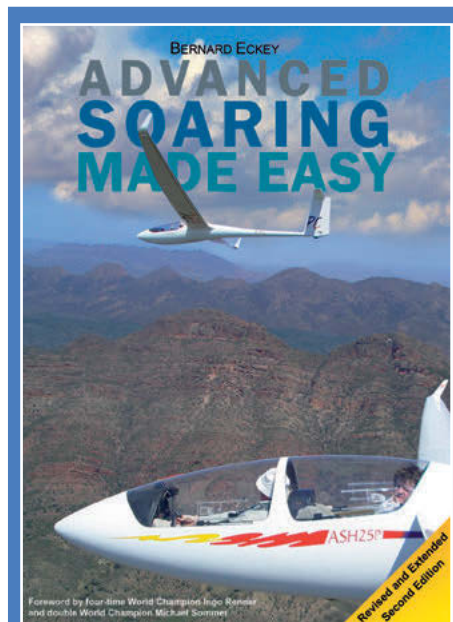
To say that it is a big improvement would be an understatement. It is essentially a new book with lots of 'bells-and-whistles'. ***It bridges the gap between the first solo flight and competitive cross-country flying and even prepares the aspiring pilot for the psychological hurdles of the sport.*** Many of the subjects covered are anything but common knowledge.

Furthermore, Bernard has taken his reader's requests and comments on board and has added large sections to every chapter. He has also improved upon the book's layout and increased the photo to text ratio. Some photos can only be described as spectacular - even spoiled subscribers of gliding calendars will look at them in astonishment.

As well as making a complex subject appear simple, Bernard has included examples and anecdotes from his own outstanding gliding career to help the reader understand.

His book answers many, if not most, of the questions that glider pilots ask - from early solo pilot through to competition pilots and record hunters. It is also a very helpful reference for gliding instructors and coaches.

The 1st edition was, well - good... the 2nd edition is great. Even as a Diamond pilot, ex-instructor and now record pilot, I use Bernard's book in preference to



Australian speed, distance and height record holder Dr Richard Q Agnew reviews the second edition of Bernard Eckey's book

the others that can be found next to my reading lamp.

I believe that in his 2nd edition Eckey has hit the nail-on-the-head very nicely indeed. Two multiple World Champions such as Ingo Renner and Michael Sommer have written a foreword and are obviously also right behind this new work.

OK - enough waffle - what about the book? - Why should you own this new edition? *Advanced Soaring Made Easy* is broken into 12 bite-size digestible chapters. Having said this, I must admit I read the whole 336 pages in quick succession - yep, ***the graphs, 134 drawings and 163 pictures greatly assisted understanding and made the read so much more pleasurable.*** Now I use this edition as a ready reference book, especially as colleagues ask this and that...

Chapters include local soaring, gliding and weather, flight preparation, extended local soaring, advanced cross-country flying, winning the mental game, flying competitively, a technical chapter, outlandings, safety (lookout, etiquette etc), ridge lift and slope soaring and my favourite subject - wave soaring.

Eckey has included in this edition both Northern and Southern Hemisphere material so pilots can be assured that their flying zone is covered. Readers are also helped by the use of icons. They alert to a new topic or new section of text that may be of particular importance, applicable to a particular part of the world and/or essential to a pilot's technical knowledge.

The first major and most noticeable difference between Eckey's editions of *Advanced Soaring Made Easy*, is the use of better graphics and a much improved layout. Bernard, I am told, did the print layout of the 2nd edition himself. This, I believe, makes this edition a 'must have' because of the ease of reading and flow of information, logic and theme. All chapters contain relevant drawings graphs, tables and the amazing photos aid the description of the subject matter. ***Almost every page contains information on how to transform new knowledge into practical benefits.*** Readers will instantly see that specific and systematic training paves the way for even more fun and enjoyment in gliding.

When I started my own gliding journey, I saved up my meagre pennies and lashed out on Reichmann. Now I can admit that I never really understood his mathematical 'stuff'... Then latter came father and son Brigliadori's book (2005). Eckey, on the other hand, has produced a high quality book, that covers all these topics and more.

I suspect that this edition will sell as quickly out as the first one and will be the sort of book that will only be lent out to the most trusted of colleagues - if at all. My Reichmann never was allowed out of the house as it was deemed way, way too valuable and probably a tad mythical. Eckey has managed to break that taboo and now I have a book that I might even buy two of and keep one in pristine condition - just for me and my personal perusal, and the other for the unwashed...

Fly high, fly long, fly fast and fly safely.
Dr Richard Q Agnew

Advanced Soaring Made Easy
by Bernard Eckey

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336 pages with maps, charts, 134 graphs and drawings, tables, and 163 colour photos. Available at www.gliding.co.uk/shop. Price to be confirmed (approx £40).

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Bryce in the back seat of the glider, with safety pilot Andrew Hulme. Others (left-to-right): Rhod Turner, Martin Pointon, Gavin Goudie, Mike Smith, Cathy Prescott (Andrew Watson)

A FAMILY AFFAIR

Life-long glider pilot celebrates his 80th birthday in the air

ON SUNDAY 17 January, life-long pilot Bryce Bryce-Smith celebrated his 80th birthday by piloting a glider at Cambridge Gliding Centre during a celebration of his 63 years in the air.

For this special flight his glider's towplane was piloted by Bryce's airline captain son Robert, with grandson Toby as a passenger. The glider was released at an altitude of 3,150ft – 50ft for every year Bryce has been flying.

Bryce was born near Cambridge in 1930, went to school in the city, and started training on gliders with the Air Training Corps' 105 Gliding School at Cambridge airport on 12 January, 1947, aged just 16.

At the time the ATC still used the solo

method of glider training, where the pupil was strapped into a single-seat Primary glider and first winched along the airfield in a ground slide to learn about aileron use. This led to a series of "low hops", towed to 6-10ft altitude but landing immediately, then successively-higher hops, with the instructor cycling alongside shouting advice. Eventually the student was ready to tow to height, release, and fly a 30-second circuit, a feat Bryce achieved in April 1947.

By age 19, Bryce was himself instructing other Air Training Corps (ATC) glider pilots, and then joined the RAF for National Service in 1951. After initial training in Scotland, he was sent back to Cambridgeshire to convert to Meteor fighters at RAF Oakington, and then Canberra jet bombers at RAF Bassingbourn.

After completing two years' National Service in 1953, Bryce continued teaching gliding in his spare time with the ATC at Marchall's in Cambridge until 105 Gliding School closed in 1955. He also trained RAF Volunteer Reserve power pilots at the same airfield right up until the age of 65.

Meanwhile, he also joined Cambridge Gliding Club, where he taught civilian glider pilots until the age of 72. As a civil engineer, he was instrumental in moving the club from

Duxford to its present home on the former site of RAF Gransden Lodge in 1991, helping to re-commission the airfield from the farmland to which it had been returned after the war.

Despite a stroke in 2002 which robbed him of speech, Bryce is still an active pilot, drives his own car, and lives independently. In his lifetime of flying he has accumulated more than 4,500 hours in gliders and another 4,500 in powered aircraft, almost all of it flown from airfields in Cambridgeshire.

Bryce's entire professional life was spent working for Cambridge City Council, latterly as City Engineer. In 1962, he married *Cambridge News* journalist Gillian Maltby, who was the paper's first woman journalist from 1953 to 1965, and for many years edited *Sailplane & Gliding*.

Robert Bryce-Smith, Bryce's son, and a training captain with easyJet, said: "Flying has been dad's lifelong passion. He goes flying two or three times a week. He's lost none of his ability to soar a glider and sometimes flies out to places like Bury St Edmunds or Leicester and back. It's great to see his enthusiasm."

Cambridge chairman Richard Brickwood said: "Bryce began flying while still a teenager, and spent over five decades helping others discover the thrill of gliding through his selfless work training new pilots. We congratulate him on his lifetime in aviation, and are proud to continue his work teaching young people to fly."



Bryce's grandson Toby Bryce-Smith (left) and son Robert in the towplane that towed Bryce's glider. (Colin Hinson)



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BGA BADGES

No.	Pilot	Club (place of flight)	Date
100K DIPLOMA PART 1			
	Christopher Burrows	Stratford on Avon	14.6.2009
DIAMOND HEIGHT			
3-1710	David Rhys-Jones	Southdown (Omarama, NZ)	18.2.2009
3-1720	Victor Leitch	SGU 1 (Portmoak)	1.10.2009
3-1721	Graham Bell	London (Aboyne)	11.10.2009
3-1724	Robin Birch	SGU (Portmoak)	11.10.2009
DIAMOND GOAL			
2-2386	Peter Charatan	Kent (Lake Keepit, Australia)	30.11.2009
2-2387	Peter Robinson	Dorset (Lake Keepit, Australia)	30.11.2009
DIAMOND DISTANCE			
1-1132	Anthony Blanchard	Rattlesden (Bloemfontein, S Africa)	3.12.2009
1-1133	Peter Purdie	Lasham (Bloemfontein, S Africa)	20.12.2009
1-1134	Anne Chapman	Booker (Bloemfontein, S Africa)	13.12.2009
DIAMOND BADGE			
752	Victor Leitch	SGU	11.10.2009
753	Peter Purdie	Lasham	20.12.2009
GOLD DISTANCE			
	Darren Blackman	Southdown (Parham)	13.2.2010
	Will Greenwood	Southdown (Parham)	13.2.2010
	Andrew Cockerell	Cotswold (Lasham)	8.8.2010
	Peter Charatan	Kent (Lake Keepit, Australia)	30.11.2009

Peter Wells, Southdown GC 1930-2009



WHAT can you say about Peter – it would take a whole book to tell it all.

Born in Portsmouth of a Naval family, Peter later moved to London, and was evacuated during the war. In his

early teens he went to boarding school at RHS Holbrook, a Naval school, and then joined the Navy at the age of 16 as an Aircraft Artificer Apprentice.

During his time in training he also learnt to play musical instruments and read music. For the next few years his love was music. Peter played in the brass bands at the stations he was based at and also in several dance bands; he was a member of the Naval band at the Coronation of Queen Elizabeth 11.

In 1955, he discovered gliding and his “true love” changed. He was a very good glider pilot, becoming a Full Cat instructor, a CFI at Culdrose, and a reliable tug pilot. He always had a keen interest in vintage gliders and assisted in restoring an Olympia

2B, (number ART), which is now flying in America. The last glider he flew regularly was a Cobra 15.

Apart from being an excellent ‘practical’ engineer he also had academic qualifications and was deeply involved in resurrecting the Ottfur name, providing support for the ‘OM’ series of release hooks, and designing, developing, and manufacturing the ‘CW’ release hooks, all in conjunction with Cair Aviation. We feel the continued use of these classic hooks will be Peter’s legacy to gliding.

He leaves a wife, Tricia, and two daughters, Miree and Renee. Our thoughts are with them.

Peter was liked by all who met him; he was extremely generous with his skills and time and will be sadly missed.

Dave Alty

Tadeusz Gora, 1918-2010

TADEUSZ GORA – recipient of the first FAI Lilienthal Medal – died on 4 January in Swidnik, south-eastern Poland, two weeks before his 92nd birthday.

Born in Krakow, Tadeusz followed the postings of his father, Jan, a military officer in the border guard service to a variety of places, mainly in the south-eastern territories of the newly independent Poland.

It was while attending a sports aircraft rally in 1933 at Nowy Targ that, at the age of 15, he was taken up by his father’s friend for his very first flight. The same year, his father retired and the family settled in Wilno (Lithuania). Tadeusz joined the Wilno Aeroclub and trained on Primaries, quickly gaining his A and B badges. A disproportionate amount of time spent at the airfield resulted in Tadeusz having to repeat his final year at grammar school. He was heard saying at the time, “Flying is more important than school”.

As the Wilno club had no instructor licenced to train young pilots to C badge level, Tadeusz enrolled at Bezmiechowa, then one of the four premier glider training sites in Poland. He soon gained his C badge, devoting all available time to flying gliders and also making progress in flying power airplanes, gaining a sports pilot licence in 1936. Whilst at Bezmiechowa, Tadeusz attempted a number of challenges, including a duration flight of just over 18 hours on 13 May, 1937. That September, flying SG-3, he won the 5th National Gliding Championships that took place in

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Innowroclaw, in northern Poland.

On 18 May, 1938, Tadeusz Gora made gliding history. Earlier that day, Bezmiechowa club instructor Dziurzynski returned from a short flight, reporting excellent weather conditions. "What are your intentions for today," he asked Tadeusz? "I am off to Wilno!" said Tadeusz. "That is more than 500km," replied Dziurzynski. "Yes, I know," came the answer, "that's where my parents live." The 20-year-old Tadeusz, strapped to PWS 101 (SP-1004), flew north landing several hours later in Male Soleczniki, just 30km short of Wilno but 577.8km away from Bezmiechowa. This phenomenal flight was recognised with the awarding of the FAI's newly-established Lilienthal Medal in January 1939.

Tadeusz began the 1939 season training for the Olympic Games that were due to take place in Helsinki (Finland) in 1940. For the first time, gliding was included as a competition event.

At the outbreak of war, Tadeusz headed back to his family at Wilno. He flew RDW-8, but landed short at Lucko and was arrested by Soviet Forces invading from the east. He managed to escape. In the first days of confusion that followed, he obtained travel documents at Wilno and travelled to Sweden via Latvia.

Evacuated to England in 1940, Tadeusz joined the RAF and fought in Polish Squadrons. He was decorated with several Polish and British medals, including Poland's highest awards, the Cross of

Virtuti Militari and the Cross of Valour.

It was only in 1945, whilst still in Britain, that he was finally able to collect his FAI Lilienthal Medal.

He returned to Poland in 1948. At first he worked as an instructor at Zar Mountain Flying School, a premier facility for advanced glider training, and soon became a CFI there. In addition to the two legs achieved in pre-war flights, the height gain of 3,602m in a wave flight in Jelenia Gora added the third (1 November, 1948, from the pre-war airfield at Grunau).

Tadeusz was awarded the third Gold Badge in Poland on 25 March, 1949. A height gain of 5,038m in a flight over Zar on 23 June, 1950, added his third Diamond. As the first Pole, and second glider pilot in the world, Tadeusz was awarded the FAI Gold Badge with Three Diamonds on 15 November, 1950.

Following his retirement in 1972, he devoted much of his time and energy to re-establishing the old flying school. Built on the spot of the old school, the new Rzeszow Technical University's Academic Flying Centre was named after, and opened by, Tadeusz in 2004. The flying centre also provided the backdrop to the biographical film about the life of Tadeusz Gora - *The Diary of Pilot Gora* - premiered in Warsaw's King's Castle in February 2007.

Tadeusz has entrusted his Lilienthal Medal to the Bezmiechowa primary school as a shining inspiration to young people.

Jan Szladowski

BGA BADGES

No.	Pilot	Club (place of flight)	Date	
GOLD HEIGHT				
	Christopher Collett	Booker (Aboyne)	4.10.2009	
	Peter Clark	Lasham (Aboyne)	8.10.2009	
	John Castle	The Gliding Centre (Portmoak)	11.10.2009	
	Robin Davenport	Andreas (Aboyne)	31.10.2009	
	Thomas Farquhar	Borders (Milfield)	31.10.2009	
	Peter Robinson	Dorset (Lake Keepit, Australia)	6.12.2009	
	Barry Lytollis	Borders (Milfield)	30.10.2009	
	Graham White	Borders (Milfield)	31.10.2009	
	Stephen Marriott	Borders (Milfield)	9.1.2010	
	Stuart Lees	Bristol & Glos (Nympsfield)	13.6.2009	
	Kenneth Singer	Derby & Lancs (Skelling)	23.9.2009	
	Stephen Day	Derby & Lancs (Aboyne)	6.10.2009	
	Stefan Bort	Kent (Aboyne)	30.9.2009	
	Jeffrey Green	Mendip (Aboyne)	24.9.2009	
	David Rhys-Jones	Southdown (Omarama, New Zealand)	18.12.2009	
GOLD BADGE				
	Peter Robinson	Dorset	6.12.2009	
SILVER BADGE				
	Alison Lees	Bristol & Glos	14.6.2009	
	Stuart Maxwell	Kent	29.8.2009	
	Robert Wootten	Dorset	29.11.2009	
	Darren Blackman	Southdown	10.2.2010	
AEROBATIC BADGES				
	Standard Known	Jeremy Brown	Yorkshire	26.10.2009
	Standard Known	Luke Dale	Lasham	27.6.2008
	Standard Known	Adrian Mitchell	Lasham	6.12.2009
	Standard Known	John Tayler	Yorkshire	26.10.2009
	Standard Known	James Fisher	Midland	26.10.2009

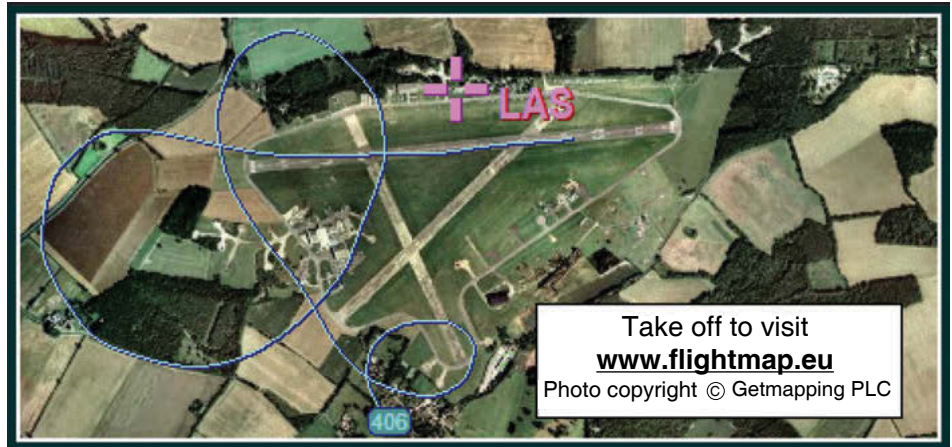
BGA accident/incident summaries

AIRCRAFT Ref	Type	Damage	Date, time	Place	PILOT Age	Injury	P1 hours
8	T-61	minor	6/12/09, 11:10	Staffordshire GC	62/32	none/minor	not reported
Rapid deceleration after landing on a waterlogged area. The TMG tipped forward, breaking the propellor tips.							
9	Bocian	minor	12/12/09, 13:30	Bath, Wilts & N.Dorset GC	20/73	none/none	130
Uncommanded cable release during the ground run left the glider heading towards rough ground. P1 groundlooped the glider, tearing off the wingtip skid.							
10	Grob Acro	minor	28/11/09, 14:00	Windrushers GC	57/not reported	none/none	~5,000
Rear canopy opened at about 400ft during the winch launch. P2 reports performing the normal pre-flight checks.							
11	K-18	substantial	7/11/09, 11:25	Southdown GC	51	none	7
Undershot approach left the glider unable to clear trees bordering the airfield. After catching a wingtip and spinning through the tree tops, the glider ended up suspended vertically with the nose a few inches off the ground.							
12	Puchacz	-	11/12/09, 12:45	-	-	-	-
P2 failed to release the aerotow rope, possibly pulling the trim knob instead. The simultaneous 'post launch' climbing turn tipped the tug into a vertical dive.							
13	K-13	substantial	2/01/10, 15:30	South Wales GC	69/35	none/none	495
P2's downwind sideslip approach to a hangar landing was too high and too fast. The late take-over by the instructor required a fuselage-twisting groundloop to avoid the far hedge.							

GLIDER ARCHIVE FILES

The BGA scans incoming EASA and Annex 2 glider documentation into electronic format. Therefore we no longer need to hold hard copies. If glider owners wish to receive the hard copy Archive Documentation the BGA has on file for their glider, they should complete the 'Glider Archive Request' form available on the BGA website at http://www.glidering.co.uk/forms/gliderdocs_application.doc and either post it to Lizzie Pike at the BGA Office, or scan it and email to lizzie@gliding.co.uk Unfortunately we are unable to supply electronic copies of glider Archive Documentation.

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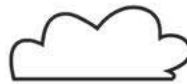
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