APRIL/MAY 2018

SAILPLANE &GLIDING

VOL. 69 NO.2

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FEATURES

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THE MAGAZINE OF THE BRITISH GLIDING ASSOCIATION
APRIL/MAY 18 VOLUME 69 No 2

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COVER STORY
Chile's Carlos Rocca competing in the Andes Open, flying his Ventus 2cxa 18m. See pp15-19 for a report on the Sailplane Grand Prix finals in Vitacura, Chile (Sebastian Kawa)

DEADLINES
June/July 18
Articles, Letters, Club News: 6 April
Display advertisements: 20 April
Classifieds: 4 May

Aug/Sept 18
Articles, Letters, Club News: 5 June
Display advertisements: 21 June
Classifieds: 5 July

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› The Women's World Championship is coming to the UK in 2021. The successful bid, submitted by the Gliding Centre and the BGA, will see the Women's Worlds hosted at Husbands Bosworth in August 2021. Congratulations to the bid team.

› The 2019 Women's Worlds will be held at Lake Keepit, Australia, 3-17 January 2020, not November 2019 as previously reported. Lake Keepit will also be holding pre-worlds in conjunction with its Club and Sports Class Nationals, from 31 December 2018 to 11 January 2019.

› The BGA Competition Rules have been updated for 2018 and published at *https://members.gliding.co.uk/library/competitions/bga-competition-rules* See feature on p23 about understanding the rules of competition scoring.

› Turkey will be the official host country for the FAI World Air Games 2020. Due to be held in the September, the World Air Games will include gliding, aerobatics, aeromodelling, drone racing, indoor skydiving and paragliding. *www.fai.org/worldairgames*

› Stemme will present two new aircraft models at this year's AERO in Friedrichshafen. The S12-SW and S12-G are a shortwing variant with 21.7m wingspan, and a state-of-the-art Garmin glass cockpit variant with a wingspan of 25m. The S12-G supersedes the S12 as the new top model, with the S12-SW as the new entry level model. All three models of the Stemme S12 family will be available to buy following their presentation at AERO. This year's dates for AERO are 18-21 April. It is not a gliding year, although there is always much of interest to see.

› The UK Airprox Board (UKAB) has launched a free app that can be used to submit details of an airprox by those involved. The app also provides access to UKAB's extensive database of historic reports, and safety material, as well as an interactive chart of the UK displaying the locations of all reported airprox incidents. Available on Android and iOS, the UKAB app will allow a pilot to report details of an incident by smartphone or tablet as soon as it is safe to do so, and while the incident is still fresh in their memory. *www.airproxboard.org.uk*

› A recent incident where a delivery driver crossed a runway has resulted in a club safety officer recommendation that clubs may wish to check whether commonly-used satnav software could direct drivers to cross their operating areas. In this case, the club is taking action to ensure that drivers using GPS are routed correctly.

› Some important pilot licensing updates emerged as we went to press – please see *https://members.gliding.co.uk/pilot-licence-conversion*

■ The Government has appointed Byron Davies, pictured right with Baroness Sugg, as its first General Aviation Champion. The appointment is for 12 months and, as GA Champion, he will gather evidence of the sector's value to the economy and the need for a protected network of airfields.

Developing women pilots

WOMEN GLIDE UK has a range of events aimed at helping female pilots all over the country take their gliding to the next level:

- 14-15 April, 2018 – Cambridge Gliding Centre, Gransden Lodge, Women Aim Higher. Aimed at those qualified to fly cross-country and wanting encouragement or guidance in doing so. Ideal for those working towards entering competitions.
- 5-7 May, 2018 – The Gliding Centre, Husbands Bosworth, May Day Compette, Running over May Day Bank Holiday weekend, the Compette is a light-hearted mini-comp to get you out racing and having fun.
- 5-11 May, 2018 – The Gliding Centre, Husbands Bosworth, Cross-Country Development Week. Aimed at pilots looking to develop their cross-country skills and test them against other pilots. A mixture of two-seater and solo training with British Team members and other pundits, running alongside the Compette over the Bank Holiday weekend.
- 21-29 July, 2018 – Bicester Gliding Centre, Women Training Camp at the Bicester Regionals. Aimed at women starting on their competition career and those wanting to boost their competition performance. Briefings, comp prep and coaching, including two-seaters – the prime aim is to compete in your own glider.

Email *info@womenglide.co.uk* for more details and to book your place.

DATES
NATIONALS, REGIONALS AND OTHERS

Competition Enterprise	Aston Down	30/6-7/7/18
18m Class Nationals	Hus Bos	7-15/7/18
20m multi-seat Class Nationals	Hus Bos	7-15/7/18
Worlds	Ostrow Wielkopolski	8-21/7/18
15m, Standard, and Club Classes	(Poland)	
Worlds	Pribram	28/7-11/8/18
Open, 18m and 20m multi-seat Classes	(Czech Rep)	
Club Class Nationals	Dunstable	4-12/8/18
Open Class Nationals	Aston Down	18-26/8/18
Standard Class Nationals	Aston Down	18-26/8/18
15m Class Nationals	Aston Down	18-26/8/18
Junior Nationals	Lasham	18-26/8/18
Two-seater comp	Pocklington	19-26/8/18
UK Mountain Soaring Champs	Aboyne	2-8/9/18
Glider aerobatic competitions		
Dan Smith	Dunstable	30/3-1/4/18
Saltby Open	Saltby	20-22/7/18
World Glider Aerobatic Champs	Zbraslavice, Czech	2-12/8/18
Aerobatic Nationals	Saltby	23-26/8/18

DUNSTABLE REGIONALS
16-22/6/18

SHENINGTON REGIONALS
23/6-1/7/18

BIDFORD REGIONALS
7-15/7/18

BICESTER REGIONALS
21-29/7/17

BOOKER REGIONALS
21-29/7/18

HUS BOS CHALLENGE CUP
28/7-5/8/18

INTER-SERVICES REGIONALS
4-12/8/18

NORTHERN REGIONALS
12-18/8/18

LASHAM REGIONALS
18-26/8/18

UPDATE YOUR AIRSPACE FILES FROM A NEW HOME

IT'S time to update your airspace files for the new season, but you won't find them where you looked last year!

To assist with navigation when flying cross-country, there are a growing number of cockpit devices which can display a moving map to help you to track your progress. In order to keep you out of trouble it is necessary for areas of controlled and restricted airspace to be displayed on the map.

Unfortunately this data changes all too often, so the moving map devices need to be updated with the latest airspace files from time to time.

Air Space Select (ASSelect) is an application which enables glider pilots to download a customised airspace file for loading into their gizmos. It's important to have current data in your device – ASSelect updates airspace data every four weeks and now includes RA(T)s.

ASSelect changes

For some time ASSelect has been a downloadable application that could be run only under Windows. Last summer Alan Sparrow took over responsibility for its maintenance (on an entirely voluntary basis) and decided to re-engineer the application so that it would run on many more environments than Windows. To do this he has made it a web-based application.

Functionally, there are very few changes from the PC version, which is no longer being maintained, although the look and feel has been updated. Probably the main difference is that whereas the PC version allowed one to choose between None, Class G or Class D for some items (eg unlicensed airfields) the Class D option has been dropped in favour of Class F.

The web version of the program is available at: *https://asselect.uk/*

If you're not sure how to use it, there are tips on how to use and set up your device on the *S&G* website. Scan the QR code below, or visit *www.sailplaneandgliding.co.uk/current-issue*

Revised list of waypoints is result of pilot feedback

The 2018 version of the definitive BGA List of Waypoints has been released, ***writes Iain Baker***. It is available via the link on the BGA website at *https://members.gliding.co.uk/library/turnpoints/bga-waypoint-list* and hosted at: *http://www.newportpeace.co.uk/turningpoints.htm*

The 2018 version includes important changes, adds 19 new waypoints, deletes 20 waypoints, and has some minor changes. This revision follows a consultative review, firstly with BGA clubs and then inviting feedback from all UK glider pilots, primarily focused on waypoints near sensitive airspace (especially where there were suitable alternatives nearby) and, at the same time, some redundant waypoints have been deleted or replaced.

Pilots are strongly recommended to use the latest version of the list and not to rely on old versions in which airspace and other information may not be up to date.

Pilots are also reminded that waypoints near restricted or sensitive airspace have a # or ## designator and to use them with due care, and that waypoints with a ! designator are unsuitable for fixed course tasks in competitions, or by large organised task groups.

Photo by Colin Simpson

■ GRAHAM Saw has made a beautiful wind vane (pictured above) for the Gliding Heritage Centre's Hangar 2, at Lasham. Modelled on George Caley's 1849 glider, the wind vane includes a replica Derek Piggott flying it.

Work is progressing well on the hangar. Future plans include a workshop for maintenance, an archive building for documents, museum building for displays and an extension to the second hangar.

Close encounter at Dunstable

A GLIDER pilot had a close encounter with a drone on the glider's approach to Dunstable, Bedfordshire, on New Year's Day. The drone passed rapidly below and to the right-hand side of the K-21 at a height of 550ft, leaving the pilot no time to take avoiding action.

The CAA recommends that drones fly at no more than 400ft (120m).

The pilot spotted spotted the drone immediately before his turn onto finals. The UK Airprox Board said had the drone been on a "collision course" the glider would have been unlikely to respond.

It rated the risk of collision as "A", the highest possible level, and said "the drone was flown into contact with the glider".

The report added that because of overcast weather, the grey drone was difficult to see.

SAILPLANE & GLIDING

Andy Davis
Competition flying

Paul Whitehead
SLMG

Howard Torode
Airworthiness

Derren Francis
Tugging

Mike Fox
Instructing

Dr Peter Saundby
Medical

Andy Holmes
Winch operating

John Williams
Airspace

Alison Randle
Development

Bruce Stephenson
Vintage gliding

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).

EXPERT ADVISERS

YOU COULD BE CLOSER TO ADS-B CAPABILITY NOW THAN YOU THINK

I ENJOYED the article in the recent *S&G* (*ADS-B: the way ahead for GA?*, pp18-21, Feb/March 18), and would like to add expansions of a few points, and some gliding-relevant stories.

TCAS II* (ACAS**), which is now standard in "all" airliners, only commands airliners to climb or descend to a maximum of 2,500fpm. TCAS III would have introduced turning, but, as I tell my pupils, if you miss the other aircraft in the vertical axis, there cannot be a collision in the other axes.

I recall flying over to Feshie from Aboyne and announcing my arrival, dodging around the 6/8 cloud cover, at "4,000ft overhead". Someone on the radio said: "So am I." I turn for clearer air while myself and my passenger's head are scanning like mad... then I said – what's your altimeter setting? "Local." So we were OK. They were height above airfield while we were AMSL and, with Feshie being 860ft AMSL, there was a large margin. Panic over.

Whenever I am near cloud, I now start calling my height – it can get damned busy if the wave is only local at Aboyne.

I had been through three real Resolution Advisories, the name for climb guidance TCAS gives, all due to air traffic control (ATC) mistakes (and all in the USA). On the first, P1, rather than climb at the commanded 1,500fpm, pitched up, converted speed to climb and fire-walled the throttles, so we ended up a mere 9,000ft above the "intruder". We left the Class C airspace "through the roof", a first for me.

TCAS is, by the way, smart enough to know not to command descents when close to the ground, or climbs with your landing gear down – and tells the other aircraft so it can manoeuvre instead.

On a later flight, pounding the airways of Kansas, I'm down the back when I get a call. "Hey, the problem of double imaging on the TCAS traffic display is back."

I stick my head in the cockpit, note the relative bearing and look out of the window. There, crossing 2,000ft below us are two USAF KC-10s (DC 10 airliners with green paint), refuellling each other. An amazing sight – I imagine needing the same delicacy as two humpback whales mating!

For information, the US FAA (Federal Aviation Administration) has allowed their airlines to fit non-compliant GPS to their ADS-B installations until 2024. Come on UK CAA.

We recently fitted a new transponder to our Grob motor glider and all I need to do to get ADS-B capability is hook the FLARM (or any other GPS source with a suitable output) to the transponder. So many of you out there might be closer to having ADS-B capability than you think.

We also fitted PowerFLARM using an Oudie as both the audio output and the traffic display. It actually worked out cheaper than a PowerFLARM portable, with all the capabilities of an Oudie thrown in. It's great to see what other FLARM-equipped gliders are doing and to use the Oudie to join them if they are climbing better.

Finally, I know that UK ATC cannot use ADS-B directly at present, but some ATC centres might just have a PC with a subscription to Flightradar24, a website which shows traffic from both ADS-B and FLARM. A good move on their part in my opinion, since it improves their awareness, even if the "integration" is just in the controller's head.

That also means, fellow glider pilots, that ATC may be tracking your airspace infringement – and may know your ID,

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 6 April

even if you don't have a transponder and don't show up on their primary radar.
David Innes, Deeside GC

* TCAS (Traffic Alert and Collision Avoidance System)
** ACAS (Airborne Collision Avoidance System)

Tim Freegarde, who represents the BGA on the CAA Electronic Conspicuity Working Group, replies: *David's reminiscences give interesting insight into the commercial use of conspicuity and collision avoidance systems.*

As David says, if your aircraft has a Mode-S transponder it may be possible to transmit ADS-B data by connecting it to a GPS.

However, not all Mode-S transponders have this 'extended squitter' capacity; some that do require the GPS to be a certified model, and even the use of certified GPS may require modification approval. The regulatory situation is nebulous for EASA aircraft, including most gliders. See: https://tinyurl.com/ydyy25dk

Things are more straightforward for microlights and LAA permit aircraft. See: https://tinyurl.com/y6uofj5k *and* https://tinyurl.com/y7xufg4f

Air traffic controllers are not currently permitted to use ADS-B alone for control or separation, though there are moves to allow it for situational awareness. That said, some airfields already have an unofficial screen displaying Flightradar24.

Although unverified, potentially uncertified GPS information isn't good enough for air traffic control, it might indeed be good enough to support prosecution for infringement – but the CAA regards trying to hide an infringement as adding to the felony.

Weather Jack shares his observations on the blues

EVEN though retired from gliding and weather forecasting, I always enjoy the articles by Messrs Cronshaw and Atkinson (*Ask the Coach*).

I would like to make a few observations about blue conditions. I had always assumed that wave effect killed thermals where the air was actually descending. Towards the end of my gliding career, I used a digital thermometer for some minor research. While hardly likely to be absolutely accurate, the thermometer was useful for making temperature comparisons in different situations.

I found that in the blue holes (especially in weak wave conditions) at a particular altitude, the air temperature was higher than surrounding areas. The penny dropped: the suppression of thermal activity was not always when the air is actually descending, but also where it had descended and warmed adiabatically to be at a higher temperature than nearby at the same height. Warm air aloft is a big killer of thermal activity.

Precisely the same effect occurs near large clouds/showers. Satellite pictures often show the cellular structure of convection, the holes being where the air has descended (and from a gliding point of view, makes for tricky soaring).

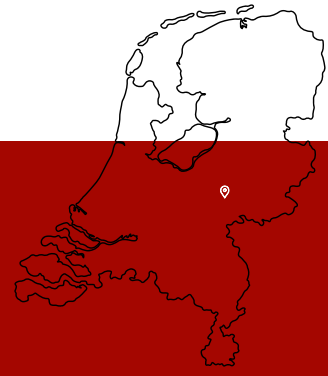
Non-gliding types would sometimes say to me: "It must have been good for soaring on that hot day". On the contrary, in many situations it was a hot day because a lid on the convection meant that the heat was not readily transferring upwards.

Soaring birds like Buzzards or Kites are often more noticeable from the ground on hot days simply because they are forced to stay low.

I set a challenge here. White-tailed Eagles (also known as Sea Eagles) are the ultimate in soaring ability. Storks also are very good, but rare in UK. Photos please, from a glider!

The term inversion is widely used, but often incorrectly. It does not require an inversion to limit depth of convection – ie temperature actually increasing with height to stifle thermal activity – merely a significantly reduced lapse rate so that a thermal cannot continue to rise, it being no longer warmer than the surrounding air. That is often rather casually called an "inversion". Inaccurate, but nevertheless quite useful jargon.

And now to a real puzzle. In my post-gliding days, I have become a moderately enthusiastic bird watcher. One totally blue day, I watched a Marsh Harrier over a Cambridgeshire Fen. It was gliding – never flapping – in a more-or-less straight line for a kilometre or so with no apparent loss of height. But it was not gliding into wind – and that is taking account that, at the height the bird was flying, the wind was likely to be veered by up to 30 degrees from that on the surface. No, that Harrier set off a good 45 degrees to the left of the presumed upper wind. That, of course, poses the question: how do birds remotely sense thermals? Human pilots would love to know.
Jack Harrison (Weather Jack)
Nairn, Scotland



Among the trophy winners for 2018 (and representatives), who were presented with awards at the BGA Dinner, were: (left to right) Santiago Cervantes, Anthony Spirling, Wendy Head, Max Kirschner, John Williams, Jacqui Sewell, Dominic Haughton, Russell Cheetham, Olly Metcalfe, Clement Allen, Ed Downham, John Williams, Ross Morriss (Max Kirschner)

BGA PERFORMANCE TROPHIES

BGA 1000km Trophy
Fastest Flight over 1,000km
Not awarded

Wakefield Trophy
Longest Handicapped Distance
Ed Downham (London GC)
857.8km at 126.4km/h, 5 Oct, EB 28

Furlong Trophy
Longest Handicapped Triangle
Andy Aveling (Lasham GS)
681.8km at 91.3km/h, 25 April, Arcus

Frank Foster Trophy
Fastest Handicapped 500km
John Williams (SGU)
516.3km at 162.1km/h, 5 April, Antares

California in England
Longest Handicapped Flight by a Female Pilot
Wendy Head (Cambridge GC)
578.7km at 67.6km/h, 2 July, ASW 27b

Manio Cup
Fastest handicapped 300km
John Williams (SGU)
516.3km at 162.1km/h, 5 April, Antares

Seager Trophy
Longest Handicapped Distance in a Two-Seater
Ed Downham (London GC)
857.8km at 126.4km/h, 5 Oct, EB 28

De Havilland Trophy
Greatest Gain of Height
Jordan Richards (SGU)
22,589ft @ Lleweni Parc, 7 Oct, Libelle

Volk Trophy
Longest Handicapped Out & Return
Bob Thirkell (Lasham GS)
554.0km at 100.1km/h, 13 Aug, ASG 29

BGA NATIONAL LADDER TROPHIES

www.bgaladder.co.uk

Enigma Trophy
Winner, Open National Ladder
Santiago Cervantes (SGU)
29,738pts

Firth Vickers Trophy
2nd Place, Open National Ladder
John Williams (SGU)
26,323pts

L.duGarde Peach Trophy
Winner, Weekend National Ladder
John Williams (Trent Valley GC)
21,665pts

Slingsby Trophy
2nd Place, Weekend National Ladder
Andy Aveling (Lasham GS)
21,413pts

Spitfire Trophy
Winner, Junior National Ladder
Olly Metcalfe (Lasham GS)
19,324pts

Chris Wills Trophy
Winner, Wooden Ladder
Adrian Emck (Lasham GS)
20,122pts

OTHER BGA AWARDS

Rex Pilcher Trophy
Earliest Diamond Distance in the Year
Anthony Spirling (SGU)
5 April

Phil Lever
Most Promising Junior Pilot
Clement Allen (London GC)

John Hands
For outstanding services to the British Team
Max Kirschner (Bicester GC)

Goldsborough
Highest placed pilot(s) in previous World Championships
Russell Cheetham (Lasham GS)
Open Class World Champion 2017

University Ladder
Imperial College 16,963pts

Challenge Trophy
For the club that, during the previous year, has the most number of pilots who have qualified to Cross Country Endorsement as a proportion of the number of instructors.
The Upward Bound Trust

Philip Wills National Enterprise Trophy
Awarded by the Enterprise Club for most enterprising flight launching from anywhere in the UK
Forsaking the familiar low land terrain of England, Dominic took up the challenge of flying over the mountains and coastal plains to complete the first declared FAI 500km triangle with all three corners in Wales.
Dominic Haughton (Midlands)

Alex Ward Trophy
For services to junior gliding. A member of the Juniors Competition Group, Andy's area of expertise, alongside Ed Foxon, is organising two-seater coaching. In addition, Andy has worked with Skylaunch to provide valuable sponsorship for the Junior Nationals.
Andy Holmes (Lasham GS)

Haywards Trophy
For instructing excellence.
Ross is always willing to instruct, tow, maintain something, or generally help out wherever required; but most importantly is now studying for his Full Cat Rating and will take over as CFI PSGC later in 2018 – a true home-grown CFI and success story.
Ross Morriss (Peterborough & Spalding GC)

The BGA Shop

BRITISH GLIDING ASSOCIATION

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Image © Ron Smith Photography

http://www.flickr.com/photos/ronsmithphotography

THE FIGHT FOR OPEN AIRSPACE

Why the system must change and how to get involved

AT THE recent BGA conference (see report pp62-67), John Williams highlighted the pressing need for change in the way lower airspace is developed. This article, which highlights two current airspace change consultations, repeats some of the points described by John.

Seventy years ago, there was almost no controlled airspace over the UK. Of course we recognise that the 1948 solution is not right for today; there are some good reasons for controlled airspace. Some glider pilots are also commercial pilots and almost all are occasional commercial passengers who do not want unreasonable risk. But right now we find ourselves facing a tsunami of lower airspace change proposals (ACPs), including Hawarden, Exeter, Farnborough, Leeds Bradford, Inverness, Oxford, Brize Norton, Edinburgh, Biggin Hill, Prestwick, Carlisle, Doncaster and many more. And we're living with uncorrected mistakes from the recent past, including Norwich and Doncaster.

There are very good reasons why the system needs to change

Exeter is illustrative. Exeter want Class D airspace and they are using consultants to get it. Exeter don't want to spend money on public consultation, so they are not modernising procedures which might give efficient operations and efficient airspace.

AIRSPACE FIGHTING FUND

A TRUST is being set up, led by the BGA, with a long-term aim of supporting general aviation in addressing increasing pressures and challenges associated with airspace. As a temporary measure, donations can be made securely to:
S R Lynn & Co Clients Account,
Sort code 20-57-40
Account number 70816418
Use reference 'Airspace'

Following the limited consultation process, we were eventually given access to the final proposal that Exeter submitted to the CAA. This is the first time this has happened; in all previous ACPs, the final proposal document has been kept confidential between the proposer and CAA. We were shocked to see that Exeter had stated that the gliding community would not favour a Radio Mandatory Zone (RMZ), when in fact we had proposed an RMZ. We dread to think what proposers have been telling the regulator in all the other final submissions over the years.

Exeter's proposal is with the CAA at present. It's clear to us that this is a bad solution and should be thrown out. But we cannot ignore the CAA's track record.

Moving on to RAF Brize Norton and Oxford airport. These two separate, but linked, ACPs are currently in the consultation stage. It is vitally important that as many pilots as possible respond to these two consultations.

It seems that the Brize Norton and Oxford airspace change proposers are uninterested in overall airspace safety. A 'solution' has been produced in advance of understanding the needs of others, and taking no account of the effects of their proposals on those in surrounding Class G airspace.

If the proposed Class D airspace is approved by the CAA, the risk to the majority of airspace users operating outside the Class D airspace will be significantly increased. A number of new choke points will appear and the existing choke point east of Oxford will be significantly worsened. Inward-looking airspace developments do not contribute to overall airspace system safety.

East/west and north/south transit across Berks, Bucks, Oxfordshire and Wiltshire will be highly restricted. As a result of restricted operations, it is highly likely that a significant number of air sport clubs, GA airfields and operating sites will be fatally damaged by the inevitable reduction in activity.

Oxford airport

Oxford claims that the current operation is tolerably safe. It has decided the airport needs a 'known traffic environment' to ensure that risk is as 'low as reasonably possible'. The safety case is based on subjective air traffic controller assessment of what they see on their radar screen and, as reported in the consultation, airprox report 2014065. This airprox report underlines what appear to be cultural and systemic issues, including unusually large circuits, that contributed to this low-risk airprox caused by an Oxford aircraft that failed to take sufficient avoiding action having seen another aircraft.

Oxford airport has stated that their principal aim is to create a known environment and yet has chosen to ignore the option of using a Radio Mandatory Zone which would achieve exactly that with least disruption to other airspace users. Instead, the consultation seeks the right to control a huge area of Class D airspace and in doing so increases risk to the majority operating around the outside. Oxford airport owners' publicly stated development aspirations indicate why the airport is seeking Class D airspace.

Brize Norton

The Military Aviation Authority has identified an unquantified risk caused by a gap in regulated airspace between the airways system and the existing Brize Norton zone. Brize Norton is concerned that its aircraft occasionally fly outside the CTR during NDB, TACAN and ILS procedures. So Brize Norton has proposed that it should establish a huge area of Class D airspace for a handful of flights per day that connect with airways. That there are so few flights and that many of them are at night is not revealed by the consultation.

The safety case for the proposed airspace change is said to be based on a subjective view of airprox reports. Detailed analysis shows that very few of the airprox would

have been prevented by the enlarged airspace that is proposed; many were caused by ATC error, most in the vicinity of Brize Norton are not associated with Brize Norton traffic, and many are simply sighting reports which were not risk bearing.

Important detail is missing from this consultation, which appears to have been written to ensure its client's needs are addressed regardless of the safety and other impacts on airspace users operating outside the proposed Class D airspace.

What needs to change?

The new ACP process (CAP 1616, which came into operation too late for the above ACPs) helps transparency, but does not solve the basic problem. Proposers must have a common understanding of all needs BEFORE an airspace design is started. Proposers must use evidence-based data driven analysis if we are to get proportionality instead of commercial grabs. This works when the CAA propose airspace change, as exemplified by the recent Class F changes when CAA organised meetings of all aviation stakeholders and NATS provided excellent detailed analysis of actual usage of the airspace concerned. Why should other proposers be permitted to neglect such a holistic and evidence-based approach? The regulator must simply refuse to approve proposals from those who do not consider others' needs, or whose arguments depend on hearsay and one-sided subjective opinion.

At a big picture level, the UK must move away from the 'sky-grabbing' approach of individual airport owners. The CAA needs to provide direction on lower airspace development within an agreed strategy that works for everyone and is sustainable. This will not happen while CAA responsibilities are interpreted as they are today, and will only happen if Government is as serious about the future of GA as its own GA Strategy publication suggests.

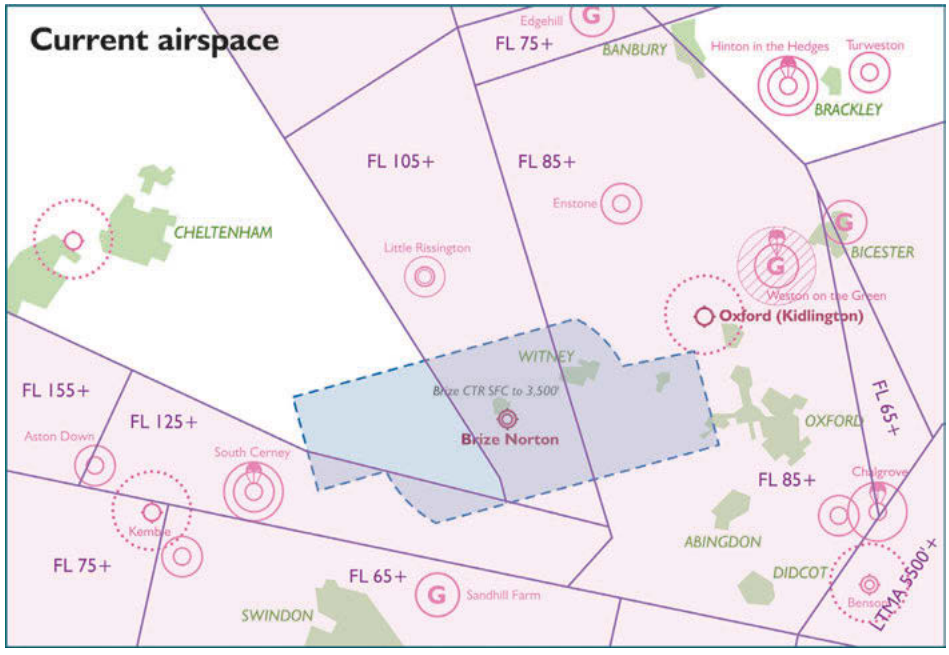
The BGA, together with GA Alliance, is active via a number of channels in pressing DfT and ultimately the CAA to achieve a fairer and better managed deployment of UK airspace. This will take a long time. In the meantime we have to do all we can by whatever means to safeguard our interest against the current flood of ACPs.

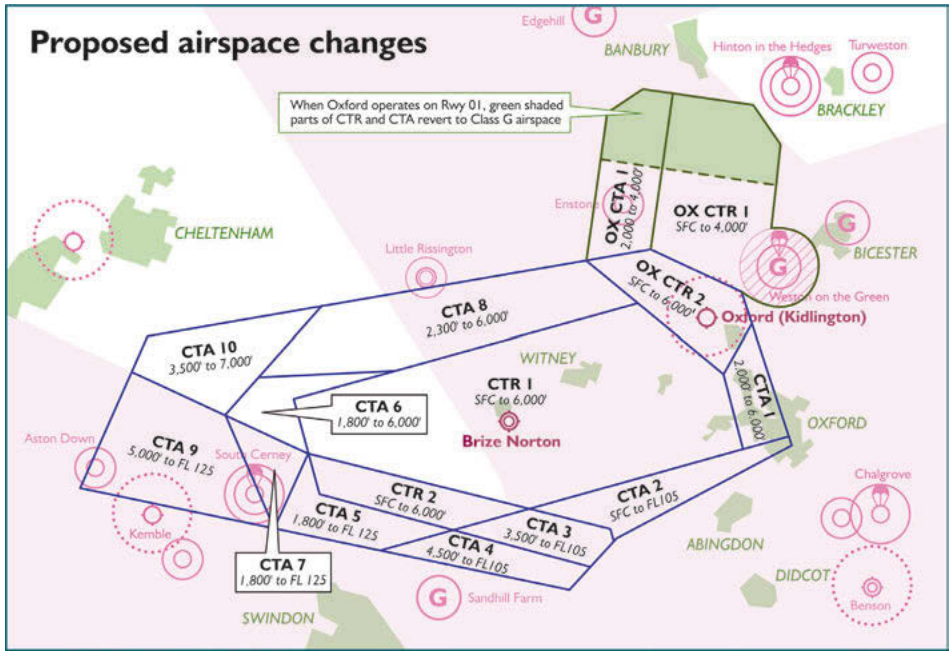
Meanwhile, how can you help?

A consultant acting for Brize Norton and Oxford airport has indicated in conversation that their job is to develop procedures and airspace for their clients, and the role of the CAA is to consider the impact on others. So we ALL need to ensure that the proposers and the CAA are very clear about the significant increase in risk and other issues presented by these proposals.

If you haven't yet submitted your responses to these consultations, please go to the BGA member website at *https://members.gliding.co.uk/representation-and-consultations/oxford-and-raf-brize-norton-acps/* The information there will help you.

Please don't turn away. Your response can make a difference. But only if submitted before 5 April 2018.





Illustrations by Steve Longland

This article was prepared by the BGA Airspace Committee

THE UK MUST MOVE AWAY FROM THE 'SKY-GRABBING' APPROACH OF INDIVIDUAL AIRPORT OWNERS

GET UP TO SPEED WITH BALLAST

Thinking of using water ballast to speed up your task? Tony Cronshaw asks coach Kevin Atkinson how to get started and the best strategies

ADVANCED pilots always seem to load water ballast and achieve very impressive task speeds. Tony Cronshaw talks to leading coach Kevin Atkinson, to find out how up-and-coming pilots can progress to using water ballast.

TONY: ***The logic that a heavier glider can achieve a faster cross-country speed seems slightly bizarre. What's the technical explanation for this?***

KEVIN: This is another of those interesting sweet spots in gliding. As we know, there is an optimum speed-to-fly between thermals (neither too fast nor too slow) for each glider type. Similarly there will be an optimum all-up-weight (neither too light, nor too heavy) to achieve the fastest task speed in given conditions. If the glider is flown too light, we are like a feather that climbs well in a thermal, but has poor penetration in the glide, especially into a headwind. If we are too heavy, we penetrate well, but it becomes difficult or impossible to climb in a thermal.

Fin ballast can correct the C of G (see glider manual) and alleviate unwanted up-elevator drag. It also improves manoeuvrability in turns (Kevin Atkinson)

TONY: ***Is the best strategy to start with full ballast and then dump part of it in the first thermal or two to find the sweet spot?***

KEVIN: That can work, but surprisingly competition pilots often complete their task without dumping any water.

TONY: ***How do they manage that? How can the sweet spot be a heavily ballasted glider?***

KEVIN: For very skilled pilots, a heavily ballasted glider may be the optimum as they employ numerous tactics to skew the sweet spot to the heavy end. These pilots know that ballast will help their final glide and are loathed to dump it even if conditions are momentarily poor. Better conditions ahead mean that survival and progressing slowly makes sense. Further tactics include setting off on task unduly heavy for the strength of initial thermals and routing along lines of energy. Advanced pilots are also very good at finding the best cores despite most thermals being mediocre.

TONY: ***What are the implications for the up-and-coming pilot?***

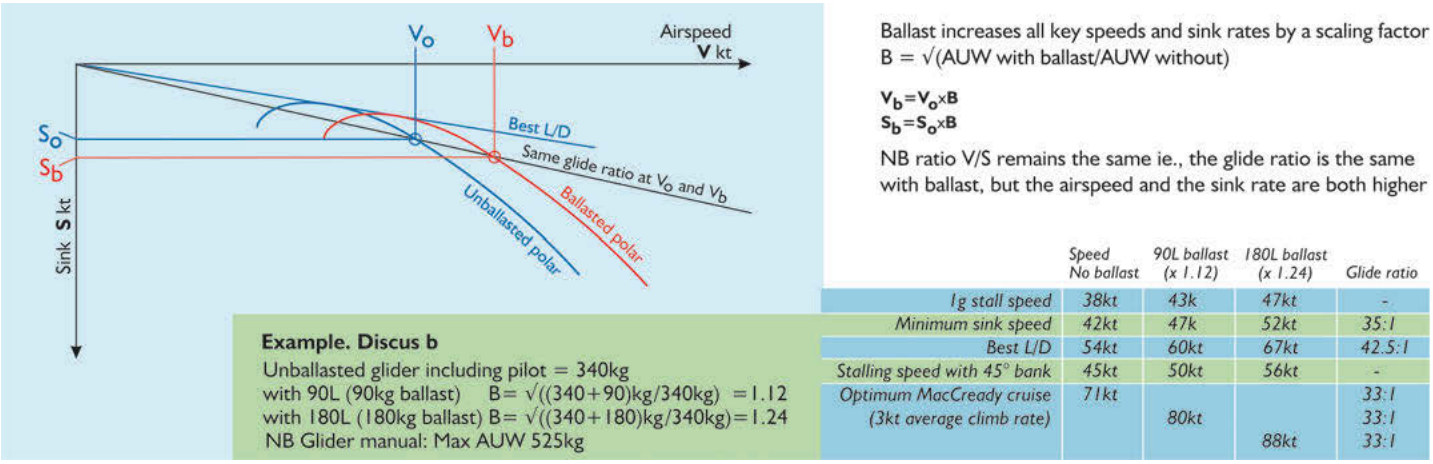
KEVIN: Quite simply, the sweet spot will be in a different place. Clearly, the pilot MUST be able to climb despite carrying water ballast, so it's partly a question of the pilot's skill to find decent thermals and knowing which thermals to ignore. Otherwise the first climb taken in a weak thermal will mean dumping all the ballast. It's also a question of the pilot's ability to centre the thermal efficiently. A pilot who can locate the core and stay in the core can afford to carry more ballast than the pilot who circles around the core, or is in and out of the core all the time.

TONY: ***What guidelines would you suggest to help getting started using water ballast?***

KEVIN: Let's consider a pilot who has a certain amount of cross-country experience, enough to achieve average climb rates over 2.5-3kts and task speeds over 65-75km/h (otherwise keep working at your climb rate and routing skills [1]). This suggests it's time to start trying water ballast on the stronger days. For the first few flights, I would recommend loading one to two barrels per wing (ie a total of 50-100L) because the feel and handling of the glider will change and it will take time to get used to that.

TONY: ***What about the practicalities of loading the water?***

KEVIN: Read the manual and talk to someone familiar with the water ballast system on your glider and the recommended loading method, eg a small pump into a gravity feed funnel, or a self-priming syphon. Pressurised water sources should not be used



	Speed No ballast	90L ballast (x 1.12)	180L ballast (x 1.24)	Glide ratio
1g stall speed	38kt	43k	47kt	-
Minimum sink speed	42kt	47k	52kt	35:1
Best L/D	54kt	60kt	67kt	42.5:1
Stalling speed with 45° bank	45kt	50kt	56kt	-
Optimum MacCready cruise (3kt average climb rate)	71kt	80kt	88kt	33:1 33:1 33:1

Figure 1 (Steve Longland)

in case the ballast tanks (or bags) are over-pressured and burst. Similarly, there will be procedures for the vents that let out the air while water is loading. Note that if a vent is taped over while waiting to launch, the tape must be removed before launching or the tank may not drain later in flight. For some glider types a vent tube will need hooking up at the wing root during rigging. If water is tending to leak out of ageing ports, try applying some Vaseline to the port/valves to stem the flow.

TONY: ***What sort of handling changes should the pilot be aware of?***
KEVIN: It's important to understand the theory and implications of water ballast. It's not all about performance, it's also about understanding safety implications. Look at the polar in the glider manual and see how it changes as the wing loading is increased. Note that ALL the familiar speeds – including all the stall speeds – will be higher for a given attitude. Note also that the increased cruise speed will be very helpful when combatting a headwind.

TONY: ***An example is shown in figure 1 (above) for a Discus b. With half ballast (90L), all speeds increase by 12 per cent whilst achieving the same glide angle, so this will be very helpful in the cruise and on final glide. Full ballast speeds would increase speeds by a huge 24 per cent, though thermals would need to be very strong [4] to warrant this. However, with ballast on board, will the climb rate suffer and possibly neutralise these advantages?***
KEVIN: The climb rate with ballast on board inevitably must suffer. It's very difficult to quantify by how much, but experienced pilots report that they can often climb successfully in the core and maybe don't lag that far behind lighter machines which have reached the top of the same bubble.

TONY: ***We also need to factor in how much of the flight is spent running lines of energy without circling, in which case the ballasted glider easily out-runs the lighter glider.***
KEVIN: I would add it's worth doing a bit of research to find out how different types of glider are suited to ballast [2], [4]. Note also that flapped gliders will have the edge over unflapped machines. Positive flap will help with slower, tighter thermalling. Neutral-to-negative flap will help with a faster cruise. This flexibility is exactly what is needed in strong conditions.

TONY: ***Since the stall speeds are higher, what are the implications, eg on aerotow?***
KEVIN: It's vital to stay well clear of stalling on aerotow. A stall on the early climb-out could be catastrophic, so the tug pilot MUST be informed that the glider has ballast on board so that sufficient towing speed is used, and avoid steep turns when low [3]. Remember on aerotow we need sufficient margins of airspeed to handle the effects of the tug's downwash (not the same as of the prop wash, which is below the downwash), which cause us to increase the glider's angle of attack on tow. We therefore operate a bit nearer the stall than you might think.

TONY: ***What about preparing for the launch?***
KEVIN: Before the launch, ensure wings are held level for long enough for the water to come to rest in a balanced state: When parked with a wing down, all the water in one wing may have migrated towards the tip, in the other wing to the root. So ensure the wing runner is briefed or else a wing is likely to drop. NB: don't follow the example of some pilots, who continue to tow with a

THE PREVIOUSLY LEARNT INTUITIVE FEELING OF HOW TO CENTRE WILL NEED TO BE ADAPTED

Kevin Atkinson is the club coach lead for the BGA's Aim Higher (*www.gliding.co.uk/bgainfo/aimhigher.htm*). He started gliding at age 13 at Ouse GC (now York), flying his first solo on his 16th. Kevin has over 4,500 hours gliding, including competing in UK national and regional competitions. He also has more than 7,500 military jet hours (Tiger Moths to Typhoon)

■ Kevin's book *Gliding in Lift and G-SINK* is available at *www.bgashop.co.uk* or direct from *kratkinson@yahoo.com*

Luke Dale dumping water on return to Lasham (Chris Sterritt)

[1] *Another two barrels please*, Ed Johnston, *S&G,* pp22-25, June/July 14
[2] *To water or not to water?* Tim Macfadyen, *S&G*, pp8-11, Feb/March 14
[3] *Water hazards*, Paul Fritche, *S&G*, pp18-19, April/May 14
[4] *Water: help or hindrance?* Bernard Eckey, *S&G*, pp34-37, Aug/Sept 14

Tony Cronshaw is an Ass Cat instructor at Cambridge Gliding Centre with over 1,500 hours gliding. His enthusiasm for helping the next generation of pilots includes running courses for visitors and members, and supporting CGC's recruitment and retention sub-committee

dropped wing – immediately release. The risk of a ground loop is not worth it.

TONY: ***What about the implications for speeds when thermalling?***
KEVIN: When circling we have to fly faster, so our circling diameter increases [4]. Staying in the core will be more difficult as a result. Moreover, since the ballast is carried in the wings, the glider is less responsive when rolling into a thermal, or when changing bank to re-centre. The previously learnt intuitive feeling of how to centre will need to be adapted.

TONY: ***Are there further safety related issues to be aware of?***
KEVIN: I don't recommend landing with water ballast. Although it may be permitted according to the glider manual, we don't want to get caught out by the approach speed needing to be higher, or the change of handling feel during the flare/float and a much longer ground run. Obviously, we should dump the ballast well before a field landing is threatening and try to soar away. I would also avoid the temptation to winch launch heavy.

TONY: ***What's the aim of tail ballast?***
KEVIN: Loading water ballast typically brings the C of G forward, so a fin tank is sometimes provided to allow a balancing amount of water to be loaded in the tail. This overcomes the issue of flying with a nose-heavy glider that needs a lot of back-trim and associated up-elevator losses (see photos on p12).

TONY: ***What are your recommendations on dumping water?***
KEVIN: Avoid dumping water when circling with others below you: It's very unfriendly if they are "washed out" of the thermal. Remember then to re-programme your flight computer for the revised loading. If you want to dump part of your ballast, you need to know the dump rate per minute. A simple test on the ground of dumping a full tank will give you an approximate dump rate per minute.

On final glide we need to open the dump valves in sufficient time – it could take several minutes to drain. Check if you can see it draining from both wings. If you see water is pouring out asymmetrically, prepare for a wing drop on landing, or stop dumping.

TONY: ***Are low temperatures a concern?***
KEVIN: Do not use water – or store water in the glider – when temperatures are approaching freezing. Ice could form on the valve/port preventing tanks from emptying. A frozen tank or fin tank could rupture.

TONY: ***Finally, could you recap the key reasons for using water ballast?***
KEVIN: To be worth the time and effort of loading water ballast, ask yourself the following questions:

- Will thermals be strong enough so that (with pilot's level of thermalling skill) the glider will climb well? This is a must.
- Will the task mean battling against significant headwinds (and routing along streets) where ballast could be a decisive factor?
- Will an incremental improvement on task time (or task speed or task distance) enable you to achieve a sought-after goal?
- Are you able to adapt your handling skills to fly and thermal accurately (perfectly enter the thermal, control the speed, change bank angle precisely), despite the glider operating at higher airspeeds, having far more momentum, and far less roll responsiveness?

This last point is crucial. It will unlock the advantages of carrying ballast, including: flying faster along lines of energy; better into-wind penetration; punching through bad air more quickly; reaching potential lift sooner; and faster final glides. In other words, enable the pilot to step up to a faster tempo of cross-country flying.

■ **In the next *Ask the Coach*, Tony talks to leading coach Kevin Atkinson about about why thermals are NOT all about hot air – and how physics can help us understand and exploit thermals more effectively.**

VITACURA

8TH SAILPLANE GRAND PRIX FINALS

REPORT BY JON GATFIELD

FIRSTLY, let's deal with the dreadful news of a fatality on the last day of the competition. It's the first time I've flown a competition that has carried such a high price and it was extremely sobering. Tomas Reich was a local Chile pilot and from what I saw over two to three weeks of flying with him, in the Andes Open (2-10 January 2018) and the SGP, he was an extremely competent and able pilot as well as being a thoroughly nice person.

Initially we all believed he had suffered concussion from a crash, but was basically fine, and we enjoyed

THERMALS COULD BE MUCH SMALLER, YET STRONGER (WITH PUNISHING TURBULENCE AND SINK AROUND THE EDGES AT TIMES)

■ You can see some of the excellent daily footage at: *www.sgp.aero/finals2017/race-coverage/videos*

Below: Extra thought is required on aerotow, with the only option being to land ahead in a rocky river bed (Sebastian Kawa)

the closing ceremony and the camaraderie of completing a wonderful competition. Ten minutes after the closing ceremony it was announced that Tomas had passed away and the mood, not surprisingly, changed instantly. Rest in peace, Tomas: the brightest stars burn fastest.

With that setting this article in context, here's my ramblings from what was otherwise some of the most challenging, but rewarding, flying I've enjoyed.

Things kicked off in late August with a very thorough briefing from Phil Sturley, who was incredibly generous with his time and advice. Phil described what was needed to get the glider to Chile, which was tricky in itself. I am very grateful to my sponsor, Cairngorm Capital, and to Zulu Glasstek for preparing the glider and with their help we got the ASG 29 to the Cobra factory in Germany. I spent a full day putting it in a frame, with five other gliders, that was subsequently wheeled into a 40ft shipping container. Two similar containers carried a total of 18 gliders leaving from Europe for Chile.

On arrival we rigged and stashed the machines under linear hangars (albeit just roofs and hard standing, ie no walls). The paperwork in getting authority to fly was dealt with in 15 minutes so when I arrived on 27 December we were good to go.

Vitacura airfield in Santiago is relatively small and compact and requires a bit of extra thought on aerotow (briefly, the only option is to land ahead in a rocky river bed) and landing (one needs to promptly vacate the runway at the end of the ground roll to make room for those behind). The locals openly share their knowledge and each day Rene Vidal and Carlos Rocca detailed their thoughts on the task ahead. The gliding club is unique – it's more like a polo club. There's an absence of stained trousers, bobble hats and teapots, replaced by smartly dressed waiters, a daily three-course lunch before launch and cocktails on landing. Rather civilised!

I found the flying to be excellent. It is an intimidating environment at times and you definitely need good experience in mountains to fly the Andes. To me, it differed from flying the Alps or Pyrenees in ways I find hard to define, but including the fact that thermals could be much smaller, yet stronger (with punishing turbulence and sink around the edges at times). There were many areas where wide, shallow slopes could catch you out and there's a lot of unmarked and

Another Gold for Sebastian

THIS was my toughest competition ever, ***writes Poland's Sebastian Kawa***. I had a big problem with the glider at the beginning because it suffered from the heat and the wings were deformed. I had to work in the morning, rig the glider and fly task, derig it in the evening and sandpaper it. This was for four long days during the Andes Open.

Director Brian Spreckley and tasksetter Alfonso Soto tried to squeeze the maximum from pilots in the Grand Prix. Unlike previously, we flew deeper into the mountains, pushed through dark valleys with passes at 4,500m (14,764ft) high and areas far from known routes, with furious 12kt sink on long distances.

The challenge was interesting. There were traps, so no one knew which way would be quicker if we are not going to get stuck and have to come back. Leaders could become losers at any time, losing with conservative and slower pilots going around.

I used my engine in the Andes Open to come back to cross a mine and pass at 4,000m. Fortunately it is a jet, so it works at this altitude. Many times we were scared, many times delighted with breathtaking views, and always under the huge pressure of the race.

I was so tired after eight continous days at the airfield that maybe another two days and I would have given up. Unfortunately, there was also a fatal accident on the last day.

The quality of pilots was so good that you could reverse the winning order of the top three and it would also be OK. Very good European pilots found themselves in the last positions. We all regret that Carlos Rocca couldn't get a good glider and he had a new job, so didn't participate in the finals.

Above: Sebastian Kawa, winner of both the Andes Open and the SGP finals, adds two more Gold medals to his collection – 21 so far (plus a few Bronze and Silver medals!)

RESULTS OF FAI 8TH SAILPLANE GLIDING GRAND PRIX WORLD FINALS, VITACURA, CHILE, 13-20/01/18

1 Sebastian Kawa, Poland (JS1C EVO)
2 Sebastian Nägel, Germany (Ventus 3T)
3 Mario Kiessling, Germany (Ventus 3T)

11 Jon Gatfield, GB (ASG 29Es)

www.sgp.aero/finals2017/results-sgp/results.aspx

Left: Grid walk with Shaun Lapworth (Claire Heliot)

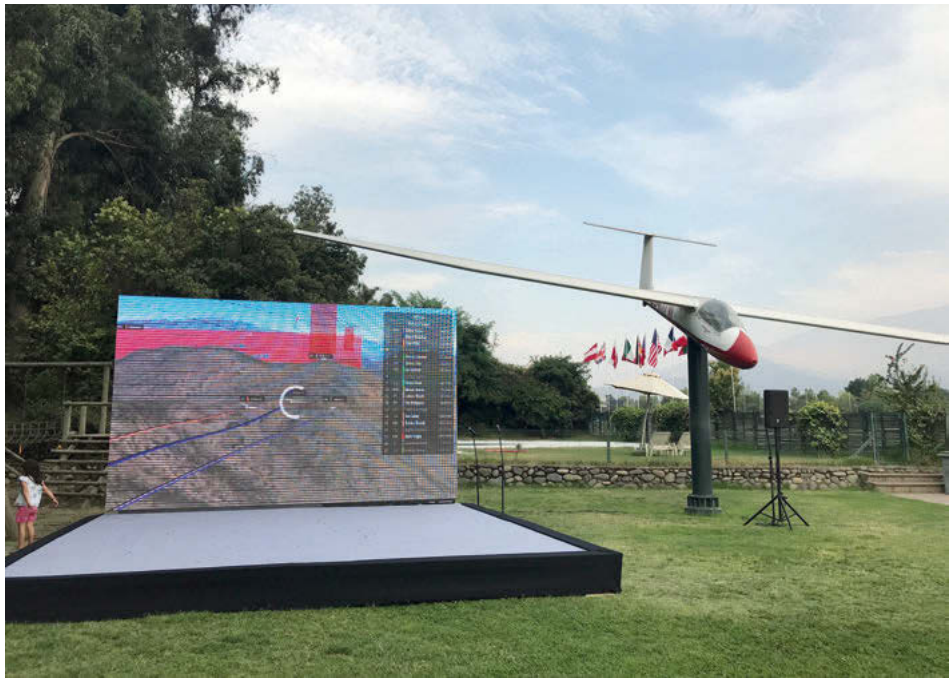
Right: Chile's Carlos Rocca competing in the Andes Open, flying his Ventus 2cxa 18m

Below (l-r): Jon Gatfield's ASG 29 stowed under the linear hangar; cocktails on landing – it's all rather civilised; the head of the Olivares Valley

Bottom: Live daily race coverage enabled those at the airfield, and viewers all over the world, to follow the action as it happened

Facing page: The spectacular mountains change in colour from white rock to dark black, with copper and gold stained areas and ridges of red

(Photographs by Sebastian Kawa and Jon Gatfield)



hard-to-spot wires around. The locals all used known "hotspots", which was fine for those that knew the place (about half the SGP field had flown here before), but not so great for those of us new to the location. Certainly there were times when the usual rules of sun and wind on a mountain generating good lift didn't always work.

The scenery is incredible. The mountains change in colour from white rock to dark black, with copper and gold stained areas and ridges of red. Before leaving the UK, I hoped at one point to fly with a Condor and in reality flew with them every single day I flew.

As for the contest I had a ball, secured two 6th places and got eight points, so finished 11th. The other competitors were good fun and there was no "gamesmanship" on the ground. I believe we were all treasuring the experience of flying together in such a special contest.

Two highs particularly stick in my mind:

On Day 2 everything seemed to work for me and I kept cleanly pulling into 5kt or better averages. Although a few km behind the leaders I was getting much higher and could take a more direct routing, even if I was all on my lonesome. About two-thirds of the way round I pulled into a climb, looked down and was shocked to see the two Sebastians (Kawa and Nägel) and Mario Kiessling joining two thousand feet below. It dawned on me that I was leading and, of course, that unsettled me! I started flying much more conservatively and predictably dropped back, but still finished 6th for the day.

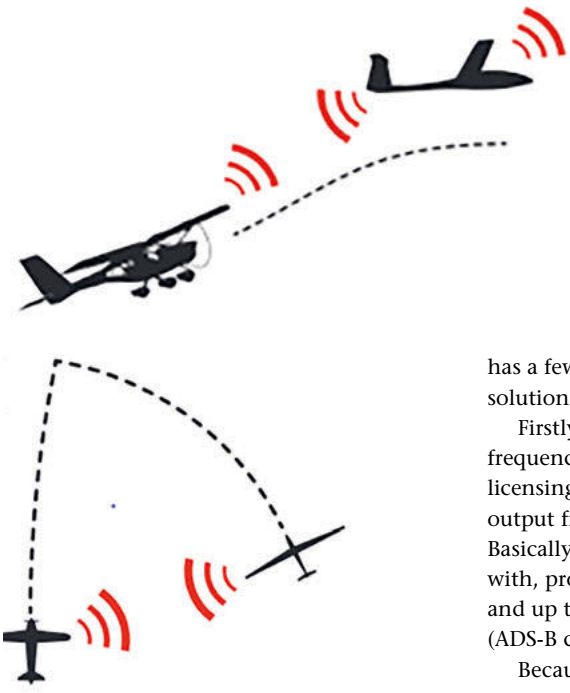
Day 4 required us to fly over the high peaks to the east. I chose to run the Olivares Valley, both going north and then again coming south. The Olivares Valley is a stunning classic U-shaped valley some 40km in length that leads up to 17,000ft peaks and a col at 15,000ft. On the way north, I couldn't resist the 8kt climb to 20,000ft and drank in the wonderful views of icefalls, glaciers and sharp rock faces. Coming back south I was with Sebastian Nägel and at 14,500ft we ridge soared the northern face of the Olivares pass until we could see the way over, flopped across and flew back onto the valley ridge. Awesome!

I can thoroughly recommend flying in Chile. The climate is warm and dry, the weather was reliably good, the Chilean people are friendly, helpful and great to be with, the Vitacura club is wonderful – it's all really rather splendid. The organisation of the SGP contest was flawless. The SGP team led by Brian Spreckley worked very hard from 08:30 to 22:00 every day and as a consequence everything ran very smoothly and the media was professionally done. In fact, it would have all been quite fantastic – until we heard that dreadful news just after the closing ceremony.

Jon Gatfield is living the dream: working six months a year in winter and touring mainland Europe airfields for the summers. He has 4,000 hours on gliders and loves flying in mountains, especially when the flight is followed by cold beer and peanuts. Jon interrupted his work this winter for a trip to Chile to fly in the Sailplane Grand Prix World Final. He can't wait to fly in Chile again

FLARM: IDEAL FOR GLIDING?

See and be seen, is FLARM the answer? Shaun Lapworth investigates...



Each FLARM system determines its position and altitude with a sensitive GNSS receiver

■ This article is the third in a short series addressing different conspicuity systems, their current shortcomings and future possibilities.
› See also *Helping hand with lookout*, pp16-17, Dec/Jan 18
› See also *ADS-B: the way ahead for GA?*, pp18-22, Feb/March 18

BUMPING into a fellow aviator in the sky is at best going to spoil your day and at worst prove fatal, so any system that improves your situational awareness in addition to "a good look out" has to be worthwhile.

Whilst the gliding community in the UK, Europe and further afield has embraced FLARM, the general aviation (GA) community and the commercial authorities have sought other solutions.

So why is FLARM so popular in gliding, but less so in GA and the commercial world? Well, whilst FLARM suits the gliding community very well (relatively cheap, power efficient, clever use of predictive track and speed), it may not be so appropriate for all general aviation and certainly not for commercial traffic.

The reason behind this is the technology employed by FLARM has a few limitations compared with other solutions.

Firstly, FLARM uses a "licence-free" frequency on the SRD860 band. Part of the licensing restriction is a maximum power output from the transmitter of 25mW. Basically the signal is relatively weak to begin with, providing a limited range of 10km and up to 20km for a very good installation (ADS-B can be as much as 100km).

Because the signal is weak, there are many environmental factors that affect its performance in an aircraft. Antenna position, length of cable, type of cable used and the number of connections, all affect the performance of the FLARM transmit and receive range. For instance, the FLARM signal does not travel through structures such as metal, carbon fibre or dense materials that make up the skin spars and ribs in an aircraft.

Trying to find the right place inside a glider to place the antenna for the maximum performance is very difficult and compromises have to be made. This problem becomes even more acute in GA aircraft, where the cockpit is even more congested and they often have a great big lump of an engine in front of them to boot.

Secondly, FLARM's predicted track technology is tuned to the speeds we travel at in gliders (up to 250km/h) and uses non-certified GPS engines. Whilst this is OK for gliders and much of the GA community, it would not satisfy the commercial world where aircraft travel much faster and want to have a greater degree of certified position accuracy.

Thirdly, not all FLARM devices will at present work with the other traffic solutions or display devices in a seamless way. However, there are some solutions that could offer pilots a view of these other technologies in addition to FLARM and, equally, a view of FLARM traffic on existing traffic displays such as LX9000, Garmin and SkyDemon.

So FLARM is not perfect; it suits the gliding community and the vast majority of the GA community, but it can be improved and adapted to enable better range and easier adoption.

PowerFLARM

To overcome the environmental problem of how to improve the range both in gliders and in GA, FLARM Technology in Switzerland developed what it calls PowerFLARM. Essentially, PowerFLARM is a development of the original FLARM device, now often referred to as Classic FLARM and works with Classic FLARM and the new PowerFLARM devices. It has a much faster processor, better interference protection from mobile phones, and the option of what is called antenna diversity. To you and me, that means the option of a second antenna. This second antenna is particularly useful for the GA community as they can potentially mount the antennas on the top and bottom of their aircraft where the antenna has an almost uninterrupted 360 degree view of the surrounding sky both above and below. If the gliding community would only accept

external antennas, we too could have a much improved FLARM range.

Most of the glider manufacturers are now making provision or are offering the installation of FLARM antennas in the fin of new aircraft. The material used in the fin is much thinner, with fewer layers of exotic materials and there is a lot less metal. This solution is a definite improvement and satisfies the glider pilot's need to keep external drag to a minimum.

Is mounting an antenna on the outside of a glider going to cause that much drag? Well it really depends on where you put it and what shape it is. Because FLARM range has become very important in knowing where your fellow competitors are in competition flying, we have started to see the installation of external dipole and fin-shaped antennas in the low pressure zone around the wheel box on some gliders. This suggests that the drag associated is so small that it is outweighed by the competitive advantage given by greater range. That being the case, the improved range and, therefore, situational awareness would be even greater from a safety perspective should the rest of the gliding community adopt a similar approach.

FLARM is unlikely to use a certified GPS engine (required by the control of commercial traffic), but the improved processor in PowerFLARM units could certainly handle the calculation for higher speed aircraft. However, the main use of the improved processor is to handle better and faster calculation of multiple targets from more than just FLARM signals.

PowerFLARM has the option of additional ADS-B, Mode S and Mode C in (the most common outputs for GA and commercial traffic). This additional option adds the transponder-equipped traffic to the FLARM data seamlessly. The data can then be displayed on a moving map or FLARM radar display, with different symbols depending on the type of traffic. Effectively, you can then see everything with electronic conspicuity within range on one screen.

So what can the glider pilot do to improve their electronic conspicuity?

If you don't have FLARM already, consider adding PowerFLARM with the option of ADS-B.

Make sure you regularly update your Classic FLARM or PowerFLARM with the latest free firmware. Continual improvements are being made to the predictive algorithm, filtering and security. It is now an annual requirement to upgrade your FLARM to the latest firmware. See: *www.FLARM.com/support/firmware-updates/*

If you have FLARM already, check your range using the tools freely available from FLARM Technology: *www.FLARM.com/support/tools-software/* Use more than one flight file from busy days to give you a better understanding of the strengths and weakness of your installation.

If required, make changes to your antenna position. Think of the antenna as the eyes of a FLARM. If it is buried behind the instrument panel and is not vertical, it will be nearly blind. However, if you can mount it away from electrically noisy instruments, with a good view of the sky, you should get a better range for both transmit and receive. Oh, and don't forget to turn your mobile phone off, they can interfere with Classic FLARM and reduce your transmit and receive range!

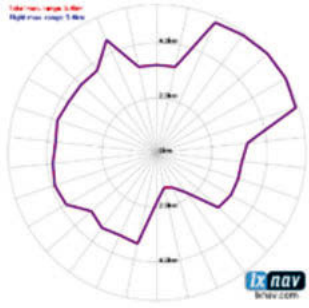
If your antenna is small, bent or in the wrong place, it might be possible to fit an alternative antenna in a better location.

If you can overcome the inbuilt glider pilot desire for a clean airframe, consider an external antenna for the best possible coverage. I am sure we will see more of this kind of installation on the competition circuit, as seen in the recent final of the Sailplane Grand Prix in Chile.

If you would like to add the ability to see transponder-equipped GA and commercial aircraft, consider adding ADS-B in to your Classic FLARM with an add-on box such as the TRX1090 or, better still, upgrade from Classic FLARM to a version of

Above: If you can overcome the inbuilt glider pilot desire for a clean airframe, consider an external antenna for the best possible coverage

Below: check your range using the tools freely available from FLARM Technology



Shaun Lapworth has been a club and nationals pilot for 15 years. Based at Lasham, he has all three Diamonds. He also likes to fly in South Africa, where he holds the 500km British and Continental record at 175km/h. Shaun runs NAVboys with Jake Brattle. *www.navboys.com*

THE BGA COMMENTS:

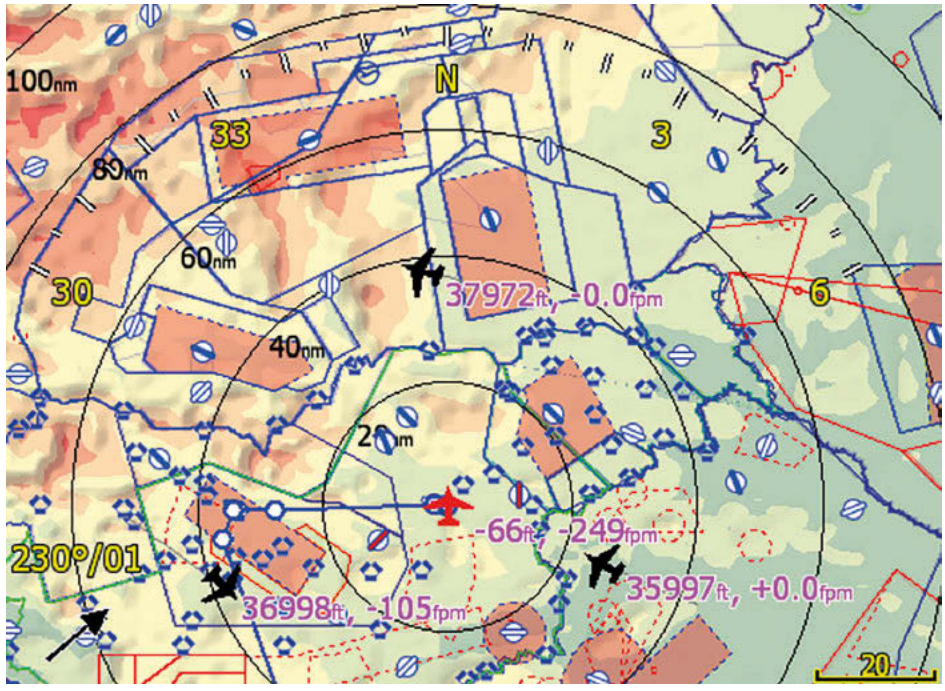
The BGA encourages the widespread use of traffic and collision warning systems in gliders, motor gliders and tugs. It can give useful warnings and enhance pilots' awareness, though of course it cannot and must not replace a good systematic visual lookout scan.

FLARM was invented to address our main collision risk: other gliders in the close-manoeuvring environments of thermals, ridge lift and circuits. Airfield circuits are the main risk for GA too. By giving accurate warnings in manoeuvring flight, and minimising the false alarms of simple proximity or straight-line-extrapolation alerts, FLARM appears to be the only effective system in these situations.

Apart from the increasingly popular PilotAware, it is currently the only system with adequate uptake to provide a significant GA safety enhancement and, except in France where the FFVV requires equipage in gliders, this uptake has been achieved entirely voluntarily.

The RAF has fitted it to its Tutor, Tucano and Air Cadet training aircraft and Battle of Britain Memorial Flight, and FLARM states that over half of new devices sold are for powered aircraft. There are now versions specifically for UAVs (drones) as well.

Every system has some shortcomings and foibles. Pilots need to know how to respond to warnings, and be disciplined enough to avoid distraction by or reliance upon displays; headings are displayed relative to the glider track, and can hence be misleading in a crosswind; and some aerial installations are nowhere near as effective as they could be.



■ Tip, If you use FLARM on your Oudie, LX9000 or LK8000, set the colour of aircraft above you to blue, green for below, and red for similar height – it makes it very simple when looking at the moving map to see who is where and where the potential conflicts are, even if you can't see them out of the window.

PowerFLARM with ADS-B, such as the LXNAV Power Mouse with ADS-B, or FLARM Technology PowerFLARM with ADS-B.

In addition to improving your FLARM installation, you might also consider upgrading your FLARM display to give you more than just a simple warning, but a view of other FLARM-equipped aircraft, a bit like Radar. The old style LED compass rose displays indicate the closest risk, but a radar screen view, or even superimposed traffic on your moving map, improves your overall situational awareness of FLARM-equipped traffic.

One standard across all FLARMs is they should be able to drive up to three displays in series. So, for instance, it is possible to keep your old LED compass rose display, but also feed the FLARM data into a moving map device like an Oudie or Dell Streak running LK8000.

Alternatively, you can simply replace the old display with a plug and play radar screen, such as the LXNAV FLARMView or Butterfly FLARM display.

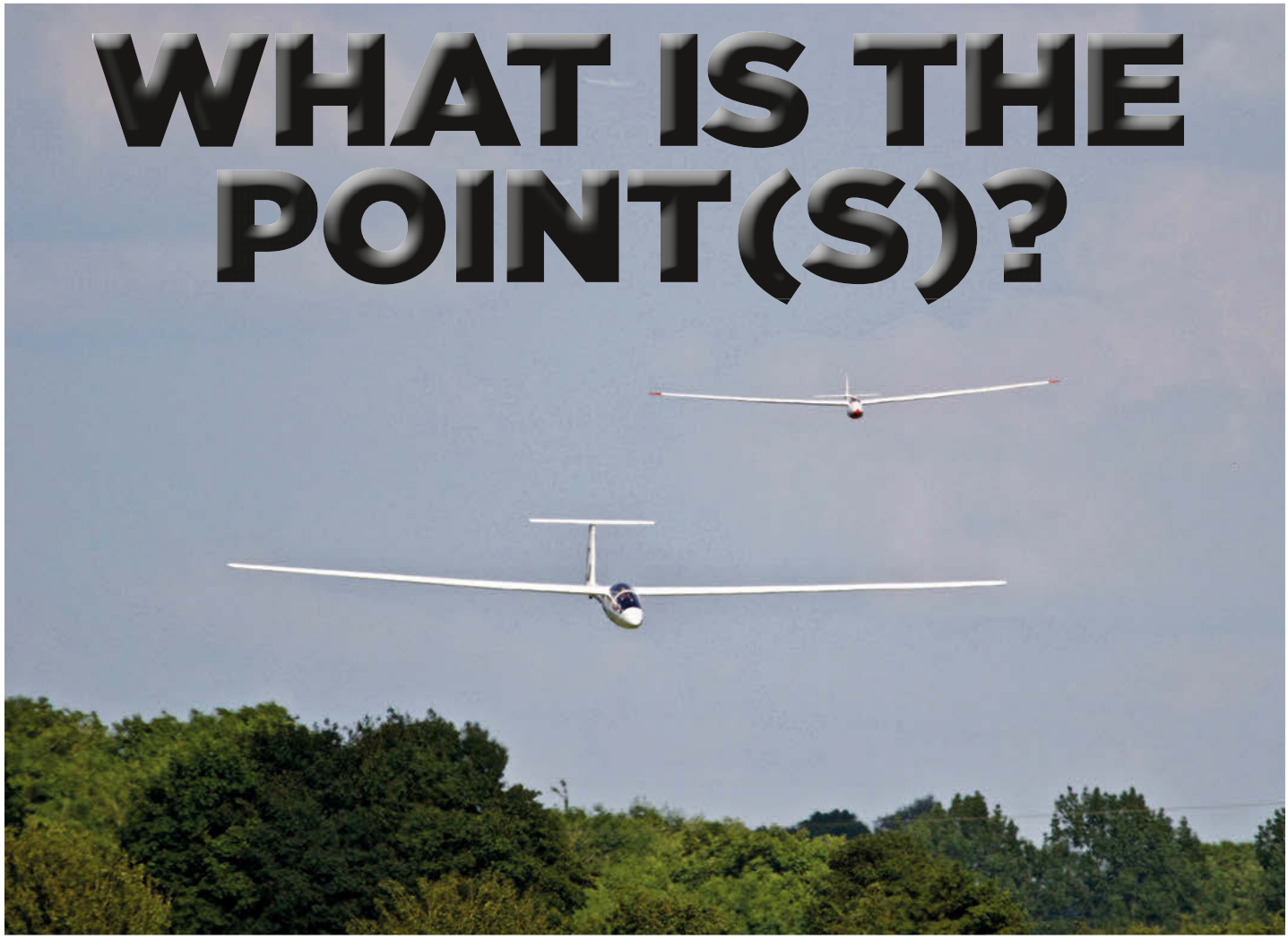
In summary, FLARM is ideal for glider pilots and GA traffic. It is cost effective, has wide adoption already and now has the option of seeing other traffic via ADS-B and Mode C/S in.

The BGA openly encourages the adoption of FLARM, as do EASA and Eurocontrol for GA. We can help ourselves by checking our installations and improving both range and conspicuity, but also considering adding radar type displays to improve overall situational awareness.

Whilst none of the above is a substitute for a good lookout, I bet you see more traffic when using FLARM than without.

FLARM is an ideal cost-effective solution for glider pilots and GA traffic

WHAT IS THE POINT(S)?



Coming in to land during the 2017 Nationals at Hus Bos (Max Kirschner)

If you find yourself baffled by competition scoring, you are not alone. Alan Langlands explains basics of the system

THE scoring system used in rated gliding competitions is quite complicated. It's not obvious how it works and to fully understand it calls for close study of the mathematical formulae set out in the rulebook. Even if you have the skills, it's still a bit of a slog to grasp all the implications that are hidden in the maths, so misunderstandings abound among pilots and even among competition officials (other than scorers, perhaps, who tend to be gifted technical geniuses). Nor is it entirely clear why it needs to be so complicated in the first place. This is a pity, because everything in the system is there for a reason and a reasonable grasp of the scoring system actually makes competition flying more fun.

How many of you have been at a competition briefing and heard the groans when the director announces an Assigned Area Task (AAT)? The groans aren't really because AATs are that difficult to fly, it's because many pilots don't understand them and have no way (other than doing the maths) of trying to understand them. Of course, what we don't understand we tend to fear and avoid.

Then there's the times when you do well on a difficult day when hardly anyone else does, but you get only a small handful of points… it seems so unfair. What's that all about?

Well, help is at hand. Scan the QR code or go to *www.sailplaneandgliding.co.uk/current-issue* to read an article which explains the scoring system in plain English.

■ **Scan this QR code to read the full article explaining competition scoring in plain English, or visit *www.sailplaneandgliding.co.uk/current-issue***

HOW YOU CAN HELP DIVERSIFY

Katharine York reports on the new BGA women gliding project, with a request for help in three areas to make it a success

The strategy includes the aspiration to have the demographic profile of the gliding population converge with that of the UK adult population within 10-20 years, particularly in respect to age and gender (Katharine York)

THE BGA Club Management Conference last November proved to be a catalyst for several ideas around introducing more women into gliding and developing them all the way through to competition level.

The level of female attendance was noted in a previous edition of *S&G* (*Our lifeblood*, p62, Dec 17/Jan 18) and it is perhaps unsurprising that once together we would start talking about how we could make a difference. The sky is a magical, inspirational place to be and we want to share that exhilaration more widely.

The revised BGA strategy discussed during the conference included the aspiration to have the demographic profile of the gliding population converge with that of the UK adult population within 10-20 years, particularly in respect to age and gender.

We start from the low point of less than seven per cent of glider pilots being women, giving the great advantage that it doesn't take many new entrants to make a significant difference. Every club has the potential to contribute to the growth of gliding in both size and diversity. The shift can come from something as simple as rephrasing a question that many of us have heard from "Are you here with your husband?" to "Are you here to fly?". Make it sound normal and automatic that you would expect anyone arriving at a gliding club to want to fly rather than spectate. At the same time, you win friends from those of us who do already fly and might feel a touch affronted that it's not obvious.

EVERY CLUB HAS THE POTENTIAL TO CONTRIBUTE TO THE GROWTH OF GLIDING IN BOTH SIZE AND DIVERSITY

A group of pilots – many, but not all, women – has established a project building on existing initiatives around women's gliding which aims to:

- promote the sport to women and girls, and get more women and girls to try gliding
- help women and girls already in the sport to stay in gliding, do more gliding and improve their skills.

The project is supported by the BGA Executive and spans initial awareness-raising to running an international competition. There are seven workstreams, which focus on different areas of gliding, each run by groups of volunteers who are passionate about the future success of gliding. To start things off we'd like your help with three things:

1) Tell all your female pilots about the virtual community and resource, Women Glide UK (WGUK), which is there to support women in gliding. Meet like-minded women and get info on events and resources targeted at helping women progress their gliding. Please encourage your women pilots join the community. Find Women Glide:

- WGUK on Facebook
- at *www.womenglide.co.uk*
- by email *info@womenglide.co.uk*

2) Keep an eye out for the results of the women pilot baseline survey. This survey aims to get accurate baseline information about women who are active glider pilots or who have taken at least a trial lesson. We want to find out how much/what sort of flying women do, or why they stopped gliding – and what will help improve things. The survey has just closed and we will analyse and publicise the results within the next couple of months. This is a great way to identify specific things that you can do within your club to encourage women pilots to join and keep flying.

3) Volunteer as a club or regional coordinator. The goal is for every club to have access to one person who will support and encourage your female pilots. The role is to have a friendly chat on a regular basis, on field or off, particularly if someone hasn't been seen in a while, to see how they are getting on with their flying and make them feel part of the club. This could include following up with female trial lessons to find out if they are planning to come along again. If you think this would be of use to your club for retaining and developing members, but

you don't have enough people, we may be able to find someone from a neighbouring club willing to help out.

While it would be fantastic to have women filling all of these coordinator roles that isn't always possible given the numbers. It also overlooks the important fact that every one of us established in the sport can point to a male instructor or club member who provided the support and guidance that got us to where we are. The most important attribute of the coordinator is a friendly and encouraging manner.

The project is already delivering results, for example:

- female pilots can join the women coaching programme for 2018 at *www.womenglide.co.uk/coaching/*
- we are building a stock of resources, templates, ideas and help for clubs trying to attract women members at *www.womenglide.co.uk/national-women-go-gliding-day/*

Meanwhile, if your club would like more women members, if you'd like to get involved in the project, or if you have any questions, read more at *www.womenglide.co.uk/women-gliding-project/* and email *info@womenglide.co.uk*

Harriette Rowden-Jones took part in High Flying Girls at Lincolnshire GC last summer. She is sitting in a Swallow that has been meticulously renovated by club member Kevin Briggs (Katharine York)

This page from top:
Robbie Robertson snapped this amazing wave cloud, which is being admired by his wife Jan, during a recent non-gliding holiday in Madeira (Robbie Robertson)

Eventualities all covered at Kenley? An emergency services training day in December 2017 (Steve Codd)

Facing page, clockwise from top left:
Top two photographs: Enjoying a flight from Denbigh at 23,000ft on 28 January (Keith Mcintyre)

This picture was taken overhead Tadcaster at 10,600ft looking SW during a wave flight from Burn on 11 November, 2017. Alastair Mackenzie said: "I towed to 4,600ft overhead Church Fenton. After a slow start I managed to climb to 12,300ft overhead Wetherby South (WBS). The trip back to Burn was interesting – 57kt on the ASI with 117kt over the ground!" (Alastair Mackenzie)

The next two photographs are sunset shots of gliders landing on Burn GC's RW25 – CMM and ERH (Alastair Mackenzie)

Preparing to hangar land at sunset, Lasham, 1 November, 2017 (Gerald Cook)

Eileen Scothern brings home a Burn Gliding Club K-21 after some unexpected February soaring (Steve Scothern)

■ If you would like your previously-unpublished photographs to be considered for inclusion in Gliding Gallery, send them to: *editor@sailplaneandgliding.co.uk* or upload to: *www.sailplaneandgliding.co.uk/dropbox*

LESSONS

René Lans reflects on a lucky escape that saw him walk away from a near fatal crash without a single scratch or bruise

I AM a relatively new entrant to the world of gliding. Like new arrivals to any environment where things have been a certain way for a long time, I found I was asking myself and others very many "Why?" questions: "Why do you do that?" "Why is that like that?" "Why is this necessary?".

Most of the answers made sense or allowed for a healthy amount of thoughtful disagreement, but often the answer sounded something like, "It's just the way it is," or "That's how it's always been."

On 1 October 2017 my perception and reality of gliding changed. I survived a very near fatal accident while taking part in a gliding competition in Potchefstroom, South Africa. The final impact happened from a height of about 10 metres; the glider cartwheeled, sustaining significant damage. I walked away, not a scratch or bruise. I have since replayed the flight in my mind, dreams and conversations a thousand times, trying to make sense of what happened. I survived, and so feel that I have an obligation to tell my story. Someone else might learn from my mistake.

I had the privilege of learning to fly at Lasham, in Hampshire. Excellent instructors, abundant facilities and, as a result, the ability to make steady, consistent progress. Lasham has the ability to teach a wide range of skills, from grooving the basic circuit to the subtle changes needed to increase cross-country speed. At the club, I found a group of like-minded people, willing to give their time and skills to help someone like me. In general, they were transferring their knowledge in the manner one would expect from a professional operation. This communal behaviour of the gliding fraternity is rare in the self-important world we live in today.

I recall the initial training mainly revolved around the processes and procedures necessary to prevent the new pilot from murdering his or her instructor. From the trainee's point of view the initial goal was, without a doubt, to go solo.

From there the target was working through the various flying skills needed to pass the Bronze flying test, and then cross-country flights would be possible after the

various Silver requirements had been met.

The initial phases of training laid the foundations for being a safe pilot. "Primacy" they called it, the actions or behaviours one would revert to under stress. As one moved on to the cross-country scene, safety became less externally emphasised and one's own responsibility. Safety comments, reminders and warnings are dished out at briefings, etc. Of course, the CFI and others are there to keep an eye on unsafe behaviour. Out of all the pilots I've met since starting, only one is what I would call a real cowboy. Describing glider pilots as prudent individuals would be quite correct and probably has a lot to do with the self-preservation instinct most of us can thank our genetic ancestors for.

I made good progress. I went solo in mid-2014 and the following year achieved all the BGA badges, but for the Diamond height. The only real achievement, I feel, was the Diamond Distance – a 500km flight lasting nearly eight hours. I made it home on the last bubble of the day, so tired I could barely speak coherently, but happy. To satisfy my new addiction, I also acquired my NPPL during the winter of 2014/15. From solo, I organised my life in such a way that I could fly at any available opportunity, provided I didn't put my work or family at a disadvantage.

Up to 1 October 2017 I had a total of 350 hours, with 80 per cent of my flying in the UK (Lasham), and the remaining 20 per cent equally shared between the Alps (Saint Auban) and South Africa (Bloemfontein and Potchefstroom).

The 12-month period before 1 October 2017 was my slowest year of flying. For various reason my flying was limited to approximately 25 hours in a motor glider and 30 hours gliding.

I had taken part in the South African Nationals in October 2016. I flew in the 15m Class and enjoyed it immensely. A midfield result, but I learned a lot. I wanted to learn more about competition flying and was going to do it again the next year. So, for 2017 I decided to take part in the Open Class 18m group. I would be flying a Ventus 2ct with some world-class pilots and, if I could just keep up and observe, I would be much wiser afterwards. I saw no risk in flying in the Open Class. In fact, I thought it would be less risky, with experienced pilots to be in close proximity to in the thermals, and safer and easier to fly gliders. Surely only my ego could get hurt…?

René Lans was competing in the Open Class at the 2017 South African Nationals

Far left: The contact of the right wing with the ground had initiated a clockwise rotation of the glider, which meant the cockpit did not smash into the ground

Day one of the competition saw both the Club and 15m Class scrubbed as a result of the weather. Only the 18m Open Class and its 30 or so competitors would fly, as the weather, dominated by thunderstorms in the area, allowed only for a short launch window. Launching started at around 11am, and I was the fifth or sixth pilot to be towed. I immediately found a thermal and climbed to about 10,000ft above mean sea level (AMSL).

Looking towards the south-west, I noticed a storm cloud approaching and it was completely engulfing the start line of our task, which was Gypsym Dam, 10km away. On reaching cloudbase I headed off towards the north of the airfield, where the sun was still shining. We tested potential clouds for lift, but by then the approaching storm had already started killing the thermals. Only the more experienced pilots – venturing much further north, away from the storm – managed to find lift.

I slowly descended, keeping an eye on the storm and the airfield, anticipating

LOOKING TOWARDS THE SOUTH-WEST, I NOTICED A STORM CLOUD APPROACHING AND IT WAS COMPLETELY ENGULFING THE START LINE OF OUR TASK

LEARNT

LIKE A WOUNDED ANIMAL AT FULL GALLOP, IT SMASHED INTO THE GROUND, MAKING A CARTWHEEL. I RECALL THE LAST SECOND AS THE RIGHT WING DUG IN AND THE GROUND WAS APPROACHING HEAD-ON

■ See *www.sailplaneandgliding.co.uk/current-issue for* video footage of a typical storm encountered In Potchefstroom during the week of the 2017 South African Nationals

René Lans learnt to glide at Lasham and went solo mid-2014

a relight. At this stage the storm was approaching from the south-south-west; the airfield was south, and I was approximately 5km north of the airfield, using the height gained to test possible sources of lift.

The area we were flying over had a few fields to land in; in fact, at briefing this area was highlighted as ideal to land in if low at the end of the day. The competition organisers deliberately routed us this way to give a straight approach to the main runway, 21 Left. Once you've rounded the final control gate, 10km out from the centre of the airfield, it would align you with runway 21. A 3km finish ring at 300ft marked the end of the competition task.

My training was kicking in, I was approximately 2,200ft above the ground, and I was assessing the landing options. I could still see the remainder of the competitors being launched down runway 030. One aerotow passed right underneath us. I jettisoned about 30 seconds of water from the ballast tanks. A few other gliders were around me.

One glider in particular, Alpha Juliet, is relevant, as he commenced to land on Runway 21 Left just before me. I made one final three-quarter orbit to give myself some space behind him and started my approach. At 1,450ft I calmly initiated my pre-landing checks, mildly disappointed that a relight would be required. Water open, undercarriage down, straps tight, flaps to 0, and I made my radio call: "Glider Papa Mike landing 21 Right." I started flying in the more westerly direction required to align on to 21R (the taxi way) and just did a check on the trim for landing speed. At this stage I considered the wind for approach and noticed that the Oudie IGC showed a wind of approximately 60km/h. What!? Minutes earlier we had calmly drifted down, no wind to be concerned about.

I could hear Alpha Juliet in front speaking to someone on the ground and he said: "I first need to make it to the airfield." I realised something was wrong.

I had set off on approach probably about 50ft above him, but the one final orbit had put me about a kilometre behind him. In reality, I was thus below him. If he was concerned, I had to be concerned!

Things started to slow down. I can recall my vision narrowed and I became fixed on the problem. I was losing more height as a result of what I think might have been the turbulence or curl-over created by the large military hangars on the western side of the airfield.

I made a radio call to say that I was changing to 21 Left. Runway 21 Left had been extended a few years earlier by approximately 200/300 metres, and now that there was some space between me and the glider in front, I could land behind him on the same runway. The additional 200/300m would come in handy. It looked like he was now slightly further away, but he was still below me.

A 60km/h headwind meant that I had to allow an extra 30km/h on approach for the wind gradient. My airspeed indicator was showing 130km/h, but it was clear I was not making enough progress over the ground. I was losing height like crazy. The sink on the variometer at some stages indicated five/six metres per second down and I started to get worried. By now I was in no-man's land. The last few kilometres on final approach is boggy reed bed, with willow and gum trees sprinkled at irregular intervals. A paddock or two, littered with anthills, weren't options, either. I had to make the runway and this was not going to be straightforward.

"Potch gliding, Papa Mike 21 Left, final glide marginal!" I said over the radio.

I couldn't believe what was busy happening. I considered what I could do: Close the water and push the nose down, in my mind that was it. I needed to get out of this wind, pick up some energy and gain the ground effect. I had approximately 400ft of height remaining. The glider in front touched down, just making it on to the runway. Down, down, down. About 2km to go, but then the most worrying of all surprises: I was on the deck after losing all

that height and having to swerve between the oncoming trees, but I had gained no speed. In fact, it looked like I lost speed; 120km/h, and falling. This was the effect of the wind gradient.

"Potch Gliding, Papa Mike heading to threshold 21. Mayday! Mayday! Mayday!" It was clear I was in deep trouble. There were no more options. It had happened so quickly.

Little did I know that the airfield did not hear the Mayday message. By then I was so low that I was beneath the runway. The runway extension meant that the threshold had been elevated from the surrounding reed bed by approximately 15 metres. I was heading toward a massive 15-metre earth wall and the glider was already making the tell-tale bobbing signs of stalling. By now everything was in slow motion. How did I get here? How am I going to make it there? It's still so far. Two trees to squeeze between, quick look to the right, I'm clear. One final tree to miss, hold … hold … hold … please hold.

Just before the earth bank I pulled up, praying that the glider would obey. Like a thoroughbred, it executed my final command, but then the effort was too much. I'm not sure by how much I cleared the bank, but there was no more control. Like a wounded animal at full gallop, it smashed into the ground, making a cartwheel. I recall the last second as the right wing dug in and the ground was approaching head-on. I closed my eyes, braced for the coming impact.

A thundering smash and then… silence. I open my eyes. I'm okay, I'm alive. A quick scan of my body: I'm fine.

Then, just astonishing disbelief! I got out and walked around the glider in a daze. I looked at it from all sides. It nearly killed me and it saved my life.

Someone is approaching. They speak to me. I talk to them. The last few minutes, a surreal time warp.

The first to arrive were the club chairman and his wife, who told me: "We heard the marginal call and saw you sinking lower and lower, then you disappeared. We jumped in the car and started driving. We are just so glad you are alive. Two years ago, we had a fatal accident."

Then others arrived. They approached the glider as if it was an alien spaceship. All of them stared at it in disbelief. They looked at me. "Are you okay?" The glider was severely damaged. It had given its life to save mine.

Above: The site of the crash landing, with the storm visible in the background

Below: part of the grid just before launch, with the storm visible in the background

The tailplane was broken and it was lying submerged in the beige African grass. The contact of the right wing with the ground had initiated a clockwise rotation of the glider, which meant the cockpit did not smash into the ground. At the point of impact, the tailplane, left wing and undercarriage absorbed all the energy of the crash.

When the owner of Papa Mike arrived, I approached him and tried to apologise. He had rented it to me for the nine-day competition. He runs a small gliding business from Douglas and we were at the beginning of the gliding season in South Africa. It was not only the damage to the glider that would affect his business, but also most likely the loss of income for the entire season. I felt like a dog. All he said was: "It doesn't matter; you're okay."

Soon a team had assembled to mop up my mess. Like paramedics arriving at the scene of a car crash, they got to work. They had obviously done this before, I thought. They took pictures. They splinted the broken tail, removed the bent undercarriage, and before you knew it, the glider was back in its box.

We left the scene with a few new scars in the landscape, but other than that, no one would know what had happened here. Once at the clubhouse, I started processing the event.

Of course, people asked me and I told

I GOT OUT AND WALKED AROUND THE GLIDER IN A DAZE. I LOOKED AT IT FROM ALL SIDES. IT NEARLY KILLED ME AND IT SAVED MY LIFE

IT'S AN ISOLATED PLACE TO BE, AS THE SURVIVOR OF A SINGLE-OCCUPANT PLANE CRASH. ONE IS LEFT PRETTY MUCH ON ONE'S OWN TO REGURGITATE THE ENDEAVOUR

René Lans went solo at Lasham in 2014 and has two Diamonds. He has 350 hours, with 80 per cent of his flying in the UK (Lasham), and the remaining 20 per cent equally shared between the Alps (Saint Auban) and South Africa (Bloemfontein and Potchefstroom)

the story. I encountered as many variations in reaction as there were times the story was told. Some were genuinely interested, some had definite preconceived ideas, some weren't interested at all. Some didn't even ask: they had heard and seen it all before. Their faces showed an agreeable expression while trying to hide the condescension. An inexperienced pilot, misjudging his final glide. A pilot flying outside his comfort zone. If you know what you are doing, this won't happen. Pilot error.

It's an isolated place to be, as the survivor of a single-occupant plane crash. One is left pretty much on one's own to regurgitate the endeavour. There is no one to verify or confirm the happenings. There is no one with whom to relive those fateful last five minutes.

With a bit of time, maybe as a result of the adrenaline and shock, one starts to question one's own recollection. Was the sink really six metres per second? At what height did I start the approach? Did they really still launch the remaining competitors with that tailwind?

The video gets played over and over and soon, like one of those old VHS tapes, the quality starts to suffer. Certain scenes remain playable and, as a result, are shown on repeat.

During the next phase, one starts to question one's actions. What should I have done? What could I have done? What should I not have done? And this leads me to my lessons learnt. Fortunately, the IGC trace of the flight recorder helped to confirm most details.

Here is my self debrief:

- I didn't appreciate the instant effect the storm could have on its surrounding area, even from a few kilometres away.

I grew up in Potchefstroom, and had seen hundreds of similar and much larger storms. On the ground you can feel the storm approaching. You can smell the change in the air. It goes still and then suddenly the gust-front rolls in with the wind, everyone runs for cover and five minutes later there's a serious downpour. "Wolkbreuk": that's what we call it in Afrikaans. Literally, the cloud breaks.

I vividly recall Afandi Darlington's article in *S&G*, in which he gave a very honest recall of his crash (*Rieti – a sting in the tail*, pp20-22, April/May 2015). I remember reading the article several times with the hope that it would sink in. Yet, I didn't connect the dots.

- I shouldn't have made the one final turn before starting my approach. A reasonably banked turn can eat up a few hundred feet and adds at least another kilometre to the flying distance. It also meant that during that turn, the wind had pushed me further away. Textbook positioning at High Key is not necessary! Excess height can easily be bled off in the circuit, on approach, or once safe over the airfield. The airbrakes are powerful. One cannot regain the height once lost.
- I could have and should have increased my speed gradually and earlier, once I noticed the strong headwind. I am taken back to cross-country "flying into wind" theory. I think this is one of the main differences between me and the pilot ahead.
- I could have pulled up the undercarriage;

there would have been a reduction in drag. There is no way to know if this would have made enough of a difference, but at impact the wheel absorbed a significant amount of the energy and saved my spine, so for my outcome I prefer it out.

- I could have been more mindful of the wind on the way down.
- I will be mindful not to be influenced by others in my area, no matter how experienced they are. I will try to make the call independently, trusting my judgement.
- I could have started the engine at 2,000ft or landed in a field, but my judgement was that it was not necessary. A 13:1 glide ratio required to reach the centre of the airfield confirmed what my eye told me.

Years of safe flying

I am not naive, but I never thought I would be in an accident. In my mind, as long as I flew conservatively and stuck to what I had been taught, I would have years of safe flying. Quips like, "The most dangerous part of flying is the journey to the airfield", or "Any landing you can walk away from, is a good landing", are not helpful; they should be stamped out like wildfire. It creates an unrealistic risk understanding, especially amongst the inexperienced.

This brings me to the reality that settled in as I spoke to more and more pilots. So many of them had been in accidents, serious, life-threatening accidents. Some had been in two or three. Many of the accidents had a similar ring to mine.

It became clear to me that what happened to me was not special, and that gliding can be a very dangerous sport. (As I am writing this, there have been two accidents at the Sailplane Grand Prix in Chile, one of them fatal. RIP, Tomas Reich.)

Benno Beesten, one of the German pilots taking part in the Nationals, mentioned that they had done some statistical work in Germany on the risk in gliding. According to him it was on the same level as being a commuting motorcyclist. That is way higher than I would have guesstimated. I might be wrong, but my assumption is that during competitions this risk might very well be even higher.

Where does this leave me? I love gliding, but I have two small children at home. My concern boils down to this: if you wipe my memory and put me in exactly the same position there is no guarantee I will not step on the same landmine. I will now, obviously, try to not make the same mistakes, but the next landmine might not be a storm, but something different. My judgement might falter again and next time I might not be that lucky.

Today it is unimaginable to drive around in a car without wearing a seatbelt, or for the car not to be fitted with airbags. Less than 20 years ago, this was normal.

In gliding terms, we fly old aircraft without safety cockpits and no instant reliable method of propulsion. This was the norm, because there were no alternatives. Gliding evolved this way, and most of our training and methods deal with this problem. However, instant propulsion technology has become available and, like airbags, should become the norm.

■ In my view it is not a matter of choice or preference. It is not a matter of liking the FES (Front Electric Sustainer) system or not, it should simply be installed in all newly manufactured gliders.

This includes gliders for competition pilots. Manufacturers should integrate the technology in their designs and not merely add it as an afterthought.

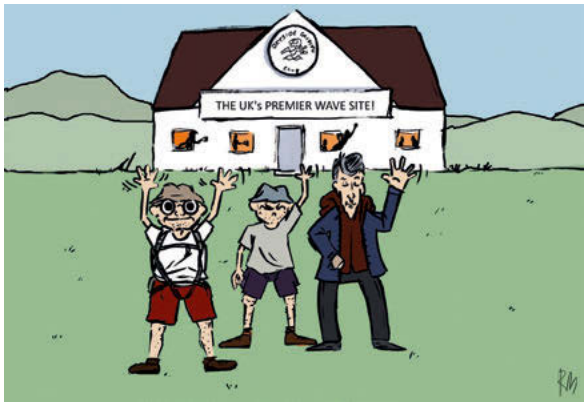
This will help to alleviate the performance sacrifice, reduce the cost, make it mainstream and, more importantly, save lives!

Imagine ordering a new BMW and asking for the airbags to be removed because you are willing to take the risk and want a reduction in costs. Would that make sense? Why do we do it in gliding?

Arguing against this is like saying you don't need to wear your seatbelt if you stay within the speed limit and drive safely. The technology has changed for the good, we should insist on it and it will become the norm.

ADVISORY 5: BUSTING MYTHS... OR NOT

Questions pre-solo pilots want to ask... but never dare to! Ebenezer Grimshaw breaks taboos, dispels myths and restores reality



The UK's premier wave site

I HAVE BELATEDLY CONCLUDED THAT THERE MIGHT BE SOMETHING IN THIS ELUSIVE WAVE MALARKEY AFTER ALL

CONTRARY to popular belief, the line between fact and fiction is far from straightforward. A fiction can be true in many ways and a fact grossly misleading. During a late night *après-dejeuner* stroll, CS Lewis changed his whole belief pattern when JRR Tolkien and Hugo Dyson persuaded him of the concept of *True Myths*.

It's a shame that none of these famous Oxford academics ever took up gliding, because such notions would really motor… I mean travel… in our sport. The sky is blue… the day is clearly dying… but some idiot glider pilot has *faith*. He is ludicrously convinced that the day's very last thermal has his name on it. If he is right he wins a competition, or sets a record… and if he is wrong, he ends up stuck in a field many hours from tea and hot food. In such situations facts become blurred and myths grow effortlessly!

Now some gliding myths can be reasonably busted. After furtively reading Philip Wills under the desk in maths lessons at school I nurtured a couple of classic myths for many years:

- That there was a Golden Age of Gliding (which I had just missed)!
- That the exploration of the skies was being boldly undertaken by the Common Man.

Both of these are, sadly, untrue. There may have been, indeed, a Golden Age Of UK Airspace… before it all got carved up on a nod by towns trying to pass off WW2 airfields as 'International' airports. However, the gliding was rough, L/D ratios were steep, rigging was awful, retrieves were hard graft and there were no pop-up motors, nav-aids, or even decent roads. And in the second case, when you read Wally Kahn's book (*A Glider Pilot Bold*), you begin to realise that much aeronautical endeavour of the late 40s, 50s and early-60s was not the Common Man at all… but a bunch of servicemen and rich toffs larking about!

Myth busting has to be done with care… take wave lift for instance. After three becalmed expeditions to the Grampians I became convinced that the whole business of mountain wave lift was a con. I strongly suspected it was a tall tale told by top tricksters… a slick in-house gliding tradition… like Father Christmas. A sly hoax told by People of Seniority to neophytes like me with just the slightest of winks… complete with dummy oxygen bottles and photos taken from airliners with glider instrumentation expertly Photo-shopped over the top. Easy to understand the need to do this of course… the urge to flesh-out dreams with fluid dynamics comes to us all sooner or later! When a certain northern club near a certain Royal Estate dubbed itself 'The UK's Premier Wave Site' I thought they meant something like the cartoon on the left.

However, when you suddenly find yourself rocketing smoothly upwards past 10,000ft over Ballater with the vario off the stops and the altimeter winding up faster than the seconds hand on a watch, it's hard even for me to pass it off as ridge lift! So I have belatedly concluded that there might be something in this elusive wave malarkey after all.

But what does it all mean for you, the fledgling student of glider flying? Can you really stay up all day in a glider? In Britain? Really?

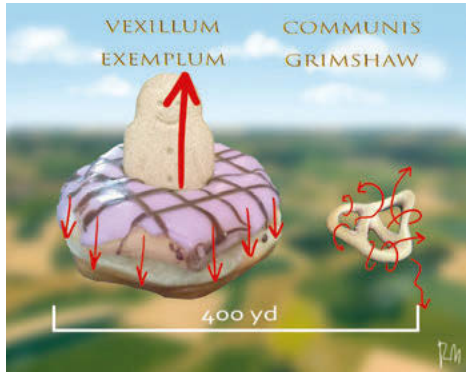
In a fallen world people avoid realities, so there is a tendency to simplify things and 'nice' them up. The conceptual models you

get given tend to be a bit 'Janet and John', so bearing in mind that few write for beginners in magazines, a bit of myth-busting at this delicate stage might be helpful:

■ ***Thermalling Myth 1: The objective of gliding is to soar… to stay aloft.***
Wrong. The object of the exercise… as far as you are concerned… is to get your instructor round a circuit without them complaining. It's almost impossible to achieve because, as I explained in an earlier advisory, the better you get at flying, the more they complain!

■ ***Myth 2: The instructor wants me to soar. He keeps teaching me how to centre a thermal!***
Deceptive. The instructor wants to see if he can lure you into an aeronautical indiscretion… like drifting too far downwind from the airfield whilst distracted by the whole soaring thing.

■ ***Myth 3: Thermals are great big doughnut things that you can centre by reading all the books and studying all the diagrams in publications… like*** **Sailplane & Gliding.**
Well, Yes and No. The picture above right shows, on the left, *that* sort of thermal… the type you read about in books and magazines. It is indeed a doughnut with all the best lift in the centre. I've dubbed it 'Standard Model'… only in Latin… a forlorn bid to raise the educational level in this magazine. (*Steady – you can go off people, you know - Ed.*) Doughnuts do exist of course… but mainly on Very Good Days… or in continental interiors. But training cannot wait for exceptional conditions like that! On a normal day what you will mostly



come across in Britain is something far more paltry and shown here on a roughly similar scale… to the right. Let us call it a common 'Grimshaw'… for want of any accepted parlance.

As you can see, a 'Grimshaw' is more like a small, demented pretzel… which can be as little as thirty-seven yards across. You can almost sort of not quite soar in them! They are also incredibly unreliable… just like Grimshaw in fact. This brings us to:

■ ***Myth 4: Try as I might, I can only stay in lift for half of my thermalling turn. This must be because I am only a beginner and Not Very Good At Centring.***
Most likely you're in a 'Grimshaw', but think you're in a doughnut. If you're getting lift as much as half the way round a 'Grimshaw' you're probably doing OK. Get your instructor to demonstrate steady lift *all* the way round *in the same thermal*. Notice how reluctant he, or she, is to prove the point! If they do accept your centring challenge notice how steep the turns are now… nearly

THE INSTRUCTOR WANTS TO SEE IF HE CAN LURE YOU INTO AN AERONAUTICAL INDISCRETION… LIKE DRIFTING TOO FAR DOWNWIND FROM THE AIRFIELD WHILST DISTRACTED BY THE WHOLE SOARING THING

THEN, AT 39 KNOTS AND A SMALL ORBITING DIAMETER, THE BEST OF ANY THERMAL IS YOURS FOR THE TAKING... EVEN IN A 'GRIMSHAW'!

■ All cartoons by Ross Martin

vertical! Your efficiency plummets… and even then there's still a sector where the vario drops back! So it's not altogether you. Blame the weather… this is Britain after all.

By contrast, try stooging about almost at random above 3,000ft under cumulus lines where the lift pattern has spread out and become even vaguer with height. Keep the speed down and the bank angles very small and you'll be surprised how long you can stay up!

■ ***Myth 5: If I had a much hotter glider, I could thermal a lot better.***

Profoundly Wrong. The reverse is true. Yes the Hot Ships have phenomenal performance, but notice how they waste most of it whizzing round the outside of lift at over 50 knots. If you really want to out-climb your club mates, buy a 1950s Olympia 2b… or, if you don't fancy a draught in your ear, try my 1962 Skylark 4 … or a K-6. None of these are expensive. Then, at 39 knots and a small orbiting diameter, the best of any thermal is yours for the taking… even in a 'Grimshaw'!

Of course, when you get near the top and the Hot Ships suddenly scarper it's a different story. Do not try to follow them! But for local soaring you can't beat an old, slow, wooden glider. What's more, you can paint it as boldly as you want. Just don't fly it boldly! Oh… you have to solo first of course!

■ ***Myth 6: Thermalling is inherently difficult and requires great skill.***

Not on a good day it doesn't. On that rare day when the sky is indeed full of fat doughnuts it's EASY! Your Granny could manage it… probably. No one tells you this… you think your club mates are all whizz kids, but if they're not racers they're probably much like you… only more confident. Remember what they said about pianists? It takes about 10,000 hours of practice to be worth listening to… and gliding's not as tough as that! Except no one wants to listen to a glider of course... apart from me. I quite like it…

■ ***Myth 7: To soar in a weak British thermal I must do it exactly the way it says in books and magazines.***

Yes… and no. In a 'Grimshaw' try reversing the procedure… opening up in lift and tightening at the first sniff of sink… sometimes it works almost as well! So what does that tell you? I reckon the main argument is going to be about the ratio of 'Grimshaws' to 'doughnuts'. I reckon it's about seven to one, but others, who fly only on Good Days, will probably claim it's lower. Please don't ring the Editor…

I remind readers this is an as-you-find-it thumbnail guide for struggling newbies only. If you're a pundit of any kind and demand exactitude and the Big Picture, I recommend G Dale's excellent publications… he explains clearly why some thermals are rubbish and tells you where to find them. Or you could just follow me around. There are no 'Janet and John' diagrams… although even G says his are still simplifications! I used to specialise in locating useless oversimplified thermals and often had the complex sink surrounding them mapped out to a T.

So, nil desperandum, Ab Initio*… despite your untimely return to earth you're really in august company. It means you can join us in the warm clubhouse for tea and a hot lunch before having another go.

You need to make the most of all unexpected opportunities in gliding… as you will find out! One day you'll be stuck in a cold, gateless field with no prospect whatsoever of hot food and a cup of tea…

■ **Next time: Gliding's Bermuda Triangle.**

Ebenezer Grimshaw

** with apologies to both Diana King and Stéphane Vander Veken (thanks for the letters).*

Is the new HpH Twin Shark a worthy competitor to the Arcus and ASG 32? Absolutely, it is among the finest two-seaters I've flown, reports Mikael Roslund

TWIN S

SHARK

THE HpH Sailplanes factory in Kutná Hora, in the Czech Republic, is probably the most modern sailplane factory I have seen. Compared with some other factories I visited, it is like comparing hostels and Sheraton. HpH Chief Executive Jaroslav Potmešil piloted us to the airport just under one kilometre outside Zbraslavice, a small town located about 100km east of Prague.

A grass field of about 800m has a fairly significant downhill slope in the starting direction. Any aircraft without a powerful engine would disappear down the hill, then appear a little further down the valley.

There the Twin Shark was set up at the end of the road together with an Arcus M, which they had as comparison aircraft. They had done some comparison flights and so far they were very pleased with the results. The

IT IS USUALLY SAID THAT AN AIRPLANE THAT LOOKS GOOD ALSO FLIES WELL, AND IT CERTAINLY DID

Above: gas lever and propeller stop in the same console
Below: fail safe fuel indicator

EB28 cockpit modified for tall and generous build pilots

Twin Shark is supposed to compete with the Arcus and ASG 32, and it's probably going to be doing very well too. The Twin Shark we were flying was the prototype, OK-7393, but we were not trusted to fly it ourselves, and I can understand that. You may not be too popular if you crash the only machine built. Jaroslav wanted to sit in front and keep an eye on the situation and, in addition, it was not equipped with engine controls and instruments in the rear seat.

At first glance it appeared to be a very nice build. The body is basically taken from the EB28 with some minor modifications. Tail and rudder are new. The elevator is also new and it has small cute ears, winglets, in the tips pointing downwards.

The wings are also new and very nice. Profile PW10-145 14.5 per cent. Swept back towards the tips with a smooth transition to the winglet. It is usually said that an airplane that looks good also flies well, and it certainly did. It is equipped with flaperons and SH type airbrakes. A slight deviation is that the outermost aileron follows up, but not down. Another thing was that on many other flapped aircraft when selecting landing flap, the ailerons go up – not on the Twin Shark. Here the aileron follows the flap down.

Jaroslav explained that such a mechanism is a bit complicated and expensive, and as the current configuration is so good, it is not necessary. He also said that there was no need to use negative flaps at the start, unlike some other flapped aircraft, because the ailerons are so effective even at low speed. Just like the 32, the wing is optimised for cruises around 150-170km/h. Now, it was the prototype we were looking at and there was much left to improve on it, which stressed Jaroslav on our behalf. To mention a few things, there were not many seals or zigzag tape on it and some buttons and controls would be placed elsewhere.

Best L/D is estimated at 49 @ 128km/h, and this is basically the same as at 32, and the lowest sink 0.72m/s @ 92km/h. With a maximum weight of 800kg, which is 50kg less than the 32, you get a wing loading of 52kg. The wings also hold 120 litres of water.

The rear seat was very spartan. As mentioned earlier there were no instruments, "just" an LX9000, and I was looking over the shoulder of Jaroslav to watch the ASI. Now Jaroslav is quite big (110kg), but luckily he had placed most of his body mass horizontally and in the direction of travel and not vertical so there would be no major problems. Before the flight, a friendly soul helped me get an ASI display on the LX so now I had my own indication of speed. Otherwise, it was like sitting in the back of an EB27/28; when you get down, you're sitting down.

I did not try the front seat, but in the 27 if you are not comfortable it does not take long before you feel it in your back, unless you have picked up some pillows to bring along, so I hope they have thought about something here. HpH has made the cockpit for tall pilots and, according to Jaroslav, a pilot of two metres plus should not be a problem.

Spacious cockpit

"The spacious cockpit easily accommodates tall pilots, and those of generous build," Jaroslav explained. Talking about generous build, two small "steps" were on the floor on both sides that could be used when you were getting out – because it's a one-piece canopy, there's no frame to hold on to. For some of us, the "gravity" increases for some strange reason every year, at least if you look at the scales!

As mentioned, the canopy is a "one piece" and you have a good view even from the back seat. The throttle and propeller brakes are put in the same console as on the EB28 and I think that is not so good. It's only a matter of time before you confuse the controls and send the propeller brake flying a mile away. We had a similar layout in our own 27, but moved the "throttle" to the dashboard; it works much better and we have not yet sent a propeller stop to space. I spoke to Jaroslav and got the answer "I'll consider that."

A little fun thing is a hydraulic "parking brake" – a small switch that you can turn on while sitting and waiting for the engine to get up to temperature. It sometimes happens in a SLG that the pilot is one hand short, and the poor soul that holds the wing must run with it because the brake can't be properly engaged. "Landing gear" is electrically operated with a small switch under the right elbow. In addition, it was spring loaded so you had to sit and press it until the landing gear was completely inside or out. Why is

HPH 304 TWIN SHARK
Basic price: €145,250 plus VAT
Wing span: 20.0m
Wing area: 15.38m²
Empty weight: approx 480kg
Max weight (MTOW): 800kg
Wing load: approx 36-5 kg/m²
Max speed (VNE): 275km/h
Motor: Binder Solo 2625-02 62 hp
Best L/D: 49 @ 128km/h (calculated)

Jaroslav Potmešil and Mikael Roslund fly the Twin Shark

it sitting under the right elbow and why spring loaded? I offered to buy a suitable switch from a cheap discount store and send it down to them and suggested it be on the dashboard next to the "gear up" and "gear down" indicator lights. "I will consider that," Jaroslav replied.

There was also an "Emergency Landing Gear Open" switch. When activated, the landing gear is prioritised in terms of electricity and the gear doors are opened and wheel dropped thanks to Newton.

At the far left of the dashboard there was an indicator showing how the aircraft was trimmed. The Twin Shark has an electric trim like in the EB28 that I tried a few years ago. In my opinion, it's a bad solution, both in the EB28 and the Twin Shark. Too slow! If you get high speed and pull up in a thermal, you'll have to sit and trim until the thumb turns blue before it's finished. A conventional trim with a "click" on the mechanical trim and half a second later, the aircraft trimmed is much better. Electric trim is an extra.

Another smart and simple thing is a fail safe fuel indicator. There is a plastic hose in the rear of the fuel tank, where you can see the fuel level, much like a CUB. It couldn't be easier! I have experience of some variants where you should check "flow", calibrate or keep track of engine time. Here you can see directly how many litres you have left. Given the lower max weight, compared with the ASG 32, Jaroslav had the selling point that Shark has a wider range of wing loading. The Twin Shark has 36-52kg/m² while the Arcus and 32 have 38-51kg/m² and 40-54kg/m².

The Binder Solo system

HpH has an extensive collaboration with Binder and, therefore, the Binder 2625-02 engine system is based on a 62-horse SOLO engine. In the prototype they had 2 Pb gel batteries on each 22Ah for extending and retracting the engine, as well as engine start. A central tank holds 19 litres and you can also get a winch tank as an option. If you compare with the 32, which takes about one litre per 300 meters, 19 litres will last for a while. In addition, there is an ILEC engine control system, but it is not new in this industry. I found that the noise and

Gear up/down indicator to the left and ILEC engine control on the right side

THERE IS A PLASTIC HOSE IN THE REAR OF THE FUEL TANK, WHERE YOU CAN SEE THE FUEL LEVEL

HpH CEO Jaroslav Potmesil is an enthusiastic entrepreneur

The original part of the company has its own building housing HpH Models, which produces models with prices ranging from €10 to €50,000 (yes!)

■ With thanks to *Nordic Gliding.* All photographs by Jens Trabolt

■ *http://hphuk.co.uk*

IT'S REALLY WELL BALANCED AND HARMONIOUS TO FLY AND VERY SMALL CONTROL FORCES, EVEN AT HIGH SPEED

vibration level were significantly higher than in the 32 where we have a Wankel engine and we can handle the noise without a headset. A JET version is planned that will be called Twin Shark SJ.

The people's aircraft

Then it was time for test flight. Because there were no engine controls in the back, Jaroslav handled the take-off. Now it was basically the same as the EB27/28 so there was nothing to criticise. Immediately, I thought the Twin Shark climbed slightly better than the 32, but we did weigh 100kg less than 32. The empty weight is 100kg lower on the Twin Shark, and Jaroslav also weighed slightly less than my usual co-pilot. I agree with Jaroslav when he said: "This is a people's aircraft".

It's among the finest two-seaters I've flown (I hope my friend Robban and Schleicher forgive me). You just get it and fly, like an LS8. It flies itself. Very fast rolling rate and not much rudder required when turning. It's really well balanced and harmonious to fly and very small control forces, even at high speed.

Now we were a bit limited in speed because it was not yet fully tested. They were currently doing a spin and rudder test so VNE was set at 180km/h for now. Jaroslav expects the certification to be completed in a few months. Stalls and spin entry were as you would expect of a newly-constructed aircraft, ie completely undramatic. The stick fully back, the speedometer at just over 70km/h and only a little light buffeting in the wings, but still full aileron control. Still with the stick held fully back and now with full rudder, the Twin Shark just departs gently towards one wing, but nothing more. The centre of gravity was not the optimal for stall test. No water in the tail and 110kg Jaroslav in the front made the centre of gravity not close to the rear limit. The flap was easily maneuvered and the right flap position easily obtained, with distinct and clear flap modes, so you do not have to look down the slider to see which flap mode you had.

We were lucky with the weather, it was 2-3 metres climb and Cu at 1,400m (4,593ft) so I got more than one and a half hours in the Czech thermals. Neither could the Shark disappoint in any way. I did not perceive the wings to be as stiff as on the 32 and Arcus and you feel the thermals well in the wings. It glided superbly between the thermals with easy handling in the updraughts.

Performance

I can't say too much about performance when we just flew a local flight, but it felt good throughout the speed range and it slipped well between the thermals with a little minus flap and 150-170km/hrs. I suppose the performance will be quite similar to the Arcus and ASG 32, and 32s "go like a bat out of hell" as my 32-mate Robban says.

Everything comes to an end and it's time to land. In the finals we were intentionally a bit high to test the landing flap and full brake. With everything hanging out, the Twin Shark dropped as expected, but not as dramatically as an ASW 20.

The price for a "basic" Twin Shark will be €145.250, then just tick the option list until the stock market is empty. The price tag on adult boys' toys has the tendency to increase with age, but it costs to be on top. To conclude, I think the Twin Shark will be a worthy competitor to the Arcus and ASG 32.

Full brake and landing flap allow a steep approach

THE DARK ART

Mark Dalton looks at weather forecasting and wonders why it is not as easy as the club 'experts' can make it seem

Cartoon by Ross Martin

WEATHER forecasting has always been an inexact science at best, or a tea leaves job at worst. For some people (and that, I suspect, includes a lot of common or garden glider pilots) it is a complete mystery. For others (myself included), there are lucid intervals where one's prediction of what might happen on a particular day is reasonably accurate, or at least can be made to sound relatively accurate with the judicious use of the right phrases, a good dollop of poetic licence – and the retrospectoscope.

And then there are a few, a happy few, who actually appear to know what they are talking about. They tend to be quiet, thoughtful types, not given to rash predictions and will often evade a direct question with answers such as "well, we will just have to see, won't we?". These are the type who sit happily in the bar, having predicted heavy rain at 3.15pm and who were just closing up their trailer at 3.14pm when the first patters of rain began.

And yet there are some members at my club who are absolutely, categorically and without a shadow of a doubt positive about the weather for the day in question. And sometimes they are right. In fact, they are right about as often as me. Which rather begs the question – are they, in fact, better at predicting the weather than me or not?

This category of enthusiastic weathermen will arrive at the club (usually in a hurry), rush in to the kitchen (where the rest of us often gather for early morning coffee to discuss who is doing what in which glider) and declare (to no one in particular) that "it is going to be a boomer" and to ask "why aren't you up there already"? Of course, they themselves cannot be there with you, unfortunately, because they are instructing (acceptable), their glider is unserviceable (partially acceptable, depending on the reason), or they are attending their grandmother's funeral that afternoon (unacceptable).

You ask (unassumingly) why they are so confident and they (seemingly perplexed by such an unbearably silly question) will begin the explanation with a question.

"Didn't you look at the latest skew T?"

Of course, there is only one answer to that, as you sip on your soy latte extra hot double shot with sugar.

"No."

And the thing at this point is to hold your ground. Do NOT, whatever the temptation, dissolve in to an embarrassed giggle. Maintain a faintly interested disposition, implying that, while you wouldn't mind hearing about the latest skew T, it really is not of prime importance at this point.

Weather expert

Of course, this sort of insouciant reply will generate a response by said weather expert, which often goes something like this:

"Well, the dew point and the dry adiabatic lapse rate come together at 8,435ft so obviously (these people like using that word) there will be a thin layer of cloud under the high level inversion. We will need a temperature of 31.7° to break through that inversion which will not happen until 12.53 this afternoon. After that it will go ballistic (they like that word too) with 8kt climbs to 12,000ft, until after 4.32pm, when the sea air will infiltrate (I made that one up) up the valley, so you better be on final glide before then."

And then (here's the thing), they will suddenly decide that there is another job that requires their immediate attention and disappear in a cloud of self-satisfied dust, leaving the rest of us to return to our coffee and the hope that someone else will go and have a look at the synoptic, the area forecast, RASP, XC skies and Skysight to let us know what is really going to happen in simpler terms. And then if they wouldn't mind sorting out an A, B and C task, that would be most acceptable.

Trouble is, it never really happens like that. What actually happens is that one or two people glance out of the window and declare that it "should be a good day – at least 500km", and then describe at length why they themselves (unfortunately) cannot be with you on this impending epic flight.

Then a couple of pilots disappear in the direction of the hangars muttering

THESE ARE THE TYPE WHO SIT HAPPILY IN THE BAR, HAVING PREDICTED HEAVY RAIN AT 3.15PM AND WHO WERE JUST CLOSING UP THEIR TRAILER AT 3.14PM WHEN THE FIRST PATTERS OF RAIN BEGAN

something about "fixing the squelch on my radio", never to be seen again. Then there's the guy who really DOES have to attend his grandmother's funeral, the guy who has to work today and the unidentified guy in the corner, who has "only come to do the concreting".

But then very occasionally, one comes across the 'quiet achiever' in weather terms. These are the people that (as you pour your second cup of coffee) are seen towing out under thundery clouds and 8/8 cover, main tyre squashed and water literally oozing out of every orifice (on the glider) after having made special arrangements for the tuggy to meet him at the launch point at some unusually early hour. This as the rest of us stare out bemused and groggy-eyed in to the light drizzle.

Several hours later, he (or occasionally, she) returns from an impossibly long flight streaming contrails of water low across the airfield in a triumphant beat up (sorry, I mean 'practice competition finish'), before quietly joining the rest of us in the bar. When asked how they knew it was going to be such good day, they mutter about high level pressure systems and atmospheric instability within the space time continuum (or at least they might just as well have said something like that, for all I understood).

Titbits of information

But then occasionally one picks up little titbits of information. One day, we were settling down in the bar as usual after a rather difficult cross-country, which had involved crossing the Bunyas (a ridge of high ground euphemistically described as 'mountains' in these parts). The thermals downwind of the Bunyas had seemed particularly broken and difficult to work. The streeting downwind had been irregular and disorganised, unlike on the flatter areas, where the streets were nicely aligned to the wind direction.

We were discussing the reasons for this local phenomenon when Miles Gore-Brown (he of CASA fame) muttered "classic Kármán vortex streets", as if that answered everything. We looked across at him, expecting more, but no, he was back, head down, tucking in to his roast pork with crackling. We do eat rather well, here at Kingaroy.

Eventually, we were able to ascertain that these so called Kármán vortex streets describe the vortices that swirl off the downwind side of hills, or indeed any cylindrical object. The photo shows the (rather attractive) Kármán

Example of Kármán vortex streets: image from Landsat 7 satellite above Selkirk Island, Chile, in September 1999

vortices spawned from an island, with the wind blowing from left to right and the zig zag pattern of swirling winds shown up in the cloud formations.

If the obstruction to the wind is just the right shape, it can actually set up a rather destructive harmonic motion (like those awe-inspiring videos of bridges destroying themselves in a wind) and this is the reason you see those corkscrew vanes spiralling up cylindrical industrial chimneys – to break up the vortices, which would otherwise set up destructive oscillations within the structure. Look out the back of a moving sailboat at the swirling water. Those eddies are Kármán vortices. Amazing what you can learn over a good roast pork.

But to get back to the weather. A couple of interesting points. You don't seem to get warm fronts in Australia. Huge high pressure systems edge their way across the interior from left to right, each divided from the next by either a cold front or a trough. And the weather is reasonably predictable, depending on where you are in relation to the system.

So it would appear on the face of it that forecasting should be relatively easy. Unfortunately, this does not seem to be so.

One day recently, I set a task of around 235km on the strength of optimistic forecast models. A small group of us launched hopefully in to a very dead looking sky. None of us could even stay up. Later in the bar, I tried to remain inconspicuous, but eventually the inevitable happened and I was questioned as to how I could possibly have been so wrong.

"Kármán vortices and a jolt in the space-time continuum", I replied, trying to be enigmatic.

They were not amused.

A SMALL GROUP OF US LAUNCHED HOPEFULLY IN TO A VERY DEAD LOOKING SKY. NONE OF US COULD EVEN STAY UP

' A great deal has been said about the weather, but very little has ever been done'. – Mark Twain

Mark Dalton is previously from London Gliding Club, but now flies from Kingaroy Soaring Club, Queensland, in Australia. He flies an ASW 20BL and has 2,500 hours, a Gold badge and two Diamonds

GLIDE WITH THE RIGHT ATTITUDE

David Innes explains why you shouldn't trust your phone's attitude indicator in flight, with another cautionary tale about the pitfalls of using portable devices in aircraft

THERE are many apps available which claim to be attitude indicators, but they are NOT. Most of them are really inclinometers (measuring tilt angles in two axes: pitch and roll) and their output is drawn on your screen to look like an artificial horizon (AH).

THEY ARE NOT ARTIFICIAL HORIZONS AND DO NOT USE THEM IN FLIGHT.

At our club, those on Bronze/cloud rating courses are instructed not to use these and this article broadcasts that message. I will also explain the mechanisms for those who don't understand how a bit of silicon can be an accelerometer or a gyroscope – or an Air Speed or Barometric Height sensor. I also give the basics for how all-electronic attitude indicators work. (And no maths!)

You don't need big heavy spinning masses any more, but they have their uses. I'm happy to discuss closed loop inertial systems on Facebook if anyone wants that form of torture.

Again I am being a bit of a spoiler, but most attitude indicating systems on phones and tablets are dangerous. They appear to work on the ground, ie showing you the correct angles when you roll or pitch them, but in the air they can show erroneous data and could be hazardously misleading. Now, while a misleading GPS display could get you lost and, if above cloud, could force you towards mountains or the sea, or busting airspace, misleading attitude when flying on instruments or low visibility can kill you very quickly (unless you are prompt with the airbrakes).

The great thing about gliders is that, on many types, getting the airbrakes fully out while still at a safe speed and attitude may prevent you from exceeding VNE. As a reminder, a glider's structure has far more reserve factor against G than against an overspeed. Ultimate stress is of the order of 10G or more. VNE is only 90 per cent of VD, the design dive speed, and all modern gliders are required only to be demonstrated to the half way point between VNE and VD. So, if VNE is 90, the test flight demo was only to 95kts, when new, not worn, not with perhaps hidden damage from previous incidents, fatigue, etc. It was therefore only designed for VD of 100kts. You can multiply these numbers to reflect your own VNE but, for most you, we are talking about at best a 7kt margin. You have a factor of about 10 for G loading, and 1.1 for overspeed, so if there is a choice to be made better to pull more G than to allow the glider to get too fast. Best of all, just don't go there in the first place.

Just look at *www.youtube.com/watch?v=pKo4j0t-p0c*, to show what flutter can do to a glider. This was a demo by a manufacturer, who had removed the mass balances on the ailerons. The pilot's grip on the stick was the "damper" and then he lets

go. This effect, or worse, awaits you if you fly beyond VNE. And don't forget, VNE reduces with height – the speed limit markings on your ASI are only accurate close to ground level.

FREQUENTLY ASKED QUESTIONS

Q1 ***How can my phone have an accelerometer?***

A1 On the circuit board there will be three pieces of silicon at right angles to each other, and usually aligned with the phone's edges. Each piece of silicon has a tiny weight held by a spring, and a position sensor for the weight, so if there is acceleration along the device's sensitive axis, it gives an output. So, if I lay a phone on a flat table, the three outputs – with a bit of "noise" ie small variations of output due to vibration – will read 0, 0 and 9.8m/s2 (normal gravity), ie stationary on the table, but one is being pulled down by gravity. In orbit, all three readings would read zero since there is no gravity. Fire the rockets and you would see an output, after you and the phone fell to the floor, driven by the rockets' acceleration. I know there are other mechanisms, such as force balance, but I'm keeping it user friendly.

Q2 ***What's a gyro and how can a phone have one?***

A2i No Greek food jokes.

A2ii Remember spinning tops or gyroscope toys, or even spinning your bicycle wheel after a puncture repair? (Do I date myself again?) Well, they involve spinning masses and they try to remain stationary in space due to their rotational momentum. It's the same effect which helps you keep balanced riding on a bike. They are used in both AHs or Turn and Slip indicators. Remember, your TS shows you a rate of turn. The gyro tries to keep pointing in one way and is held in place by a spring connected to the turn needle, so the faster the glider turns, the more the needle deflects.

Gyros in phones operate like the TS above. Instead of one mass in the accelerometers, there are two masses balanced on either side of a sprung pivot. If it experiences acceleration, both masses cancel each other out. If the gyro rotates around, then the masses deflect in different directions and you get an output proportional to rate of turn.

There is another electronic gyro called fibre optic: it gives the same outputs proportional to rate of turn along its sensitive axis, but is too complex to explain in this article.

So, accelerometers measure movement and gyros measure rotation.

Cartoon by Ross Martin

Q3 ***How can a phone sense barometric height?***

A3 Another piece of silicon is designed so that air (or gas) pressure on one face changes its electrical characteristics. This is measured and calibrated for that specific material and, unless it is contaminated, it will always give the same output for the same pressure. Pressure varies with height so, with some smart maths, your phone gives you height.

Q4 ***How can I get airspeed?***

A4 First and MOST important: GPS data is ground speed, ie the aircraft's path over the ground, and is the "vector sum" of True Airspeed, heading and wind. (Angle of attack and lift are in there too, but are minor factors.)

A conventional Airspeed indicator has pitot on one side, static on the other, moving a bellows then a pointer. Electronic speed sensors connect static as above to one sensor and pitot to another and, instead of a mechanical bellows doing the conversion, simple maths by the computer calculates IAS.

Q5 ***Why do I need GPS for attitude display, I can't see any obvious link?***

A5 The sensors in any phone are dirt cheap and can have offsets (think of your

■ The author does know of a few tablet-based apps which actually work as reliable attitude indicators, and I can tell by the software parameters you can tweak* in the app, but the potential liability of using non-qualified software and perhaps having an accident means I ain't telling! For the curious, your phone must have:
1) working GPS or barometric height
2) accelerometers in all three axes – the things that allow the phone to tell which way up your phone is (very common), by sensing Earth's gravity
3) gyroscopes – which measure rate of rotation (nowhere near as common in phones and tablets – when getting my new phone I had to explain to the assistant what a gyro was. Sadly, I might have just as well have taught my dog French.)
**You need to tweak settings because the app is generic; it doesn't know the update rate or filtering applied by the phone's sensors, nor the computing speed of the phone. The user adjusts them at their own risk.*

■ I was once thermalling in cloud on a TS and ASI only. We were climbing nicely and a buddy from my office (a major avionics company) was most impressed. But as I climbed I noticed that to maintain the same turn rate I had to pull harder and harder on the control column. IAS was stable (ish) so I was, for a few seconds, puzzled and then decided something was wrong.

I rolled level and flew out, still on TS on a constant heading. As we popped out of the cloud, the OFF flag on TS appeared. The battery had been discharging, the gyro motor slowing, so the mechanical gyro therefore became less sensitive, which meant I had to pull harder to get the same indicated turn rate. The flag was only showing the volts were too low.

A silicon device under the same circumstances would have given the correct output at all times until its power supply could no longer give the right output, then fail. You either have a good output or none, there is no gradual degradation with such devices.

David Innes is an Ass Cat instructor, MGIR and tuggy at Deeside Gliding Club. He has Silver C, got his Gold height in a Capstan, and Diamond height, in 1976, in a Swallow. David is also chairman of the Scottish Gliding Association

car's speedo reading 10mph when stationary) or drift (their output moves away from correct value over time – like Radio Luxembourg, again I date myself – so there needs to be an external stabilisation input. This could be TAS, or ground speed, for example, but GPS position is better, being more accurate and stable long term).

Q6 ***So how can these devices give me an attitude display?***

A6 (This is how electronic attitude systems work...) Initially the device uses Earth's gravity – assuming the aircraft is straight and level to work out where up is, sensed by the accelerometers. The device assumes it is installed parallel to the instrument panel and that defines roll. And for pitch it assumes the device is approximately vertical, such as on an instrument panel. (Some let you input the tilt angle of the panel.) So that defines the pitch and roll axes.

The gyros sense rotation and display changes in attitude from this initial guess. Now the maths becomes difficult. If the vertical "guess" is wrong, the accelerometers will sense Earth's gravity on all three sensors, therefore thinking the device is moving sideways and if that measured movement disagrees with the positional information from the GPS, this provides a (slow) correction term (removing the "tilt" error) and improving the initial guess of attitude (Control Loop Feedback).

In the old days, mercury switches (an electrically-conducting liquid at room temperature) were used to provide currents to push (torque) the mechanical gyro towards the right attitude. This is one reason why if you start a mechanical artificial horizon while in a balanced turn, it "erects" to a false value, and it needs to be caged (gently pull the knob marked cage) to get back to the correct datum ONLY WHEN LEVEL. Electronic devices have a similar function, done in many ways which are too diverse to describe here.

Mechanical gyros have inertia. I'm sure you all have heard the TS or AH running for minutes after power is switched off. Silicon sensors have no significant inertia, so need constant electrical power to operate. There might be a dedicated back-up internal battery, but loss of power to the electronics loses all data. The pitch and roll angles are just numbers, which change based on number inputs primarily from the gyros – not the physical position of a gyro – but functionally they are the same.

On the aircraft

Most phones only have accelerometers, so they can't tell attitude in flight. If you don't believe me, take one up in flight, try one of these "Attitude indicators": Straight and level they will look OK, do a sideslip and they should show some bank, BUT do a coordinated turn and look on in horror as your bank angle is NOT shown on the display, because the gravity sensed is still vertical with respect to the aircraft and the display shows straight and level flight. Skid a little and the indicator will show bank in the opposite direction – WOW!

SO DON'T USE THEM, THEY ARE MISLEADING AND DANGEROUS!

Airliner in development

We used the principles described above on an airliner in development, which had an interesting design deficiency. It was fitted with combined pitot-static probes. (Pitot at front, static ports along both sides.) At any reasonable angle of airflow, the values for pitot and static pressures were acceptable. However, on rotation at take-off, we discovered that the change in flow around the probe caused a transient increase in static pressures, causing vertical speed (higher pressure = descending) to show sink when the aircraft was actually rotating upwards and climbing.

Now on airliners you need to have a positive rate of climb before retracting the landing gear, and it took several seconds for this transient effect to cancel out. This meant more drag in the initial climb (First Segment), which took longer because of the time to retract the gear with consequent performance penalties, amounting to the equivalent of having to offload several passengers (before take-off, ideally) under limiting conditions.

So we used vertical acceleration from the attitude system, integrated (ie adding up accelerations over time) to give vertical speed, and used pressure altitude to provide long-term stability corrections for errors from this accelerometer.

A bit of maths and an easy software change gave the aircraft several hundred extra pounds of load capability under limiting conditions.

Simples, to quote a certain insurance-selling puppet...

■ See also *Hidden perils of using GPS*, by David Innes, pp46-47, Aug/Sept 2017

Qin Cao's first flight in FEF (Astir) with 55lb of lead ballast (equivalent) and five cushions (Dinant Riks)

THE PERILS OF A PETITE PILOT

GLIDING is a great sport, but not everyone fits the average glider cockpit. The life of a lightweight pilot can be tough…

For most pilots, the normal flying routine would be jumping in, strapping in and carrying out pre-flight checks. But spare a thought for us petite-built pilots, for whom the process is not quite as straightforward.

First of all, which glider are you flying? While the same types of gliders have the same speeds for launch and VNE, the minimum solo weight varies largely for every individual glider.

It depends how many modifications have been carried out in the past, especially on those wooden-framed ones. To fly a K-13, the ultimate training glider at my old home club, means two floor weights and then a lead ballast bag (as specified in the K-13 flight manual). All of these need to be carried across from the base to the glider and properly installed. You can easily get a floor weight the wrong way round and you then have to do it all over again and fiddle with the screws.

After the ballast is sorted, you can look forward to the enjoyable task of setting up the seat cushions. Again, because every glider is different, my need ranges from two to five impact-absorbing cushions. Otherwise, it will be very entertaining to have a solo flight without reaching the rudders!

Not surprisingly, this is all alien to those

TO FLY A K-13 MEANS TWO FLOOR WEIGHTS AND THEN A LEAD BALLAST BAG. ALL OF THESE NEED TO BE CARRIED ACROSS FROM THE BASE TO THE GLIDER AND PROPERLY INSTALLED

THERE HAVE BEEN SUGGESTIONS THAT I SHOULD EAT MORE PIES OR DRINK MORE PINTS TO REMOVE THE NEED FOR BALLAST

Photo: Jamie Allen

Qin Cao discovered the joy of gliding when joining the Oxford University Gliding Club in 2012. She served on the OUGC committee as social secretary and then captain. She has cross-country endorsement and Silver height and duration. Qin now flies at Portmoak and is a member of the Edinburgh University Gliding Club

who never need these gadgets. In addition, it might be a piece of cake for many to carry a 25lb lead ballast bag around. This is actually about one quarter of my overall weight. Once, I even had the fun of being dropped out of a car with 30lb of lead to lug across two streets – just because the driver did not consider carrying such a weight to be an issue.

Another part of the 'fun' is that there have always been varied opinions regarding the use of ballast. The common logic is that fixed ballast weights are always preferable to cushion weights. Curiously enough, I have seen lead cushions being used even when floor weights are available. While it might be much quicker and easier to use a lead cushion than installing fixed ballasts, and the risk is relatively low for a circuit flight, it is not good practice and the pilot may one day pay the price. In the event of a crash, the lead cushion (only secured loosely by the straps) would go forward at a huge force (the law of physics) and the poor legs would be the named victims. Sadly, as not all gliders have fixed ballast weights (or not enough), the lead cushion becomes essential.

As if having a loosely fitted 25lb lead cushion sitting underneath you was not enough, some lightweight pilots have been permitted to fly with two (over 50lb). This means not just having a very uncomfortable seat, but it also carries a much higher risk of both cushions coming forward with tremendous force, much more than double that of a single cushion.

Due to the sorts of issues mentioned above and others, my first solo flight was delayed for two months. It was then followed by half a year of no solo flights due to the ballast issue. You may say this all sounds very frustrating – how did you cope?

There have been suggestions that I should eat more pies or drink more pints to remove the need for ballast. Very helpful indeed! Ultimately, it was the support of many very experienced and knowledgeable instructors, inspectors and fellow pilots, which led to appropriate solutions to ensure the safety of all lightweight pilots.

Perks of a petite pilot

While all things have positive and negative sides, one may wonder whether there are any perks of being a petite pilot. I happen to have an anecdote in hand. At the tail end of last summer, I accomplished my Silver duration flight – over five hours of thermal soaring at a flat site. Unfortunately, two other pilots who were attempting the same task only managed just over four hours.

The day was tricky as the thermal started almost two hours later than forecast and the sun decided to hide at about 5pm. If this happens to other pilots, the achievement would be attributed to tactics and/or soaring skills. In contrast, I was teased by a very experienced pilot that it was my light weight that saved the day.

You may think this is the best perk of being a petite pilot, as I can remain airborne even in weak thermals. However, this is a misconception. I do weigh much less compared to most people in a big passenger jet plane (although I get charged the same!). On the other hand, I, with all the ballast installed, actually weigh similar to the average British man (184lb, 2017 figure) in gliders.

If you really want to ask me what is the trick then, I would say "every cloud has a silver lining". It certainly applies to a petite pilot like me!

THE SIGN OF ATTRACTION

WHO wouldn't want to do this sport? It is incredible! And nearly anyone can do it. So why is average membership recruitment from trial lesson sales still so stubbornly low, despite the hard work of countless glider pilots up and down this land?

There are a whole set of thoughts that have been milling around in my head ever since Tim Freegarde excitedly told me about a sign he had seen outside a sports club. It simply said 'Get into golf'. "How that", Tim went onto observe "contrasts with what most gliding clubs don't say on their advertising signs." And there began a long-running discussion on unwritten messages of such signage. Since then I have been noticing more notices, including one at the gate of a top public school's sport field that reads 'Sports complex. No coach access'.

Let's face it, what clubs are often advertising to the people who drive past it every day, is a one-off flight for quite a lot of money, which they may or may not buy as a gift for someone else eventually. What we are not often offering is the opportunity to come and join the club this weekend, and to take part in all that gliding has to offer, including the flying.

The question is, what does the average gliding club in this country need more of? I have yet to come across a club that hasn't been able to sell as many trial lessons as it would like and it has been many years since one club said it had a full membership. So what are we selling; are we advertising to the people we really want; and are we saying what we mean?

What does gliding at a club provide? A stairway to heaven; giving local people access to the sky, fresh air, exercise, problem solving and laughter in (generally) excellent company. Perhaps not everyone's idea of heaven, but certainly very appealing to many.

The sport of gliding is so much more than flying

Your gliding club is a local sports club with comprehensive sporting facilities and great volunteers. People joining it don't need to buy any equipment in order to take part. In a virtual age where loneliness is increasingly affecting people of all ages, new members will meet new people, make new friends and learn new skills.

People really do 'get into gliding'. Some of them will end up living at the club, whereas for most others a half-day session is all they can shoehorn in between their other commitments, but they can do it on a regular basis, so we should get better at making that option more obvious.

One club has reported a recent change to their signage – they put out a gate side sign that simply invites people to come in for a cuppa and a chat. It wasn't a particularly flash or polished sign. This small club reported seven new members without trying particularly hard.

Curiosity

People were brought in by a curiosity that in some cases had been smouldering for years. They drank tea, asked questions and realised that this was something they, yes them! could do. So they took a flight and joined the club. Even the local ice cream man joined in with the fun.

So I wonder if part of the problem is that we're not very good at making gliding look like something that the person reading about it can really do beyond that one-off trip that someone might eventually buy them as a gift.

There has to be an easier way to get more club members than flogging through an ever increasing number of trial lessons each year.

What can you do outside your club to help people to realise that they too could get into gliding?

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

TALKING OF BUYING GIFTS...

MIDLAND Gliding Club has noticed that people (very often women) will buy someone else a gift that they'd really like to have themselves. So they are selling to them too. They also tailor their products. Several clubs now do this. Those who will only ever want a 'gliding experience' can buy that, and the people who want to get into gliding buy something that suits them better.

Clubs are also beginning to look at segregating the flying of different product types into different times of the week, which helps to prioritise club members over trial lessons and helps them to feel valued. An individual club member brings in more money to the club each year than an individual trial lesson.

Members meet new people, make new friends and learn new skills

PEOPLE WERE BROUGHT IN BY A CURIOSITY THAT IN SOME CASES HAD BEEN SMOULDERING FOR YEARS

This page:

❶ Walker Gaz Owen photographed this Arcus being flown by Chris Gill and Ben Edkins in Snowdonia

❷ Descending back down from over 23,000ft on the return to Lleweni Parc (Keith McIntyre)

❸ K-6 DRE has been donated by Ian King for the Devon & Somerset juniors

❹ John Gowdy and Katie Simmonds joined Southdown with an aim of becoming airline pilots. They both succeeded and went on to marry. Members wish them only happy landings and many more years at Parham

❺ Not a promising day at Wolds? (George Morris)

■ If you'd like to submit your previously-unpublished photographs for possible inclusion somewhere in *S&G*, please email them to: *editor@sailplaneandgliding.co.uk*

This page:

❶ Devon & Somerset's tug pictured under a winter sky (Mark Courtney)

❷ Wrekin's Terry Walsh on finals (Geoff Catling)

❸ Burn GC's Pawnee, flown by Tony Flannery, crosswind for runway 25 with Drax steaming away in the background (Kevin Moseley)

❹ Eileen Scothern works on Burn's K-13 to bring it back to operational condition (Steve Scothern)

❺ Wrekin's Dave Judd makes light of the early December snow (Geoff Catling)

■ Our thanks to all the photographers and to our *Club News* contributors for sending these in.

APRIL/MAY 18 _VOL69 NO2

CLUB NEWS

BANBURY (HINTON IN THE HEDGES)
WWW.BANBURYGLIDING.COM
5204355N 00118784W
CONGRATULATIONS to one of our youngest pilots, who went solo in the Astir on a sunny January day just after his 16th birthday. Robert Holloway has embraced his training, enjoys the sport of gliding and wants to become a pilot when he is old enough. He is well on his way. We are in the planning stage ready for the new gliding year to change the product offerings, such as trial lessons, learn to fly packages, etc, to try and make the club more member focused. We're also planning our trips to other clubs and hopefully being ready for a great soaring season.
David Sibthorp

BANNERDOWN (RAF KEEVIL)
WWW.BANNERDOWN.CO.UK
511858N 0020631W
CONGRATULATIONS go to Sam Arnold who was awarded the Caroline Trust award at the recent BGA Conference. Elsewhere the club is very busy preparing to host the Inter-Services Gliding competition in August. The contest is open to all, and all are welcome.
Alison Arnold/Debb Hackett

BATH, WILTS & NORTH DORSET (THE PARK)
WWW.BWND.CO.UK
510742N 0021445W
OUR workshop has been busy; Nick Bowers and Geoff Pook (now an official inspector) much in evidence. Our venerable, but resplendent K-6 BNH has emerged from checks with a new radio and the two-seaters, starting with FUY, are processing through in preparation for summer. The new Dyneema rope has proved a success. We have been conducting trials, led by Mike Jenks, with smaller parachutes and we are adapting our retrieve methods to suit the lighter, more fragile cable. Most importantly, we have conducted a series of meetings, chaired by Mike Thorne, planning our future with a new lease on the field. Look out for developments at The Park!
Chris Basham

BIDFORD (BIDFORD)
WWW.BIDFORDGLIDINGANDFLYING CLUB.CO.UK 520803N 0015103W
OUR awards dinner was held at Salford Hall on 24 February. Guest of honour was Squadron Leader Ian Smith, a Red Arrows and Battle of Britain Memorial Flight pilot. The awards presented were as follows: The Ladder Trophy & Fastest 300km to Bill Inglis; The Longest Flight & Greatest Height Gain to Dave Findon; The Pilot "Most Likely To" to George Sheard; The Vulcan Trophy for services to the club to Graham Wright. Our BBQ has a smart new roof, thanks to the efforts of Arthur Williams and brothers. Jon Wand had a good gliding holiday in New Zealand, in January, flying with Justin Wills.
Mike Pope

BLACK MOUNTAINS (TALGARTH)
WWW.BLACKMOUNTAINSGLIDING.CO.UK
515848N 0031215W
WHAT a miserable winter, with almost no flying due to rain, wind and a waterlogged airfield. However, a few stalwarts have been busy inside the clubhouse fitting a new kitchen - special thanks to Steve Johns for all his work. Meanwhile, work is progressing with the refurbishment of "Daisy" our back-up Pawnee that can be put into the air at short notice if needed. On a very sad note, we have lost one of our founders and president Derrick Eckley. With John Bally, Derrick set up the club and if it not for his efforts and enthusiasm, Black Mountains GC would not have come into existence (see obit p70). Roll on the spring wave!
Robbie Robertson

BOOKER (WYCOMBE AIR PARK)
WWW.BOOKERGLIDING.CO.UK
513642N 0004830W
THE days are getting longer and we have had some very good days midweek with soaring possible. Max Norfolk converted to the Pegasus and enjoyed his first thermal. Others have been practising aerobatics in preparation for the annual Easter Egg Cup competition, to be held on the weekend of 7-8 April, weather permitting. We need to be on top form as we are expecting teams from Long Mynd and Lasham. The winter series of briefings have been well attended, with instructors demystifying a range of topics for aspiring Bronze pilots.
Jane Moore

BRISTOL & GLOS (NYMPSFIELD)
WWW.BGGC.CO.UK
514251N 0021701W
THE lack of flying has allowed other tasks to progress. The two-seater fleet ARCs are complete. Many applications were received for the 'sponsored' cadet places, selection is taking place in February. Planning for 2018 flying, instructor, cross-country courses, interclub and other stuff, continues. A new committee was elected with the aim of continuing the progress made by the last. Club members digested the Brize Norton and Kidlington Airspace Change proposals. Cynically timed to avoid the new ("fair, transparent, comprehensible and proportionate" – the CAA's words) process, these will change flying forever in the south and Nympsfield if allowed to go unchallenged. The Old Flying Café kicked off a popular Sunday roast lunch routine.
Greg O'Hagan

BUCKMINSTER (SALTBY)
WWW.BUCKMINSTERGC.CO.UK
524912N 04228W
WE have continued to fly at every opportunity. We have experienced a bit of wave in evidence, but difficult to stay in. John Hayter organised a party to fill in potholes and did a great job. The club simulator is progressing and we hope to install V1 very soon. One of our motor gliders is progressing well with its refurbishment, all the covering and painting has been completed and the instruments are refitted, just the engine to go before rigging again. Our calendar is filling up with expeditions from other clubs and confirmation of the aerobatics competitions again. Membership is doing well with a steady stream of new pilots joining us for gliding or microlight training.
Danny Lamb

BURN (BURN)
WWW.BURNGLIDINGCLUB.CO.UK
534445N 0010504W
CLUB history was made in January when Matthew Stirk became the third generation of his family to fly gliders at Burn, soloing on his 14th Birthday. Dad Richard went solo on his 16th birthday in 1982 at Doncaster and Matthew's Grandfather, John Stirk, soloed in March 1954. He was one of the founding members of Doncaster & District Gliding Club in 1959, and eventually the CFI. Much later, after the club had relocated, John became the chairman in 1985 and held that post for 12 years. John's wife Pat is also a very good glider pilot. Refurbishment work on our 50-year-old K-13 is progressing, thanks to Eileen and Steve Scothern and Bob's supervision.
Russell Walsh

(Left to right): Kelvin-Helmholtz cloud over **The Park** in December, with Lesley Lambourne in the foreground (Jörn Schuster); **Burn**'s Matthew Stirk after first solo with Dad Richard and Grandad John (Pat Stirk); **Cranwell**'s Mick Wood and Leigh Hood, 50 years after their first flight together



CAMBRIDGE (GRANSDEN LODGE)
WWW.CAMGLIDING.UK
521041N 0000653W
AS of the end of January, winter has given us wind (up to 61kt), rain, snow and sunshine, without too much interruption to flying. And, of course, the workshop has been busy as gliders of all shapes and sizes come in for their annual inspection. Our winter lecture series kicked off with a very special presentation by long-time member Mike Foale on his flying career from glider pilot at Cambridge to astronaut on both Mir and the International Space Station. The weekend aerobatic courses have proved to be very popular and weekday training slots have been added to meet the demand (our thanks to instructors Martin Whitehead and Graham Spelman).
Chris Davis

COTSWOLD (ASTON DOWN)
WWW.COTSWOLDGLIDING.CO.UK
514228N 0020750W
FOLLOWING our AGM we are pleased to report an increased membership and healthy finances. We welcome Adrian Giles as chairman, Roger Banks as treasurer, John Docherty as deputy chairman and Mike Randle as secretary. Members also thanked retiring chairman David Roberts for all his hard work, and Douglas Gardner, a solicitor and club member, who for many years, has provided legal services to the club and will shortly retire. We are hosting an Aim Higher course in May, Competition Enterprise in June and the Open, Standard and 15M Nationals in August while we plan to complete a new glider-only workshop and possibly another private owner hangar within the next 18 months.
Frank Birlison

CRANWELL (RAF CRANWELL)
WWW.CRANWELLGC.CO.UK
530231N 0002936W
YOU know the saying about old pilots and bold pilots? You can decide which these two are... On 31 December 1967 one of our instructors, Mick Wood, had his first flight in a glider at Two Rivers GC in a T-21, with his instructor Leigh Hood. On 31 December 2017, 50 years to the day, here they are again (see photo above) this time in a K-21 both still instructing maybe not quite so youthful. The beginning of the year was miserable weather, but the eternal optimists continued to take the opportunity to fly whenever able.
Zeb Zamo

DARLTON (DARLTON)
WWW.DARLTONGLIDINGCLUB.CO.UK
531444N 0005132W
THE weather caused a reduction in flying this January. Members made valiant attempts to continue flying, but on two occasions managed to get support vehicles stuck on the field in the mud. The launch point bus had to be rescued one Sunday and the following Sunday the winch had to be retrieved with two 4x4s and a tractor. The club held the AGM in the clubhouse in December, which was well attended by members who took part in some interesting discussions. We would like to thank the airfield committee for providing the refreshments. Congratulations to Peter Storey and Craig Hobson on obtaining their Gold height in wave at Portmoak.
Barry Patterson

DEESIDE (ABOYNE)
WWW.DEESIDEGLIDINGCLUB.CO.UK
570430N 0025005W
WE start seven-day-a-week operations from 16 April till 2 November. Our portacabin for the simulator will arrive shortly, thus freeing up the wooden workshop for members. Brian Crouch, Iain MacDonald and William Brydges have their Bronze. Sue Heard re-soloed after a break of a couple of years. Our Perkoz is still scheduled for April delivery. Booking forms for 2018 wave season slots are on our website.
Glen Douglas

DENBIGH (LLEWENI PARC)
WWW.DENBIGHGLIDING.CO.UK
531239N 0032312W
A GOOD start to the year, with many flights over 18,000ft, as well as others in the mountains of Snowdonia.We are welcoming visitors throughout the year. I am now club CFI. We welcome inexperienced cross-country pilots, who want to improve their skills, to fly in our DG-1001M.
Chris Gill

DERBY & LANCS (CAMPHILL)
WWW.DLGC.ORG.UK
531818N 0014353W
GREAT progress has been made in glider maintenance and inspections, thanks to dedicated members. We learned with regret of the death of two of our former instructors: Dave Smith, who gave up gliding due to illness, and Bob Frodsham at the great age of 96. Dave flew an Astir for most of his time here and also enjoyed marathon running, whilst Bob owned a variety of gliders, and even went on a trip to Poland to fly a MIG15. Any visitors should note that during April the road to Camphill via Abney will be closed for repairs.
Dave Salmon

DEVON AND SOMERSET (NORTH HILL)
WWW.DSGC.CO.UK
505107N 0031639W
SOME nicer days have allowed junior members to become familiar with the K-6. Ellie Carter achieved her 50th solo flight, just after turning 15. The future of aviation and engineering came to North Hill when a group of 10-year-olds from a local primary school came to learn about gliding. They are about to embark on a design technology project to build a model glider. DSGC Junior Development Coordinator Pete Harmer explained the rudiments of a glider and managed to answer all their questions. There have been expeditions to Denbigh and Nympsfield by the North Hill nomads. Thanks as always to our hosts.
Jill Harmer

DORSET (EYRES FIELD)
WWW.DORSETGLIDINGCLUB.CO.UK/DGC
504233N 0021310W
THE winter was not kind, with the technical team considering floats for the K-13s. Staying current has been helped by neighbouring clubs and expeditions. The track by the hangar and drainage work/resurfacing is complete so that should help. Thanks to a lot of enterprising work, we now have a new fence around our car park. Jon Davis, who re-soloed earlier on aerotow, has now also re-soloed on the winch. Well done! In April the club is holding a week's glider training course, creating a lot of interest. Our newly-acquired Super Cub is now in use. The Pawnee is back and we will be putting our EuroFOX up for sale.
Richard Roberts/Colin Weyman

DUMFRIES & GALLOWAY (FALGUNZEON)
WWW.DUMFRIESGLIDING.110MB.COM
545638N 0034424W
NOT a very busy flying month, but many jobs have been done: CofAs and repairs on gliders, paperwork and overhauling of vehicles, winch, etc. Big congratulations and well done to one of our younger members, Connor McIver, for completing his Bronze. We also would like to welcome two younger members – Zak and Dan.
Wendy McIver

(Left to right): Retrieving **Darlton**'s launch point control bus; keeping current at **Mendip** (Richard Roberts); Feniton CofE Primary School pupils, about to start work on buidling a model glider, were thrilled to see the real thing at **North Hill**



EAST SUSSEX (RINGMER)
WWW.SUSSEXGLIDING.CO.UK
505423N 0000618E
WE managed to fly at Ringmer up to the Tuesday before Christmas and then the rains came. Reluctantly we closed the field in January, but a good number of members turned out to form work parties and we were able to clear a substantial number of ground maintenance tasks ready for the season. In March we hosted a GASCo safety evening briefing that was well attended. For the new season we expect to have the full club fleet available, including our Junior that has been repaired following an accident last year. Finally, congratulations go to Adrian Lyth, Mike Collins, Chris Young, Christian Fowler and Will Harley, who all received awards at our Christmas supper.
Mike Jeater

EDENSOARING (SKELLING FARM)
WWW.EDENSOARING.CO.UK
544152N 0023506W
THE season approaches and we are steadily working towards many improvements in our operation. Club expedition bookings, as well as trial lessons, are appearing in the diary. Our own expedition to Lleweni Parc is going to start things off for 2018 in mid-April. We look forward to another good outing. This year we are planning a members' development year with regular cross-country tasks from our Skelling Farm site. Visitors to our airfield are always welcome to join in the fun with or without a glider.
John Castle

ESSEX (RIDGEWELL)
WWW.ESSEXGLIDING.COM
520253N 0003330E
THE New Year has not been kind weather-wise so far, but we have been flying with our friends at Rattlesden when we can. We have also been working on improvements at our home ready for our return in the spring. Security has been upgraded following burglaries at the end of last year, and we are busy making sure that the fleet is ready to go. We were saddened by the news at the end of last year that long-standing member Brian Hockley had passed away. Brian was very much liked, had been a hard-working member of our club and had recently presented an interesting talk and slideshow about the history of the club and North Weald. We are very much looking forward to the summer, we welcome our new members and we wish them all the very best for their flying.
Cathy Dellar

ESSEX & SUFFOLK (WORMINGFORD)
WWW.ESGC.CO.UK
515630N 0004723E
THE beginning of the year heralds wet runways and using the concrete track for landings; as the track is only 4.2m wide this requires our members to fly with precision, crosswinds included. Many of our younger members have attended the junior training camps, returning with tales of wave flights into the stratosphere. David Wilde has volunteered to run the kitchen so stocks of Magnums, members' favourite, will be maintained. The committee is on the cusp of placing an order for a new multi-purpose trainer with 20m-tip option and the next issue will advise on which one.
Paul Robinson

HEREFORDSHIRE (SHOBDON)
WWW.SHOBDONGLIDING.CO.UK
521429N 0025253W
THANKS to Mike Dodd and Peter Poole, our club fleet is now equipped with 8.33kHz radios, the tug has FLARM and we have a receiver with OGN-PilotAware uplink. Shobdon airfield frequency will change in May to 8.33 spacing. If you plan to visit or land here after that, please check that you have the new frequency. January weekends have had miserable weather until the last Sunday, when we had wave and flights up to 11,000ft, but we have been grateful for our hard runway and rigging area. Dewi Edwards organised an enjoyable Christmas dinner and winter talks continue on cross-country flying ready for summer and our return to Rockpolishers League.
Diana King

HERON (RNAS YEOVILTON)
WWW.HERONGLIDINGCLUB.MOONFRUIT.COM 51006N 002384W
THANKS to the efforts of all our members, we are now able to return to flying. Thank you to those that have put in a large amount of effort to this project, notably Mr David Green (secretary) and Mr Tony Richards (MT/QA manager). Preparations are now fully under way for our Fleet Air Arm Officers Association (FAAOA) course in March.
Sam Franklin

HIGHLAND (EASTERTON)
WWW.HIGHGLIDE.CO.UK
573508N 0031841W
ELLEN and Tony Mountain have taken some stunning photos of the cloudscape and Ben Rinnes, available to view on our Facebook page or our website under News Archive 2017. Heavy equipment has damaged the tractor track and, until repaired, aircraft must not land on the south strip, as it isn't safe to cross the track. The frozen raised edge on this track caused some minor damage to our K-21 when the winch cable snagged on it during the early ground run of a launch. Thankfully the launch was abandoned promptly. We have been able to continue to fly thanks to the Perfo reinforcement we put in place last January – money well spent!
John Thomson

KENT (CHALLOCK)
WWW.KENT-GLIDING-CLUB.CO.UK
51123N 0004950E
AS spring starts we are looking forward to a good flying season and warm weather. Our Kick Off Meeting in March gave a chance for members to hear from our chairman and CFI, who outlined plans for 2018 and beyond. This is our second year of bookable training, which is enhancing the progress of our trainees. We are strengthening our instructor group and looking at ways to increase membership. Our courses are in full swing from April and our mini task weekend is in early May. Our Open Day will be on Saturday June 23 when we'll invite locals and the public to visit and enjoy a day of flying and entertainment.
Mike Bowyer

LAKES (WALNEY)
WWW.LAKESGC.CO.UK
570752N 0031549W
DESPITE a fairly quiet time for gliding, various projects are moving. Drains have been cleaned to prevent the hangar from flooding, thanks to Roy Jones and Neil Braithwaite. An insulated hut has been installed in the hangar to store the parachutes and the battery chargers, efforts of John Burdett and Peter Craven. Peter Thomas has taken on the task of getting the IS 28 into a good condition. It has not flown for some years and is now having a lot of TLC. Owen Baylis has gone solo and hopes to move on to the Sport Vega soon. Steve Wilkinson has had his first flight in the LS3.
John Martindale

(Left to right): Father Christmas gives long-standing **Northumbria** member Frank McLoughlin a check flight; **Oxford**'s Ian Rodway and Paul Morrison, after the first two decent thermal soaring flights of 2018 (Jon Hunt); Dave Crowhurst in the club Astir at **Crowland**

LASHAM (LASHAM)
WWW.LASHAMGLIDING.CO.UK
511112N 0010155W
LASHAM continues with training through the winter with minimum mud, thanks to our paved runways and taxiways. Some excellent early season cross-countries have already been flown, with many taking advantage of the Southdown's ridge. Investment at Lasham continues with four new hangars under construction: a club tug hangar, the second GHC hangar and two privately-built member hangars. Many people are using our excellent member maintenance facilities for their seasonal fettling. Our winter talks season continues with many welcome visitors from other clubs and elsewhere. A few who went to Namibia had an excellent trip. Congratulations amongst others to our CFI, Colin Watt, on several 1,000km flights.
Mike Philpott

LINCOLNSHIRE (STRUBBY)
WWW.LINCSGLIDING.ORG.UK
531836N 0001034E
CONGRATULATIONS to Joe Raisen on going solo. Committee changes abound with Eddie Richards finally having had enough as treasurer after 15 years. Katharine York replaces Joe, whilst her job as secretary goes to Malcolm Bailey. Phil Trevethick has sold his DG-300. We have acquired a new lorry chassis to carry the winch. The old AEC will quietly retire to the motorway services in the sky.
Dick Skerry

LONDON (DUNSTABLE)
WWW.LONDONGLIDINGCLUB.CO.UK
515200N 0003254W
CONGRATULATIONS to Matt Doyle, who completed his Bronze, Cross-Country Endorsement and RT exam, and Dan Comerford his Bronze. Our Winter Wednesday seminar series ended with a session on field landings, and in the early spring we completed our Bronze lectures, led by Martin Hayden. Our pilot development course took place in March, and the Easter weekend sees the Dan Smith aerobatics competition. By the time you read this we will have completed another club expedition to Cerdanya. Our soaring course takes place between 26 May – 1 June, and the task week is planned for 30 June – 6 July. Guest pilots are welcome at the Dunstable Regionals in June and will never worry about a retrieve!
Andrew Sampson

MENDIP (HALESLAND)
WWW.MENDIPGLIDINGCLUB.CO.UK
511544N 0024356W
CONGRATULATIONS to George Jones on his first glider solo; George's day job is a 777 captain with Cathay Pacific. Also, congratulations to Nick Blake on his tugging rating. We now have our K-13 back after a superb wing recover and paint job carried out by Ian Mitchell. Our CFI, Simon Withey, has arranged a winter programme of Bronze and Cross-Country Endorsement lectures. He has also arranged, in conjunction with our neighbours at Bath, North Wilts & Dorset GC, a glass conversion course into our Astir. Our annual expedition to Talgarth has been planned. The clubhouse refurbishment carries on under the direction of Jeff Green and his team. Jeff is also taking on track repairs.
Barry Hogarth

MIDLAND (LONG MYND)
WWW.MIDLANDGLIDING.CLUB
523108N 0025233W
WE hosted another successful visit by the Juniors in February with 80 launches on Sunday. The clubhouse was packed on the Saturday night with 85 for dinner. Our Christmas meal and awards ceremony had to be postponed as the weather made access to the club far too exciting. Our winter talks have continued to be very popular, the most recent being an illustrated talk on Euroglide by Julian Fack, Diana and Phil King. Prior to that, we had another fascinating session with The National Trust, our neighbours on The Mynd. Meanwhile, winter maintenance continues with road repairs, updating our electrics in the clubhouse and a new engine for one of our winches.
Steven Gunn-Russell

NORFOLK (TIBENHAM)
WWW.NORFOLKGLIDINGCLUB.COM
522724N 0010915E
DECEMBER brought the Christmas party and race evening and with it the annual awards. The winners this year were: Clive Wilby for The Whiskey Cup; NGC President's and the Frank Sayer Trophies, Pete Ryland; Bob Grieve for the President's Triangle and Harvest Cups; Peter Carter won the Derek Kitchen Trophy; the CFI Cup went to James Loveland and the Agip Cup to Wade Leader, winchmaster. After the serious stuff, we enjoyed some horse race fun and the Bean Award. In January, we took the winch offline for its annual service, carried out by a dedicated team. As the wind whistled during the whole procedure it didn't interrupt flying at all.
Adrian and Barbara Prime

NORTHUMBRIA (CURROCK HILL)
WWW.NORTHUMBRIA-GLIDING-CLUB.CO.UK
54560N 0015043W
CONTINUED poor weather has kept us on the ground more than we would like, but members continue to turn out. One benefit is that we make excellent progress with refurbishment projects, so our club and surroundings are improving. Another benefit has been to see how much improvement we gained from the recent drainage works; the airfield surface is better already.
Ian McFarlane

NORTH WALES (LLANTYSILIO)
WWW.NWGC.ORG.UK
530239N 0031315W
ON the days that were flyable we managed using tractor and four-wheel drives. Thanks to Ken Fixter we have a 10-ton self-propelled roller, and hope to smooth out bumps in our field. We are grateful to Ian Masson for becoming our secretary and are pleased Chris Jenks is pursuing his Half Cat rating. At our Christmas dinner, Gareth Jones was presented the cup for first solo of the year and yours truly was given the president's shield for services to the club. We are starting to fill up our trial flights, but we start with three duel gliders, which will make a huge difference.
Brian Williams

OXFORD (RAF WESTON ON THE GREEN)
WWW.OXFORD-GLIDING-CLUB.CO.UK
515249N 0011311W
IS THERE anywhere on earth colder than a windy airfield in winter? Laden down with winter woollies and the remains of the additional Christmas ballast, our members have had a few good flights with the first decent thermal soaring taking place in February. In less happy news, we are gearing up to oppose the unwarranted and disproportionate airspace grab being planned by London Oxford Airport. Battle plans are being drawn up in conjunction with the BGA and the GA Alliance, etc, and we would ask all pilots to respond to the consultation which, if unopposed, is a very real threat to gliding and GA flying in southern England.
Norman G Nome

(Left to right): New **Portmoak** BIs Martin Phillimore and Fred Bull, with coach Kate Byrne (centre); strong overnight winds meant **Surrey Hills** had to get their launch point caravan back upright! (Steve Codd); **Upward Bound Trust**'s Phil Guy was sent solo by Dave Bramwell (Gary Newbrook)



PETERBOROUGH & SPALDING (CROWLAND) WWW.PSGC.CO.UK
524233N 0000834W
WE had limited flying in January, but refresher training at neighbouring winch sites helped ease us through the winter. Ridge and wave expeditions to Milfield and Sutton Bank introduced new members to winter soaring. Our joint venture with Peterborough Regional College gathers pace; an excellent opportunity to promote opportunities for young glider pilots. We look forward to training week with applicants on the bursary scheme. This is supported by local business and funding from PRC. We welcome Tomasz Lipinski and Murray Spittal to the honourable 'legion of tug pilots', at Crowland. Our Astir has been helpful transitioning solo pilots to single-seat gliders and a welcome escape for experienced members.
Tim Beasley

PORTSMOUTH NAVAL (LEE ON SOLENT)
WWW.PNGC.CO.UK
504855N 0011225W
WITH Christmas having been and gone we are now over half way through the darkness. Winter has been bleak, but we have managed to fly most weekends. Congratulations to Olly Rastrick and Jim Chapman for their solos and Sam and Lewis for conversions onto the Cirrus. The Aboyne exped saw some fantastic wave conditions with Gold height achieved for Chris Parvin and Jamie Steel. Sam Hepburn also got his Gold height to complete his Gold badge. Well done, guys.
Lee Allinson

SCOTTISH GLIDING CENTRE (PORTMOAK)
WWW.SCOTTISHGLIDINGCENTRE.CO.UK
561121N 0031945W
WELL done to James McParland, first solo, and to Martin Phillimore and Freddie Bull, our latest Basic Instructors. At 16, Freddie is the youngest ever BI in Scotland (and nearly in the UK). In anticipation of Fiona Scougall retreating from the fray (she does not like the word retiring), the club has recruited Mark Thompson as the office manager. Congratulations to Santiago Cervantes and John Williams for taking first and second place in the Open Ladder and for collecting trophies for the fastest 300km and 500km tasks (in both categories they had the top five quickest flights between them). Roll on spring, so they can do it again.
Chris Robinson

SEAHAWK (RNAS CULDROSE)
WWW.SEAHAWKGLIDING.CO.UK
500509N 051520W
GOOD training has been achieved over winter. Lawson Tickell and Nick Baretta completed their Bronze GSTs. And DCFI George Kosak and Jamie Robertson climbed to 5,000ft in wave! The social event of the year was our Christmas party and prize-giving. Prizes went to: Clubman of the Year – Chris Dennis for his work on our ground equipment without which nothing would move; CFI's Prize – Lionel Webb, our QA Officer, who keeps us all correct; Best Flight(s) – Tony Wysocki for his three Silver flights; and Pilot of the Year – Jake Matthews for qualifying as a BI and a successful first competition.
Chris Bryning

SHALBOURNE (RIVAR HILL)
WWW.SHALBOURNEGLIDING.CO.UK
512014N 0013239W
WE are looking forward to warmer weather and the start of the soaring season. January was busy with the well-attended Shalbourne annual dinner and the work weekend. Many thanks to everyone who took part, completing such tasks as clearing the clubhouse and hangar of unneeded materials, cleaning aircraft, preparing the new control point trailer and cutting back brush (plus dozens of vital etceteras). Also, thanks to Pete (and assorted sous-chefs) for the endless supply of bacon butties and to Tony for his famous cakes and brownies. HCF has gone away to be refinished and SUGC took the Vega to the Mynd.
Claire Willson

SHENINGTON (EDGEHILL)
WWW.SHENINGTON-GLIDING.CO.UK
520507N 0012828W
CLUB buildings are undergoing renovation and work has started on our replacement showers. We held our annual dinner in February and the AGM in March. We're looking forward to a visit from the Juniors in April and are busy planning this year's regionals, which will be our 10th. The regionals for 2018 is oversubscribed and there's a regionals blog linked to our website if anyone wants visibility of the competitor and waiting lists. We've already had our first thermals and a few ridge days, which is promising. We'll be open seven days a week from April. The webcam and Facebook can be used to see what we're getting up to.
Tessa Whiting

SOUTHDOWN (PARHAM)
WWW.SOUTHDOWNGLIDING.CO.UK
505532N 0002828W
THE first of December dawned with temperatures as cold as Sussex flint. Sensible people pulled the blankets over their heads, but glider pilots from far and wide descended on Parham airfield for one of the best northerly days in living memory. At one stage there were around 50 gliders airborne, 34 having been launched by Angus Buchanan. Visiting pilots attended early morning briefing and discipline on the ridge was generally commendable. Sadly, since then the rain has arrived to limit soaring opportunities, but not before Oscar Warrington went solo and Jim Fleming qualified as a new tug pilot.
Peter J Holloway

SOUTH WALES (USK)
WWW.USKGC.CO.UK
514306N 0025101W
POOR flying conditions, soggy ground and the temporary unavailability of our tug has enabled us to concentrate on indoor activities, with a highly enjoyable Christmas social followed in January by a comprehensive presentation from Richard Slater on using LK8000. At our well-attended AGM Enzo Casagrande was elected club chairman, replacing retiring Grahame Nisbet, who was thanked for his work. Pete Burgess was re-elected as secretary and Steve Evans, Richard Slater and Geoff Williams were elected to the committee. We are very grateful to Cotswold Gliding Club for allowing us to bring our Grob 103 Twin II over to fly from their Tarmac runway at Aston Down.
Stuart Edinborough

STAFFORDSHIRE (SEIGHFORD)
WWW.STAFFORDSHIREGLIDING.CO.UK
524940N 0021212W
WELCOME to new members Marlena Jasiniecka, Tony Mackillican, Dominic Price, Ewan Strachan and son Patrick, Dave Shepherd, Lilly Lou Shipton and Oliver Thompstone. Belated congratulations to Nigel Frost, co-owner of Peter Scott's Olympia 419 'Wild Goose' for winning the Best Restored Aircraft and the Camphill Tankard at the 22nd Camphill Vintage Rally and 7th Capstan Reunion in June (see *Rally Round-up*, Feb/March 18). Rob Kameny has done it again – this time making the cover of Feb/March 18 *S&G* – during a winter wave

(Left to right): **Wolds'** Mike Johnson, solo again after a 30-year break (Will Blackburn); **Wrekin**'s Norm Potts and Colin Haynes prepare for an SLMG lesson; three generations of the Hollings family fly gliders at **Rufforth** – Grandad Tom and son Anthony, with granddaughter May



flight from Sleap with Paul Cooper. In the same issue, Dave Knibbs shows a typical early morning wintery scene at Seighford, preliminary to a busy Wednesday flying.
Malcolm Taylor

STRATFORD ON AVON (SNITTERFIELD)
WWW.STRATFORDGLIDING.CO.UK
521406N 0014310W
THE wet winter has meant a reduction in flying activities, to protect the field. However, we've managed to miss the worse parts of the mud and remain current. A big thank you to Barry Kerby for maintaining and preparing all the gliders for the season. Phil Pain has decided to step down from the committee and the club would like to thank him for his hard work over the past six years. Our annual expedition to Sutton Bank is taking place in May. With the 'promise' of wave, a larger party than normal will be travelling north. Congratulations to Ed Syson on passing his Bronze exam. Six SoAGC pilots have entered the Bidford Regionals.
Peter Capron

SURREY HILLS (KENLEY)
WWW.SURREYHILLSGLIDING.CO.UK
511820N 0000537W
2017 ended in the worst possible way – Simon Cousins, one of our members, lost his brother, two nephews, his brother's future wife and her daughter in the Seaplane crash in Sydney on 31 December. The members have spent most of January doing jobs around the club, including cleaning the launch point caravan only for it to be blown over in very high winds – it's back the right way up now. The club has purchased a Sport Vega so we now have got a fibreglass single-seat glider that the members were hankering after. We look forward to better flying weather soon – but at least our Tarmac runways mean we can fly all right year round.
Chris Leggett

THE GLIDING CENTRE (HUS BOS)
WWW.THEGLIDINGCENTRE.CO.UK
522626N 0010238W
WE are well prepared for the start of the season here at Husbands Bosworth. We have just taken delivery of a shiny DG-505 to supplement the club's two-seater fleet of two K-21s and the Duo Discus. There is a winch training programme and incentive in place, driven by the ever hard-working Paul Howard (many thanks) and our restaurant is back in business under new management so drop in for a good all-day breakfast. Our courses begin in mid-March and we already have several bookings. Our visit from South Warwickshire Flying Club was hugely successful in introducing power pilots to proper flying. Video can be seen here: *https://youtu.be/l4oCn70qw6c*
Alan Smith

UPWARD BOUND TRUST (HADDENHAM)
WWW.UBT.ORG.UK
514635N 0005630W
CONGRATULATIONS to Phil Guy, who went solo on 9 December. We are proud to have been awarded the Challenge Trophy this year and one of our new cross-country pilots attended the awards ceremony. We have continued to fly throughout the winter months whenever possible, despite a sometimes wet and muddy strip. A trip to Talgarth is planned for April and we hope for another good week's flying there. Our annual vintage rally will be held on the first bank holiday weekend in May (5-7).
Chris Scutt

WOLDS (POCKLINGTON)
WWW.WOLDS-GLIDING.COM
535532N 0004740W
CONGRATULATIONS to Mike Johnson, solo again after a 30-year break, but enticed back after his family bought him a voucher flight. We have enjoyed the first weak thermals of the year and recent westerly winds have produced some ridge soaring. Importantly, the return of our tea bus has brought some relief from winter weather. With the annual dinner and a new soaring season approaching we are looking forward to a busy year as we celebrate our 50th anniversary. As well as the 33rd Two-Seater Competition in August we are planning a task week in June and an open day in September – and watch out for us as the Tour de Yorkshire flashes past runway 31 in May!
George Morris

WREKIN (RAF COSFORD)
WWW.WREKINGLIDINGCLUB.CO.UK
523824N 0021820W
WREKIN has been lucky that a busy winter flying programme has seen only one cancellation due to weather. Highlights of the past year include: Mike Gagg achieving his NPPL SLMG; Matt Morrison passing his Bronze exam; Geoff Catling achieving both the Bronze Endorsement and Silver height gain; Steve Wall completing his Silver award; and Alan Swan achieving his Mountain Instructor qualification. Many congratulations to Colin Haynes on being accepted as a BGA inspector, a well-earned reward for all his hard work and study during the year. Looking forward, a busy flying programme is in planning and the club are at the early stages of planning an Easter expedition to Lleweni Parc.
Geoff Catling

YORK (RUFFORTH)
WWW.YORKGLIDINGCENTRE.CO.UK
5357100N 00111332W
EXCITING news – we have a K-21 that should be in use from February onwards as part of the modernisation of our fleet. Discussions are under way with a number of organisations regarding the possibility of shared use of our airfield. We are looking at safety and financial factors in more detail. We have established a significant extension to our East-West runway, thanks to the co-operation of our neighbours at Rufforth East Microlight site. Following the success of 2017's courses, we have published the 2018 schedule on our website. Finally, we enjoyed witnessing three generations of the Hollings family flying gliders here. Granddad Tom and son Anthony have been joined by granddaughter May, who has begun flying.
Andy Carden

YORKSHIRE (SUTTON BANK)
WWW.YGC.CO.UK
541338N 0011249W
GOOD early winter weather allowed flying with limited interruptions. The Christmas period saw this end. Snow and high winds limited flying through January. However, flying opportunities were taken on nine days, including our instructors evaluating a DG-1001Club neo, flying under the guidance of Bob Beck. The winter has seen the re-instrumentation of our two-seaters with tandem LX-S80 vario/nav systems and twin cockpit Becker radios. Our entire fleet now has standardised instruments and panel layouts. Training of an additional five Basic Instructors for 2018 has continued. Down to earth, our visitors will be pleased to hear that shiny new toilet and shower facilities will be in place for the coming season.
Ken Arkley

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

■ Kent GC welcomes visitors from the UK and Europe. The club is easily accessible, close to the M20 and M2 and about an hour's drive from London or Dover

› CLUB FOCUS

KENT

AT A GLANCE

Membership:
Full: £470pa
Junior/student: £55pa
Go for solo, incl annual membership: £1,000

Launch type:
Winch: £7.90
Aerotow: £30 (2,000ft)

Club fleet:
3 x K-21, 2 x Juniors, Puchacz, Pawnee tug

Instructors/Members:
25/120

Types of lift:
Thermal, ridge and wave(ish)

Operates:
April-October: seven days a week, with winch, tug and instructor available
Weekends and Wednesdays all year round, except for Christmas Day

Contact:
Tel: 01233 740274
soaring@kent-gliding-club.co.uk
www.kent-gliding-club.co.uk

Long and Lat:
511251N 0004984E

ON A CLEAR day, pilots flying from Kent Gliding Club can enjoy the very special experience of seeing, in one turn, not only the hop fields and beautiful countryside of Kent, but also the South Coast, South Downs, North Downs, Thames Estuary, Essex and France.

Nestling on the top of the gently rolling North Downs, just above the village of Charing and close to the village of Challock, is a triangular field which has been the home of Kent GC since 1963. Easily identifiable from the air with a chalk pit off one corner, we are lucky to own this field giving us a secure home from which to fly our modern club fleet and extensive range of private gliders and motor gliders.

Founded in 1930 we are the first BGA club to be formed, initially flying from various sites in Kent before settling at our current site. KGC now has about 120 flying members and operates seven days a week from 1 April to 31 October and on Wednesdays and at weekends during the rest of the year. We include a motor glider group and vintage glider group.

Apart from the Kent thermals, being situated right on top of the south face of the North Downs means ridge soaring is easily available in south-westerly winds. Wave flying also occurs... so some people say!

Apart from training our members through our bookable system and 'go for solo' scheme, we offer a range of training courses to non-members during April to October provided by our professional instructors. We fly many members of the public with our trial lesson programme and fly groups of people who want to try something different for their team building or social event through our Flying Evening programme.

The club is situated in the heart of Kent with numerous places to stay and places of interest nearby, including Leeds, Chilham and Sissinghurst Castles, as well as numerous gardens. We offer accommodation on site, a large clubhouse with showers, bar and cafe. Our office is staffed at weekends and on various days during the week. We have an active social programme and regular expeditions to other sites.

Mike Bowyer

Peter Harvey discusses the new Ventus with Schempp-Hirth's Ralf Holighaus and Andreas Lutz

Andy Davis (left) is joined on the Jonker Sailplanes' stand by Eckhard Sommer of M&D Flugzeugbau

The Haywards Trophy for instructing excellence is presented to PSGC's Ross Morriss (right) by Nigel Foster of Hayward Aviation

A DAY

With the latest toys on show and talks from a range of fascinating speakers, glider pilots enjoyed the annual BGA Conference and AGM

MORE than 400 glider pilots attended this year's BGA Conference on 17 February, which was sponsored by Sydney Charles Insurance and superbly organised by Liz Pike, Debbie Carr and the rest of the BGA team. The Nottingham Belfry Hotel looked after us well throughout a very busy weekend.

The day kicked off ahead of the main conference with two parallel sessions for club officials: a Club Chairmen's forum led by BGA Chairman Peter Harvey and a CFI/Senior Instructors' forum led by Mike Fox, the BGA Training Standards Manager.

The main conference began with Peter Harvey welcoming everyone with a numbers quiz that led neatly into a brief introduction to the day via an excursion into a thermal convection theory.

Paul Ruskin and Keith Vinning then presented a safety related item describing the development and benefits of the Open Glider Network (OGN) and how a low-cost solution that utilises OGN output to generate electronic situational awareness on a moving map screen is gaining popularity among GA aeroplane pilots. Paul made the case for wider potential benefits around situational awareness and sought support to further enhance the OGN network in the UK.

John Williams introduced an airspace session with guests John Brady (FASVIG), Dave Curtis (NATS) and Jon Round (CAA).

John W reshowed a slide he had used seven years earlier, which illustrated the choke points west of London and how any new Controlled Airspace (CAS) might benefit a minority, but make the airspace as a whole more dangerous. Seven years ago the threat had been purely hypothetical, now it was real and urgent because Brize and Oxford's consultants were formally proposing new CAS after flagrantly failing to even consider the needs of other airspace users. While the CAA's new airspace change process might improve transparency, it regrettably did not require proposers to work together to understand all users' needs before design work was done. That, combined with the CAA's well-established track record of always approving new CAS, led John to fear for the future and the safety of gliding. Unless the CAA adopt a radically changed attitude that fosters a collaborative rather than adversarial approach to modernising airspace, the future seems desperately bleak.

John Brady described the situation in Germany, where stakeholders seemed much more co-operative and flexible, and how the relationships between GA and controllers had been improved to everyone's benefit. The visit had been arranged by NATS and there seemed much to learn and benefit from.

Dave Curtis talked of his background with ATC (where he'd been

TO SHARE

involved in the well-managed co-operation between Luton and London Gliding Club) and innovation. He described the needs for and benefits of airspace modernisation. He advocated a collaborative approach to change and had already ensured BGA and NATS contact while redesign of northern airspace (Project PLAS) was still at a stage where gliding needs could be considered and incorporated.

Jon Round commented on the regulatory difficulties that had arisen between his predecessor's conference comments two years earlier and the CAA Post Implementation Review (PIR) of unchanged Doncaster airspace. He described the various pressures on regulatory decision making, particularly the vociferous aircraft noise lobby. A number of new airspace change proposals were now following the new process.

Jon was the almost exclusive recipient of questions from those attending, many concerning why a rushed and ill-prepared Brize/Oxford ACP had been allowed to escape the enhanced scrutiny of the new ACP process. He also stated that the CAA did concern itself with the safety of those flying in the diminishing spaces between areas of CAS and did not care solely for those who could or did fly inside CAS.

Following a coffee break, BGA Chief Executive Pete Stratten and BGA Executive Committee member Dave Latimer presented a short piece about the BGA over the next few years. This included headline actions and plans aligned with the BGA strategy around airspace and political engagement, site support and protection, as well as participation and marketing. Referring to specific EASA-related developments, it was noted that the lack of clarity around EU exit does impact directly on gliding. The discussion considered the 2017 Glide Britain pilot project, its subsequent output and 'what's next?' Part of the answer is that the BGA will ask clubs what they need. One of the many superb short films produced by the Glide Britain team was shown to an impressed audience, having been introduced as an example of the marketing legacy of the BGA, club and crowd-funded project.

Peter Harvey took to the stage to announce the development of an airspace fighting fund aimed at all GA pilots. Peter described how, having identified suitable trustees, a trust will be set up with a long-term aim of supporting GA in addressing increasing pressures and challenges associated with airspace. As a temporary measure, donations can be made securely to S R Lynn & Co Clients Account, Sort code 20-57-40, account 70816418, reference 'Airspace'.

Peter went on to describe the huge contribution made in gliding by volunteers. BGA Medals were presented to Ged Terry (Bowland Forest GC) for his outstanding contribution to gliding instruction; to Howard Torode (Lasham GS) for his outstanding contribution to gliding airworthiness and maintenance; and to Andy Davis (BGGC) for his outstanding contribution to competition gliding, including leadership of the highly successful EGC 2017. BGA Diplomas were presented by Peter Harvey to Matt Davis (BGGC), Steve Pozerskis (Lasham), Charlie Jordan (Deeside GC), Kev Atkinson (Cranwell GC), Tony Cronshaw (Cambridge GC), Basil Fairston (Bicester GC), and Jim Heath (Southdown GC). The Bill Scull Safety Award was presented to London GC for its ongoing success in maintaining a safe airspace sharing arrangement with London Luton airport. Yvonne Elliott presented the Caroline Trust special award to Sam Arnold (Bannerdown GC). The RAeC Awards were announced ahead of the awards event in May 2018 and the British Gliding Team were applauded for their impressive medal haul in the 2017 FAI European Gliding Championships.

Following lunch and another opportunity to make the most of the exhibition areas, the formal business of the AGM took place under Company Secretary, Anthony Smith. The Minutes of the AGM held 25 February 2017 were approved; the Annual Report was adopted; the Revenue Account and Balance sheet for the year ending 30 September 2017 was adopted; the budget for the year ending 30 September 2019

NATIONAL AWARDS:
BGA Chief Executive Pete Stratten reported a number of national awards: the RAeC Silver medal to Andy Miller; a Bronze medal to Mark Evans; RAeC Certificate of Merit to Steve Longland, Kevin Atkinson and Tony Cronshaw; and RAeC Diplomas for Don Irving, John Williams (SGU), Derek Wilson, Michael Muir, and John Stirk.

John Brady (FASVIG), Jon Round (CAA), Dave Curtis (NATS) and the BGA's John Williams fielded questions in an airspace session

A TRUST WILL BE SET UP WITH A LONG-TERM AIM OF SUPPORTING GA IN ADDRESSING INCREASING PRESSURES AND CHALLENGES ASSOCIATED WITH AIRSPACE

■ **Photos by Max Kirschner**

■ **TURN TO PAGE 64 AND 66-67 FOR MORE CONFERENCE COVERAGE**

Conference delegates are treated to a wide range of fascinating presentations (Max Kirschner)

CHAIRMEN'S FORUM

■ Peter Harvey facilitated a discussion with around 25 club chairmen that considered airspace, with an update by John Williams, as well as marketing news that included developments around the 2017 Glide Britain project.

CFI AND SENIOR INSTRUCTORS' FORUM

■ It was fantastic as usual to meet CFIs and senior instructors for an hour at the beginning of the BGA conference.

We spent this year on a few separate subjects. Paul Conran chatted about how CFIs could access training for more advanced aerobatics. Paul Ruskin gave an overview of the PilotAware system and asked for support, which sparked some interesting questions.

John Williams presented his take on the airspace situation, and then Colin Sword and I chatted about plans to introduce training for supervisors.

Mike Fox

and annual subscription rates were adopted, and auditors Haines Watts were re-appointed. In accordance with the Articles of Association and following the retirement of Peter Harvey, of Charlie Jordan and of Neil Goudie, Andy Perkins was nominated and approved as Chairman, George Metcalfe was nominated and approved as Vice-Chairman, and Bill Brittain and Richard Brickwood were nominated and approved as Executive Committee members. Retired BGA Chairman Peter Harvey was approved as a BGA Vice-President. The Company Secretary thanked those present and closed the meeting.

Schempp-Hirth General Manager Ralf Holighaus and Andreas Lutz (Austrian team member and part of the engineering team designing the new Ventus) took the stage. They highlighted impressive OLC statistics of flights in Schempp-Hirth gliders and described new Ventus developments.

After coffee, the afternoon progressed with four very interesting presentations: Freddie Turner gave an update on UK Junior Gliding, and Joey Beard talked about *Airborne*, a film she is making as her major thesis at university, that aims to encourage more young people to learn how to fly and for which Joey is seeking crowdfunding. Tony Newbery talked about the substantial progress made with the second hangar at the Gliding Heritage Centre, Lasham, and future plans to extend and add new buildings. Sir Chris Colville, retired Air Marshal and novice glider pilot, highlighted the risks and rewards in 'Flying to the limit'. Finally, Loris Gilner talked about 'The Airbus Perlan Mission II'. Loris works on telemetry data and developing the virtual cockpit for Perlan missions. When he's not working on the Perlan Project, Loris studies Aeronautical Engineering at Imperial College, London.

These fascinating talks rounded off a superb conference day.

The formal dinner and disco, sponsored by Forbes Insurance, was attended by 294 members and guests. Under the guidance of the BGA Competitions Committee chair, Liz Sparrow, the BGA Challenge trophy was presented to the Upward Bound Trust by Terry Moyes of Forbes Insurance, the BGA trophies for sporting achievement were presented by BGA Vice-President Peter Harvey, the Vintage Glider Club presented a keepsake medal with the Chris Wills Trophy for the wooden ladder trophy winner, Adrian Emcke, and the BGA Instructor of the Year trophy was presented by Nigel Foster of Hayward Aviation. The fun continued into the early hours of Sunday morning.

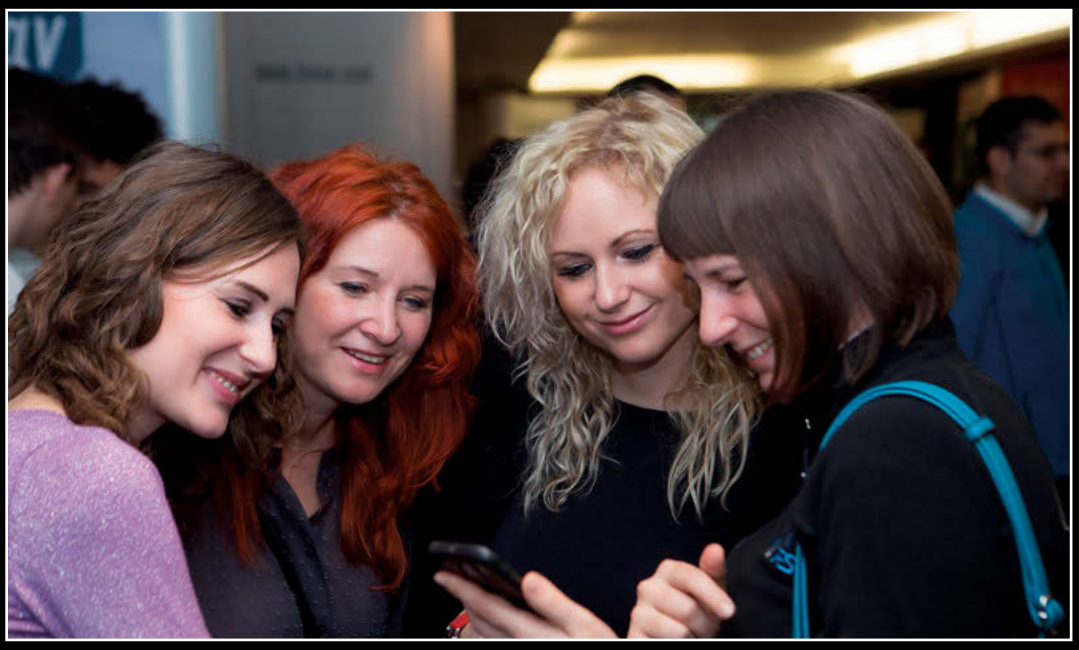
■ The BGA would like to thank the exhibitors supporting the conference: Sydney Charles; RD Aviation; LX Avionics; Paul Conran, aerobatics; Rory Ellis IDE Fly; Pooleys; IMI Gliding; Southern Sailplanes; Anglia Sailplanes; Hill Aviation; Milvus; Hayward Aviation; Forbes Insurance; Aeroclub Barcelona; Jonker Sailplanes and M&D Flugzeugbau; HpH Sailplanes; Cobra Trailers; McLean Aviation; Cloud Dancers; TPF Parachutes; Fly-Pyr Santa Cilia; Take Flight Aviation Ltd; Stein Financial; Nav Boys; Service Center Terlet; Vertigo Covers; Centre National de Vol à Voile (CNVV); Kevin Atkinson, Aim Higher; LaunchPoint; The Gliding Heritage Centre, Lasham; *S&G*; BGA simulator; BGA Shop; British Gliding Teams; Women Glide; Junior Gliding

▲ (Left to right) Peter Harvey presents well-deserved BGA Diplomas to the Aim Higher/ *S&G* Ask the Coach team, Kevin Atkinson and Tony Cronshaw

◀ Sydney Charles was again a generous sponsor of the BGA Conference

▼ The BGA's new chairman, Andy Perkins (left), presents ex-chairman Peter Harvey with a photograph of his glider, taken by Clement Allen during the 2017 UK Open Nationals at Tibenham. Peter Harvey is now a BGA Vice-President

▶ Pilots travelled from all over the UK and overseas to attend the conference and take part in the exhibition



(Facing page from centre top):

◀ Liz Sparrow, BGA Comps Committee Chairman, promotes Women Glide

◀ Starting them young on the BGA simulator

◀ 2017 Open Class World Champion Russell Cheetham with the Goldsborough Trophy, awarded to the highest placed pilot in previous World Championship

◀ Trying the JS3 Rapture for size. It looks a perfect fit!

(Left to right): networking and meeting with friends old and new is an important part of the day during breaks and at the evening's awards dinner, generously sponsored by Forbes Insurance

2018 BGA SPORTING CONFERENCE AND AWARDS PHOTOGRAPHY BY MAX KIRSCHNER

◀ Polish company IDE Fly were on hand to show that you too can dress like a champion. The company makes clothing and accessories for world champion Sebastian Kawa

▶ British team manager Graham Garnett looks delighted with the team's very impressive haul of medals

BGA accident/incident summaries

AIRCRAFT				PILOT	
Ref	**Type**	**Damage**	**Date, time**	**Injury**	**P1 hours**
111	DR 400	substantial	29/06/17, 14:45	-	not reported

Propeller struck the towbar. The pilot did not hear the propeller hit the towbar, taxiied and flew an aerotow; a reduction in power due to the propeller damage was only noticed before the second aerotow. The pilot had taken the towbar off after pulling the tug out of the hangar. A second pilot had re-attached the towbar to move the tug off the apron and when the pilot came back to the tug he did not notice that the towbar had been left attached to the nosewheel.

114 Std Cirrus minor 02/07/17, 18:50 none 321

Field landing groundloop. After nearly eight hours flying, the pilot realised that he wouldn't reach his intended landing area and made a late decision to land in the field immediately below. After a quick turn onto the downwind leg he flew a cramped circuit and ended up overshooting on final approach, touching down more than halfway into the field. The groundloop damaged a wingtip and an undercarriage door.

115 Puchacz substantial 06/07/17, 19:20 none/none 2,000

Heavy landing damaged the nose wheel and front cockpit. As the speed reduced on approach, the P1 said "I have control" and attempted to take control, but the P2 had not heard and resisted the instructor's attempted control inputs. The hearing loop and microphone used by the deaf P2 amplified all noise and the P2 had been unable to distinguish the P1's voice from background noise. A different hearing aid has helped, but the club intend to supplement the oral command by shaking the stick.

117 DG-101 minor 07/07/17, 13:50 none 165

Competition field landing accident. The pilot had landed in the same field before and knew it to be suitable so elected to try to climb over a nearby sunny area. When that was unsuccessful he flew to the field, joining the circuit on a low diagonal leg. It wasn't until final approach that he realised there was a substantial downwind component to the crosswind and the pilot was forced to groundloop to avoid running into a hedge. The tip of one wingtip broke off during the groundloop.

119 Super Dimona destroyed 13/07/17, 18:30 fatal/fatal –

AAIB investigation.

120 Puchacz substantial 14/07/17, 13:10 minor 20

Glider crashed into a field short of the runway. The pilot had opened full airbrake to correct an overshoot, he then sensed increased sink so shut the airbrakes, later reporting that the airspeed dropped to 40kts. The field immediately before the runway threshold is some 10ft lower than the runway; the glider impacted at the start of the slope up to the runway, breaking the fuselage at the base of the fin and around the cockpit.

121 K-21 minor 20/07/17, 16:30 none 196

Rear canopy opened on take-off. The pilot left both canopies closed, but unlocked, while stowing unneeded seatbacks and a parachute in the launch vehicle and, after strapping in, only the front canopy was checked in his pre-flight checks. The perspex separated from the frame, damaging the rear fuselage and TE tube. The nylon canopy interlocks had became deformed, enabling the front canopy to be locked while the rear canopy was unlocked. The club safety officer recommends that the nylon interlocks be replaced by newer, metal Schleicher parts.

123 Astir CS77 minor 20/06/17, 15:10 none 43

Field landing in crop. The inexperienced pilot flew cross-country during peak crop season. The glider groundlooped during a landing into a crop field, damaging an elevator hinge.

124 K-21 minor 25/06/17, 14:45 none 20

Ballooned landing. The pilot closed the airbrakes to correct for an undershoot on approach into a strong wind but then had difficulty opening the airbrakes and rounding out at the same time. During the PIO the nosewheel hit the ground causing some internal delamination.

125 Perkoz substantial 13/07/17, 14:05 none/none 1,340

Crop landing. On a mutual soaring flight, the pilots misjudged the height required to return to the airfield. With no suitable landing fields the pilots pressed on to the airfield, planning to land on a cross runway. The glider landed in a wheat field approx 100 yards short of the airfield, damaging the tailplane. The P1's glide calculations in his report suggests there was more than enough height to return to the airfield; the CFI's report points out a significant crosswind and shows that the logger altitude was 300ft lower than the indicated altitude reported by the P1.

127 ASW 22 minor 20/07/17, 17:45 none 2,000

Wingtip caught on the ground while rounding out. On the pilot's second flight on type, he reports being surprised at the ineffectiveness of the airbrakes and tried to turn slightly to one side. After the wingtip caught, the glider groundlooped and damaged a tip aileron. The reports suggests that the flap lever may have come out of the landing flap position.

129 K-23 substantial 25/07/17, 12:00 none 1

Wingtip caught slope during a field landing. The early-solo pilot released from the aerotow at 2,000ft aal some 8km from the airfield. Unable to recognise any landmarks and unsure of where the airfield was, the pilot set up a field landing at about 1,000ft. After catching a wingtip during the groundrun, the glider groundlooped, breaking the fuselage.

134 Discus minor 01/08/17, 17:30 none 118

Undercarriage collapsed during a competition field landing.

135 K-21 minor 03/08/17, 17:05 none/none 4,544

Heavy landing broke the main wheel fairing. The P2 lowered the nose late in the approach and the P1 took over too late to prevent a hard landing.

BGA accident/incident summaries *continued*

AIRCRAFT Ref	Type	Damage	Date, time	PILOT Injury	P1 hours
136	Discus	substantial	06/08/17, 14:15	minor	93

Competition field landing accident. For most of the long glide in deteriorating conditions, the pilot was confident of being able to return to the airfield. Below 500ft aal, the pilot realised that he wouldn't reach the airfield and made a left turn to line up with a suitable field and opened the airbrakes. The glider stalled after it cleared a hedge and impacted the ground nose first before rotating through 180°. The pilot bruised a leg, the glider fuselage was broken in the cockpit area, the boom was snapped and the elevator and tailplane damaged.

Incidents

109	K-21	minor	24/06/17, 09:45	–	–

Tail dolly latch failed while the glider was being towed, allowing the tail dolly to come off and damage the rudder. Members had noted that two of the the three latches were u/s, but this was not reported and the dolly continued to be used until the third latch failed.

110	Duo Discus	substantial	26/06/17, 11:00	–	–

Wing dolly wheel separated from wing clamp while under tow, yawing the glider. The wing clamp cracked the aileron and the rudder was damaged by the towbar.

112	Astir CS77	none	01/07/17, 12:00	none	34

Undercarriage collapsed during landing. The pilot had lowered the wheel, but it it was not properly locked down.

113	Twin Astir	none	01/07/17, 11:00	none/none	>3,000

Undercarriage collapsed on landing. The P1 is not certain that it was properly locked down.

116	DR 400	minor	08/07/17, 14:00	–	–

Wheel spat fire. The aircraft had completed five aerotows and was taxiied back to the fuel pumps. The pilot noted that more power than usual was needed to maintain speed and after exiting the tug heard warning shouts. The fire was put out with minor damage to the spat.

118	ASW 20	none	09/07/17, 15:00	none	132

Wing drop during aerotow take-off.

122	DG-505	none	15/06/17, 16:30	none/none	1,090

Aerotow launch failure. The launchpoint was set up at the far end of the airfield to give maximum clearance over the upwind trees in the windy and gusty conditions. This meant that the P1 had to hold full airbrake to use the wheel brake to stop the glider rolling backwards before take-off. The P1 attributed the poor climb after take off to low level turbulence and was considering whether to release when he saw the rudder waggle signal from the tug. The P1 released and only then did he realise that the airbrakes were open. After shutting the brakes the pilot flew a safe off airfield landing.

126	K-21	substantial	16/07/17, 17:30	–	–
	K-21	substantial			

Club member went to put a tow buggy away, not realising that the tow rope was still attached to a glider. Although he stopped the buggy soon after moving off, one K-21 rolled on into the other. A wing leading edge was damaged as it hit the other glider's rudder, the other K-21 also had a punctured fuselage where it was hit by the nose of the towed glider.

128	ASW 20	none	23/07/17, 17:40	none	–

Inadvertant undercarriage retraction.

130	LS6	none	25/07/17, 14:05	none	380
131	PA 18	none		none	530

Glider got high on aerotow. After looking at the altimeter, the glider pilot looked up to see that the tug was no longer in view so released the rope. The tug pilot reports seeing the glider "winch launch" in the mirror so he pulled the release. The glider was being towed on a belly hook.

132	Junior	none	01/08/17, 12:00	none	42

A retrieve buggy crossed the landing area in front of the glider just as the glider was about to round out. The pilot was able to pull up to miss the buggy, but the glider subsequently landed heavily, fortunately with no injury or damage.

133	Olympia	none	01/08/17, 11:45	none	600

The tug pilot had difficulty staying below the glider's max aerotow speed of 60kts in the windy and gusty conditions. After encountering turbulence at 800ft agl, the glider's airspeed reached 70kts and the pilot chose to release, but had difficulty pulling off as the load on the hook increased as the aircraft diverged.

137	K-21	none	15/07/17, 11:45	none/none	450

One airbrake opened fully and remained open when the P1 opened the airbrakes at the start of the approach. The glider had just been rigged and the riggers had had difficulty connecting the controls. The connections were checked visually and positive control checks were performed after rigging; it is thought that the airbrake connection was not properly secured.

138	Chipmunk	none	22/07/17, 14:00	none	–

Engine failure at 800ft during an aerotow. After landing back at the airfield, one of the rear cylinders was found to have failed.

During BGA Club Safety Officer seminars it was proposed that, to further encourage reporting, it would be a good idea to remove site names from summaries. This has been reflected in the summaries on these pages. Edward Lockhart continues to provide a little extra detail, where available, in these listings. We would also like to publish (anonymously) your stories of particular flights that have taught you a valuable flying lesson. Please send details to *editor@sailplaneandgliding.co.uk* or by post to the address on p3.

BGA BADGES

No.	Pilot	Club (place of flight)	Date
FAI Diamond Badge			
7547	David Bray	Oxford	02/10/2018
7548	Kevin Dillon	SGU	04/01/2018
Diamond Height			
3-1817	Geoffrey Forster	Borders	15/10/2017
3-1818	Chris Gill	Denbigh	24/12/2017
Gold Distance			
	Richard Watson	Wolds (Lasham)	13/08/2017
Gold Height			
	Daniel Palmer	Wyvern (Aboyne)	30/10/2017
	Miles Bailey	Bicester (Lleweni Parc)	31/12/2017
	James Davidson	Lasham (Aboyne)	11/10/2017
Silver Duration			
	Mark Durden	Chiltern	26/11/2017
	Joshua Rees	Chiltern	19/08/2017
Silver Height			
	John Marshall	Cairngorm	02/11/2017
	Daniel Palmer	Wyvern (Aboyne)	31/10/2017
100k Diploma Part 1			
	Harry Cooper	Lasham	01/09/2017
Cross Country Endorsement			
	Andrew Harvie	York	11/11/2017
	Ryan Hobson	Darlton	07/09/2017
	Brian Crouch	Deeside	30/11/2017
	Owen Price-Lewis	Bristol & Glos	09/12/2017
	Paul Johnstone	Nene Valley	17/12/2017
	Joshua Rees	Chiltern	28/08/2017
	Nickolay Jelev	Shalbourne/ Southampton University	13/01/2018
	Michael Calvert	Lasham	25/01/2018

INSTRUCTOR RATINGS

Basic		
	Thomas Fern	Bicester
	Andrew Jones	Eden Soaring
	Frederic Bull	SGU
	Maciej Van Der Steen	London
	Martin Phillimore	SGU
	John Shaw	Burn
	Richard Nadin	Trent Valley
	Alastair Mackenzie	Burn
Full		
	Oliver Bosanko	Cambridge
	Chris Gilll	Debigh

Congratulations to everyone listed here for their achievements

DERRICK ECKLEY (1933-2018)

ALTHOUGH many people dream of starting their own gliding club, few have the energy and vision to do so. Derrick Eckley, who sadly died recently, certainly did – for along with the irrepressible John Bally, Derrick created one of the UK's premier soaring sites at Talgarth, home of the Black Mountains Gliding Club.

Derrick was a complex and at times complicated man. By turns dour and funny, mean and generous – he really was a tremendous character, who could infuriate, enrage, engage and amuse in equal measure.

He also knew how to get things done. Talgarth is in the Brecon Beacons National Park, so you can imagine the difficulties in convincing the planners that creating an airfield within a national park's boundary was a good idea!

Derrick worked very hard to make the BMGC a success, for as well as operating the tug for many years and instructing, he was simultaneously running his farm while his wife Gwen offered a B&B for visiting pilots.

A great illustration of his 'can do' ethic is that when he and John first started thinking about flying from his farm and paced out the most suitable field, it was clearly too short. The solution? Pace it out again and again, until they'd convinced themselves it was long enough!

The adventures and misadventures of the club's early years could fill a book, so it's just as well that Derrick wrote one! By the mid-1980s, gliding club bars around the country were beginning to hear tales of a tiny airfield halfway up the side of the ominous-sounding Black Mountains, and conditions that offered some of the finest soaring in the UK.

As well as enjoying a fast-growing membership, Talgarth became renowned as an expedition site, and Derrick – usually accompanied by his faithful Welsh Corgi Sammy – delighted in welcoming groups of glider pilots from most of the larger English clubs.

He particularly enjoyed showing visitors how to soar the ridge low down, and explore the myriad wave systems that abound in the area.

Derrick's management style was distinctly autocratic, and I suspect he secretly revelled in being referred to as 'der Fuhrer'. He also took justifiable pride in the achievements of the BMGC, and the club's continued success will remain his legacy.

Dave Unwin, Black Mountains GC

MEL MORRIS (1942-2018)

WHEN I arrived at Burn Gliding Cub in 1986, Mel was and had been the CFI since before the club moved from Doncaster three years previously.

His flying career had actually started in 1970. He continued in the position of CFI until he suffered a stroke in 1996, at which time he stood back and passed the job over to Bill Jepson.

However, as his health improved Mel was eventually able to carry on with BI training and tug flying.

Much later, Mel suffered the tragedy of losing his eldest son, Paul, in 2004 to a flying incident in the RAF, and never fully recovered from the devastating and emotional trauma of that event that he suffered.

His visits to the club became less frequent until the time came when he decided to stop flying altogether. His younger son, Neil, brought him to see us at the airfield last year, but it was not the same Mel Morris who we had known over the years.

On that day, my thoughts were that he knew he wouldn't be seeing us all again, so came to say his own farewells to the club where he had spent years enjoying our sport, and during this time passing on his knowledge and his experience to others. Very sad indeed. More than this I cannot say.

When you leave this world and go elsewhere as you surely will one day, the only things that you'll take with you, are the things you gave away.

Mel is survived by his wife Jenny and younger son Neil.

Tony Flannery, Burn Gliding Club

The BGA Team and General Information

Executive Committee

Chairman
Andy Perkins
chairman@gliding.co.uk

Vice Chairman
George Metcalfe

Executive Members
David Latimer, Bill Craig, Nick Bowers, Lisa Humphries, Anthony Smith, Bill Britain and Richard Brickwood

Treasurer
Anthony Smith

Company Secretary
Anthony Smith

HQ

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Fax: 0116 289 5025
office@gliding.co.uk
www.gliding.co.uk

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Office Manager
Debbie Carr *debbie@gliding.co.uk*

Accounts
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Administration
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Sheila Weston *sheila@gliding.co.uk*

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Airworthiness Quality Manager
Keith Morgan

Magazine Editor
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Child Protection Lead
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Performance & Development

Competitions & Awards
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Team GB Manager
Graham Garnett

Development
Dave Latimer

Development Officer
Alison Randle
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Marketing
Rachel Edwards
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Aim Higher
Kevin Atkinson

Schools and Colleges Lead
Yvonne Elliott - *via the BGA office*

Operations

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Pete Stratten

Airspace
John Williams

Instructing
Colin Sword

Training Standards Manager
Mike Fox
mike@gliding.co.uk

SLMG
Paul Whitehead

Technical
Howard Torode

Flying Operations
Peter Moorehead

CAA SLMG Instructors and Examiners

A number of CAA authorised SLMG examiners are appointed via the BGA to support SLMG activity under the management of the BGA SRE SLMG. Contact details are at https://members.gliding.co.uk/examiners

Gliding Examiners

BGA gliding examiners are appointed regionally and directed by Senior Regional Examiners. Coaching and tests can be arranged via SRE's who are listed at https://members.gliding.co.uk/pilot-resources-flying-training/examiners/

Safety Guidance

There is extensive safety guidance including a toolkit for club safety officers at https://members.gliding.co.uk/safety

Airworthiness Inspectors

There are a number of BGA inspectors across the UK. A proportion of them are approved to issue an ARC and are listed by region at https://members.gliding.co.uk/arc-signatories
Regional Technical Officers can be contacted via the BGA office.

Airworthiness Guidance

Extensive guidance for owners of non-EASA and EASA aircraft is at *https://members.gliding.co.uk/airworthiness*

Other Information

Courses *and Seminars*
BGA courses and seminars information is at https://members.gliding.co.uk/courses/

Fees
BGA fees are detailed at https://members.gliding.co.uk/fees-and-charges/

BGA Office Contact Details
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tel: 0116 289 2956 fax: 0116 289 5025 email:office@gliding.co.uk

Classifieds

Please send the text of your classified advert to Debbie Carr at the BGA office (not to the editor) – *debbie@gliding.co.uk* The deadline for classifieds to be included in **June/July 18** is **4 May 2018**.

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Bookings should be made via the BGA office 0116 289 2956 or debbie@gliding.co.uk

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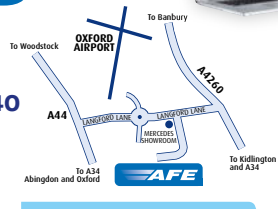

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