SOUTHERN HANG-GLIDING CLUB

WINDSOCK

NOVEMBER 2022

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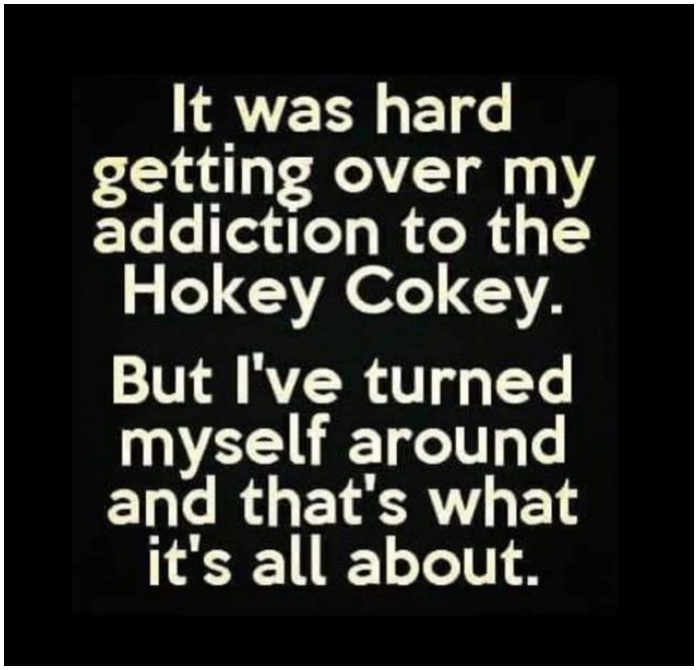

"The exhilaration of flying is too keen, the pleasure too great, for it to be neglected as a sport" - Orville Wright

1. Introduction

Welcome to another edition of Windsock. For those new to the Club, Windsock is the Club's newsletter. Windsock's mission statement is very similar to that of the BBC; to inform, educate, and entertain.

All prior copies of Windsock, dating back to the formation of the Club in 1974, are available on the Website (www.shgc.org.uk/windsock). Those very early editions provide a fascinating glimpse into the early days of the Club, and into the rapid development of free-flying in the South East of England. Some of those pilots, involved then, are still very active in the Club, and the sport. Take a look, when you have time, you are unlikely to be disappointed.

In this edition of Windsock, in addition to the regular features, the Windsock team have included a range of articles on subjects that include the importance of understanding ground inversions – and why you need to take extra care at this time of year. Written by Dave Lewis it is an excellent summary of inversions and winter flying – please read it! On the same subject, there is an article on winter flying more generally, plus Lapse Rates, Tephigrams, RASP, a guide to Civil Aircraft Notification Procedures ('CANPs'), and an excellent article from Dermot Ryan on understanding and managing our innate 'Confirmation Bias', and a better understanding how it may be negatively influencing our flying decisions.

We have repeated a request (from the last edition) for volunteers to help the Club maintain our flying sites on what would probably amount to no more than just a few occasions during the year. Can you help?

Unfortunately, incidents do occur on our sites and it is essential that any/ all people who were involved either directly, or as a witness, complete an incident report. Steve Purdie and Robin Clark have co-written an article on this very topic and why it is important that all members understand why these reports are important and essential tools to help all parties learn from these experiences.

We fly in very busy skies, and from very busy sites, and never more so than now. In recent years the popularity of drones has increased, as much as prices have fallen. There is a very helpful article, written by Robin Clark, that explains the rules and regulations that apply to drone operators and what steps we can,

and should, take if and when, as has happened recently, a drone is being flown from a Club site whilst PG/HG activities are taking place.

As I noted above, the purpose of Windsock is to inform and educate all pilots who share a passion for free flight!. The articles highlighted above are intended to do this. Regarding the third mission 'to entertain' we hope that you enjoy this edition of Windsock and hopefully you also enjoy the 'entertaining interludes' included by the Windsock team.

Special thanks to Chintan Gurjar for allowing the use of the stunning photograph on the front cover of this edition of Windsock. I am pleased to say that the Windsock team were present that day and enjoyed the autumnal flying! FYI… We are always happy to publish similar photos from Club members.

Finally, PLEASE, PLEASE, PLEASE, help by sending articles for publication in Windsock – covering your flying experiences – which will 'inform, educate, and entertain' your fellow pilots. They are always welcome, and very gratefully received. Putting Windsock 'together' is a much easier task with YOUR help! Please send articles to windsock@shgc.org.uk

Thank you - the Windsock team.

Stuck for ideas for your Christmas list?

What about this… just a thought….?

Written by Dennis Pagen with illustrations from Steve Ham.

"This book has been the best-selling classic meteorology text for over 30 years. Substantially revised and updated, and packed with clear illustrations."

Currently available on Amazon priced at £32 (Flexibound).
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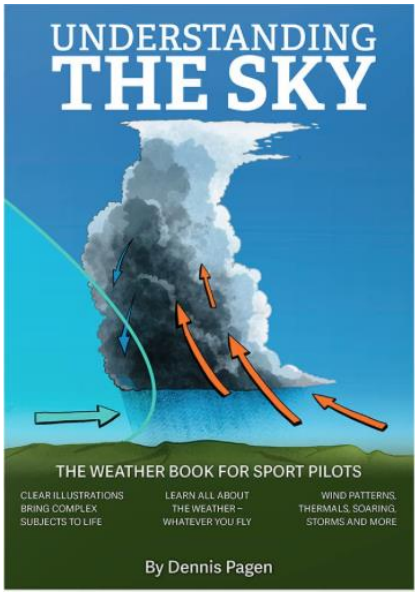


2. Chairman's Chat – John Turczak

As we approach the end of the year, and move into the winter season, it's a good time and opportunity, to reflect on what we have been doing in the Club over the past 12 months. In this edition, there are articles that help you better understand how and why the flying conditions at this time of year differ to those the other seasons and with helpful guidance on how to fly safely.

Congratulations go to the very keen and dedicated XC pilots that made the Southern Club the best in the UK, winning the XC league with 5190 points. The Dales Club came second with 4751.6 points and XClent were third on 4605.7 points. The top four Southern Club pilots were Hugh Miller, Andrew Kruszynski, Tom Wycherley, and James Chancellor. Click Here for more details on the XC League. Additional congratulations go to Andrew McNicol who also won the 2022 British Championships.

We are looking to encourage more pilots into XC flying and a significant part of this effort is to support the smooth progression of new pilots into the club. Chief Coach - Robin Clark - continues to run an excellent Red Ribbon Club giving newly qualified CPs helpful support and encouragement, allowing a smoother transition from the school to the Club environment. In this edition, Robin has written an article on this point. If you are already a coach and would like to get involved in this rewarding area of helping new pilots then please get hold of Robin for a chat.

As Robin mentions in his article, all new pilots receive an induction and a friendly welcome into the club, guidance on sites and site rules, and an opportunity for questions. Pilots are encouraged to take advantage of the coaching system, the various Telegram groups, and to ask any questions. We get very good feedback for the new CPs on this and how helpful they find it.

The HG aerotow portion of the Club has finally got a new home at Kittyhawk Airfield. See Windsock Dec 2021 for more details. Our esteemed President, Johnny Carr, is now a Senior HG Instructor and is encouraging newer HG pilots to get involved. Congratulations also to Johnny for winning the 2022 Great British Aerotow Revival competition earlier this year. Congratulations also to Southern Club pilot Dave Mathews who came second, and Gordon Rigg from the Derbyshire Soaring Club who came third. Well done to all of the 21 competitors who took part. Click Here for more details.

We are continuing to run our Club Committee meetings by Zoom which, makes it much more efficient, and significantly greener. We are really pleased to see some of the younger and newer Club members stepping up to help on the Committee. Andrew Kruszynski, as XC co-ordinator, has definitely been leading the way in XC, by promoting the Waypoint Challenge. Inga Markelyte took over as Membership Secretary and, very quickly, got to grips with the role allowing a very smooth and seamless transition from Grita Rose-Innes who stood down. Thanks to Grita for her excellent service as the Club's Membership Secretary. Lastly, let's not forget that Jeff Royle gallantly took over as the Club's Social Secretary – a post that had been unfilled for several years – and organised an excellent BBQ, with help from several other valiant Club members; fabulous food, drinks, music, and company! Thank you Jeff, very much appreciated! Look out for announcements, of further social events, in due course.

There is a lot of background work that gets done by the Committee stalwarts who have been giving their time over many years to keep the Club running. I am totally appreciative of their help and hard work. However, you don't have to be on the Committee in order to help the Club, as our team of Coaches regularly demonstrate. To illustrate this point, thank you to Yves Horent who has organised a First Aid course in December. This First Aid course is now full but Yves is maintaining a 'waiting list' and will look to organise further courses in 2023. These First Aid courses have a practical focus on accidents that can occur on our sites and having pilots with 'first responder skills' is very important. There is a write-up of a previous First Aid course in the December 2021 edition of Windsock. Contact Yves if you want to add your name to the waiting list.

The Club continues to support the work of the Kent, Surrey, and Sussex Air Ambulance and Newhaven NCI. Donations to support their work have again been made in 2022. I can also report that the SHGC Discretionary Trust is now fully established, and the Site Fund is under the watchful eye of the Trustees.

We desperately need people willing to volunteer as Site Custodians and to help our sites officer Dave Lewis in the very important oversight of our sites and maintaining cordial relationship with landowners. I would be delighted to hear from anyone that would like to volunteer in this important role and/ or in some aspect of the Club.

As the year draws to a close I wish everyone seasonal greetings and some more great flying next year

– John.

3. Coaching Corner: A Guide for New(er) Club Members – Robin Clark

The Club has consistently had around 10 new members joining every month, and over 1,000 new members have joined since 2015. Of course, not all of them have retained their membership, but it has been proven that new pilots are more likely to remain in the sport if they continue to develop their skills and experience.

The BHPA's approach to pilot development is that once a club pilot rating has been gained from a school, further development generally occurs on a voluntary basis within the club coaching environment although there are also local schools and instructors providing CP+ development programs for a fee.

A coach is a Club member who has completed a two-day BHPA coaching course and is approved by the Club's Chief Coach to hold a coaching licence. This approval is renewable annually. The important aspect of the coaching licence is that coaches are covered by the BHPA's liability insurance in respect of their coaching activities. Details of all coaches are shown on the Club's website. There are separate coaching licenses for hang gliders and paragliders just as they each have their own pilot ratings. A small number of coaches are Senior Coaches, who have attended an additional BHPA Senior Coach/ Instructor course and been appointed by the Club.

A new member's first encounter with coaching is usually the induction meeting held by Zoom each month for new joiners. Here they are introduced to the Red Ribbon Club (RRC). Both the RRC and the monthly Club meetings are a good opportunity for newcomers to meet other members.

A length of Red Ribbon attached to the trailing edge of a wing, tells other pilots that the pilot is new to the sport and may require special consideration such as extra space in the air. It should be used for at least the first 10 hours post CP.

The RRC communicates through dedicated Telegram groups, and aims to meet with a coach in attendance at least one day each weekend if it is flyable, and sometimes midweek too. This is an important element in helping pilots make the transition from the school to the Club environment and flying with others on an unsupervised basis. It covers weather forecasting and site selection, site briefings, and support with launching as well as any general beginners' queries. There is also a SHGC Coaching Group on Telegram where anyone can post questions which are then answered by coaches.

We hold a monthly Club meeting at Glynde Social Club, usually on the last Wednesday of each month, with a presentation by coaches or external speakers on various subjects. Recent topics have included CP development over the winter, the work of the Air Ambulance, the early days of SHGC, thermalling, and cross-country flying. Wherever possible these are videoed and posted on the SHGC YouTube channel. There is a growing library of video and other coaching resources on YouTube and the 'Coaching Corner' of the Club's website.

These resources include presentations covering the syllabus for the BHPA Pilot Rating exam, which can be arranged with the Chief Coach once all the necessary flying tasks have been completed and signed off by a coach. Any club coach can witness completion of a flying task on the hill and sign it off in the member's Pilot Task book.

The Club also arranges a two-day First Aid course run by external trainers that leads to a recognised qualification and has a particular emphasis on the types of injury sustained by pilots.

Windsock, the Club's magazine, is published online several times each year. It contains coaching articles relevant to pilot development, and past editions are all available on the Club website. The Windsock editor welcomes contributions and some of the most popular articles have been accounts of flying trips abroad including experiences of SIV training.

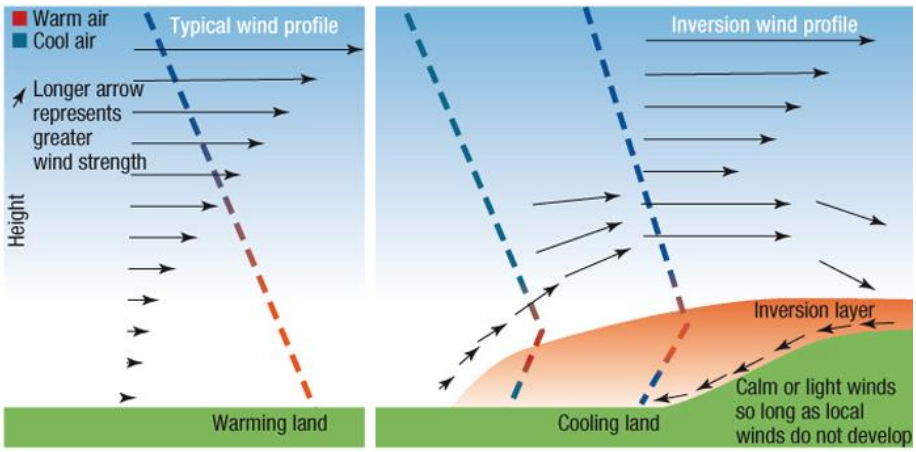
These are just examples of the more formal coaching activities in the club. All coaches (and Committee members) are unpaid volunteers who have expressed a willingness and commitment to help other pilots in various ways. Do make use of this valuable coaching resource by getting to know them and speaking to them on the hill. In time you may wish to put something back into the sport by becoming a coach yourself; we normally run a coaching course with the BHPA every two years and other Clubs run them too and SHGC members are often invited to attend if there are places spare.

4. 'Tis the Season… To Be Jolly Careful of inversions – Dave Lewis

Looking out of my window at 07:00 one morning, the wind in the trees made it look flyable, but the clouds at around 1000 feet were belting along. I wondered if I should take a paramotor up and investigate the shear layer between the two? Or could I simply fly Firle for an hour and let the shear layer come to me?

I hate to mention the word, but it's nowfeeling very autumnal early morning and late evening some days. What we're feeling is a ground inversion, which has provided more than a few nasty moments for pilots. It works like this:

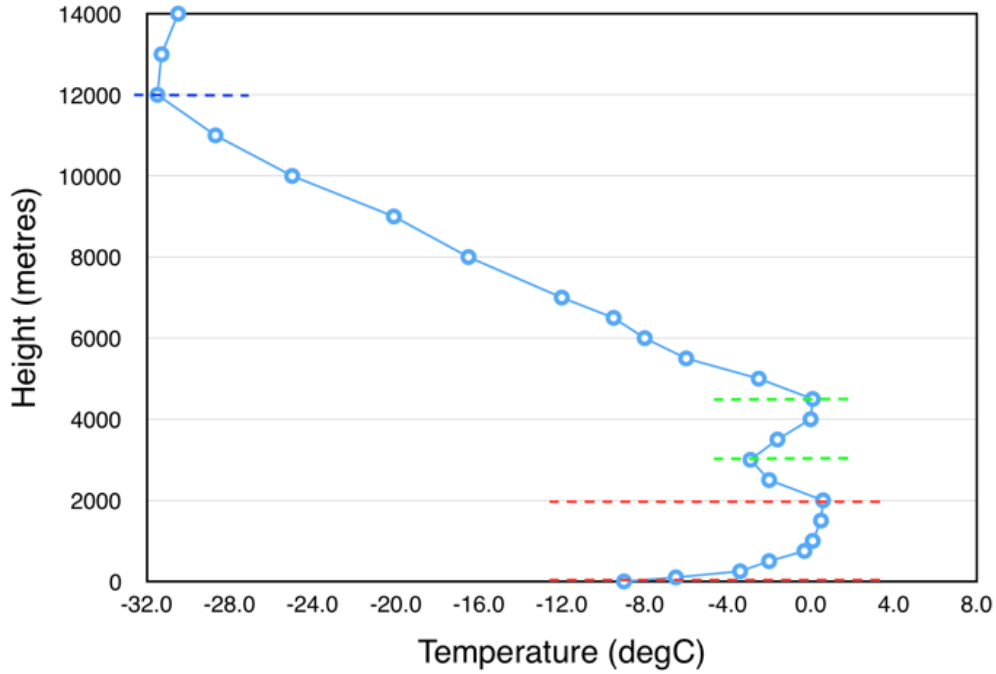
We're all familiar with the ground heating in the day, heating the air touching it and making thermals. As the sun goes down the reverse happens. The once-hot ground radiates its heat energy. If there's no blanket of cloud to bounce it back, the energy is lost into space and the ground gets cold. The air touching the cold ground gets cold and dense. As evening draws into night, the layer of cold air gets thicker and colder, anything between a few feet and a up to several hundred feet, perhaps even a thousand. We now have a lake of heavy, cold air over the land with the real air doing its own thing over the top.



Air movement under a surface temperature inversion differs from a typical wind profile (left). Surface winds de-couple from the surface, accelerate and flow over the inversion. Within the inversion, winds are typically light and often drain down slope, regardless of the overlying wind direction. Under an inversion the shape of the landscape also influences the direction in which airborne droplets will move (right).

The autumnal feel happens when we're standing in the cold layer - it's cold, humid even forming dew or mist and less windy than in the day. Risks to the unwary pilot are:

- It's been windy all day and close to sunset the wind drops to flyable. If you fly and climb a bit, you might get up to the windy layer and find a turbulent surprise in the shear layer between the two. Above the shear layer it will still be as windy as it was all day.
- The wind early morning is light and flyable (possibly with plenty of wind from the north as the cold layer flows out to sea, just like a river). With some sun on the ground, thermals start and climbing begins. If you get a decent early climb, you might get to the shear layer and receive a battering from the turbulence. If you get through that in one piece there might be a lot more wind above.
- At about the point in the day when the thermals are strong enough to get our intrepid shear-layer researcher aloft, all those thermals belting through the cold layer stir up the whole system and mix the cold air in with the normal air above. That usually takes 10 minutes to half an hour and is not a nice time to fly. The thermals race up through the cold air, lumps of windy air from above are brought down and sensible pilots will be on the ground having coffee.
- Once the mixing is complete and the ground inversion is gone, all the cold air having mixed up with the air above, thermal activity will slow right down. That's because the air over the fields is now warmer and the fields and their thermals need to get hotter to make the required temperature difference. After another coffee it should get going again and this time the climbs will go all the way up.



Example of a vertical temperature profile with a deep inversion at the ground surface at 0-2000 metres (between red dashed lines), a second inversion at 3000-4500 metres (between green dashed lines), and the usual inversion found as we head from the troposphere into the stratosphere (above the dark blue dashed line). The light blue line joins temperature measurements (blue circles) throughout the troposphere.

Signs that this might be the situation:

- It's been a warm, breezy day and in the evening the wind slows as it cools off.
- The skies are fairly clear allowing the energy to escape.
- It's not windy on the ground, but the clouds are moving well.
- The forecast is for wind, but it's not windy on take-off.
- The isobars and other higher-level wind forecasts show wind but the simple forecasts for ground level wind show much less.
- It's clearly shown on the forecast soundings.
- You're soaring around take off where there's plenty of wind but not much lift. You get a bit low and slope land only to discover there's no wind at all. You're in the cold lake and only the top bit of the hill was sticking out in the breeze.
- You're landing at the bottom of the hill facing into wind and at 10 feet the glider dives as it enters the cold, still layer and you land long and fast! Hopefully, you followed procedure and came in with excess airspeed and legs down so you didn't stall.
- You've watched someone take off half-way up, climb 100 feet above the hill, take a series of collapses, then start going backwards.

5. Flying with Drones – Robin Clark

The use of drones has become more common and they are used in a variety of different settings. These include use by the military for intelligence gathering and weapons delivery purposes, and they are used by a wide range of other people, groups, and organisations; these include wedding photographers, security personnel, and in search and rescue operations. It is anticipated that Amazon plans to use drones to make deliveries (in California).

The flying of drones and model aircraft is a regulated activity in the UK and is covered by the Unmanned Aircraft Systems (UAS) Regulations. These include the Air Navigation Order 2016 (as amended) and previous EU legislation that is now incorporated into UK Law.

The specific requirements are different depending on the type and weight of the drone, the purpose it is used for, and whether it is flown over or close to other people.

Whilst, PG & HG pilots may encounter large drones operating at high altitude during a cross country flight, this article focuses on smaller (sub 250g) drones, flown for recreational purposes, and which we may encounter on and around our flying sites.

This note is intended to give you a better understanding of the potential risks and legal position in case they need to ask drone flyers to move elsewhere. Recently, a drone was being flown over launch at Devil's Dyke operated by a person near the stone bench and although the drone pilot was challenged by several pilots the operator carried on flying.

Risks

The main risk of flying close to a drone is clearly the risk of an airprox incident or a mid-air collision. Whilst, small drone's spinning 'wings' may not cut the PGs sheathed Dyneema or the Kevlar lines of a paraglider, a drone could hit the pilot, and/ or the wing, resulting in a collapse. HG's wings are probably less vulnerable to damage but the HG pilot remains equally at risk from being hit by a drone. That said, a collision with a large 'professional drone' would be another matter completely.

As small recreational drones are restricted to 400 feet AGL, and the recommended minimum height for a clean deployment of a paragliding reserve is 500 feet, the potential consequences are obvious.

RC powered aircraft and gliders pose similar risks, but we have generally co-existed happily at a number of sites with each group staying in its agreed area. Their owners appear to more co-operative and understanding than some drone flyers, perhaps because they have been around for longer and are not generally preoccupied with filming for social media.

A BHPA / BMFA Operating Code for Co-existing with model aircraft is available on the BHPA website (https://www.bhpa.co.uk/pdf/BHPA_BMFA_operating_code.pdf). It was issued in 2011, before the use of recreational drones became widespread in the UK, but the principles remain relevant.

Because drones are separated from their operator by some distance, and may be flown First Person View ('FPV' - see below), the drone flyer may have poor perception of separation.

Cases and incidents

The BHPA incident report database includes three near misses with drones, and one mid-air that damaged lines and central cells but ended with a safe landing.

In 1987 a hang glider pilot died after colliding with a model aircraft at Devil's Dyke. This led directly to the 250 feet exclusion zone over the modellers bowl north of the pub.

In New Zealand, in 2020, a drone flyer was convicted and fined the equivalent of £500 for using his drone "in a manner causing unnecessary endangerment", and "for failing to keep clear of a manned aircraft", after his drone hit a trainee paraglider pilot's line(s) circa 100m above the ground. The presiding Judge said that the pilot had been too reliant on his camera (field of) view and failed to maintain visual line of sight. Fortunately, the paraglider pilot was able to land unharmed. The drone flyer, a professional cameraman, appealed the conviction on the grounds that it would damage his ability to get work, but this was rejected by the court, and his appeal failed.

In November 2021 an airprox report was submitted to the UK Airprox Board who determined that the safety of the aircraft may have been compromised (category B, the second highest risk rating) when a drone flew

close to paragliders. The pilots were ridge soaring 150-200 feet above Westbury White Horse (a Thames Valley site) when the drone came within 15 feet at the same height before all parties took evasive action. The paraglider pilots landed to speak to the drone flyer but he had already departed.

These are only a few examples: there are others on the internet, such as a YouTube video of a parameter flying into a drone: the drone flyer did not see the paramotor because his camera was facing directly onto the sun. Kites can also pose similar risks; a paramotor pilot reportedly died recently after crashing when he hit the line of a kite.

UK law and regulations

Drones are subject to specific legal requirements, which depend on the weight and class of the drone.

The CAA operates a licensing scheme which varies according to the type of drone, its weight, and its use. Flyer and operator IDs are required for certain classes of drone. For commercial drone operators the licensing requirements are more onerous.

We are most likely to encounter drones below 250g for which the main requirement, if the drone has a camera, is that the person has an operator ID, which is renewable annually for a fee of £10. There are drones, such as the DJI Mini costing around £700, which are specifically designed to fall below this weight limit.

The operator is legally responsible for the drone and how it is being flown, and the person must be an adult. Drones above 250g also require a flyer ID, which involves a very simple theory test based on the Code (see below), but no fee, and is valid for 5 years. Juveniles can hold a flyer ID.

The operator's drone ID number must be displayed on the drone. If required, the flyer ID card must be carried and shown to a police officer or an official on demand, but it is not clear whether members of the public have the same rights.

Operator ID displayed on drone

Flyer ID card

The Drone and Model Aircraft Code issued by the CAA (https://publicapps.caa.co.uk/docs/33/CAP2320_Drone_Code_Interactive.pdf) includes the following provisions:

- If you fly using live video (called first person view) you must also have an observer
- The drone must not be flown more than 120m (400ft) above the ground and remain in line of sight
- There are rules not to fly within 50m of people or 150m of recreational areas, but these do not apply to drones below 250g
- If you endanger the safety of an aircraft you could be fined or imprisoned for up to 5 years (Air Navigation Order Articles 240 and 265(8))
- Bylaws and Sites of Special Scientific Interest (SSSI) may restrict where you can fly (see National Trust below)
- Land immediately if an aircraft (which would include a paraglider) is attempting to land

- Insurance is optional for drones below 20kg not flown commercially, but pilots could be held personally liable for injury or damage caused
- Personal privacy must be respected when filming

Drones are subject to Flight Restriction Zones around protected aerodromes where they cannot be flown without permission. Various apps are available to show drone flyers where they may and may not fly.

Drone pilots are not legally prevented from flying at our sites, and unlike paragliders are not specifically prohibited under the CROW Act (right to roam).

National Trust bylaws

The National Trust Bylaws, which apply at Devil's Dyke, Truleigh Hill, Ditchling Beacon, and Cuckmere Valley (High and Over), prohibit drone flying.

The National Trust's policy is that the use of drones is not permitted on or over National Trust land without a licence granted by them, which is only granted under stringent (non-recreational) conditions. The bylaws date from 1965 when there were no drones and rely on bylaw 11, which prohibits riding or driving any conveyance (including any air vehicle or machine) over or upon Trust Property.

Any National Trust officer has power to remove such 'conveyance', after issuing a due warning, to any offender. However, as the penalty for breach of the bylaws is a £20 fine on summary conviction, this is not much of a deterrent, although a Trust officer could call the Police for enforcement assistance.

Liability, associations and insurance

Under section 76 of the Civil Aviation Act 1982, the owner of an aircraft has strict liability for any damage it causes without proof of negligence, unless there has been contributory negligence by the damaged party.

The British Model Flying Association (BMFA) has a British Drone Flyers (BDF) section which provides £25 million third party liability insurance cover for its members. This insurance does not automatically cover an injured party who would need to prove operator negligence and claim against the BDF member.

The BDF is not directly comparable to the BHPA: it undertakes lobbying and provides insurance but membership is not compulsory and it does not have a licensing role.

FPV UK, a limited company based in Brighton in 2016 provides its 6,850 policy holders with £5 million public liability insurance and product discounts. FPV is "First Person View", which means flying relying on the feed from a video camera - see the New Zealand case above).

The UK professional drone industry has its own separate organisation, ARPAS-UK.

If you see a drone flying at one of our sites, what should you/ we do?

- Approach the pilot, explain the risks and possible consequences, and ask politely if they will move elsewhere.
- If it is a National Trust site, explain that flying drones is an activity is prohibited by the bylaws. Then, if they are uncooperative, report the matter to a National Trust officer if there is one nearby and ask them to take action.
- Ask if they have insurance and BDF membership. If you can, make a note of the operator number on their drone, for example with a phone camera.
- Notify other paraglider pilots if there is a drone flying in the vicinity.
- Tempting as it may be, you should not threaten the pilot or damage their property.
- If there is a reportable flying incident or Airprox, file the relevant reports.
- Finally, if appropriate, report the matter to a member of the Committee which can then decide whether the matter should be followed up with the relevant authorities.

Many thanks to all those who kindly peer reviewed an earlier draft of this article. Your help was much appreciated – Robin.

6. Volunteer Site Custodians Needed!

In the previous edition of Windsock, we highlighted that the Club is looking for volunteers to help the Sites Officer undertake maintenance tasks on our flying sites such as trimming bushes, mending fences, oiling padlocks, and tidying.

Ideally site custodians:

- Would live locally to the nominated site (or sites) to be able to respond quickly, without having to make a long journey.
- Be a long-term pilot or planning to be so relations with locals and landowners can be built up over time.
- Be DIY literate, and have access to relevant tools.

Please do get in touch with Dave Lewis dave@skylarkparagliding.co.uk for more details.

7. Incident Reporting – Robin Clark & Steve Purdie

Good incident reporting is based on standardised procedures for reporting flying related accidents, incidents, equipment malfunctions, and other mishaps.

The purpose is to inform and reduce the likelihood of future occurrences. Incident reporting is all about safety, not naming and shaming individuals, and certainly not to apportioning blame.

Importantly, neither the BHPA or the SHGC will identify any person or persons, whether they were involved in incidents or submitted reports. It is incumbent on all members to respect a person's right to anonymity and refrain from discussing and speculating about incidents on social media platforms.

This article provides more information on why reporting incidents is important and how to follow the rules for our mutual benefit. So, let's begin with first principles…

Serious injury or death

A. What does the Law say…?

Under the Civil Aviation (Investigation of Air Accidents) Regulations 1996, there is a legal obligation to report air accidents resulting in death or serious injury. A "Reportable Accident" is defined as:

> *"An occurrence taking place between the time any person boards an aircraft with the intention of flight until such time as all persons have disembarked, in which:*
>
> *i) Any person suffers death or serious injury while in or upon the aircraft, or by direct contact with the aircraft, or anything attached thereto; or*
>
> *ii) The aircraft receives substantial damage.*

You should take comfort in the knowledge that reporting incidents to the BHPA, will be interpreted as acting in full compliance with the law.

B. The CAA Air Accident Investigation Branch.

Fatal or potentially fatal accidents must be also reported to the CAA Air Accident Investigation Branch. The CAA generally delegates formal investigation of fatalities to the BHPA Technical Officers, and their reports are published on the BHPA website, although this is often subject to delays whilst legal formalities are completed. There have been 34 such reports in the last ten years.

C. The Police

Whenever anyone is killed at or in the vicinity of, and as a result of a hang gliding and/ or paragliding event, the local police must be informed at once.

D. The BHPA and the SHGC.

Details of how to do this are on the SHGC website under “Add content / Incident”.

Airproxes

An airprox is a situation where in the opinion of a pilot the safety of his aircraft has been compromised by its position relative to another aircraft. This is taken as referring to at least one of the ‘other’ aircraft being something other than a hang glider or paraglider (whether it is military, commercial, or private plane).

Only a pilot (rather than a third-party observer) can report an airprox, and this is done using a separate reporting system. These are investigated by the UK Airprox Board, who then issue a report which is summarised in Skywings if it involves hang gliders or paragliders. The BHPA has a representative on the Airprox Board.

Near misses involving only paragliders are not considered as airproxes but may be reportable as incidents if safety lessons can be learned.

Reportable incidents

BHPA and SHGC adopt the same definitions of reportable incidents. The full list of reportable incidents is set out in the BHPA Technical Manual, which can be found on the BHPA and SHGC websites respectively. These are:

1. Those involving injury, whether to participants or others.

2. Those involving damage to property, whether or not it is third party.

3. Those in which an insurance or legal claim might arise.

4. Those involving the use of non-standard procedures or training.

5. Those in which equipment has broken or failed to function, or has malfunctioned.

6. Anything that might highlight safety points or was unusual.

7. Those from which the sport may learn.

It is important to note that these extend beyond injury, property damage, and equipment failures, to include any other unusual safety points from which lessons may be learned. We strongly recommend that all “near misses” should be reported, as next time the pilot(s) concerned may not be so fortunate.

We understand that the BHPA is actively considering adding to this list any incidents where the emergency services have been involved, even if no injuries or damage is sustained. This would include, for example, rescues by the Fire and Rescue Service or Lifeboats. The August 2022 edition of Skywings, includes an article from the BHPA which highlights their position.

Who should submit incident reports and when?

It should be clear that the pilot concerned should file a report if they are able to do so. But any other members/ persons who witness an incident should also complete a report as this may provide additional useful information of which the pilot was not aware. Reports should be submitted as soon as possible and preferably within 48 hours. It has been widely proven that memories fade very quickly and, in addition, the human brain actively rationalizes the incident which may result in a different/ changed perception and understanding of the causes of the incident.

What happens to incident reports?

As noted at the outset of this article, individuals are never publicly identified.

The BHPA reviews all reports that it receives and publishes annual incident analysis reports and also publishes a summary in Skywings headed “BHPA accident and incident digest” which highlights some, of the (many) reports, that it has received. Where equipment failures are identified, these are escalated to the manufacturer concerned, and this may result in the manufacturer issuing a safety notice and taking action when necessary.

The BHPA incident reporting system feeds into a database maintained by the European Hang Gliding and Paragliding Union, which enables analysis and research to be undertaken. The FAI also undertakes analysis

drawn from national and regional databases. Its website lists over 70 causes of incidents and proposals for safeguarding against them.

SHGC maintains its own database of reports, which should be made using the club website ("Add content /Incident"). All reports are reviewed and the Safety Officer will, in discussion, decide whether any specific actions should be taken, such as advice to the pilot(s) involved, a notice to members, and, in some circumstances, recommend changes to the Club's Site Guide.

Over 200 incidents on Southern sites have been reported over the last 15 years, including 6 classed as near fatal, with almost a third of all incidents occurring at Devil's Dyke. This does not necessarily mean it is more dangerous than other sites but that it is one of the most popular.

In summary…

The purpose of incident reports is to learn from incidents and thereby make flying safer for everyone. This only works if people follow the system and file reports. Too many members do not do so. Unreported incidents are often mentioned on the grapevine and some even make it onto the national news networks.

If you do experience or witness an incident, please report it using the procedures outlined above.

8. Lapse Rates

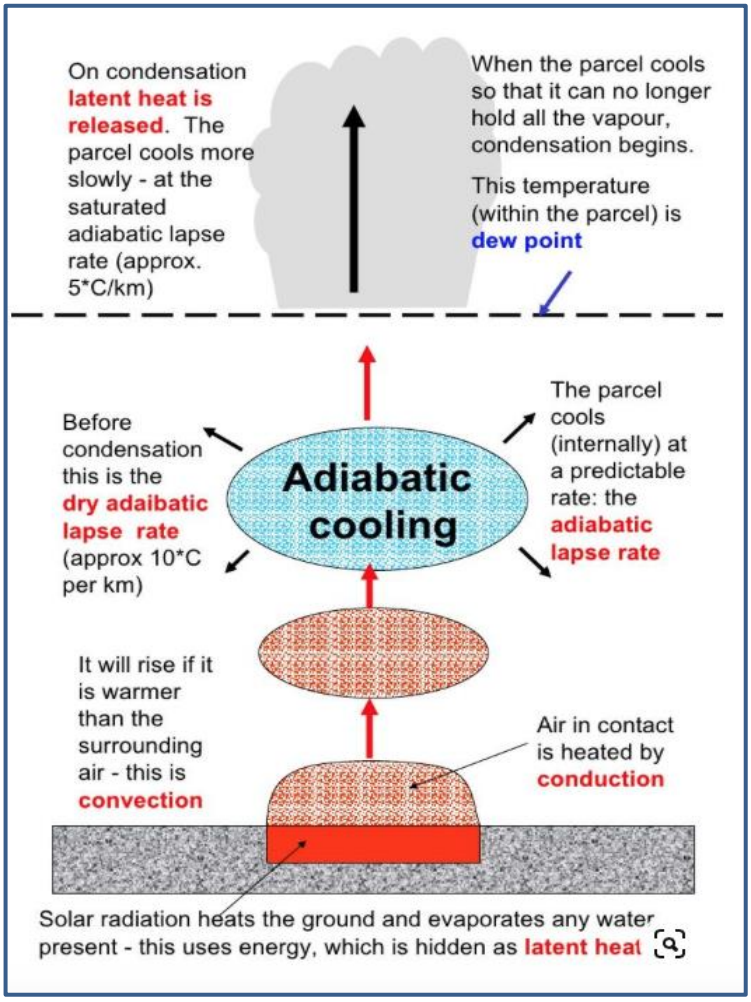
The rate of change in temperature observed while moving upward through the Earth's atmosphere is called the lapse rate. The lapse rate is considered positive when the temperature decreases with elevation, zero when the temperature is constant with elevation, and negative when the temperature increases with elevation a temperature inversion. The lapse rate of non-rising air commonly referred to as the normal, or environmental, lapse rate is highly variable, being affected by radiation, convection, and condensation. It differs from the adiabatic lapse rate, which involves temperature changes due to the rising or sinking of an air parcel. Adiabatic lapse rates are usually differentiated as dry or moist.

The dry adiabatic lapse rate for air depends only on the specific heat capacity of air at constant pressure and the acceleration due to gravity. When an air parcel that is saturated with water vapour rises, some of the vapour will condense and release latent heat. This process causes the parcel to cool more slowly than it would if it were not saturated. The moist adiabatic lapse rate varies considerably because the amount of water vapour in the air is highly variable. The greater the amount of vapour, the smaller the adiabatic lapse

rate. As an air parcel rises and cools, it may eventually lose its moisture through condensation; its lapse rate then increases and approaches the dry adiabatic value.

When air is forced to rise up in the atmosphere, the pressure reduces with height. For a given volume of gas, the pressure divided by the temperature remains constant (Boyle's Law). Therefore, as the air pressure reduces, so does the temperature.

If no heat is exchanged with the surrounding air during this process, which is called “adiabatic cooling”, the rate at which the air cools, the Adiabatic Lapse Rate (ALR) is a constant.



For unsaturated air, the lapse rate is 3°C per 1000 feet; this is called the Dry Adiabatic Lapse Rate (DALR).

However, when the parcel of air reaches the Dew Point and becomes saturated, water vapour condenses, latent heat is released during the condensation process, which warms the air, and the lapse rate reduces. The Saturated Adiabatic Lapse Rate (SALR) is therefore the rate at which saturated air cools with height and is, at low levels and latitudes, 1.5°C per thousand feet. At higher altitudes and latitudes, where there is generally less water content in the air, and therefore less latent heat to release, the SALR is closer to 3°C per thousand feet.

The ELR (Environmental Lapse Rate) is the actual rate at which the ambient temperature changes with height. Considering the parcel of air as before and utilizing the DALR and SALR for that parcel of air in contrast to the surrounding air:

If the ELR is greater than the DALR, rising air will be warmer than the surrounding air and therefore keep rising; the atmosphere is then said to be unstable. If ELR is greater than SALR, the air is said to be absolutely unstable, since the air, whether saturated or unsaturated, will always have a higher temperature than it surroundings.

When the ELR is less than the SALR and greater than the DALR, then the air is considered conditionally unstable: the condition being whether the air is saturated or not.

If the ELR is less than the DALR, then the rising air will be cooler than the surrounding air and will sink - the atmosphere is said to be stable. If the ELR is less than the SALR, the air is said to be absolutely stable, since the air, whether saturated or unsaturated, will always be cooler than the surrounding air.

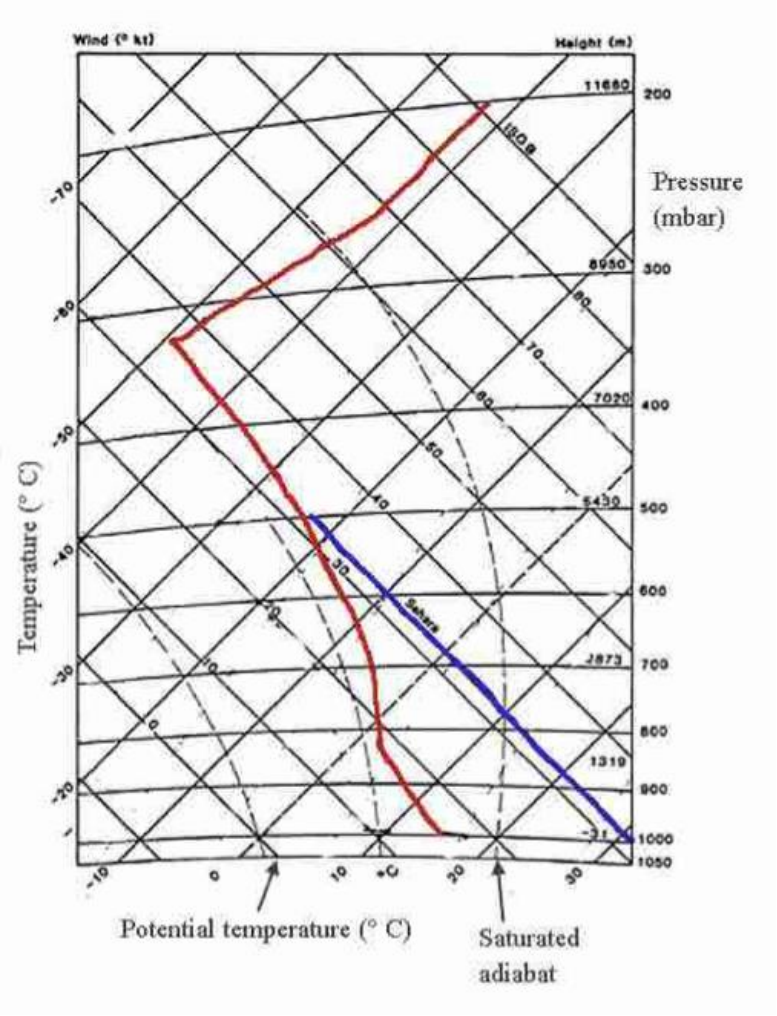
The distinctions between stability and instability as noted above are the foundation of weather analysis, in particular for afternoon airmass thunderstorm development or stable conditions. The most complex situation is when the troposphere is considered conditionally unstable, since a trigger may be needed to enhance either the stability or instability factor.

The difference between the normal lapse rate in the atmosphere and the dry and moist adiabatic lapse rates determines the vertical stability of the atmosphere - that is, the tendency of an air particle to return to its original position or to accelerate away from its original position after being given a slight vertical displacement.

9. Tephigrams

One of the most versatile and useful ways of representing air stability is based on plots of actual temperature against potential temperature for vertical transects through the atmosphere. Such temperature-potential temperature diagrams are known as **T f diagrams** or **Tephigrams**. This is because potential temperature can be regarded as equivalent to entropy (the measure of a system's thermal energy per unit temperature that is unavailable for doing useful work), which is denoted by the Greek letter f (Phi).

On the basic Tephigram, temperature is plotted on the vertical axis, and potential temperature on the horizontal axis. Air pressure then plots as a series of gently curving diagonal lines slanting up from bottom right to top left. Because air pressure decreases with altitude, it is useful to rotate such diagrams until the pressure isolines are approximately horizontal, with the highest pressures at the bottom (1050 hPa) and the lowest at the top (usually 200 hPa) so that the diagram then appears as a vertical slice through the atmosphere. The shape of temperature profiles then shows at a glance whether the air is stable or not. Furthermore, these diagrams also permit the exact calculation of the behaviour of air masses.



Tephigram shown on the left shows lines of equal temperature (rising from left to right), potential temperature (rising from right to left), pressure (sub-horizontal curved lines), and saturated adiabats (steep dashed curved lines). Also shown are temperature curves derived from soundings over Northern Ireland (red) and the Sahara (blue). The Irish curve closely follows a saturated adiabat through most of the atmosphere, characteristic of a well-mixed, cloudy atmosphere. The abrupt change in direction just below 300 mbar is the tropopause: the abrupt change in thermal characteristics of the atmosphere between the troposphere and stratosphere. The Sahara line (blue) is parallel to a dry adiabat (line of equal potential temperature) this is characteristic of a dry atmosphere well mixed by convection.

Important concepts to note in connection with Tephigrams:

- For dry air, rising or falling air changes temperature along the dry adiabatic lapse rate. This means it will follow **lines of equal potential temperature**, which are marked as diagonal lines on the diagram. These are known as **dry adiabats**.
- For saturated air, rising or falling masses will follow the saturated adiabatic lapse rate. Examples of these cooling/warming curves are shown on Tephigrams as curved lines, beginning nearly vertical at the bottom of the diagram, then gradually curving into parallel with the dry adiabats. These are known as **saturated adiabats**.
- Lines representing the environmental lapse rate can thus be compared at a glance with the gradient of the dry and saturated adiabats, thus providing a rapid impression of air stability at all levels of the atmosphere.
- **The lifting condensation level**: this is the altitude at which condensation will occur for a given air mass raised adiabatically. It coincides very closely with the cloud base. Below that altitude, rising or falling air will follow a dry adiabat, above it, a saturated adiabat.
- **Dew point**: this is a related concept to the lifting condensation level. It is the temperature at which

condensation occurs (for constant pressure).

10. How to Use Regional Atmospheric Soaring Predictions Effectively ('RASP)

It has been said that PG & HG pilots typically fall into one of four categories with respect to RASP. The first group (likely quite small among those that have been flying for some time) who have never heard of it. At the other end of the scale there are those, probably also relatively few in number, who are expert users.

However, the vast majority of pilots fall into one of the middle two categories: either they have heard of RASP but consider it too scary and complicated to actually use, or they know of it and use it to plan flying days but only in a fairly limited way without exploiting its full potential.

A detailed summary of the inner workings of RASP has been published on the Derbyshire Soaring Club Website and was written to aid those pilots in the middle two groups, to show what RASP is capable of and to use it effectively in day-to-day flying preparation.

Click Here for the detailed written explanation of RASP.

To access RASP click Here

11. A guide to the Civil Aircraft Notification Procedure ('CANPs') – Robin Clark

The Civil Aircraft Notification Procedure was designed to warn low flying military aircraft when free flying is taking place to reduce the likelihood of airprox incidents. It is coordinated by the Low Flying Coordination (LFC) unit at the Military Airspace Management Cell. Since 2014 CANPs have been published as NOTAMs and so can be seen by civilian as well as military pilots.

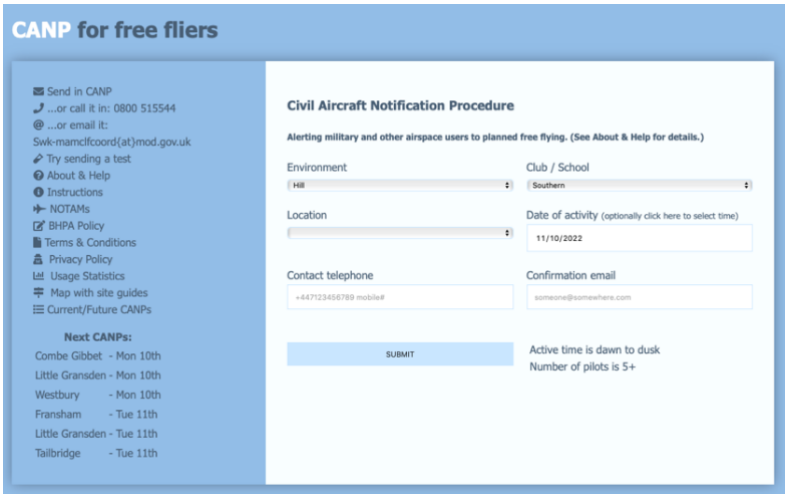
It is rare that SHGC pilots submit CANPs as, unlike many other clubs such as Thames Valley, we do not have military airbases close to our sites. However, we do sometimes experience low flying military aircraft, such as Chinooks from RAF Odiham in Hampshire exercising below the cliffs at Beachy Head, so this may change.

Therefore, Club members will usually only submit CANPs when we have notice of military activity, or other relevant NOTAMs, such as air-shows, taking place nearby. In contrast, other clubs may need to submit CANPs much more frequently and perhaps whenever flying is taking place.

CANPs generate a NOTAM which defines a warning zone rather than an exclusion zone. This zone has a radius of 2 nm, and a ceiling of 2,000 feet AGL.

A CANP is not meant to be generated unless there are at least five gliders flying. However, we operate on the basis that if a Southern site is (remotely) flyable there will likely always be at least five pilots present. And, for convenience, we also usually assume that flying will take place from dawn to dusk.

There are various ways to submit a CANP, but by far the easiest is to use the "CANP for free fliers" app (https://canp.logans.me.uk).



This website includes a database of registered sites. Begin by selecting hill in the top left of drop-down options, then Club/ School, then location and so on.

CANPs should be submitted before 8pm the previous evening on Monday to Thursday and before 3pm on Fridays to ensure they are available for military pilot briefings the following day.

Once a CANP is submitted and again when it has been processed the sender will receive an email from the LFC who are based at Swanwick near Southampton.

If you are not sure whether to file a CANP you can always ask on the SHGC Coaching Telegram group. If you do file a CANP, please post details on the Site Reports Telegram group to avoid unnecessary duplication.

12. Winter Flying

The low winter sun angle in our Northern Hemisphere heats less surface area. Behind every bush, blade of grass, and tree is more shadow throughout more of a shorter day than during the summer, so less heat is accumulating. Thermals may still exist even in the winter when the pressure is low and the upper atmosphere is cold, so still do your "thermal index" modelling and don't ever get complacent.

Expect the triggering of the thermals to generally occur later in the day than in the summer and for a shorter duration and interval. Very late in the day look for thermals over the forest areas as they give up their accumulated heat. Just because you're freezing cold doesn't mean there aren't thermals, heat still wants to rise. Get yourself some long johns, a good windproof flight suit, a balaclava, and some warm gloves. The thermals generally won't rise very far and for very long, but it's a hoot to make the most of light conditions. Getting good at using nominal lifting air may very well become your favourite kind of flying. It's sure fun to work super light lift as a possible welcome change from the summer time "events" of "hanging on" in "nuclear" air. Leave the vario behind and fly by the "seat of your pants". Keep horizon reference, even while making circles. Try and feel yourself being lifted, the sink and being pushed sideways through the air. Work on using every bit of buoyancy to maximize your stay in the air.

Winter flying might also bring your local area widespread regional wind flows that can be soared for hours with relative ease. Watch for a day when you have a stratus-clouded sky and look at the winds aloft for a model of upper-level wind flow that isn't too strong for your skills and aircraft. Be aware that a cloudy day that breaks into sunshine may develop thermals very quickly and be sure to account for this potential increase in your ever-updated evaluation of your immediate atmosphere. It can take only a few minutes of direct heating for the air to get turbulent on an unstable day, even in the winter. More advanced pilots that have solid active piloting skills will look for areas of direct sunshine and boat around those potentially "productive" spots looking for a "lift". This can be a great time of year for pilots to begin flying unfamiliar sites that have been unapproachable in the summer.

Take advantage of the soft winter conditions to make loads of flights. Sled rides are great, really! You can often fly all day in the winter and make many flights and thus perfect your abilities on many levels. Try bringing up your glider in all sorts of conditions and make clean and straight launches. Actually make a mark on the ground and try to make your launch without running to the side. To "loaf" off launch as you stare up at your glider often causes failed launches. A key to your success is to keep moving with your eyes on the horizon so your glider has more airspeed and consequentially is more manageable.

Get those accurate landings down pat. Keep your eyes on your landing target with your knees as a reference point. If the target is getting higher on your horizon you'll need to straighten out your flight path and get a better glide with your hands at "trim". If your target is getting lower on your horizon, then you better do something to reduce your glide. Glide reduction to avoid over-flying a target can be accomplished by making "s" turns while holding about 1/3rd brake. Keep an eye on your target, as well as the traffic, while making the turns and you'll notice your slope angle changing and you'll be able to straighten out your path and make your target.

This article was first published in the USHGA Magazine and sourced from the Eagle Paragliding website listed under the tab "Dixon's Notes" (www.eagleparagliding.com). No author is recorded.

13. Strange Cloud Types and What They Mean – Ellen Gutuskey

Lenticular Clouds

True to their name, lenticular clouds are lens-shaped, and they're also often compared to UFOs or stacks of pancakes. When high winds encounter a tall structure - like a mountain or even a building - the air is sometimes diverted up and over it.

That air cools as it rises, and if it contains enough moisture, it will condense into a flat cloud formation at the crest of the wave. Though a lenticular cloud often looks like it's hovering stock-still right above a mountain peak, it's actually in constant motion: The air warms up and dries out as it progresses downward, and the wind steadily refills the cloud with newly condensed air from the other side.

When a straight-shooting wind runs into an obstacle, it won't immediately return to its straight path once it clears the hurdle. In other words, the air will continue to move in waves on the other side of the obstacle. Lenticular clouds can form at the crest of each wave, which explains why you might see them suspended above nothing.

The picture shown on the left is Mount Fuji reflected in Lake Tanuki, Japan, with a stunning Lenticular cloud formation above!

Kelvin-Helmholtz Clouds

It's not a coincidence that Kelvin-Helmholtz clouds - named after Lord Kelvin and Hermann Von Helmholtz,

who studied the physics that causes them - resemble certain ocean waves: They both happen when the top layer of a substance is moving at a faster rate than the bottom layer. When the upper cloud layer is warmer than the lower layer, it's also less dense, and it can move along more quickly than the colder, denser cloud below. The instability created at the boundary causes the top edge of the lower layer to rise as it moves forward until it curls over, much like a wave breaks. If you happen to overhear a commercial airline pilot mention Kelvin-Helmholtz clouds during a flight, expect some turbulence.

Roll Clouds ('Morning Glory')

Roll clouds are long, low, tubular arcus clouds that can extend for hundreds of miles. Like Kelvin-Helmholtz clouds, they occur when there's warm air atop cooler air (an inversion) and indicate instability. In this case, it's often because of a thunderstorm.

Roll clouds are exceedingly rare, and the only place that produces them with any consistency is Australia's Cape York, where they're called "Morning Glory clouds" and don't necessarily coincide with storms. As for why they're so consistent there, it's still a bit of a mystery. But scientists believe it has to do with the routine collision of the sea breeze moving east across the cape from the Gulf of Carpentaria and the sea breeze coming west from the Coral Sea.

Cumulonimbus Incus Clouds ('Anvil Cloud')

When a thunderstorm develops, air currents (updrafts) rise, cool, and form clouds. But there's a point in the atmosphere between the troposphere and the stratosphere called the tropopause where air stops cooling with altitude.

If an updraft is strong enough to get there, it won't be able to rise any higher and will instead start moving laterally, forming a flat-topped cloud called a cumulonimbus incus, or anvil cloud (*incus* means "anvil" in Latin). Occasionally, an updraft will be strong enough to rise past the tropopause and into the stratosphere, in which case a cloud protrusion known as an "overshooting top" will appear above the anvil's flat surface. If you see this, brace yourself for an especially formidable storm.

Mammatus Clouds

Mammatus clouds from the Latin word *mamma*, meaning "breast" or "udder" require an unstable atmosphere and often appear around stormy weather.

The reasons why they form are still up for debate, but some scientists believe it involves sublimation: when ice turns directly into water vapor, without first stopping at the liquid stage.

According to this theory, ice crystals from a cloud become vapor, which causes the surrounding air to get colder (and therefore denser) and start to sink in pockets. Though they're most commonly seen beneath a storm cloud following severe weather, they can also form from fair-weather clouds like cirrus and altocumulus.

Shelf Clouds ('Arcus Clouds')

A shelf cloud is a low, horizontal, wedge-shaped arcus cloud. An arcus cloud is a low, horizontal cloud formation, usually appearing as an accessory cloud to a cumulonimbus.

Roll clouds and shelf clouds are the two main types of arcus clouds. They most frequently form along the leading edge or gust fronts of thunderstorms; some of the most dramatic arcus formations mark the gust fronts of derecho-producing convective systems. (A Derecho is a storm system that moves a long distance very rapidly and brings winds that can devastate an area several miles wide.)

Roll clouds may also arise in the absence of thunderstorms, forming along the shallow cold air currents of some sea breeze boundaries and cold fronts. A shelf cloud is attached to the base of the parent cloud, which is usually a thunderstorm cumulonimbus, but could form on any type of convective clouds. Rising cloud motion can often be seen in the leading (outer) part of the shelf cloud, while the underside can often appear as turbulent and wind-torn. Cool, sinking air from a storm cloud's downdraft spreads out across the land surface, with the leading edge called a gust front. This outflow cuts under warm air being drawn into the storm's updraft. As the lower and cooler air lifts the warm moist air, its water condenses, creating a cloud which often rolls with the different winds above and below (wind shear).

sharp, strong gust front will cause the lowest part of the leading edge of a shelf cloud to be ragged and lined with rising fractus clouds. In a severe case there will be vortices along the edge, with twisting masses of scud that may reach to the ground or be accompanied by rising dust. A very low shelf cloud accompanied by these signs is the best indicator that a potentially violent wind squall is approaching.

Shelf clouds are harmless themselves but typically indicate strong storms. Shelf clouds form at the leading edge of a thunderstorm. Shelf clouds can even form before a derecho strikes. If you see a shelf cloud coming your way, it probably means you are about to get hit by a strong thunderstorm.

Picture of a shelf cloud taken at Enschede, Netherlands.

Super Cell Clouds

This stunning picture, taken in the Great Plains (Kansas), was photographed by Laura Hedien.

She said…"these storms on the Great Plains feel like they are alive. They ebb and flow, depending on the atmospheric conditions, and are so unpredictable and invigorating.

When they look like this… expect a crazy day".

A supercell is a thunderstorm characterized by the presence of a mesocyclone: a deep, persistently rotating updraft. Due to this, these storms are sometimes referred to as rotating thunderstorms. Of the four classifications of thunderstorms (supercell, squall line, multi-cell, and single-cell), supercells are the least common and have the potential to be the most severe. Supercells are often isolated from other thunderstorms, and can dominate the local weather up to 32 kilometres away. They tend to last between two to four hours.

Supercells can occur anywhere in the world under the right pre-existing weather conditions (including in the UK). The first storm to be identified as s supercell was the Wokingham storm which was subsequently studied/ identified by Keith Browning and Frank Ludlam in 1962.

Supercells are usually found isolated from other thunderstorms, although they can sometimes be embedded in a squall line. Typically, supercells are found in the warm sector of a low-pressure system propagating generally in a north easterly direction in line with the cold front of the low-pressure system. Because they can last for hours, they are known as quasi-steady-state storms. Supercells have the capability to deviate from the mean wind. If they track to the right or left of the mean wind (relative to the vertical wind shear), they are said to be "right-movers" or "left-movers," respectively. Supercells can sometimes develop two separate updrafts with opposing rotations, which splits the storm into two supercells: one left-mover and one right-mover.

Supercells can be any size – large or small, low or high topped. They usually produce copious amounts of hail, torrential rainfall, strong winds, and substantial downbursts. Supercells are one of the few types of clouds that typically spawn tornadoes within the mesocyclone, although only 30% or fewer do so.

This article was adapted from a piece written by Ellen Gutuskey and published on the 'Mental Floss' website. It is used with permission from the Editor in Chief. For more strange cloud types and their meaning click here: https://www.mentalfloss.com/article/648925/cloud-types-and-their-meaning

I've just been to the gym. They've got a new machine in. Only used it for half an hour as I started to feel sick.

Its great though, it does everything, KitKats, Mars bars, Snickers, crisps, drinks, the lot…

14. Confirmation Bias – Dermot Ryan

During our initial paragliding training we are taught how to control the wing. We learn how to execute a safe take-off and landing, in benign conditions. The focus is mainly on controlling the wing with launching safely, and getting safely back on the ground the main goals.

Gradually we learn how to change direction, using weight-shift and brakes. With guidance, and practice, we learn how to turn our flying machines and master 360 degree turns, slope and top-landings.

However, the BHPA syllabus does not include “Human Factors”, which are a part of the training for the Private, Commercial and Air Transport Pilot certifications. In my personal view, that is an omission. Yes, we need to be able to competently control our flying machines, that goes without saying, but, we also need to be aware that how we think about things affects flight safety. I recently almost drowned while flying at Newhaven Cliffs (see Windsock – April 2022). A bad decision, driven by confirmation bias, almost cost me my life.

Confirmation bias - what is it, how does it affect flight safety, and how can it be avoided? Getting this wrong may cost you your life. Confirmation bias describes our tendency to seek out and trust information that confirms what we already think, or believe, or want to believe, and to avoid or discount information that goes against what we believe, or want to believe. We are subconsciously putting on “blinkers”. Without realising it, we are dismissing valuable information that is telling us we are wrong, or making a bad (unsafe) decision.

Flying is an inherently risky pursuit. Only one thing needs to go wrong for it to become life-threatening. Luckily, modern equipment, training and improved weather forecasting have all contributed to making PG/HG safer than it ever was. What hasn't changed is how our brain works. Becoming a safe pilot is about much more than learning how to control a wing. Confirmation bias is all about decision making.

Confirmation bias can rear its ugly head during the decision about whether to fly or not. If several forecasts disagree about the wind direction or strength, which one will you choose to believe? In my case, it was usually the one that supported my initial decision to fly. I’m now learning to actively look for reasons not to fly. That’s not easy. Another example is being on-site when conditions are top-end. Do you attempt to fly, or not? If you

succumb to confirmation bias, you will think “if they can fly, I can fly” (i.e. it’s flyable). That may be true for experienced pilots, but maybe not for you.

My personal definition of confirmation bias is “wishful thinking”. We wish for something to be true, so we actively look of evidence to support that belief, and (unconsciously) ignore evidence that contradicts our belief. Wishful thinking is not compatible with safe flight. Commercial pilots don’t just “wish” that their aircraft is safe, they make sure that it is before trusting it with their life, and the lives of their passengers.

How do we avoid confirmation bias? Firstly, be aware of it, and the possible consequences of falling into its trap. Secondly, actively look for evidence that contradicts your initial belief. Ask yourself the question: “ is this really true”, or “ is it the case that I just want it to be true?” When looking at weather forecasts, we may unconsciously select the one that supports our wish to fly, and discount others that are telling us it may not be safe. We may see others in the air already, and decide that it is “flyable”. On a good day that may be true. But, consider the possibility that others may have more experience, better skills, or may have already made a bad decision. Never rely on others for your safety. You are the “Pilot in Command”, ultimately responsible for your own safety.

Avoiding confirmation bias involves actively stepping back mentally, and examining your own decision-making process. That’s not an easy thing to do, but it may save your life.

15. The final Word…

In Europe, Heaven is where:

The English are the policemen

The French are the cooks

The Germans are the mechanics

The Italians are the lovers

And, the Swiss organise everything

In Europe, Hell is where:

The Germans are the policemen

The English are the cooks

The French are the mechanics

The Swiss are the lovers

And, the Italians organise everything