SOUTHERN HANG-GLIDING CLUB

WINDSOCK

OCTOBER 2021

CONTENTS

1. Introduction

Hello, and welcome to the October 2021 edition of Windsock. The Winsock editorial team have put together this autumn edition packed full of articles and advice designed to improve your flying knowledge, your understanding, and to keep you safe.

The Windsock editorial team remain ensconced in their editorial bunker deep in the Sussex countryside only breaking from their labours to nip out to the Offy when essential supplies run low. You will be pleased to know that the Windsock editorial team are fully up to date with their shots: Tequila, Vodka, and Gin…!

Since the start of the new Membership year (1 June 2021) the Club has welcomed 62 new members – welcome to you all – and formally said goodbye to 106 people who have chosen not to renew. That's a near 22% change in our total membership. We are all very grateful to all the Club's coaches for their tireless efforts to help guide new pilots into the Club and to progress. In particular, the Red Ribbon section has proved to be very helpful in transitioning new pilots from the school to the Club environment.

In this edition of Windsock, we lead with an article written by Dave Lewis entitled It's "Autumn: Its ground inversion season; how to avoid nasty surprises". There follows an article highlighting how the Club helps support the work of the Newhaven National Coastwatch Institution and the Kent Surrey and Sussex Air Ambulance.

We have included an article written By Robin Clark (Robin leads the Red Ribbon section) and it is written, to help newer pilots (and a refresher to others too), better understand how to forecast weather conditions on the Club's sites.

The editorial team have included a short Q&A on the free app "what3words' which members might like to download for use in emergencies. There follow two sections. The first on how to stay safe on the Club's busy sites and a second that highlights how all members can help to protect the sites we have and enjoy. Finally, we finish with a section on winter flying – well with Winter just around the corner it was felt that this would prove useful.

As always, the Windsock team would be delighted to receive content for publication highlighting your specific flying experiences, and thoughts that others would be interested to read.

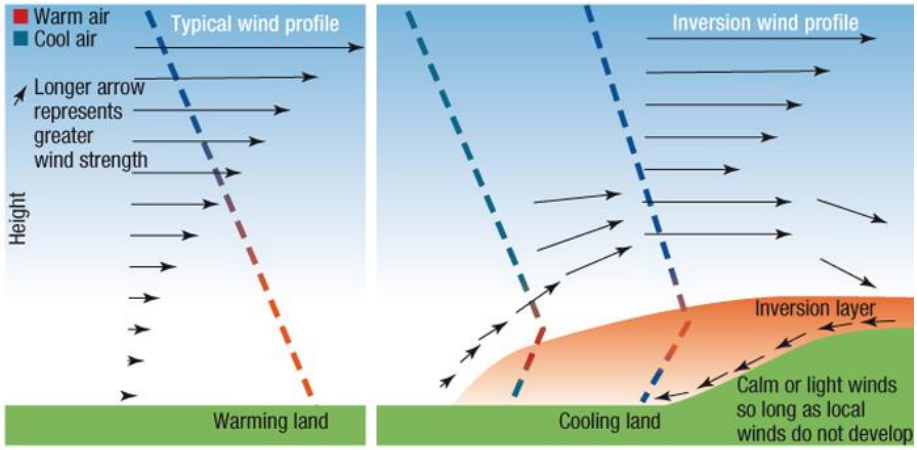
Enjoy…!

2. Autumn: It's Ground Inversion Season. How To Avoid a Nasty Surprise – By Dave Lewis (Skylark Paragliding)

Looking out of my window at 0700 this morning, the wind in my trees makes it look flyable, but the clouds at around 1000 feet are belting along. I wonder if I should take a paramotor up an 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 beginning to feel 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 it's own thing over the top.



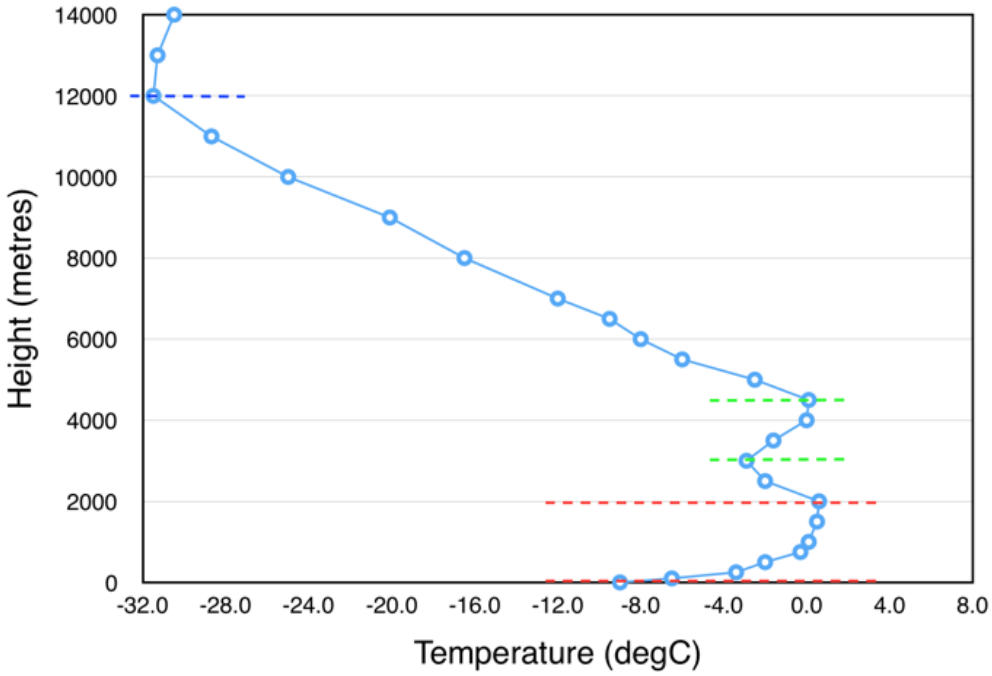
Air movement under a surface temperature inversion differs from a typical wind profile (left). Surface winds de-couple from the surface, accelerate and flow over the inversion. Within the inversion, winds are typically light and often drain down slope, regardless of the overlying wind direction. Under 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.

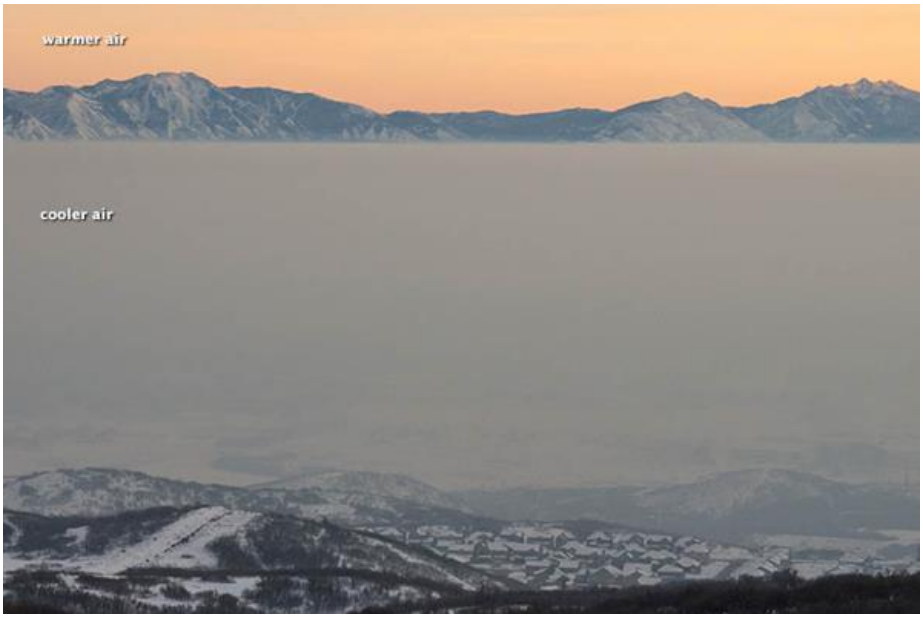
- Once the mixing is complete and the ground inversion is gone, all the cold air having mixed up with the air above, thermal activity will slow right down. That's because the air over the fields is now warmer and the fields and their thermals need to get hotter to make the required temperature difference. 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.

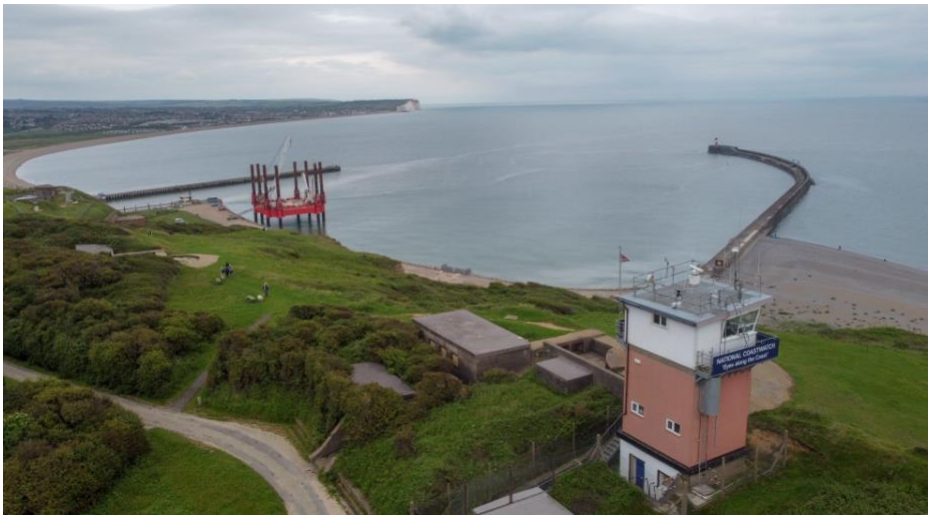


3. Newhaven National Coastwatch Institution (NCI)

The First UK NCI Station was opened at Bass point in Cornwall in 1994. Since then, a further 56 NCI stations have been opened, dotted around the British Isles, and staffed by around 2600 volunteers. NCI watchkeepers provide the eyes and ears along the coast, monitoring radio channels and providing a listening watch in poor visibility. They are trained to deal with emergencies offering a variety of skills and experience, and full training by the NCI ensures that high standards are met.

NCI Newhaven was founded in 2004. It is manned every day of the year by willing volunteers. The only enforced interruption in its continuous service was during the initial compulsory eight-week Covid-19 lockdown in 2020.

The current NCI Newhaven lookout was built in the early 1960s replacing a smaller lookout located inside Newhaven Fort. It is located on the cliff top on Castle Hill 175 feet above sea level.



Its location provides a panoramic view of Seaford Bay from Newhaven Harbour entrance to Seaford Head eastwards and to the ocean off Brighton westwards as well as to seaward into the shipping lanes of the English Channel. On a clear day, the lookout at Newhaven provides the watchkeepers a visual range of 14 nautical miles and an area in excess of 400 square miles can be observed. The lookout has a radar range of 20+ nautical miles and a good coverage for VHF radio reception. It has a defibrillator available and its what3words location is figs.rocket.messaging

Over the past few years, the SHGC has supported the work of the Newhaven NCI. The Club's donations have included contributing to a new remotely controlled CCTV camera located on the westerly arm of the tower (which had been a blind spot in their otherwise uninterrupted panoramic view), a digital weather station, binoculars, and replacing two worn out (and uncomfortable) chairs.

More recently, members may have noticed the new windsock adorning the NCI tower. This was paid for from a donation made by the Club. The windsock is an extremely helpful addition and will be useful to all pilots flying at Newhaven.

UPDATE: Newhaven NCI is currently looking to recruit four volunteer Watch Keepers. Full training will be provided

In addition to supporting the Newhaven NCI, the SHGC also supports the work of the Kent, Surrey and Sussex Air Ambulance. Over the past seven years, the Club has donated just under £20,000 to support the air ambulance and the important work that they do. The Club's support will continue for many years to come.

4. A guide to forecasting flying conditions on SHGC sites – Robin Clark

Introduction

Perhaps the most frequent question asked by new(er) pilots is "Where and when can I fly?" This is understandable as before passing their CP this decision was generally made by someone else. The following is a summary of the approach which I use in deciding whether it is flyable and which site is appropriate. Forecasts can conflict, and do not always reflect the actual conditions on the hill, so predictions are not always right all the time. But you definitely can't fly if you aren't on site.

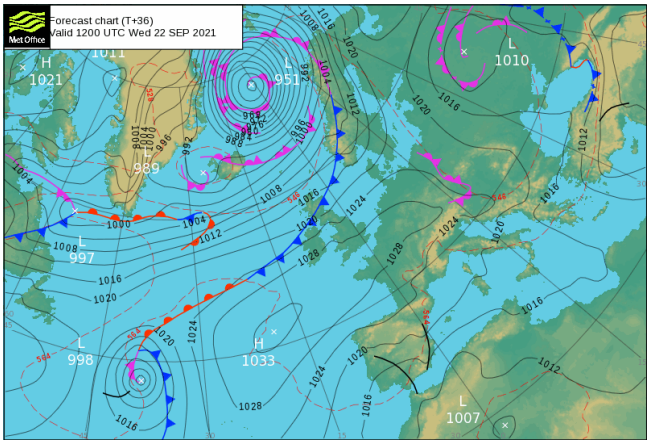
The objective of this short article is to help new pilots gain confidence in deciding for themselves where and when the conditions are likely to be suitable for them to fly safely. It is aimed mainly at those planning to ridge soar, rather than those more experienced pilots looking to climb out in thermals and get away from the hill.

Glossary – Summary of technical terms often used in weather forecasting

- **Isobars:** lines on a weather map joining places of equal atmospheric pressure. They are usually spaced at intervals of four millibars (a millibar is one thousandth of one bar pressure).
- **Buys Ballot's law:** In the Northern hemisphere, if you stand with your back to the wind, the centre of low pressure will be to your left and the centre of high pressure to your right. This is because wind travels counter-clockwise around low-pressure zones and clockwise around high-pressure zones.
- **Coriolis effect:** the rotation of the earth deflects the wind to the right in the Northern hemisphere. This is why wind blows clockwise around high pressure and not directly towards a low-pressure zone, and why it blows at an angle to isobars rather than at 90 degrees.
- **Visual Meteorological Conditions (VMC):** conditions when flying is permitted under Visual Flight Rules) VFR. Below 3,000 ft (or 1,000 feet above terrain if greater, which will not be the case at SHGC sites) this means clear of cloud, in sight of the surface, and 5km flight visibility.
- **UTC:** Universal Time Coordinated. Formerly called GMT (Zulu time in the military), it is the UK time zone when we are not on British Summer Time (UTC + 1 hour).
- **Venturi effect:** when a fluid or gas passes through a constricted passage its pressure drops and its velocity increases.
- **Cumulonimbus (Cb):** towering high energy rainclouds with strong cloud suck and frequently leading to thunderstorms, squalls, and hailstones.
- **Sea Breeze:** an onshore breeze caused when warm air over land rises, creating low pressure, and is replaced by cooler higher-pressure air drawn in from over the sea. It is more common in spring and summer when the temperature difference between land and sea is greatest. It can extend tens of miles inland.
- **RASP:** Regional Atmospheric Soaring Predictions. Boundary layer forecasts, including graphs of wind strength and direction, thermal height and strength temperature, cloud base and cover, sun and rain for BGA turn points.
- **Boundary layer:** that lower part of the atmosphere that is affected by the earth's surface. It's depth can range from a few metres to several kilometres and it is within this layer that turbulence is generated by the earth's surface and thermals occur.

Synoptic charts (aka Surface pressure charts)
https://www.metoffice.gov.uk/weather/maps-and-charts/surface-pressure

- It is not necessary to understand synoptic charts to read a weather forecast. However, it is part of the Pilot exam syllabus, and reading a sequence of charts will enable pilots to understand the big(ger) picture of why the weather is as it is and how it will (should?) develop.
- Synoptic charts show pressure and weather fronts at 12-hour intervals up to 5 days ahead. They are updated at 0730 and 1930 UTC (1930 only for days 4 and 5).
- Isobars indicate wind strength and direction. Closer together means stronger wind. Buys Ballot's law and the Coriolis effect explain wind direction.
- The source of an air mass (e.g. polar maritime) gives an indication of the likely weather characteristics (e.g. cold and wet).
- In simple terms, high pressure equates to settled, dry, sunny, weather and low pressure to unsettled, wet, and windy weather.
- Warm, cold and occluded fronts (coloured lines with triangles and semicircles) signify likelihood of rain.



Are Flying Conditions suitable?

The following is a list of factors for all pilots to consider, it is not exhaustive.

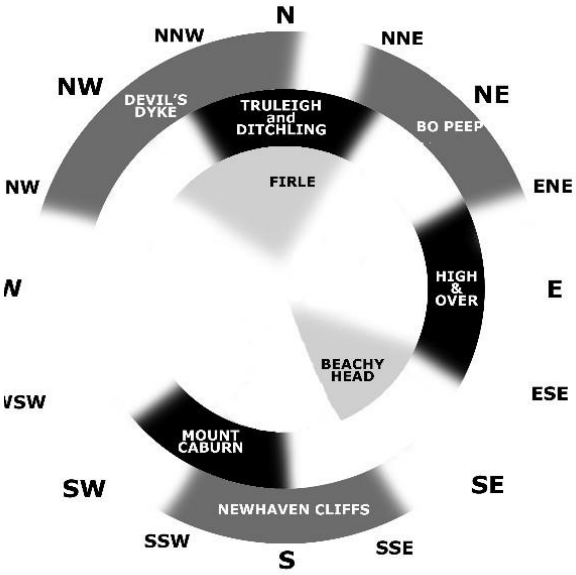
- Wind direction and strength on take-off: Is it suitable for ridge soaring (10-18 mph?), and not gusting strongly (+/- 5mph ?). Forecast wind speeds are usually for 10m above ground level. Wind speeds generally increase with height (wind gradient), and your forecast may not always be for the actual altitude at take-off.
- Cloud cover: Is cloud cover suitable for flying under VMC (avoid low visibility due to mist / orographic cloud on hilltop).
- Venturi effect: Wind will be stronger as it passes over the top of the hill than in open ground. Beware of being blown backwards if top landing near the back of the hill.
- Avoid cumulonimbus clouds. (See Glossary).
- Spring thermals: Strong sun with cold air and ground creates punchy thermals with gusts and heightened risk of collapses especially around the middle of the day. Consider flying early or late in the day when thermals are likely to be weaker.
- Sea breeze front: Often marked by a line of small cumulus. Wind direction changes quickly to the south any time from around midday. When the sea

breeze arrives, it can often be very strong. SBF convergence can give lift but likely to be turbulent. Shown on RASP and on forecasts as change of wind direction, but timing is often unreliable. See June 2021 edition of Windsock on shgc.org.uk for more details on Sea breezes.

- For Newhaven Cliffs consider the tide state (CP+10 hours for flying beyond "the point").
- If other pilots are not flying there is probably a good reason for this. Just because experienced pilots are thermalling high up does not mean that conditions are suitable for inexperienced pilots to launch, soar, or land safely.
- Consider the best time of day to fly, taking account of your flying experience, actual conditions on the hill, and forecast conditions.

Choosing a site

There are club sites taking all wind directions except westerly. See the latest SHGC Site Guide on the Club Website



Forecasting Models

All forecasts are computer simulations which use data inputs and mathematical models to "predict" weather conditions. Forecasts may differ due to differences in data inputs, the models used, frequency of data collection, runtimes and resolution. Apps and websites that use the same models can be expected to give similar results. If different models give similar forecasts these are likely to be more reliable, and vice-versa. Some models provide their data freely, others charge. Expect free apps to be less reliable than those that charge.

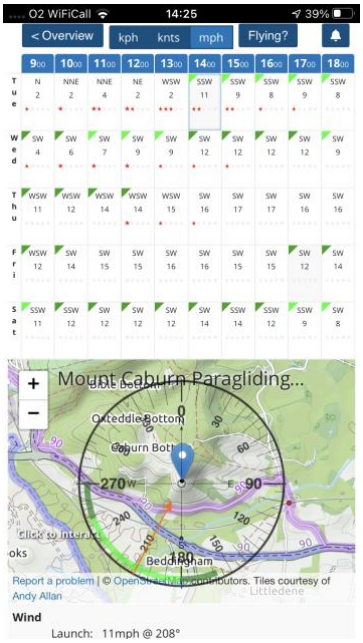
Among the principal models covering the UK are:

- GFS (NCEI Global Forecast System). 4 locations in USA.
- ECMWF (European Centre for Medium-Range Weather Forecasts). 23 Member States and 11 Co-operating States with HQ in Reading, UK.
- Met Office (proprietary model). HQ in Exeter, UK.
- Meteo (proprietary model). HQ in Switzerland.

Some useful weather apps / websites

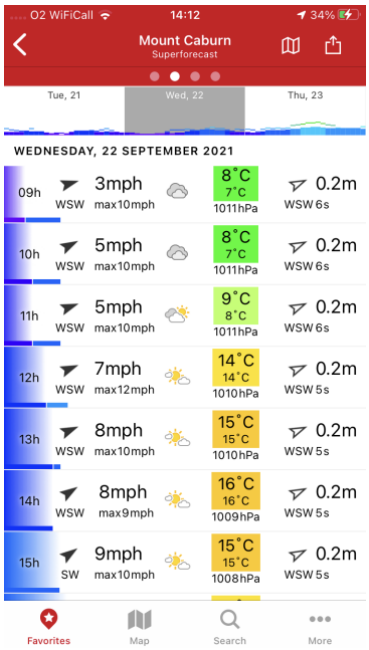
Flybubble Weather - https://flybubble.com/weather/

- Based on RASP.
- 5 days forecasts with wind direction, speed and ratings.
- Useful for at a glance consideration of daily flying conditions at a site.



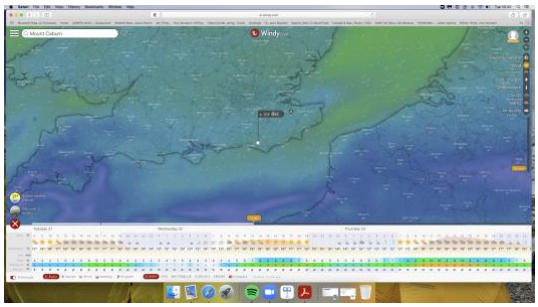
Windfinder - www.windfinder.com

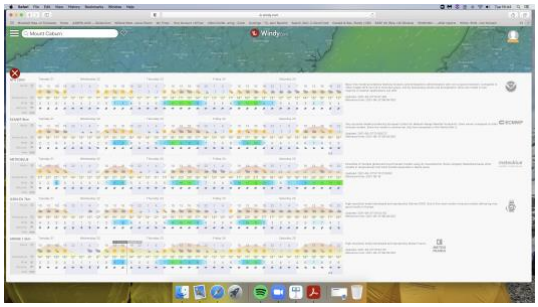
- Open an account to save favourite spots: all SHGC sites are included.
- Various versions of the app are available: Windfinder Pro (£6.99) is the best as it includes the Superforecast. There is also Windfinder Plus with additional features.
- The Superforecast is better than the standard forecast. It uses an improved model, is updated more frequently (00200, 0800, 1400 and 2000), has hourly data, and has a higher (7km) resolution which takes account of topographical features.



Windy - www.windy.com

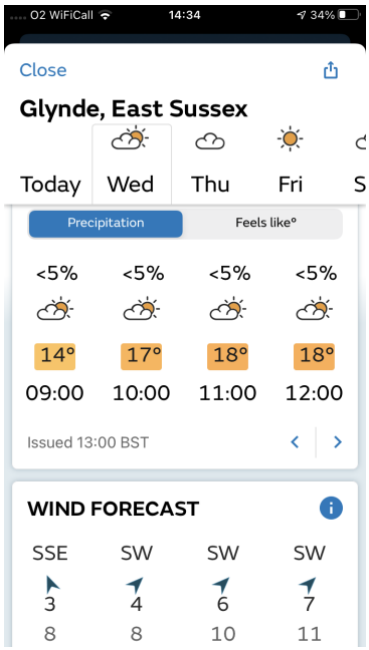
- Both an app and a website. Register for an account. Premium service (£25.99 for one year) has higher resolution, 1 hour forecasts and 6 hourly updates compared to free service.
- Desktop website and app both have map showing wind flows and site forecasts.
- A feature is the ability to compare forecasts from 5 different models (ECMWF, GFS, MeteoBlue, Icon-EU and Arome).
- Use the airport overlay on the website to see actual weather reports at larger airfields, e.g.Shoreham.





Met Office

- Gives a seven-day forecast.
- Need to choose location closest to flying site, e.g. Glynde for Mount Caburn.
- Shows likelihood of precipitation.



Other frequently used sources

A. Actual (real-time) forecasts

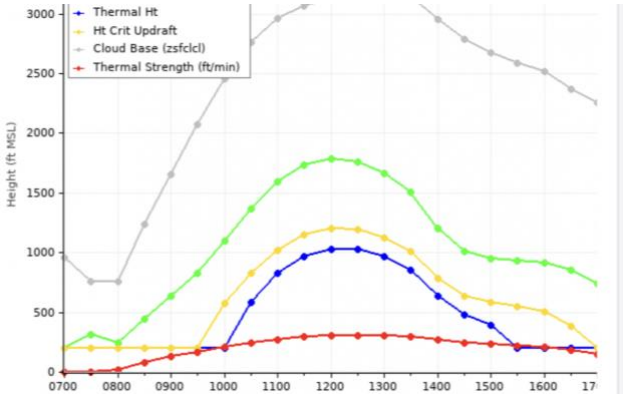
- Newhaven Breakwater www.newhavenport.com
- Deanland Airfield Weather Station (east of Ringmer) www.deanland-airfield.co.uk/index.php/pilot-info/weather
- Shoreham Airport www.weatherhq.co.uk

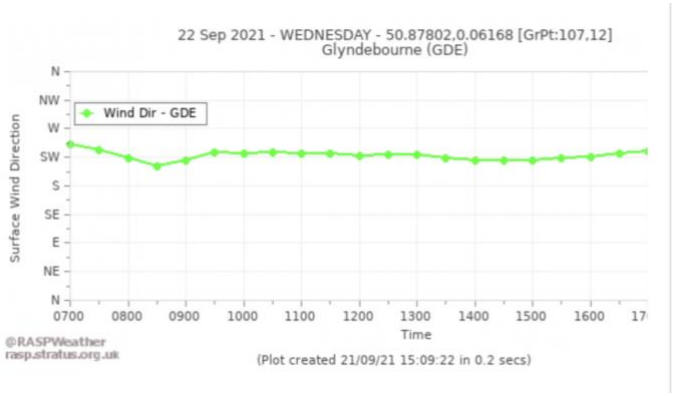
B. Other forecasting apps

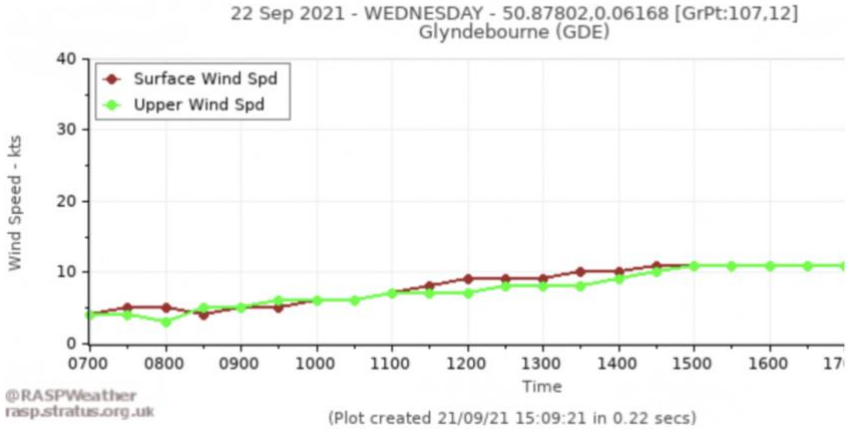
- XC Weather: uses GFS with 27 km resolution.
- MeteoBlue.
- BBC Weather: moved from Met Office to MeteoGroup in 2018.
- Accuweather.

C. Rasp Turn-Point Graphs - **rasp.stratus.org.uk**

- Targeted at sailplanes so uses British Gliding Association turn points. There are turn points close to most Southern Club sites designated by 3 letter acronyms (e.g. TRU, DDK, DIT, LWN, GDE, FIB, SEA, AFB, ENW).
- For a site forecast select “RASP by Turn point” and choose the nearest turn point and your chosen day (in this case GDE).
- Based on modified GFS data, it covers 7 days, with 4km resolution for today, 5km res for tomorrow and 12 km for subsequent days.
- The RASP BITMAP tool useful for planning cross country (XC) flights is not covered here.







Old school weather forecasting…

5. What3words

What is it?
Street addresses weren't designed for 2021. They aren't accurate enough to specify precise locations, such as building entrances, they don't exist for parks and many rural areas, and unlike street addresses, A what3words address points to a very specific location. Its developers divided the world into 57 trillion squares, each measuring 3m by 3m (10ft by 10ft) and each having a unique, randomly assigned three-word address. When it's hard to describe exactly where you are in an emergency, you only need to read out three words for the emergency services (999) for them to know exactly where to find the incident.

When and why was it developed?
What3words was launched in July 2013. Chris Sheldrick and Mohan Ganesalingam conceived the idea when Sheldrick, working as an event organiser, struggled to get bands and equipment to music venues using inadequate address information.

Sheldrick tried using GPS coordinates to locate the venues, but decided that words were better than numbers after a one-digit error led him to the wrong location. He credits a mathematician friend for the idea of dividing the world into three-metre squares, and a linguist who had the idea of using memorable words.

How does it work?
What3words divides the world into three-metre squares and gives each one a unique three-word address in order for people to be easily found in emergencies, and to give the billions of people without a formal address access to one for the first time.

Who uses what3words?
What3words is particularly useful in rural areas and is used by over 100 UK emergency services.

Does what3words replace traditional addresses?
No. What3words does not aim to replace street addressing. Rather, it is a useful addition when street addresses are not accurate enough, and an instant, scalable solution where addresses do not exist.

How accurate is what3words?
Compared to current street addressing systems, 3 word addresses are far more accurate, as they refer to a specific 3m x 3m area and each address is unique unlike street addresses that are often duplicated. As the entire what3words grid is fixed, the 3 word address for a particular location will never change even if buildings or streets are redeveloped and they are easy to communicate and share with others.

What3words auto-suggest prompts intelligent suggestions based on the user's exact location.

How do I use what3words in an emergency?
1. Find the 3 word address for your current location on the free what3words app for iOS and Android.
2. Share your 3 word address over the phone to the call handler.
3. The emergency service can then coordinate a response directly to the exact location where help is needed.

Is what3words expensive to download/ install?
No. The app which is suitable for most needs is free to download. There is a paid for version available for business who use the app for location seeking purposes rather than purely for emergencies.

Why is what 3 words better than GPS?
They are easier to remember, and quicker and easier to say over the phone, or to enter into a device or navigation system by voice or text. what3words has error-prevention technology which helps users quickly identify and correct input mistakes.

Should I download the app on my smart phone?
Yes. Good idea.

6. The Club's sites are busy places, please remember the following:

SHGC sites are amongst the busiest in the country. With our large number of members and relatively small sites we need always to consider our usage in relation to others; pilots and the public alike.

The Danger of Collision
Only take off when there is clear airspace available for you and you can do so without disturbance to any other pilot already flying. If you are not sure, then do not fly. In addition to their numbers, be aware of the variety of aircraft in the air. Hang gliders and paragliders fly at a different range of airspeeds and have very different flying characteristics. Try to be sympathetic to your fellow fliers' needs in this respect.

Take note that collision with a model aircraft can easily prove as dangerous as collision with any other aircraft. Ensure that the airspace you fly in is clear of model aircraft. If passing an area of ridge where aero-models are flying, shout "hello" as you approach to get their attention. The pilot of a model is focused on his aircraft and has little peripheral vision.

Take note that our sites are frequented by an increasing number of very large birds (raptors, ravens and seabirds) A bird-strike could easily prove fatal. Hence you must always fly with caution when near them and must not just expect them to get out of your way.

Respecting Others
Horses are easily spooked by passing aircraft, which obviously presents a danger to their riders. It is established practice on our sites not to over-fly horses, and not to ground-handle, launch or land in their vicinity.

We often have spectators, most frequently on the Dyke and Beachy Head. Ensure that they are given room, and be careful not to launch or land close to them. If they encroach onto the take-off area, ask them politely to move.

If you are taking a break or have chosen not to fly, please do not obstruct the launch or landing areas.

Site Assessment
Each of our club sites have their own unique characteristics. Read the site guide thoroughly and seek advice on the hill from a club coach or experienced pilot.

Airspace
SHGC sites are located in some of the most heavily congested airspace in Europe. As well as the two London airports and Shoreham ATZ close by there are heavy concentrations of commercial and private powered aircraft, microlights, sailplanes and hot air balloons. It is a popular transit area for military aircraft and large air displays using fast jets are also held from time to time.

The map below shows the main airspace features - Between 2,500 ft QNH to the north and 5,500 ft QNH to the south.

7. Protecting our sites

Please familiarise yourself with the relevant site rules contained in this guide before flying any of our sites. Our ongoing use of these sites often depends on our ability to

demonstrate that our members understand and will continue to comply with conditions of use agreed with landowners and tenant farmers.

- Take responsibility for the actions of others. If something looks wrong, it probably is.
- Park your car in an agreed area. Please don't park on grass verges or in such a way as to cause an obstruction to other users. Some of our sites (notably FIRLE on the right-hand verge as you arrive at the top of the hill by car) have 'Canadian' style gates. These gates look like ordinary barbed wire fences but if you look closely, you will see they can be rolled back to form a gate entrance. Please DO NOT PARK in front of these gates.
- Use only recognised gates and paths. Don't climb over fences, gates or walls or through hedges.
- Do not take dogs on to any site unless you have obtained the landowners permission. Dogs must be kept under control at all times while on site and must not be allowed to chase livestock or any pilots taking off or landing. Remember, members of the public may be able to take dogs where you as a pilot may not.
- Do not leave any litter, do not discard lighted matches or cigarettes, or pollute streams etc. Pick up any litter you see, we will be blamed for it whoever dropped it.
- Always report any damage (however small) you may have caused, to the Sites Officer, Club Coach or landowner.
- Avoid all livestock. If they tend to migrate to one area, then try to avoid disturbing them there, even if it means using a less favourable take-off or landing area. Do not leave gliders unattended (cows have been known to trample on them or eat them and then die).
- Do not take-off, land or ground-handle in the vicinity of horse riders. Always wait until riders are well clear before taking-off. Horses are particularly easily startled by paraglider canopies inflating or rustling on the ground.
- When landing away from designated landing areas, always try to avoid landing in fields with crops or that contain livestock, especially horses. If you are forced to make an out-landing in a cropped field, at least try to minimise the damage by landing in the tramlines and then carrying your glider out of the crop before de- rigging or packing. If out-landing in a field containing livestock, try to land as far away from them as possible.

If you are approached by landowners claiming that you have caused damage as a result of your out-landing, you have two choices:

- If a reasonably small amount can be paid there and then from your own pocket, this is often the simplest course of action.
- If you feel the landowner's claim is excessive or unreasonable, then DO NOT ADMIT GUILT but politely tell them you are insured against any third-party claims and that they should therefore take the matter up with your insurers who will meet any reasonable claim. Provide them freely with your name and address and details of the BHPA. Do not in any circumstances become abusive. It costs little to be polite, even when faced with an irate farmer.

Always try to avoid the situation where you have to shout at other users of the Downs to get out of the way of your landing. If it is necessary to shout a warning, please do it politely and with a smile. The less we affect other people's enjoyment of the area in which we fly, the less motivation they will have to interfere with our enjoyment.

We have many agreements with various farmers and landowners for access to their land in order that we can fly. It is essential we keep a good relationship with them in order to protect our flying sites.

Do not close gates which you find open, but...

ALWAYS CLOSE GATES YOU OR ANOTHER PILOT HAVE/ HAS OPENED EVEN IF YOU DON'T SEE ANY LIVESTOCK.

8. Winter flying – well it's almost winter…!

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; 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. It was sourced from the Eagle Paragliding website listed under the tab "Dixon's Notes" (www.eagleparagliding.com). No author of the work is recorded. The Windsock team approached the USHGA and Eagle Paragliding to ask permission to reproduce the article.

9. Remember…