SOUTHERN HANG-GLIDING CLUB

WINDSOCK

AUTUMN (COVID-19) EDITION

OCTOBER 2020

CONTENTS

"Everyone who lives, dies. Yet not everyone who dies, has lived. We take risks not to escape life, but to prevent life from escaping us."

Time ticks on…

1. Introduction

To all SHGC Club members; new and old. Welcome to another edition of Windsock. Yes, I know, it's been too long! Matters largely outside my control, and all that.

In the last edition (February) we said a sad farewell to one of the Club's most popular and revered characters, John 'Windy-John' Lancaster. John will be remembered for his generosity of spirit, his abundant humour, and his willingness to take new pilots under his wing (whether they wanted to or not).

John loved flying because of the people he met on the hill. He knew it was fun to have fun, and even more fun if he could share his fun with others to have fun. His ground handling skills were legendary. The plan is that the Committee organise a series of 'Windy-John' Ground Handling" sessions in his memory. Watch out for further announcements.

Unfortunately, with the COVID-19 Pandemic crisis, the SHGC Committee have been unable to hold the normal Club AGM this year. So, in addition to all the normal stuff, we are using this edition of Windsock to present the Club's financial report for the 12 months to 29th February 2020 and to comment on the proposed changes to the Constitution.

The membership of the Committee has changed a little over the last few months. The Committee has said a very grateful goodbye, and thank you, to Mariusz and Phil Ettinger, and welcomed Grita Rose-Innes, and Catherine Castle.

The Committee is made up of Club members and are all volunteers. Yes, it is often a thankless and unforgiving task. The sites officer (Dave Lewis) has (far too often) been required to smooth over troubled waters created (mostly unintentionally it has to be said) by members (not always though!) actions and the safety officer needs nerve of steel to unravel yet another flying misdemeanour. The Committee comprises many others too…

The purpose of the Committee is to further the objectives of the club. It's easy to say things need to be different, it is harder to put your hand up and say I can work with you and make things different. Thank you to everyone who does put their hand up and say, "I want to make such a difference, how can I help?".

So, without further delay… Windsock October 2020 (Yippee!)

2. Thermalling in Time and Space using 'SETI'. (Dave Lewis).

We have all been there, first up, the whole sky is open. There are no other pilots airborne, and, the thermals are pumping everywhere; only a fool could not get to Margate now, sea breeze or no sea breeze! Then, suddenly, other pilots appear. The sky is suddenly full of flimsy aircraft all climbing and getting in the way. What do you do? Oh, wait, you turn over in bed as it is only 02:45 am in the morning.

Let's consider an approach using a technique called '**S**omeone **E**lse's **T**hermalling **I**nitiative', by Dave Lewis.

The standard of airmanship at the sites (e.g. the Dyke) is often not (very) good, somewhere between unpleasant and (very) dangerous to fly; with the result was that many more pilots could/ should often climb out than actually do. I'd like to share a little trick that may help.

When flying thermic conditions, we (pilots) spend all our time looking for the next / best / nearest climb. Luckily it's always so crowded at, say, the Dyke that there's almost always a bird or a glider showing where the climb is. However, if you're spending the whole time looking for the next hazard, instead of the next climb, it's too crowded, unsafe, no fun, and time to land.

The trick to safely getting gliders into climbs is to spot them early and to join them politely (and safely!).

So, here's the idea… using **'Someone Else's Thermal Initiative' ('SETI')**

SETI – The Unofficial but practical rules of thermalling on (our) busy sites. Here's how it works

1. Let the pilot marking the thermal keep marking it for at least one turn. This SETI pilot (he or she) has made all the effort to find it and centre it. They've already had a while to work on it before anyone else has spotted it. They know the most about it. They are the most useful lift marker in the sky. They are, for the moment, the thermalling Sky Gods. Let them enjoy the moment and breath (just a few beaths mind!)

2. Sure, we often fly directly at a SETI, that's often the lifting line and the best way to get there. If I fly directly at a SETI at full speed, it's likely to distract and fluster the SETI pilot. Hang glider pilots can go even faster, are harder to see, and even more likely to fluster a SETI. What happens next? The put out SETI doesn't thermal as efficiently, which gives anyone else considerably less information and a flustered, less useful climbing partner for later.

3. Instead, I've found it better to back off the speed and shift to the left early, ready for a joining right turn. Sure, it's less efficient. Comp pilots will be in a rage over this limp strategy, but they are (probably) not here, at this moment! The result is that SETI remains undisturbed and continues to mark the thermal.

4. The arriving pilot, more usefully, will fly at a slower average airspeed and use their speed range and course adjustments to prepare to join the SETI just right. Flying slower means they have more thinking time. It's more efficient because of psychology overriding mathematics.

5. Once you have joined a SETI, chase the pilot's tail and evaluate their skill. If the pilot is doing it right, great; take a back seat and just follow. They can do all the thinking and keep on centring. Your job, just look at them and follow. If they make a mistake, then the lead swaps and maybe even turn inside them to take the core. The original SETI pilot can relax and follow the new upstart pilot's SETI….

…until it all ends in tears and the failed leadership experiment, into lift that was not there, is apparent, and the lead swaps again.

3. The SHGC Financial Report for the 12 months to 29th February 2020
(Figures in brackets are for the prior year)

Please can all members be discrete about 'sharing' this information outside of the Club. If/ when farmers/ Landholders are aware (and most already are) it tends to encourage them to push for BIG rent increases. Needless to say, this is unhelpful, to say the least; so please be circumspect over what is said 'openly'. Thank you.

Total receipts were £36,569 (£38,866)

- Individual memberships £31,619 (£31,980)
- Day fees £213 (£382)
- Fees from schools and other commercial operators £2,000 (£1,540)
- Site fund contributions were £480 (£896)
- Bank interest was £1,427 (£1,171)

Total expenditures (including donations made) were £24,293 (£26,488)

- Site fees £14,327 (£14,223)
- Site maintenance £2,534 (£900)
- Social and coaching events £1,595
- Admin £2,008
- Donations were made to Newhaven Coast Guards £500 (£500) and Kent, Sussex, & Surrey Air Ambulance £2,500 (£2,500)

Summary and notes to the accounts:

1. Overall, the Club's total financial assets increased to £204,506 (£192,959)
2. Club reserves were £204,000 (£188,500). Other bank balances were £506
3. The Club maintains bank accounts with HSBC
4. Site fees:

- Caburn (Top) £3,900 (Unchanged)
- Caburn (Ridge and Landing) £400 (Unchanged)
- Firle (Take-off and Landing) £1,854 (£1,807)
- High & Over (Take-off and Landing) £480 (Unchanged)
- Bo Peep (Take-off) £2,293 (£2,235)
- Bo Peep (Landing) £400 (Unchanged)
- Dyke (Landing) £2,000 (Unchanged)
- Dyke (Paddock) £2,000 (Unchanged)
- Aero Tow £1,000 (Unchanged)
- The Club does not currently pay to fly at Beachy Head, Ditchling or Newhaven

4. Committee Membership Changes

It's been quite a busy few months. Some important changes. Here is a summary…

- Mariusz Mucais stood down as Membership Secretary having done a truly excellent job. The Club's healthy receipts are testament to his dogged determination to chase members to renew.

- Phil Ettinger (Happy Flyer) has also taken a (big) step back from leading the RR section. His leadership of the RR has been truly inspirational. The transition from school to being on you own, and making your own decisions, is immense – we all remember that time. The RR section helps enormously with this transition as the comments from members have shown. Phil's sartorial flying elegance, combining both shorts and a high-vis jacket, even in the depths of winter, is the stuff of legend!

  The Committee is very grateful that Dave Harle has taken over the stewardship of the RR Club (but at his request, is not a Committee member). I am sure that he and a small group of fellow "leaders' will take the RR section to new levels. Phil, now you can relax, your legacy is in good hands!

- The Committee welcomed Grita Rose-Innes as the new Membership secretary and she has certainly hit the ground running and made a HUGE difference already, thank you Grita!

- Catherine Castle has also joined the Committee as Communications/ Member liaison and has already been very effective in this new role as evidenced in the recent Zoom calls and member communications.

On behalf, of all the membership, we (the Committee), thank departing Committee members for their service and welcome new members and section leaders with immense gratitude.

5. The 2020 Constitution

As you no doubt be aware, the Committee have submitted a New Constitution to a vote of the membership. The deadline for receiving postal votes is 31 October 2020. For any Members who have not voted and/ or have yet to make up their mind the following Q&A may prove helpful.

Q. When was the Constitution last changed?

A. The last Constitution was adopted at the AGM held 19th March 2011. The one prior to that was dated 1991.

Q. Why is it necessary to change the current Constitution?

A. Constitutions for Clubs, Organisations, and Associations, are dictated by Company Law and they need to reflect changes in underlying legislation, legal precedent, and relevant regulations. Put simply, the current Constitution is out of date and requires significant revision

Q Will these changes have any impact on the Club itself and the way that it is run?

No. However, the reserves will, in future, be managed by a Trustee.

Q. The old constitution refers to the appointment of four Trustees, the new one does not, why?

A. The proposed Constitution allows for the Club to make a gift(s) to a discretionary settlement. That discretionary settlement will be overseen by four Trustees. Whilst the language has changed (by necessity) the end result is the same. The Site Fund will in future be legally separate and will be able to purchase or lease land and make other appropriate investments

Q Who are the nominated trustees?

A. The four Trustees are all SHGC Club members. They are:

Peter Impey, Alison Webb, Chris Aegerter, and Steven Nicholls

Q. How long will these Trustees serve?

A. There is no formal limit on term of service.

Q. How will future Trustees be appointed?

A. The Trustees will be responsible for appointing future Trustees.

Q. What are the objectives that the Trustees will follow?

A. They are identical to the objectives contained in the Constitution namely, to encourage the practice, promotion, development, participation and preservation of the sport of hang gliding and paragliding in the geographical region of the South of England".

Q. Do the trustees all need to agree for decisions to me made?

A. Yes.

Q. Will the Trustees be paid?

A. No.

Q. How will the Trustees be held accountable?

A. Trusts have existed for several hundred years (or more), and have been tested (and improved) by time, legislation, and legal precedent. Importantly, the actions of the Trustees must always be measured against the objectives provided and, actions, that are counter to these objectives, can be challenged.

Q. Will the Trust/ Trustees produce periodic accounts?

A. Yes.

Q. When was the Site Fund created?

A. It was created with an investment of £4,400 in 1993

Q. What is the current value of the Site Fund

A. £210,000 (October 2020)

Q. How is the money in the Site Fund currently invested?

A. Currently the Site Fund is restricted to holding bank deposits.

Q. Will contributions from the Club to the Site Fund continue?

A. Yes.

Q. Who is currently responsible for the Site Fund?

A. The Committee and specifically the Club Treasurer oversees the Site Fund.

Q. What can the Site Fund be used for?

A. The Site Fund is there to solely further the objectives of the Club. The property and funds of the Club cannot be used for the direct or indirect private benefit of members.

Q. I understand that 20% of the membership fee is put into the Site Fund every year, will that continue?

A. The idea that 20% of the membership fee is put into the Site Fund every year is a 'rule of thumb'. There is no reference to 20% either in the existing or new Constitution. The Constitution(s) simply state that "*all surplus income or profits are reinvested in the Club*".

Q. Is the Club currently liable for tax?

A. Yes. The Club is liable for Corporation tax on profits. However, the Club's profits are limited to Interest on cash deposits and the value of the income is below HMRS's threshold so we are not currently required to make a (Corporation)Tax declaration.

If the Site Fund were to buy a parcel of land it would be liable to Stamp Duty on the purchase and Capital Gains Tax (if applicable) upon disposal (after annual CGT allowances are taken into account).

In summary, the changes to the Constitution are needed and necessary and, if/ when adopted, will mean that we can (at last) create a once-in-time, permanent, ring-fenced site fund. At that point, the site fund will not be treated as an asset of the Club and is legally, and formally, protected. It also means that the Site Fund can only be used for the purposes as set out in the Constitution(s) (new and old).

6. Speed Bar and Big Ears (Author unknown)

Yes, of course, we should have the forethought to not be flying in conditions that may be getting much stronger than anticipated but stuff happens. Speed systems can help. All modern gliders have a speed bar within their rating with the manoeuvres such as asymmetric collapses when FULLY APPLIED. Your glider will not turn into a flying death trap with speed bar. Learn to fly with it. Get it pulley to pulley when in smooth air with your hands on your rear risers to feel the glider pressure and no pressure on the brakes. A normal glider will start to lose glide noticeably at about 50-60% bar but speed is much more important in a lot of situations.

Really take an SIV course or an XC course if you have the time and money as they will teach to use the bar for much more efficient pitch control than your brakes and you will learn to love and trust your bar. Good pilots use a lot of bar in their daily flying and you should be comfortable flying with 50% bar in a lot of conditions. Flying at a ridge soaring site with laminar airflow a pilot has no excuse to not include a speed bar with their kit.

At a laminar ridge soaring site we can fly safely when it is still strong by staying further away from the ridge or lower. Getting too high or too close to the ridge can get you in a situation where you are not penetrating forward and are climbing which will place you gradually into stronger winds and then flying backwards.

Keep that speed bar as your reserve escape speed in these types of conditions. If you are using your speed bar all the time to keep your forward speed, when you do get to the position where you are not moving forward your glider has nothing left to give.

If it's strong but flyable, constantly check your forward speed into the wind over the ground without speed bar. If you are moving forward fine, then you can go higher/ further up the ridge in small increments checking in small steps and making a good judgement call to not put yourself at that point you will not be penetrating into the wind.

If you do reach a point where you are not moving forward pointed into the wind, that is your limit for altitude or relative position for the present conditions. Use your speed bar to push forward into the wind make a mental note as to the limits of that position/ altitude and keep a serious eye out for the conditions getting stronger. If you put yourself in this position you may be moving forward slowly on bar but still climbing and getting into faster wind speeds. A few minutes trying to get out of this situation feels like an eternity waiting to see if you can make it back out far enough in front of the ridge to pull big ears or stop your climb.

Nice basic rule of thumb that should be obvious but bears repeating. Look at the other gliders and pilots in the area on stronger days. If there are better pilots with more experience and/ or are flying Hot-Shot or acro gliders that are definitively faster than your own and not penetrating into the wind much, don't fly farther back or higher than them and always fly with your speed bar. Or go fly the cooler and live to fly your glider another day.

At ridge soaring sites, big ears is good for getting you at down, but you will fly slower and will potentially fly backwards if you were not moving forward at trim which may not be a good option if you are already behind or close to your soaring ridge/peak.

Applying speed bar while on big ears will increase your speed and sink rate but remember the order: Big ears> Speed Bar > Off Speed Bar > Release Big Ears

If you pull big ears or release them while already on speed bar you could induce a big collapse or stall your wing trying to pump out sticky ears while on bar.

The choices are yours to make when trying to decide to use speed bar, big ears, or both. If your most important object is speed, big ears and speed bar might be a worse choice than speed bar alone due to how much drag you create with those flapping ears as you slowly drift backwards towards DOOM!

Landing on speed bar - You may need to do this and when done correctly can be simple but you have to break some of your landing habits or you will be going for a

ride potentially into any objects (rocks, trees, houses, fencing etc.) downwind of where you touch down. If you have made a series of poor decisions, strong valley winds develop, the wind picks up too much at your site before you can get down this could happen.

If you find yourself in the position requiring speed bar to elevator down to your LZ or just make it there keep in mind that your speed bar tilts your wing forward. Releasing the bar as you touch down will cause it to drop back. Flaring in addition to this will cause it to drop back even further in what I am assuming to be very strong wind potentially right into the power zone and turning it into a big sail. I watched a pilot do this and do multiple somersaults through his risers as he was being violently drug across the LZ until another pilot tackled and disabled the wing after about 60-70 feet.

I personally recommend not flaring and be ready with hands on the rear risers to disable the wing as you touch down. Rear risers will disable the wing much more effectively and not drag the pilot vs. the brakes. If the winds are very strong, disabling the wing with your brakes generates a lot of power as the wing falls back and can take you for a ride. Evaluate these landings carefully and make your own choice based on how strong it is on how to disable the wing.

Finally, if you see fellow pilots, flying with 50%-100% bar and no brakes, they are not all getting giant scary collapses, and dropping like flies it may be a sign that, perhaps, you should give it some speed (bar).

7. Temperature Inversions (It's that time of year 'innit!)

Section One: Types and characteristics of temperature inversions (Source Encyclopedia Britannica)

A Temperature inversion, is a reversal of the normal behaviour of temperature in the troposphere (the region of the atmosphere nearest the Earth's surface), in which a layer of cool air at the surface is overlain by a layer of warmer air. (Under normal conditions air temperature usually decreases with height.)

Inversions play an important role in determining cloud forms, precipitation, and visibility. An inversion acts as a cap on the upward movement of air from the layers below. As a result, convection produced by the heating of air from below is limited to levels below the inversion. Diffusion of dust, smoke, and other air pollutants is likewise limited. In regions where a pronounced low-level inversion is present, convective clouds cannot grow high enough to produce showers and, at the same time, visibility may be greatly reduced below the inversion, even in the absence of clouds, by the accumulation of dust and smoke particles. Because air near the base of an inversion tends to be cool, fog is frequently present there.

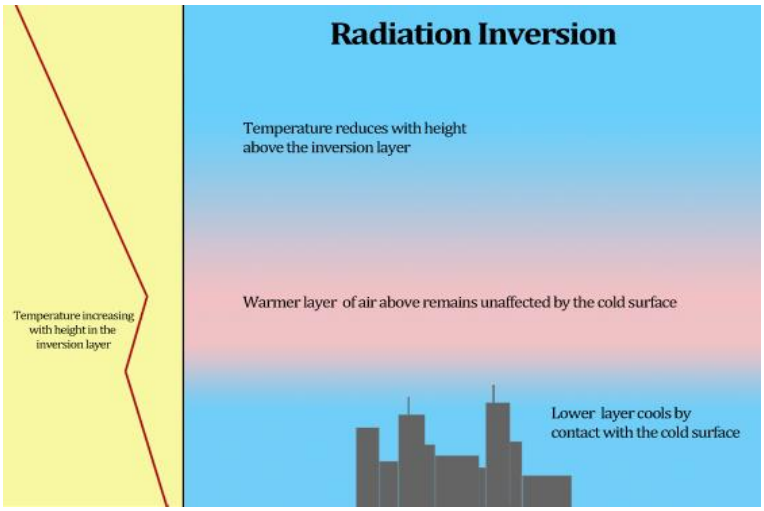
Inversions also affect diurnal (variations during the day) variations in air temperature. The principal heating of air during the day is produced by its contact with a land surface that has been heated by the Sun's radiation. Heat from the ground is communicated to the air by conduction and convection. Since an inversion will usually control the upper level to which heat is carried by convection, only a shallow layer of air will be heated if the inversion is low and large, and the rise in temperature will be great.

There are many kinds of inversions: ground (or radiation), turbulence, subsidence, and frontal.

A ground (or radiation) inversion develops when air is cooled by contact with a

colder surface until it becomes cooler than the overlying atmosphere; this occurs most often on clear nights, when the ground cools off rapidly by radiation. If the temperature of surface air drops below its dew point fog may result. Topography greatly affects the magnitude of ground inversions. If the land is rolling or hilly, the cold air formed on the higher land surfaces tends to drain into the hollows, producing a larger and thicker inversion above low ground and little or none above higher elevations.

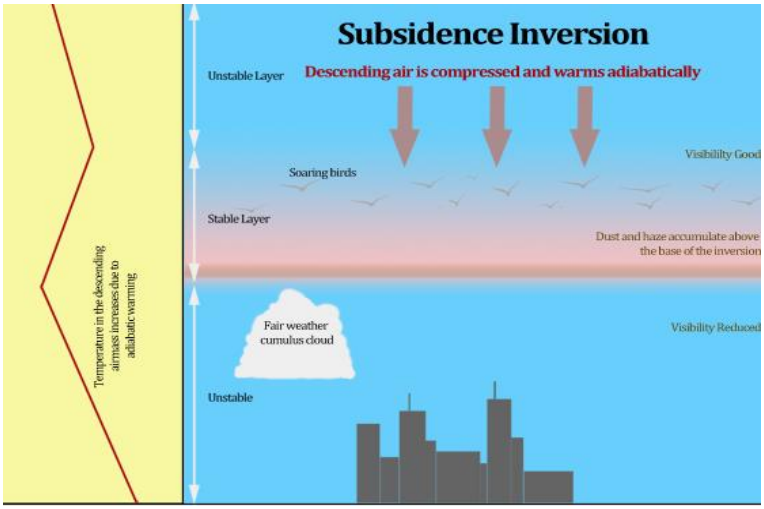
Or this way…



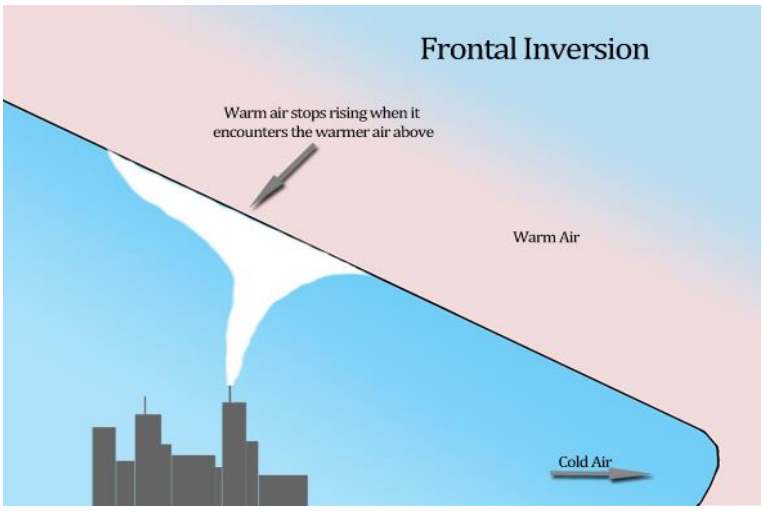
A turbulence inversion often forms when dormant air overlies turbulent air. Within the turbulent layer, vertical mixing carries heat downward and cools the upper part of the layer. The unmixed air above is not cooled and eventually is warmer than the air below; an inversion then exists.

A subsidence inversion develops when a widespread layer of air descends. The layer is compressed and heated by the resulting increase in atmospheric pressure, and as a result the lapse rates of temperature is reduced. If the air mass sinks low

enough, the air at higher altitudes becomes warmer than at lower altitudes, producing a temperature inversion. Subsidence inversions are common over the northern continents in winter and over the subtropical oceans; these regions generally have subsiding air because they are located under large high-pressure centers.



A frontal inversion occurs when a cold air mass undercuts a warm air mass and lifts it aloft; the front between the two air masses then has warm air above and cold air below. This kind of inversion has considerable slope, whereas other inversions are nearly horizontal. In addition, humidity may be high, and clouds may be present immediately above it.



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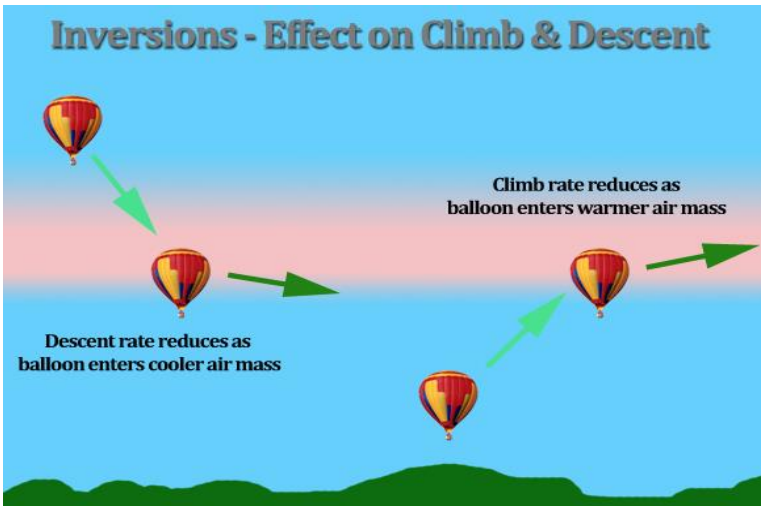
Effect of Temperature Inversions on Climb and Descent

Recognising a Temperature Inversion: The temperature changes found within a piece of the atmosphere that includes an inversion layer affect a balloon when climbing or descending through the inversion layer.

Consider the case of a balloon that is descending towards an inversion. As the balloon begins to penetrate the bottom of the inversion it will encounter cooler more dense air. As there is now a greater difference in temperature inside the balloon compared to

outside the balloon, more lift will be generated which will cause the descent rate to reduce. On cold winter mornings where there can often be temperature differences of 10ºC or more at the bottom boundary of the surface inversion the descent rate may even reduce to zero.

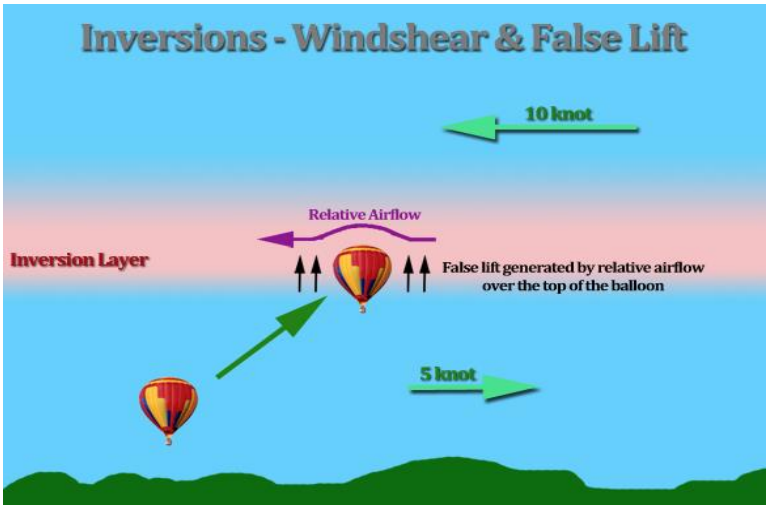
When climbing towards an inversion from below the top of the balloon will encounter the warmer air mass and create less lift because there is now less difference between the temperature inside the balloon when compared to outside the balloon. As a result of the reduction in lift the balloon's ascent rate will reduce.



For PG and HG pilots (not hot air fanatics) the inversion is weakest where it meets the terrain. If you are in a situation where there is a strong inversion (Imagine a hose pipe pumping water (thermals) at an impregnable plate, tuck in close to the terrain and you will break through. But be careful, the climb will be beeeeeeeep, peeeeeeeep, not beep, beep on your vario as you have entered a wind window (a vortex to a higher world). Hold on and enjoy!

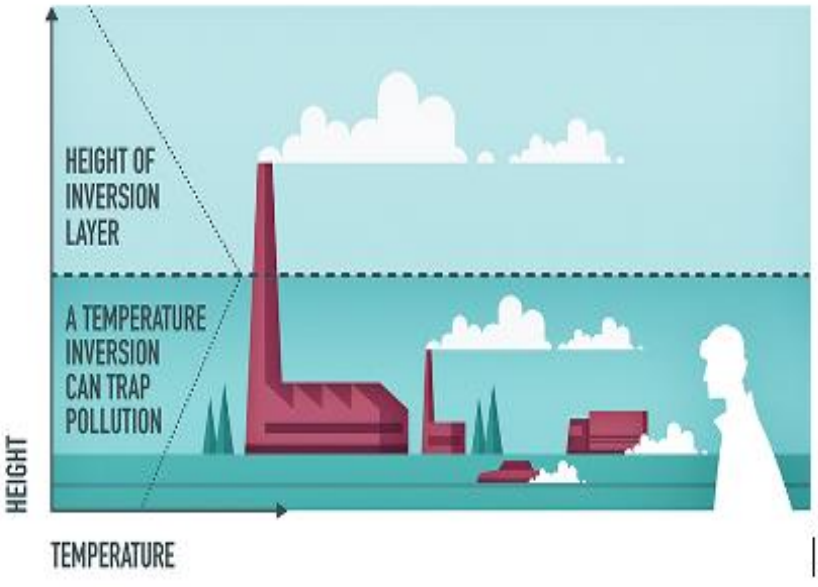
The effects of Windshear

It is quite common for there to be windshear associated with a temperature inversion. The inversion decouples the layers of air and they can therefore be moving at different speeds and / or directions. Whenever there is windshear associated with an inversion there will be 'false lift' generated as you enter the inversion layer from below. Although the lift of the balloon decreases as the balloon enters the inversion from below this can sometimes be more than made up for by false lift generated by windshear.



Section Two: Temperature inversions and Pollution

The weather plays an important role in the formation and disappearance of air pollution. During winters, air quality has been observed to decline very quickly after long clear nights with weak winds. Then pollutants from different sources are emitted into the air, but because of poor mixing circumstances near the ground, pollutants released into the atmosphere's lowest layer are trapped at breathing level and can reach unhealthy levels in a few hours.



Winters are characterized by short days and low solar activity. The snow-covered ground is cold and its white colour reflects almost all heat coming in. When the sun goes down, the ground loses heat very quickly and this cools the air above the ground. Nights in the summertime are much shorter than nights during the wintertime when cooling of the ground can continue over a longer period of time. Weak winds prevent air mixing near the surface and clear skies increase the rate of cooling at the Earth's surface. Stable conditions inhibit vertical and horizontal mixing near the

ground and consequently, favour the development of a strong surface temperature inversion or radiation inversion (see picture above). The condition like this is called an inversion because it is the reverse of a normal air pattern (i.e., warmer air below and cooler air above).

What factors can affect inversions?

The shape of the landscape has an impact on both the formation and intensity of inversion. For instance, over flat terrain inversion gradually intensifies if the surface cools. Over valleys cold air will flow down the slopes and settle under the warm air intensifying the inversion. Inversions frequently develop during evenings and nights and can occur at the surface or aloft in the atmosphere. During the daylight hours, surface inversions normally weaken or disappear when the sun warms the ground. In addition, wind speed and rain contribute to how quickly inversion will break up. Radiation inversions are the most common type of inversion, but there exist other inversions like advection and subsidence inversions as well.

How do inversions impact air quality?

Winter temperature inversions play a significant role in the winter pollution episodes in Nordic urban sites. An inversion can prevent the rise and dispersal of pollutants from the lower layers of the atmosphere, because warm air above cooler air acts like a lid, preventing vertical mixing and trapping the pollution material e.g. at the breathing level. Traffic emissions especially have a great impact on air quality at the breathing level, because they are released near the ground.

The strength and duration of the inversion and elevation of the release compared to the inversion elevation has a large influence on the air quality. Air pollution will continue to accumulate until inversion disappears. Traffic particularly and other sources add more pollutants to the air. A strong and low height inversion will lead to high pollutant levels, while a weak inversion will lead to lower levels. In other words, the smaller is the mixing volume; the higher is the pollution concentration. Inversions are also stronger and more common during the winter months. In summer, inversions are less frequent and weaker.

Why a tall chimney is usually better than short chimney?

Inversion can influence pollution near the ground as well as the behaviour of smoke leaving a chimney. Under normal conditions, smoke plumes from chimneys would

rise into the atmosphere and disperse, but in the case when an inversion is aloft, above chimneys, pollutants will be trapped underneath the inversion layer. When this inversion layer disappears, pollution concentrations can subsequently suddenly increase near the surface, if some vertical motion pushes the trapped smoke plume to the ground. To avoid this, many of the shorter chimneys have been replaced with taller ones, because taller chimneys are better able to mix pollutant throughout a greater volume of air. Alternatively, if a pollutant, e.g. a plume from a chimney, is released above the surface inversion layer, it will not have an opportunity to enter the inversion layer. In this case pollution disperses upward but not downward, due to the presence of the surface inversion.

8. Remember…