

Safety Bulletin 9

Welcome to the latest safety bulletin. It's length (too long?) is a reflection, not of the number of incidents but the willingness of the membership to report events relevant to safety and to discuss them openly on the forum. That's got to be a good thing. Most, but not all of this bulletin has been extracted from the CSC forum however a significant element has been instigated or encouraged by pilot to pilot conversations in car parks, on launches and in the pub.

As stated in each bulletin, just because an event is discussed below it does not represent any form of closure. If you have anything to add (or detract) please do so by contacting me (CSO) or by posting on the forum.

In this bulletin, we cover four issues:

- Mind the Gap! Lance Greenhalgh's brush with 'windy Gap' on his attempted Blease-Jenkin transit.
- Pressure on Launch: Ali Westle's brush with Johnny Foreigner at St Hilaire.
- Busy Sites: A discussion on dealing with crowds.
- Full stalls and polar curves: can understanding of the latter prevent the former?

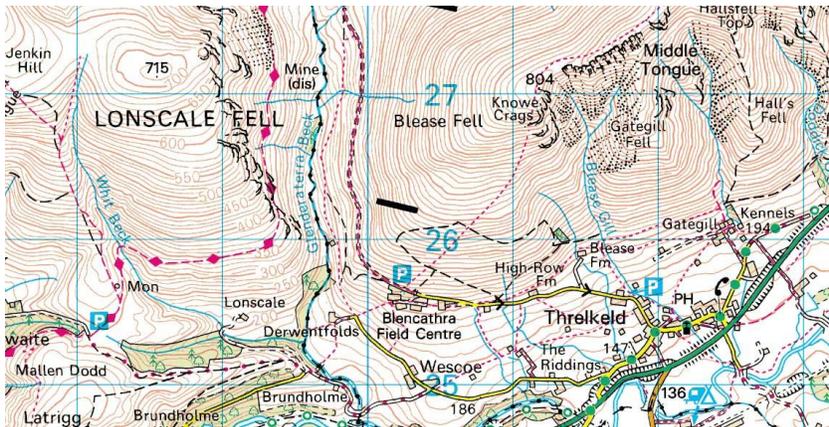
Mind the Gap

<http://www.cumbriasoaringclub.co.uk/forum/viewtopic.php?f=20&t=4136>

Lance Greenhalgh posts:

"On a sunny, light wind (8mph) August afternoon I took off from Blease hooking into the plentiful big fat +3m/s thermals. It was just too easy to boat about soaring above the Blencathra ridges to Souther and back, then poking out over the A66 etc. I decided to challenge myself to 'nipping' across the aptly named 'windy gap' to join others on Lonscale Fell, Jenkin Hill and beyond. I had heard of lots of mishaps to pilots attempting this apparently simple task but I thought I had lots of height and forward clearance ... so no problem. Setting off at about 1K in front of Knowe Crag at 2800 feet (Lance subsequently amended this to 2500 ft)I took a westerly course with a ground speed of about 10 mph. Within minutes I realised I was losing ground speed and height. Pushing on full speed bar, within a few more minutes (or was it perhaps just a few timewarping adrenaline filled seconds) I was at zero ground speed and 500 feet above Glenderaterra Beck. Fortunately, the air speed was such that I was not going backwards so I aimed for the flank of Blease. As I made my landing approach (still on full speed bar praying there was no turbulence) my ground speed increased slightly and I landed safely on the track leading to the Blencathra Centre.

No doubt we have all experienced the increase in lateral wind speed as we walk up Blease due to the 'Venturi effect' created by the difference in air pressure at the entrance and exit of this open valley. It occurred to me later, whilst I thought I may have had sufficient forward clearance, I did not take into account the compression will also 'suck' down the higher layers of air into the valley perhaps explaining the rapid loss of height".



The subsequent thread produced some technical discussion about the potential of the venturi effect pulling the air downwards as well as accelerating it through windy gap which it was argued, would have accounted for the unexpected sink as well as the lack of penetration. However, from a safety viewpoint it is probably as useful to consider this incident more generally based on the known characteristics of this flying site and other pilots' experience.

The zone is highlighted on the site guide map as 'windy gap,' not without reason. Lance was aware of this and had made what several pilots considered adequate allowance for the crossing. It does raise the question; 'what is 'adequate' height? And the answer is obviously not 2500 ft in these conditions.

Ed Cleasby's post is instructive;

"I've made the crossing many times without problems I've also turned back a few times too. It's always harder crossing west than returning.

I think the key is height, line and timing. The last especially because at some point it generally sea breezes, which has been a big contributory factors in several accidents on the Blease flank side of the gap. At height you don't really notice it, but the crossing drains height - and the lower you get the worse it gets as you sink increasingly into the SB influence which flows strongly round into the gap. Early crossings can be easier than late ones"

Kitt Rudd's advice, taken from Defined Flying Challenges is:

When crossing gaps it is rarely efficient to fly directly across the gap. I say rarely because if you are in orbit then this effect is diminished. When you next fly Blease or Jenkin and you want to link these sites there is a small, but significant valley to cross. Rather than flying directly at the next hill where you know you will encounter ridge lift try taking a line which pushes out, away from the gap. Doing this will mean you are less likely to squander your hard-earned altitude in the accelerated valley airflow, losing more height to distance gained in that initial phase of your transition. Instead, glide through the relatively unaccelerated air till you can put in a subtle (weight shift) turn and glide at the next face - you are now going with the airflow as opposed to fighting it.

Pressure on Launch

<http://www.cumbriasoaringclub.co.uk/forum/viewtopic.php?f=20&t=4137>

Ali posted, in his idiosyncratic and highly entertaining style, a description of an accident at St Hilaire. It could have been much worse and is an event I think we can all relate to. Here are the highlights.



St Hilaire

“Sunday morning, I decided to beat the queues and got to launch at 7:15am. I was still behind approx. 20 other early risers. I rigged away from launch (seems to be just a British thing to do, sadly!) and joined the queue. The sun hadn't risen over the mountains in front yet. The wind was very katabatic and the balloons were firing up.

There were a few messy, aborted launches and some very good ones. Everyone required a good amount of running pressure to beat the down draught.

I laid out at the back to give myself the fullest run possible and checked everything ready for my forward launch. I turned to face the cliff. An effing frog had put his wing right in front of me. My heart was already racing in anticipation of a very committing run off a 2000' cliff, then, as he laid his wing out before going for his harness to get that clipped in BEFORE getting into his harness himself I could feel the anger, rage and tension building inside me. I got more and more worked up for about 5 mins before shouting at him to hurry up and get off the hill or piss off out of my way.

He eventually launched and then the launch marshals told me to now move half way down the slope to allow more pilots to get ready behind me. Before I had chance to just run they were dragging my wing forward and I had to go with it. I felt the pressure even more as folk were waiting, I was too close to the

front (in my opinion) and the balloons were raising quickly.

I just turned and ran.

Then, as I reached the edge, I heard lots of shouting and aborted my take off as quickly as possible. I was in the air. Sadly it wasn't quick enough and I fell over the edge and down the very steep slope just before the vertical cliff. It was a very hard landing and a long slide down the matting. I hit every bramble bush, tree stump and metal staples that was holding the matting in place.

2 people came to the edge to see if I was ok. I said I was and that I would self-rescue.

Lesson 1: If it doesn't feel right, if things are getting to you, if you are seeing red... Get balled up and calm down.

Lesson 2: Do ANOTHER pre-flight if things have changed since your first one”.

The discussion which followed showed that Ali's experience is far from unique and echoed Ali's own analysis and lessons; basically keep cool and stick to your tried and tested routines. If the pressure gets to the point where it compromises safety, then swallow your pride and withdraw. There are, however, some preparatory actions that can mitigate the pressure. Ali was flying alone; the pressure is much less if you are in a group which will provide moral support and practical assistance on launch. It is worth perfecting your forward launch before your trip abroad. (This comment is emphatically not aimed at Ali who probably spends more time abroad forward launching than any other club member). British pilots are notoriously bad at the alpine launch. A lack of self-confidence in one's ability to execute an effective launch on an intimidating site in front of an impatient grumbling press of foreign pilots does not make for a relaxing take-off.

Busy Sites

<http://www.cumbriasoaringclub.co.uk/forum/viewtopic.php?f=20&t=4158>

In early October, following an excellent flying day on Carrock, I was made aware of a half dozen (at least) complaints about inconsiderate (not the actual word used in most cases) flying. I'm certain there were many more complaints, perhaps about me. Examples were pilots ploughing through thermalling gaggles, cutting in, not looking, making sudden unexpected/unsignalled manoeuvres, not observing the accepted protocols. I suspect that no (allegedly) erring pilots were subsequently approached to address the issues because we don't do that do we! There will be pilots, perhaps quite a few, perhaps me, who are unaware of the effects their flying is having on other pilots. So, we can assume that next time the conditions are right we will have more of the same.

A useful discussion with contributions from both experienced and low airtime pilots followed. Thank you. Much of it related to the correct rules and procedures for soaring/thermal flying and the issues surrounding crowded sites, too much to repeat here. I posted a summary of the discussion which I will repeat here. But I don't think we're finished on this one.

"We have recognised that there is a problem and discussed the correct procedures for flying near ridges. I think Noel Holland's post best summarises the situation and it is interesting to hear the approach to overcrowding on some of the Southern sites, heaven forbid that should happen here. However, I think we have some compounding problems when flying busy sites in Cumbria.

The first one is that, as several posters have suggested, it isn't actually a problem for 95% of the time. We have big sites and relatively few pilots. But this means that when it does happen we are likely to be less well prepared and adapted to the crowded conditions. The sites most susceptible to overcrowding will be the small soaring sites (Lowca for example) and the big popular sites when few alternatives exist, i.e. Carrock with a forecast North Easterly which draws pilots from all over the North. The soaring sites are not really a problem in the context of this discussion because the consistency of the lift, uninterrupted visibility and lack of thermals allow for predictable flight patterns; sort of conveyor belt flying.

In contrast, a busy day on Carrock is likely to involve a combination of thermic and dynamic lift. Noel describes it well in his post which bears repeating:

"Low airtime pilots just don't have the sensitivity to tell the difference between the edge of a thermal out front and a slight gust in the ridge lift as they are meandering along. When we do find what we think is a thermal the normal instruction we are given is to S turn until we have enough height above the ridge to allow a safe 360. That's alright in a big ridge with hardly anyone there but on a small ridge with lots of other pilots it completely blocks that part of the ridge line and can cause chaos for everyone else. I often feel obligated to pass up what might have been the edge of a thermal simply to avoid blocking the ridge line for those around me. I'm also certain that no-one here wants low air-timers feeling they have to pull hard 360s close into a ridge. So I'm damned if I do and damned if I don't, eternally obligated to blundering along the ridge trying to stay out of everyone else's way and hoping they climb out so I have some free space to do my barn door S turns in the lift after everyone else has climbed out and buggered off."

On the particular day in question, I found a further exacerbating factor was that I did not recognise many of the pilots. This shouldn't be an issue I know but there is comfort to be had when you are familiar with the pilots potentially encroaching into your bubble. You know their competencies and foibles and they yours. You can second guess their next move and if necessary make greater allowances. It's quite interesting that of the whinges I referred to in my initial post, none specifically named new or particularly low airtime pilots.

I expect (hope) most if not all pilots are familiar with the rules of the air and inadvisability of turning towards the ridge or executing tight 360s close to the ridge. Probably the newly qualified pilots are more au fait with the rules than most. Unfortunately, it all breaks down in the melee of a crowded ridge.

What's the solution? Here are a few suggestions in no particular order.

Recognition – It would be really helpful if low airtime pilots could be recognised. It would be good for them and good for other pilots who are less likely to be surprised or annoyed by aberrant maneuvers. Whatever happened to the red ribbon system?

Training – As stated, we get less practice than most in flying in crowded conditions. All CSC pilots should travel, at least once, to Sussex to fly Mt Caburn on a summer's weekend. This would result in better pilot skills and stop CSC pilots (me, mostly) moaning about over-crowding.

Naming and shaming – Nope, it's not going to happen but we should certainly make a bit more effort to draw pilots' attention to perceived weaknesses. An appropriately pitched conversation should be beneficial to all concerned. Once you've landed of course. If there is a serious concern it should be raised with the CSO. If deemed necessary I am willing to approach any alleged perpetrator with appropriate safeguards on anonymity. (On that note, I would be extremely disappointed if any pilot viewed my flying as dangerous and didn't feel they could mention it)

Limiting numbers on sites – Yep, I'm laughing as I type but as Noel describes, it happens down there (which is why we fly up here). There will be a degree of self-limitation by pilots who decide that an hour's bricking-it plus whiplash from multiple rapid head rotations is not a worthwhile way to spend a flying day and will go elsewhere. Noel makes some suggestions vis a vis coaches taking the initiative in this regard. Other pilots' views would be welcomed:

"I'm not suggesting that we have a formal policy for site congestion, that situation is very rare. But if a site is clearly congested and becoming unsafe, the club coaches should consider taking the lead and asking the low airtimers to land, giving the experienced pilots 30 mins breathing space on the proviso that after 30 mins if they haven't climbed out and left the site, they in turn should land and give the low airtimers some free space. Alternatively, the coaches might consider gathering a few pilots together and heading off to another site to relieve the pressure. Speaking for myself as a low airtimer I would be quite happy to escape a congested site if a club coach was prepared to lead a group somewhere else less crowded and that will work just as well. that said, low airtimers beyond a certain point need the experience of having to cope with congested airspace."

I expect this matter will lie dormant until the next busy day on Carrock but in the meantime I believe there are two main lessons we can draw:

- Be considerate. In particular, make allowances for the inexperience of lower air time pilots.
- If you witness any examples of dangerous or just inconsiderate (in your opinion) flying, you should discuss it with the pilot concerned. As several of the pilots stated in the thread, they would hate to be judged incompetent or dangerous and not be told.

Full Stalls and Polar Curves

<http://www.cumbriasoaringclub.co.uk/forum/viewtopic.php?f=20&t=4157> and
<http://www.cumbriasoaringclub.co.uk/forum/viewtopic.php?f=20&t=4171>

In early October, James Jackson posted a description of an incident involving a full stall at Carrock. After some inconclusive discussion over the possible causes of the crash James started a second thread '**Polar Curves and Polar Bears**'. As the two issues are related they are dealt with together. Polar bears are the easy, non-contentious bit. We all understand them; they're really cuddly and Kate Humble and the BBC love them and they don't actually affect my life. Up until now I've thought of polar curves in the same way except for affecting my life. Polar curves explain how a paraglider flies and how you should fly a paraglider. The polar curve can be a fascinating source of information both generally and for one's specific glider. Certainly, some of the contributors think so. This was balanced by a body of opinion that feels that a deep understanding of the science of flight is less important than its practical application, e.g. why not to fly really slowly along a cliff!

Opinion was certainly divided on several of the issues, even on the supposedly non-contentious theory of lift. There appeared to be some confusion over aerodynamics, wing technology and function. Much of this stemmed from terminological confusion. Geoff Moss makes a gallant effort to right the scientific wrongs and I frankly lost the will to fly. Without trying to make light of a serious matter (I do believe a basic understanding of how paragliders fly enhances safety and the polar curve provides a useful illustration) but I think that from a CSO standpoint I need to focus on the 'how to fly'.



Initial post by James Jackson:

"I experienced an accidental full stall on Carrock on Saturday, crashed pretty much into the Peregrine's nest (luckily it wasn't in!). Hit the grass rather than the rocks so no damage done.

The cause of the incident, I think, was due to scratching very close to the rocks while applying massive amounts of break in a desperate attempt to stay up in weak lift. As I was tucked into a small bowl I'm guessing there was turbulence coming over one side of the bowl. With the glider close to stall point already it probably only took a few moments of turbulent air to push the wing to stall point.

I only knew it was happening when I realised I was dropping backwards and sideways, less than a second before I hit the ground. I was fortunate that I must have only been a few feet above the ground when the stall occurred.

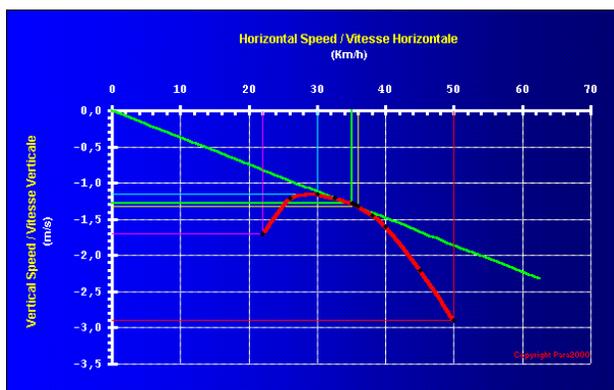
It's worth adding that I fly a low-end 'B' glider (Buzz Z) with relatively few hours, so I guess this sort of thing could happen on any wing.

I've been flying 20 years and the dangers of flying close to the hill and possible turbulence with loads of break simply hadn't occurred to me.

I've been chatting with fellow pilots and got some useful feedback including: the gliders age could be a factor despite the low hours; the lines may have shrunk or become stretched; on modern gliders breaking doesn't increase lift so there's little point in doing it anyway... perhaps more relevant to those of you on modern gliders – although I'm not sure I entirely subscribe to this theory

Any of the above could be relevant of course but I think flying on full brake in a rocky, turbulent bowl is probably the most relevant!"

And here, for those that need reminding, is a sample polar curve:



Mike Cav commented:

“At one time I read about polar curves, and not sure I really remember them properly except to acknowledge they might have a good relevancy for a sail plane pilot whilst for us they are more of a theoretical lesson that should not be in our mind when we are flying. Our polar curves constantly change throughout a flight and from day to day, and we should not let such thoughts play on our mind when we are flying. They won't stop us stalling our wing or help us find best glide.

Ali touched on the best thing to take away from this thread. Don't get blinded by the theory. Learning about our wing, flying conditions, terrain assessment (being super observant) etc. will hopefully save us from stalling into the ground, make us safer, and, at the other end of the spectrum, help us perform better.

Scratching and playing on a slope is one of the best ways to learn about a wing (and how to read a site/conditions) but only with nothing to distract from full observing and decision making mode. Not only can we hear/see the results on our instrument, but we get the instant feedback from our position on the hillside as well as the feedback from the wing. Not a time to think about polar curves or polar bears, but to concentrate on observing and reacting. And hopefully learn without getting bitten”.

In a follow-up post in response to **Rick Livingstone's** request to experienced pilots to ‘give us their views on whether flying slowly, while needing to be very carefully learnt, is a useful skill and worth having?’

Mike Cav posted the following:

“Paragliders fly slow enough already, so using so much brake to be close to stall point should not really be one of our valuable skills. Ground handling will help us identify stall point, but not with the aim to learn how close we can get, more to remind us what we want to keep well away from except on final flare, about to touch down.

Scratching a hill (and staying up) is not a skill of being able to fly slowly. Scratching is a skill of identifying and utilising available lift the most efficiently. If there is no lift then flying slowly will probably just get us down the hill faster, or dumped.

Scratching requires good feeling for our wing, good feeling for the air and good skills of reading the terrain, all coupled with fast and accurate decisions and reactions. If anything feels wrong then move away from the hill and enjoy the fly down, or stumbling into (searching for) a thermal.”

Ed Cleasby entered the debate with:

*“As for polar curves, to me they're pretty much an irrelevance other than as an exam question they barely cross my mind whilst flying. As far as 'slow flying' I can't go much beyond **feel** against **conditions** versus the **terrain**.. The overall aim being a clear understanding of the margins you have. Between trim and the stall point, where ALL our brake control takes place there is a wide range of small,*

subtle, but often telling brake interventions and they can be different side to side.

All I know is that:

** when I'm scratching around I'm near/at my highest level of concentration (depending on conditions/terrain)*

** my brake control is at its most subtle and sensitive*

** the reading of terrain is essential, more so when it's at its most featured (bowls, crags, outcrops, spines, possible thermal triggers etc)*

** the sun and the wind must be factored into terrain and a visualisation applied.*

** try to avoid (or be at least aware) of the red/amber places. Either fly a little further out, carry a speed bonus or set the glider (brakes, weightshift and heading) so any problem hopefully see's you turning away from the ridge.*

** Remember that flying close puts the inner half of the wing into potentially slower moving air (wind gradient) flying very slow means more likely a spin than a stall. Less so on a pg than a hg, as our slow speeds mean we tend to crab in reality (pointing out).*

I can't read this topic as an academic exercise you learn by doing and establishing as second nature the reading, understanding, visualisation ability and marrying this to subtle effective wing control. This may not help lower airtimers - but I suggest they just give themselves a good margin of speed and distance from terrain (most do) until they develop the skills and don't worry about going down. The desperation to stay up can stupidly narrow the margin know when it's time to cut and fly out (for chance of a thermal) or down for a coffee."

Brian Doub commented (in response to the suggestion that slowing the glider on a landing approach was a necessary skill):

"When teaching landings of any kind we tell our students to keep their airspeed up and to make a committed flare when about a metre from the ground. This applies to top landings, slope landings, nil wind landings ... all landings. If you're landing into wind this will naturally slow you down without putting on more brake than trim speed. We also always tell them to be prepared to run off any excess speed. This of course is emphasised strongly on nil wind landings.

The hand/brake position for all EP maneuvers is from the shoulders to the ears (trim speed with a little more depending on the wing). That is all the control inputs they need until they are ready to land and flare at 1 metre from the ground".

I'm sorry to disappoint. However, those members who wish to go deeper into the science of flight can read the whole discussion (6 pages, 50 posts) or better still get on the web (Paragliding Forum, and numerous technical/scientific sites) where I have discovered that not only do scientists disagree amongst themselves but they can be quite rude.

And to finish on a positive note, James had his trusty Buzz Z tested and it passed with flying colours. So that's a result then!!

Fly lots, fly safe!

ESO