600 Points or Bust

What follows is a description of the approach that I adopted to enable me to average 600+ points/season in the XC league

Tony Spirling 2015.

Health Warning

- If you do badly a golf or squash you will get a low score. If you do badly at paragliding you may get injured or killed. It is a sport with a ‘hard edge’.
- If you pursue the goal of 600+ points per season you will have to demonstrate a greater level of discipline and commitment and accept a higher level of risk than the pilot who simply flies for fun. However, with the increased knowledge, skill and sensitivity that flows from taking on such a challenge you will be able to cope with a more demanding environment at reduced levels of risk.

The Focus of the Talk

In Scotland light or nil wind XC days suitable for defined XCs such as Triangles and Out & Returns are rare. Most cross country flying is done in a (ridge soarable) met wind and involves Open XC or a flight to a Goal. Thus my talk will focus on ways to improve your open XC performance.

The Path I Chose to Take

- The goal, to score 600 points + in the XC league, based on six flights in the region of 100km rather than a couple of big flights, (lucky or clever) and four short flights, (70km or less).
- This goal was based on the belief that with the right approach a competent pilot on a sport class wing should be able to produce at least six 90+km flights per season in Scotland.

The Approach

- **professional** – not about fun – A systematic and rigorous approach to achieve clearly defined goals.
- Basic strategy was to adapt my thinking and behavior to **maximize the probability of achieving success,** (90+kms on each good xc day).
- Attitude – **If you do less than 90km you have failed** and wasted the day!

Operating Area 1

- **I chose to commence all my flights in Scotland and to focus solely on the SHPF XC league** because:

- 1) My first 90+km flight was back in 2005 on an Airwave Sport from the Lawley, Shropshire. About 50 of us flew along like a WW2 bomber stream. There were cloud streets almost all the way, base was 5500 and I never got below 3500, it was easy. Fertilizer bags did 50km that day! (It felt good at the time but relative to the challenge and satisfaction of doing 90+ km in Scotland it was not so good) Conditions are often like this south of the border and hardly ever like this in Scotland so there is little point in trying to compete with pilots based in the south, unless you like doing a lot of driving.

Operating Area 2

- 2) There are organized teams of pilots based in the south who are prepared to drive the length and breadth of the UK to fly in the best conditions, using the latest high end wings. There is little point in trying to compete with them, unless you are a masochist.

Site Choice

Any site with proven XC potential and 100km of land before you hit the sea is ok.. In fact because of air space restrictions, the relatively small size of the Scottish land mass and the subsequent close proximity of the sea to most of our sites 90+ km is often all that can be achieved before you run into a sea breeze. (Thus you must learn to exploit the sea breeze for extra distance.)

For the above reasons, even if you choose a site to give maximum distance you are unlikely to achieve more than 170km in Scotland. (The UK distance record is 275km.)

Sites I have used in Scotland for 90+km flights,(2013-2014).

- Eildon Hills – 94km
- Dungavel – 118,105,99,99,97km
- Tinto – 109km, (96km)
- Carn Liath - 99km
- Aonach Mor - 113km
- Glen Coe – (128pts)

Sites with good potential

- Aberfeldy (SW)
- Obney Hills (S, SE) [10km North of Perth]
- Morven (E) [Nr Ballater]
- Kings Seat (SE)
- Ben Toaig (SE)
- Craig Meagaidh (SE) A large ridge system – with potential for an 80km O/R!- T/O at NN476,888 takes SW/S/SE wind.

- **If a site does not have a minimum distance potential of 100km don't go there!** (This puts Bishop Hill and Broughton out of bounds.)

Availability 1.

- From the perspective of the paraglider pilot with a conventional job who can only fly at weekends Scotland is in fact two countries:
- ‘Mid Week Scotland’, a dry & sunny land of light winds and cloud bases up to 8000ft.
- ‘Weekend Scotland’, a wet and cloudy land with strong winds and low cloud.

Availability 2.

The number of good XC days (100km potential) in Scotland is limited. (2013 – 12, 2014- 7, 2015 – 5 .) Thus to get 6, 90+ km flights **you must be able to get out on all of the good days.** So, ideally you need to be unemployed with a 'private income' or retired with a pension and with no family or friends apart from paraglider pilots. (A bit sad!)

Availability 3.

- However, if you are a normal decent human being with a day job, a family and friends you can still use what follows to improve your distance on the rare occasion when you do manage to get out on a good day.

Equipment: Glider

Given that you will have relatively short distances to cover, rarely much more than 100km, your average flight time will be no more than 4 hours and usually you will leave before 13:00 so you will not be in a rush! **I emphasize, this is not about speed .**

Typically you will be decked because you got stuck in a difficult patch in the midst of good soaring conditions, not by the end of the soaring day.

- **Glider size- be at or below the middle of the weight range.** (I flew a delta 2, range 85/105 at 95kg. **)**
- **Fly a glider that you are completely comfortable with** and happy to fly anywhere, because you will need to.

Equipment: Other Kit 1.

- **A pod harness is preferable** for warmth, comfort, reduced drag and the feeling of security that comes from being enclosed. With good weight-shift and sensitivity. However, any comfortable harness will do, (moderately reclined is best for reduced drag).
- **Clothes**: Heated gloves, good boots and a down or Primaloft jacket under a shell jacket or flying suit. Often the best weather for XCs in Scotland is early in the season, March to early June, So you need layers and loft!

Equipment: Other Kit 2.

- Open face **Helmet,** brown tinted **glasses** not goggles, you need to feel what the air is doing!
- Sensitive **vario**. + a micro back up
- **Two GPSs** (one for back up!) one with **a moving map that shows your position relative to airspace is a must.**
- A **Radio,** can be a distraction, if your observation is good enough for open XC you will see anyone who's going up. If you can't see them you will be too far away to join them given the poor glide of a paraglider. You should be treading your own path and enjoying the peace and tranquility.
- A **Spot** is good but costly. Adequate smart phone tracker apps are available.

Food & Drink?

- I was always too wound up or too busy to eat, drink, take pictures or communicate with anyone whilst flying; they are all distractions for the average pilot. **You should be totally immersed in the task in hand!**
- But do take food and drink for after landing when the hard bit starts.

Airspace!

- You will have a moving map facility with your position relative to airspace on your GPS.
- You will also subscribe to robot@notaminfo.com to have the NOTAMs effecting the area of your flights sent to your mobile each morning.

Weather analysis: 1.

- Task - To establish:
- a) Is it a day with 100km potential?

  if it is
- b) What is the best place to start and the best time to start?
- (Remember you are looking for a 4 hour window to do your 100km)
- I use RASP, it has its faults but it's probably the best we have and it worked well for me.

Weather analysis: 2

- Establish the weather pattern for the week ahead, and note when any good days might be.
- Beware the 'Red Friday' mob hysteria. Do your own analysis, rely on your own judgment, and tread your own path. For you this is no longer a sport it is a professional job. Red Friday often turns out to be Yellow Thursday or simply blown out!
- Weather predictions for more than 4 days in advance are invariably wrong. Get a feel for the general pattern **but check every evening** to see if things have changed for tomorrow.

Weather analysis: 3 a

On the good days get up in time to do all your prep and arrive on take off by 10:30.

Weather analysis on the day; Check the predictions for each parameter between 11:00 and 18:00.

- **Thermal strength**, which area has the strongest thermals over the biggest area for the longest time?
- **Surface sun**, look for cumulus patterns and streets, avoid blue areas and 6/8 to 8/8 cloud areas.
- **Star rating (3-5**), Star ratings are not very reliable. We have all had poor 5 star days and good 3 star days. Always relate the star rating to the other parameters.

Weather analysis: 3 b

- **Convergence**, note any areas of convergence that you can use in your chosen area.
- **BL Wind**, check which area has winds that are within paraglider limits.
- **Cloud base**, which area has the highest cloud base over the largest area for the longest time?

Use each of the above to establish the best place to start and the best time to start, then go there. (Remember you are looking for a 4 hour window and 100km of land.)

Trust Your Own Judgment

- Trust in your own analysis and judgment. Focus on your primary goal,(100km).
- Your friends may want to go elsewhere, they may have other priorities. (Child care at 4 pm, a busy day at work tomorrow, A heavy night last night). **You have one priority – 100km, stick to it!**

On the Hill

- As you climb up and then set up try to get a sense of what the air is doing by observing clouds, grass, birds, other gliders. Begin to shift your attention away from the chatter and gossip to the air around and above you. (You are committed, you have made your choice. Ignore the chat, the pundits and the predictions. Your job it to simply make the most of whatever comes along.) Use the rigging process as a ritual to help you become calm and focused. Once clipped in use the wall to feel the air. Get a sense of the ebb and flow of the air, the frequency and duration of the lift cycles. When you feel a lift cycle begin, step off the hill into it.

Strong wind days.

- Some of the good days for 100km flights may be strong wind days. If you want to use these days you need to be very competent at ground handling your wing and taking off in strong winds. (Practice!)
- Only attempt this on sites where there is an 'escape route' if you get blown back. (It is bad practice to be fighting your way back over the hill, low down on bar in turbulent, thermic air – better to turn and run.) E.G - Dungavel – turn right and fly off the north end of the hill, plenty of good smooth landing areas. Tinto go over the back to the east of the wood. But not low.
- If you have to land before the coast choose a wide open valley and a large field. Land at the up wind edge and be prepared to be dragged. Simply reel in one side of the wing from the tip. (**If in any doubt about conditions or your ability to cope, don't fly.)**

The Climb out: 1.

- Find a consistent and solid climb from any height and stay with it until it stops or you reach cloud base. (If you are not yet confident in your ability to judge this then step climb. As a general rule – if you lose lift at less than 3000ft* go back to the hill and start again. Going over the back low is a low probability scenario!

- Your primary objective is to get high and stay high. Speed is not an issue so stay with the thermal even if the lift becomes broken and weak as long as you are not sinking you are being carried to the coast by the wind. If you lose the thermal flatten your turn and search a broader area it will probably be close by, do not cut and run immediately. Think hot air balloon rather than sail plane! (*This height depends on the day and the site.)

The Climb out: 2.

- In the first 10km if you find yourself in a weak and broken climb stay with it until you have enough height to be sure of gliding easily to the next good looking cloud. If you leave early in search of something better you may not have enough height to reach the next area of lift. It may be that all the thermals are weak and broken, it may be that kind of a day. **Tread very carefully until you find out what kind of a day it is.**

The Climb out: 3.

- As you climb try to relax into the process, allow your wing to fly and just gently correct it when necessary. If you are fighting it you are doing it wrong – it knows how to fly. Allow your senses to flow out to your wing tips and beyond – visualize this, think in these terms. By taking off you have allowed yourself to become part of a massive energy flow that is the atmosphere. **This energy flow** or river of air **has shape, form or grain and your job is to sense it and flow with it.**

The Climb out: 4.

- **Fly the air not your thoughts about it or yourself.**
- Our theories and models are only rough approximations of what the air may be doing. Use theory but don't be limited by it. Try to sense what the air is actually doing!

- You may feel fear – respond by asking the questions: **Am I climbing? Am I progressing over the ground?** If the answer to both these questions is yes, pressure breath and continue.

The Climb out: 5.

- As you climb pressure breath*, gaze into the middle distance, use peripheral vision to see other gliders, only using focused vision if someone comes close or is erratic. feel the wing in the air, make small corrections to optimize the climb. Listen to your vario, don't look at it. As you get closer to base, glance briefly downwind to locate your next climb. Remember there is no rush, your job is to stay high. **Stay suspended in the River and it will take you to the coast!**

- *Pressure breathing = breath in slowly, 5 seconds minimum, then breath out slowly through closed lips.

Where next?: 1.

- **Go where the best lift appears to be,** – Usually the highest ground and the darkest clouds. Try not to let thoughts about landing out, rough terrain, forests, wilderness, walkouts or wind turbines influence your choice! **Fly the air not your thoughts about it or yourself!**
- (If the wind is strong you may want to choose a less hilly/mountainous route. If you do go down in the hills on a strong wind day do not land in the valley! Rotor! land up high on a windward slope (no rotor) and walk down. You may get dragged so pick a smooth area, heather is good it will snag your lines and stop you.)

Where next ? 2.

- XC flying is a game of probabilities; you are pursuing an invisible prey, so choose a route that looks to give the greatest probability of staying high by giving a series of climbs for as far as you can see.

Where next ? 3.

- Different scenarios from Dungavel:

- Get to base – blue down wind but you head off into the blue ,because this is the way to the coast, wrong this is the way to the ground.
- Get to base – head off toward a large building cumulus over Biggar east of which the sky is blue. Wrong think several climbs ahead, with just a 10/1 glide you can't afford to fly into a dead end.
- Get to base, on the way you notice a line of reasonable development extending to the ESE over the higher ground 45 degrees from your intended track to the coast. This is the way to the coast.
- The sky downwind is a mess, you can't make any sense of it but there is a reasonable looking cloud building across wind , go for it. Finding lift and staying high gives the greatest probability of getting to the coast. Getting low in the blue is a low probability option.

Speed Bar? 1

- Glide at max glide speed, hands up and **no bar**. Only use bar when: a) in prolonged heavy sink, b) to improve glide into wind, for example trying to turn 95km into 100km by gliding into a sea breeze, (know how to calculate the optimum speed to fly for any given head wind), or c) when on Ears trying not to bust 5500ft under the airspace.
- **You have plenty of time**, stay high. In Scotland the coast or the sea air is rarely that far away.

Speed Bar? 2

- Leaving early, (before 12:00), and using bar on glides is essential if you want to cover more than 140km, (given the average length of the soaring day and the inland march of the sea air.) However, both these things significantly increase your risk of landing out and therefore reduce the probability of your achieving 100km.
- My approach was to be conservative and maximize the probability of doing 100km.

Should you hunt with the pack or as a lone wolf?

- Depends on the pack, depends on the wolf.
- Mathematically the pack can search a larger area, giving a greater probability of finding lift. However, psychologically the pack can produce a risk averse dynamic, gaggle drag!
- If you are able but lack confidence in your ability you will under perform in the pack.
- If you are confident but lack ability the pack will boost your performance.
- I produce my best flights on my own, making my own decisions. I also find this the most satisfying way to fly. **Just you and the River!**

An Excellent Guide to XC in the UK

- **Read 50km or Bust by Nigel Page**. Read it and follow it. Do a couple of XCs and read it again. You will get more from it each time you go back to it as your experience builds.

When you get low: 1.

- What I have said so far will get you away from the hill and probably to 30 or 40km but on most days **at some point you will get low.**

- **What you do when you get low will determine if this is to be a 50km or a 100km flight.**

When you get low: 2.

- Typically you glide off to an area of cloud that looks good and you get nothing. Now you are down to say 2500ft and you glide on to a ground source that looks good:
- With a large thermal feeder area, good aspect to the sun, slope facing into wind, a trigger point and cloud forming above.

Examples

- Two examples of what makes for a good place to look for lift when low.
- Drumelzier (Quarry Hill) near Peebles,(NT150,360).
- Bowshank (wind-farm) near Galashiels, (NT450,410).

Examples

- Drumelzier: In a westerly wind thermals build in the valley of the Tweed, drift east and are lifted into the sky by Quarry Hill which protrudes into the valley flow.
- Bowshank: In a westerly wind thermals build in the Ox Bow area drift east and are collected and lifted by the bowl to climb over the wind turbines.

When you get low: 3.

- You glide in to your ground source, by luck, arrive at just the right time and bang, up you go back to cloud base.
- Alternatively, you arrive at the wrong time and you have to feel your way around in either the weak remnants of the last thermal or the beginning/ coalescence of the next thermal. You may need to drift along in zeros until it lifts off or feel out an area of weak lift and work a very weak climb. At this point you are fighting for your soaring life, (in the air = life ,on the ground = death) and almost anything goes. Locate a landing area and then focus on the primary job, staying up and finding a climb. **You must be 100% determined to stay up!**

- **If you are heavy on your wing you may not even feel the week lift and if you do feel it you will not be able to climb in it and you will go down. Your glider must have a light wing loading and good maneuverability.**

Yet More Reading:

- Understanding the Sky – Dennis Pagen, probably the most useful after Nigel Page.
- Thermal Flying – Burkhard Martens
- Cross-Country Flying – Burkhard Martens

(Be warned as with many of the books on XC flying the Martens books are written from the perspective of a comp pilot flying in strong alpine conditions. Open XC in Scotland usually requires a different approach.)

When you reach the sea breeze: 1.

- If you handle the sea breeze intelligently you can add a significant distance to a 90km flight.
- If you are at 95km straight distance from take off climb as high as you can in the convergence and then glide on toward the coast into the sea breeze on bar. You should make the extra 5km and thus100km. (well done!)
- If you are less then 95km, aim to fly along the convergence and get a long 'turn-point' flight. It may be possible to add more than 20km to your total distance.
- **Read, 'Sea Breeze and Local Winds' by John E Simpson - very useful.**

When you reach the sea breeze: 2.

- Sea breezes are low level winds flowing from sea to land as a result of thermal activity over the land and subsidence over the sea. They are subject to the Coriolis force.
  Instead of simply flowing inland from high pressure to low pressure they are diverted in a clockwise direction.
- So if you are flying on a track at 90 degrees to the coastline the sea breeze will be flowing from your right to your left. For example, if you fly towards Elgin north from Carn Liath the sea breeze will be flowing towards Inverness, (NE wind). If you fly from Dungavel to Berwick on Tweed the sea breeze will be flowing towards Dunbar (SE wind). Thus, for best distance, turn left, fly along the convergence and when you sink into the sea air you will be gliding with a tail wind.
- This works on the relatively flat coastal plain. When the sea air moves into the high ground it tends to follow the glens and depressions. It will typically be about 2000 ft deep and will flow into any glens or low lying areas.

Final Glide

- When you are on your final glide in the sea air look closely at the terrain ahead.
- Choose a route that puts you over low lying ground to give yourself the longest glide possible. Every kilometer counts!

The End:

Good Luck next season!

- P.s. Drop me an email when you make the coast, (if it is your first time).
- Tony Spirling 2015