

A coarse pilot's guide to cross country

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The recent "Advanced Mentees' evening" at Nympsfield raised some interesting questions. In particular there was a debate about the level of expectation an average weekend-only pilot should set for their cross country achievement. Following this, and some discussion with Richard Smith, I decided to try and take a realistic look at my own cross-country flying since I joined Nympsfield in the late 1980's, and try and get on paper some of the thought process about tasks that I go through before and during a typical weekend flight.

Firstly – a word of warning. This guide is aimed at people who, like me, have no great competitive ambitions and want to fly cross-country for enjoyment and personal satisfaction. If you are a steely-eyed racer with your eye on the Nationals (or higher) then don't read this! The ideas in this document could cause a serious deterioration in your finely honed competition mindset & require extensive therapy and/or a 1:1 session behind the hangers with one of our more competitive mentors!

What I want to discuss is how you set about cross-country as a challenging but enjoyable pastime, and I want to address three issues:

1. What is a realistic level of expectation? We all know that the top pundits talk of 500Km flights, rounding the last turn point as dusk falls and squeezing the last drops out of the day – but what really happens to the average weekend XC pilot in practice?
2. How do you structure your cross country task planning, how does the "coarse glider pilot" select tasks so that you don't end up over-setting or (at the other end of the scale) simply wandering aimlessly around?
3. What do you think about en-route when (as usual!) the weather does not live up to expectation?

For each section I've tried to give you an insight into how a typical pilot's thinking might operate. You need to modify this for yourself, or talk it over with your mentor. Bear in mind some of this is not appropriate for the competition keen, or the avid badge hunter – and at times you will want to be more "press-on" than described here. What I've tried to do is present an honest view of what I do in order to get enjoyment from cross-country on a typical weekend.

Reasonable Expectation for a weekend Pilot

To get an idea of what "reasonable" might mean I did an analysis of my log-books going back 18 years (to when I moved to Nympsfield and started to get more serious about XC flying). To make this a reasonable comparison, for those years when I've been flying a Nimbus 3DT I reduced all XC Km in the Nimbus by 33%. So what you see should be representative of what is achievable in an LS4 / Discus / ASW20 type glider (in this period I have had a DG200, LS4, Pegase and latterly an ASW27 as well as the Nimbus, and I normally fly weekends only + around 3 days/year mid week).

I calculated the average total XC Kms, number of flights, % flights Declared / Completed and number of flights over 300km (over 400Km, or 300Km at >100kph in the Nimbus). I also took out anything more than 3 midweek flights/year. The following profile was the resulting "average year" of weekend flying:

- Total Km per year: Average over the full period was 2,700 Km per year, but with wide variations from 1,800Km up to 4,000 Km
- Average number of XC flights – 16 per year, giving an average XC distance of just over 170Km
- Average number of “300Km” flights (400Km in the Nimbus) per year – 2.5
- Percentage of XC flights “completed as declared” – 34%

So, given that I’ve probably benefited from better access to gliders during this time than many members, I would suggest that “reasonable goals” for the weekend only XC pilot in a Discus/LS4/ASW20 performance glider might be something like:

- Total XC 1,500Km – 2,500 Km / year.
- About 12-15 XC flights/year averaging around 150Km per flight.
- Of these expect one in three to be completed as declared, and plan for two to three 300Km days per year.
- If you can’t get time off in the week AT ALL, then you might lose several hundred Km from your total: this makes a big difference to how the season feels, especially in lean years.

If you’re already achieving this – then read no further. If not then some lessons to take away might be:

- While lots of people talk about & maybe even declare 300Km+ tasks the reality is that there are relatively few weekends in a year where you will complete one as a “casual pilot” (If you are trying for a 300km badge, then you’ll do better than this, as you tend to accept longer flight times and press-on more than when you are “flying for fun”).
- The reality therefore is that 80% of your tasks will be less than 300Km – either because the day is not good enough, or because you abandon a 300Km flight for some reason. This means that more than half your total Km will be gained in short 100Km to 200Km tasks. There is nothing wrong with this! Indeed you can learn a great deal from a 100Km triangle on a poor day.
- Only 1 in 3 flights may be completed as declared, so you need to maximise what you get out of your undeclared or uncompleted tasks.
- With the standard of early warning met info now available, it is fairly easy to spot 300Km days a couple of days in advance. Doing this three times a year adds 900Km to your haul; but for many pilots, a day off with only a couple of days’ warning is not an option. Instead, you’ll have to use up a week’s holiday: try Sid’s task week or a Regionals (don’t take it too seriously: treat it as a task week). Over many years, you will average 4 or 5 tasks out of a 9-day summer period, 600Km per week or a bit more. Every now and then you will be rained off altogether: grin and bear it.
- Alternatively, change jobs, or inherit a vast fortune.

How to structure your thinking pre-flight

First, you should try to declare a task before you set off – I normally at least verbally declare something, unless the weather is so bad that going cross-country at all is marginal.

However, given the difficulty of predicting the weather, it is sensible to have one or more “fallback” tasks in mind before you launch. Then if your first task is “not on” you can still do something constructive – albeit it will not count as a declared task for the club ladder.

A fallback task can be shorter – e.g. cutting one or more legs down in distance – and/or it might be in a totally different direction. As an example last year I set off having declared a 300Km with Ironbridge as the first TP. Once airborne it became obvious that going NW was a big mistake (which shows how good my weather interpretation is!). So I re-set (in the air) my task to go to Lasham and Northampton – keeping the distance similar, but totally changing the quadrants I was working in to what looked good from the air.

Everyone has their own style of task planning: my approach is to have a list of “Favourite TPs” structured so that for each 45 degree quadrant (eg West to South West) I have (say) two or three TPs – ideally one at 50Km, one 75Km, one at 100Km. In this way all you need to do set a task is pick which quadrants you want to fly in & then how far you want to go. This approach makes re-tasking in flight much easier as you only need to know 20 or so TPs – not the full BGA list.

Finally, when thinking about a task the main considerations are:

1. How long is the available soaring day? (this is a guess of course!)
2. How many hours do I want to fly for today? (your enthusiasm, mental state, hangover, likely launch time, etc will dictate this).
3. What kind of average speed can I make? For this, one approach is to use the expected cloud base from the weather forecast as guide. So for example (assuming it’s not too windy!) the average “weekend” Discus driver might do 55kph with a 3000’ base, 75 kph with a 4000’ base and 85kph+ with a 5000’ base (scale these up or down to match your experience level).
4. Which quadrants look best: from the forecast, and by looking at the sky from the airfield.
5. Multiply the expected flight duration by the expected average speed. Then look for a suitable sized task in the best looking quadrants.

Using this approach, you might say “It’s a 3000 ft base today, I want to fly for 3 hours to the west” – so you’re looking for a task of around 150Km going West - in my case I would pick my two 70Km TPs in the West – SW and West to NW sectors – giving me Chieveley Svcs – Didcot (160Km approx). If I thought the day might deteriorate from the North, then maybe I would have Membury – Westbury chimney as an alternative, using two 50Km TPs.

The important things are:

- Set a task (or adopt some-one else’s) that is realistic for you. Just because one of our Nationals pilots is declaring a 300Km don’t feel you have to do the same – a shorter task, maybe sharing part of their first and last legs, might be better.
- Set the task for the day – remember there are only a limited number of weekend days when a 300km+ flight is straightforward. You will learn a great deal (and have a lot of fun) completing declared 100Km, 150Km or 200Km flights. But if the day is good enough for a 250Km, do consider stretching to a 300Km, unless some weather feature makes this inadvisable.
- Be realistic about your average speed and the time available – it’s no use planning a 300Km if you are not going to get launched till 14:00, and normally only do 50 kph.

- Know your “favourite TP” list – use this and quadrant planning system to help you plan tasks (see the end of this article for my own list).

What to do when you are airborne

So – you’ve set your task, ideally with a fallback or two in mind (or maybe a fall-forward), and you’ve managed to get a launch and soar locally. What you’re looking for now is reasonably consistent conditions - e.g. at least 3 steady thermal climbs up to a cloud base you are comfortable with. Once you have this met, provided you are not racing, you want to think about setting off provided the conditions down track look similar to those locally. Some rules of thumb for this:

1. Remember it’s often better inland, so your pre-start “local soaring” on some days may be local to Aston Down rather than Nympsfield.
2. Try and work out what’s happening as you soar locally – e.g what do the “good” clouds look like, which side are they feeding from, what is a reasonable average climb for the day, what is cloudbase (and how does this compare to forecast)
3. It’s a good idea to set off with a couple of other gliders – if they are faster pilots than you then you’ll get left behind pretty soon, but in general no-one minds towing a gaggle for the first few thermals down a leg – just make sure you fly to your own “comfort margins” – not theirs (and keep a good lookout of course!)

I personally try and have a structure for the day. Firstly I have a desired “operating band” - typically from cloud base to 1/3 of the way down. If I fall out of this then between 1/3 and half way down I’m throttled back and below half way it’s definitely time to find a climb. So on a 4000 base day operating band is cloud base down to 2700’, throttle back is 2700’-2000 and by 2000’ I’m slowed right down looking for a climb that will at least get me back to 2700.

Once you’ve started you should be looking for 3 things (and this is true all round the task):

1. Are the conditions deteriorating around you – for example is cloudbase coming down and/or thermal strengths diminishing (this doesn’t mean just one bad thermal, but a trend over several climbs).
2. Can you see weather problems which you can’t simply divert round, eg large areas of spread-out, weak / blue conditions, rain showers, incoming high cloud etc.
3. Are you hearing consistent reports of poor conditions from where you are headed (look for several people calling problems, not just one unfortunate Booker-Boy landing out and remember that you might just be hearing the pessimists, while the optimists are pressing on).

If you get one or more of these you need to decide whether or not to continue your task as set. If you are close to a TP or it might be worth pressing on for 10-20Km, but if you have a long way to go you need to decide if the task still seems feasible.

Now the important bit! If you decide not to go on (and remember my own statistics means this happens quite often) the day is not over. You’ve just flown through reasonable conditions – otherwise you would not have set off. So before you head straight back to Nympsfield consider:

- Can I complete this task, but just at a slower speed than I was planning? (i.e. is the soaring day long enough to do this, and are the conditions still OK – if not as good as you had hoped).
- Can I do a shorter task in the original quadrants? (e.g. a 120km triangle rather than a 160km)
- Is it just this area where the weather is poor? (i.e. “did I simply pick the wrong task?”). If so, maybe you can still do your 150Km (or whatever), but you need to re-set in the air using different quadrants.
- Have I simply started too early – so do I need to slow down or go back to Nymphsfield (or Aston Down), and local soar for a bit, then re-start ?

Clearly there is a balance here – you do not want to give up a task just because you get low once, but you do need to develop the skill of knowing when to do something different – and to optimise your XC flying you need to develop the ability to re-set the task in the air to match what you can see.

So the lessons from this are:

- Make sure you have a clear picture of the conditions before you set off, so you can spot when things are getting consistently worse.
- Take some time to form a judgement, but then admit you (or the task setter) were wrong.
- If this is not a competition or badge flight you have the option to do something else, and still have a good XC flight. Try to avoid simply coming straight home unless the whole day is collapsing!

Favourite TP List

Here’s my list as an example, by quadrant, starting North to North-East (roughly!) :

N to NE: Stratford or Edge Hill, Northampton, Hus Bos (SOA, EDG, NOS, HUS)
NE to E: Didcot, Bicester, Grafham Water (DID, BIC, GRW)
E to SE: Membury, Chieveley, Kingsclere, Alton (MEM, CHV, KGS, ALT)
SE to S: Westbury Chimney, The Park, Shaftesbury (WEB, PRK, SHA)
S to SW: Bath R/C, Sherborne, North Hill (BAT, SHB, NHL)
SW to W: Not a lot – Bristol Channel gets in the way!
W to NW: Usk, Brecon or Hay on Wye, Cray Reservoir (USK,HAY,CRY)
NW to N: Hereford, Long Mynd, Ironbridge (HEC, MYN, IRO)

There are of course other TPs which I use as “fill in” or to get round airspace, but the above probably cover 70% of my flights and if you add in the “fill-ins” you get to around 90%:

Fill in TP’s:

Airspace avoidance: Enstone, Devizes (ENS, DEV)

Intermediate points: Banbury, Silverstone, Lasham, Basingstoke, Worcester R/C, Shobdon (BAN, SIL, LAS, BAS, WOC, SHO)