

> search area, but it nicely illustrates a fundamental point. ***In typical UK and Northern European conditions, flying a little slower than the optimum speed by setting a lower MacCready has very little effect on your theoretical average cross-country speed, but has huge benefit in terms of increasing your search area for the next good thermal.*** If you find a better thermal as a result, your average speed will almost certainly be higher.

Note that these examples are all *target* speeds. Once the MacCready is set at a given value, it is very important to follow the speed director commands, especially if it tells you to fly faster when in sink. I don't personally chase every little twitch of the speed director, but generally fly at the target speed and then smoothly vary the speed for sustained speed director commands.

These arguments illustrate why many successful competition pilots instinctively set their MacCready to about half the achieved average climb rate in their thermals.

They recognise that the fastest pilots find the best climbs and are optimising their chances of finding those better climbs without sacrificing too much of their theoretical cross-country speed. Combine this with the tendency to over-estimate our achieved average climb rate, and the argument to fly a little slower becomes even more compelling. Furthermore, since a low scrape can be very time consuming and a premature outlanding a total points disaster, there is a major tactical imperative to fly a little slower to improve our search area and avoid getting low.

When should I start?

First you have to know how fast you are likely to go. Once again we go back to basic MacCready theory. Using the construction shown in figure 1 draw up a table of optimum cross-country speeds for various climb rates and then reduce the values by say 10 per cent to allow for route deviations, navigational errors, etc, as illustrated by Table 2 (*below*) for an unballasted Discus.

This table now becomes your reference against which you can estimate your likely average speed for the day, having received the daily met briefing with its forecast of predicted thermal strengths. As mentioned previously, cross-country speeds will approximately increase by the square root of any weight increase (not exactly, because

amongst other things, climb rates will be worse with waterballast). The effect of adding 200lbs of water would be to increase speeds by about 10 per cent, so the middle column gives a handy guide to likely average speeds when carrying water. Once you are able to estimate your likely average speed for the day, you can calculate how long any given fixed course task is going to take, or estimate how far you are going to be able to fly in the assigned time in an AAT.

Having calculated how long your task is likely to take you, consider your start time options by working back from the desired finish time. The met forecast will give a clue when the soaring day is going to fade. Plan to fly your task in the strongest part of the day, but leave yourself a bit of soaring margin at the end of the day in case you don't go quite as fast as planned.

For example, if you anticipate 4 hours to complete the task and good thermals are expected to die away after 5.30pm, allow yourself a 30-minute margin, and plan a 5pm finish. Subtract the 4-hour task time and your planned start time in this case should be 1pm.

Consider practical factors that might affect your planned start time and adjust your plans accordingly. If significant shower activity is forecast, consider starting as early as possible to complete the task before showers become widespread. If there is likely to be a large amount of spreadout, consider if this might slow you down and adjust your start time to suit. In blue weather, thermals often peak later in the afternoon than when clouds are present and it is often beneficial to start a bit later (additionally, if you start early, you have no other gliders ahead to mark thermals and later starters are going to use you as their thermal marker). Some sites may have particular local factors that influence your decision – for example incoming sea air in the late afternoon, which makes an early finish advisable.

The aim is to always take off with an optimum start time for the day in mind.

Practice

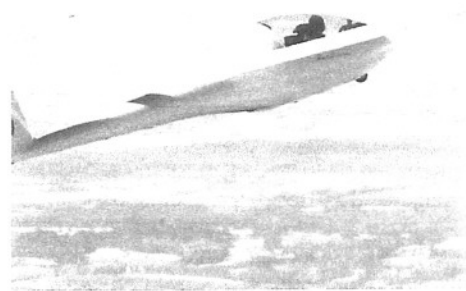
The skills, judgment and stamina required to participate successfully in a competition cannot be gained without practice or training. Every flight you make should, if possible, simulate a competition flight.

Fly cross-country at every opportunity

Fly cross-country tasks as much as possible, ideally in the glider you will use for the competition. If the weather is soarable but will not allow you to fly cross-country, practise important flight activities, for example, thermal location and centring by climbing a bit, airbrake down, centre again. Practise choosing fields and later visit them on the ground to give yourself feedback and build confidence in your judgment.

Set yourself tasks

Try to set yourself a task every time you fly. Following patches of good weather around



Fly cross-country tasks at every opportunity...

the countryside at random will not train you to fly a competition task in which you are required to fly to given turning points or assigned areas. If possible, also practise flying AATs.

If your glider carries water and you intend to use it in the competition, fly with water, building up the weight over a series of flights so you learn what is a comfortable weight for given conditions.

Set yourself a task before take-off, plan it properly and work out a start time.

Use the time between take-off and your start to relax, practise thermal location and centring (note where the thermals lie in relation to the clouds).

Starting efficiently is quite an art, so make a proper start from a BGA start sector and then, weather permitting, make a determined effort to complete the whole task as set.

Don't give up unless the task clearly becomes impossible. It is very important to learn to stay airborne and keep going in difficult weather. In this way, build up your stamina and develop mental toughness.

Make a proper finish across a finish line or ring to gain familiarity with your final glide computer and to learn the planning and safety issues involved in low-energy arrivals before your first competition day.

Analyse each flight

Look back on each flight. If any other pilots flew the same task, discuss the flight with them. Ask yourself a series of questions:

- Was the start time right?
- What went well?
- Why did it go well?
- What went badly?
- Could it have been avoided and how?
- Did I follow the best route?
- Was I ruthless about the climb rates?
- Too much, too little, about right?
- Did I find the best lift?
- Did I identify the right clouds?
- Where was the best lift in relation to them?
- Could I have centred quicker?
- Was my final glide about right?
- Was it too fast, too low?

Table 2

Likely average cross country speed Discus, 735lbs

Average climb rate (kts)	Theoretical average XC speed (kts)	Likely average XC speed (km/h)
0	0	0
1	44	40
2	62	56
3	77	70
4	87	78
5	94	84
6	101	91

Be honest with yourself, but don't worry about errors and mistakes you couldn't possibly have anticipated in advance.

If you identify any particular weaknesses in your flying, then concentrate on those weaknesses in your future practice.

Execution

At the competition it is essential to stay relaxed, focused and avoid distractions. Don't increase your mental baggage by complaining about the task-setting or by worrying about what the other competitors have done or are doing – it's all just history.

You can't change history but you can influence your future.

Remain focused by following your daily routine and concentrating on soaring aspects of your own flight such as where the next climb is, which cloud street to follow and so on.

Think ahead, run and review two plans simultaneously in your head: a short-term and a long-term plan.

The short-term plan might be to find and centre a climb under the next cloud. The long-term plan might be to consider options after you have climbed, what it looks like ahead, which way to route and how high to climb to reach the next good weather.

Obviously, one plan takes priority over the other from time to time. They are both interdependent and constantly changing – there is no point in having a long-term plan to glide 20km across to the next cloud street if the short-term plan can't get you high enough to get there!

Remain flexible throughout the flight. Be ready to change your plans if required. Look well ahead to see if there are any weather developments that might affect your planned route. Be prepared to slow down to conserve your height at the first sign of a major problem. Conversely, be ready to speed up again as soon as you can see good weather within range ahead.

Starting

Prior to your start, watch on track to see if there is any sign of weather deterioration. Look well upwind to see if there is any sign of high cirrus rushing in that could dilute the sun and weaken thermals. Unexpected spreadout, showers, high cloud or blue conditions are all good reasons to adjust your planned start time.

Don't worry about what other competitors are doing – treat them as another source of information you can use to your advantage. For example, if they are all starting early, ask yourself why. There might be something you haven't noticed, but if you can't see a logical reason, ignore them and stick with your original plan.

Resist the almost overwhelming urge to set off the very moment the start opens. Try to relax and focus on soaring issues. Sample as many clouds as possible to learn where the lift lies in relation to the clouds.

If conditions are reliable, move a little distance away from the start area, where there are fewer gaggles and gliders to worry about. I find that munching on a sandwich helps me to relax.

On task

On task, take what you perceive to be the best route and climb in the best thermals you find. Fly at a comfortable speed that allows you to reach the next good-looking cloud at a reasonable height. Always try to fly so that if your intended cloud doesn't work you have enough height to reach another cloud high enough to give you a good chance of climbing away.

Don't be tempted to fly fast just because the others are. The actual speed you fly at doesn't matter very much; the fastest pilots use the strongest climbs and centre quickest. Again, don't worry about what the other competitors are doing, but use them to your advantage. If they are climbing ahead on your route, sample their thermal and make your own mind up. If it's good, climb, but if it's not, leave it. If you hit a good climb on the way to the gaggle, stop and climb in it.

Similarly with route: it's very easy to blindly follow other gliders. If they are going your chosen way, follow them. If not, ask yourself why and if you can see no good reason, go your own way.

Remain alert for weather changes ahead. If it is deteriorating or you cannot see sun ahead, slow down to best glide speed immediately. If you do then happen to find a good climb this precaution won't affect your average speed very much. Conserve your altitude so that when you do eventually break out of the poor weather and see good conditions, you have enough height to reach them.

If conditions become really bad, do be

prepared to do anything necessary to stay in the air. Turn 90° to track, or in extreme situations turn through 180° back to your last climb. If you cannot see any prospect of another climb, stop in the first weak lift you find while still at a reasonable altitude rather than continuing onwards to scratch at low level. The reason for this is that if a soarable patch of sky opens up a short distance away you will have the height to reach it.

If all else fails, look on your map for a ridge facing into wind and consider ridge-soaring there to wait for an improvement.

Equally, when you suddenly break out into good weather, force yourself to increase speed again.

Final glide

If you remain focused, concentrate on flying your own glider, don't worry about what the others are doing and maintain both a short- and long-term plan, you will eventually reach a point where you are able to final glide to the finish.

This is probably the end of a long and tiring flight and there is no point at all in making it more stressful than necessary.

If you have a height margin, try to conserve it until you are close to the finish rather than burning it off early and finding you have no margin at all for the last few kilometres. Overall, it costs almost no time to climb a bit higher in the last thermal and then regain most of the time spent climbing by converting the extra height into speed as you approach the finish.

To land out just short of the finish is very costly in points, and a hasty field selection at low level is very dangerous. Think well ahead and plan your arrival long before crossing the finish. Decide if your energy will allow you to fly a circuit or if you must land ahead.

Keep monitoring your height and speed as you close on the finish and decide if you need to change your plan. If in doubt, the safest option is always to cross the finish, open the brakes and land straight ahead.

I hope you find this guide to surviving your first competition useful, and if you are a more experienced competition pilot, perhaps it served as a useful revision. Good luck, relax, enjoy it and remember that at the end of the day it is only a game, so aim to **have fun**.

