Bruce Taylor
GFA National Coach

A Fine Balance

Soaring Cross-Country successfully is always treading a fine line. We want to go as fast as possible, but we need to stay afloat. As we progress through our experiences in learning about soaring, generally there are times when we have trouble finding that balance. This has certainly been true for me anyway. Firstly we need all our attention to simply stay airborne, and then we see that to really get anywhere we have to push along more aggressively. This is followed by a number of outlandings, while our ability to find lift catches up with our aspirations. Then the balance becomes progressively more finely tuned, sometimes bouncing from being too cautious to getting caught out. It is a little like motor racing though; we really need to bite the dust occasionally to remember where the limits are. But this all sounds like it could take years. Can we short cut the pain easily?

There are some rules-of-thumb that might help. Get high, stay high… the first part of the old soaring adage. Experience says that it is good to be above roughly half the height of convection. Cloudbase at 10,000 feet, stay above 5,000 feet. This might sound very conservative, but if you are perceptive, you will see that as you descend into the lower layer you will find it more difficult to find thermals, to centre them, and the sink will appear to become more widespread and severe. There are good explanations for why this is the case, and if you are interested then some excellent meteorological texts are available. Suffice to say that the depth of the “super adiabatic layer”, or that lower layer of the atmosphere where thermals are small and disorganised, varies its depth in direct proportion to the total depth of convection. 2,000 feet can be fine on a low day, but is treacherous on a booming 10,000 foot day. You all know the feeling of leaving a good high climb; usually there is almost no sink way up there, and you can travel quite some way before you start to have to deal with the varios going down again.

How do you stay up there? It is important to realise that on a very fast, well-executed flight, some of the most important climbs are the weaker ones that you decide to take to stay right up in the good air. If you have been working 8 to 10 knots on a high day, this might mean that if you get down to half the convection height you should be content to work five knots to keep you up and running. You won’t want to take it all the way up to cloudbase again, as that would mean wasted time when you run into the next strong climb, but a couple of thousand feet will keep you out of trouble while you keep moving. Do the sums… this decision will cost you a little over a minute, compared with having to work just a couple of knots to save your skin when you have no choice. There is also the aspect of true airspeed to consider. Keeping high on a big day can have a significant effect on your average speed.

Days will vary; no two are the same. If the lift is closely spaced you can afford to push harder, but if the good climbs are a long way apart, it will be worth your while to cruise a bit more slowly to allow more selectivity when you hit the next lift. Don’t force yourself into having to use any weak climbs by being too aggressive. This all depends on being able to read conditions ahead, and this means actually looking well

ahead of where you are and making your decisions in good time. Increasing your cross-country speed is all about using the strongest climbs, so you need to fly at the right speed to get to the bottom of the next good climb. As a general rule, being slightly on the conservative (slower) side in choosing a cruise speed means a lower workload and having the opportunity to be more selective in your climbs, but will only cost you the very smallest amount in comparison to using the theoretical optimum speed.

One aspect of cross-country flying progress that is difficult to speed up is the ability of the pilot to handle a low level recovery. As experience grows, I think it becomes easier to cope with getting low out on track. The most important things to remember are to keep calm and keep thinking. The most common fault is to retract into the cockpit when the pressure starts to build, and to stop looking outside for signs of lift or any helpful visual cues. Try hard to relax, remember that from launch height it is quite unusual to land back without finding anything at all, and this will ease your mind. Stop racing. Look up and outside the cockpit. Look for birds, dust, grass in the air, anything that might help. At the very least find a good paddock to use if all else fails. Try running along tree lines, scrub edges, or any other irregularity that might trigger a thermal. Be positive in your search and keep moving along to the next possibility if you get no result. Most importantly, if all attempts do fail, make yourself adhere to a cut-off point, after which you concentrate solely on a safe field landing.

I think it is advantageous to regularly put your own flying under scrutiny. Are you finding that you fall down out of that good height band a little too often? Or are you always up there but not getting the high speeds of other pilots doing the same tasks? Do you need to work on occasionally taking that weaker climb to stay up, or should you be more selective in your climbs and be pushing along faster in the cruise? Often you need to ask yourself these questions continually during the one flight, as conditions and fortunes change along the way.

It is a fine balance – going fast with height to play with. It will be something that you need to work on for your whole gliding life.

Keep safe.

Bruce.