

### Thermalling Notes

- 1) Don't get off at 2000 feet, get off in real lift, whether its at 1500 or 3500 feet. Going back to find that thermal you towed through a minute ago is a most doubtful endeavor. Best cue for lift on tow is to watch the tow-plane itself for a sharp rise, then confirm his motion on the vario.
- 2) Make a 270 degree turn and straighten up for 5 seconds any time you get a lift indication in straight flight and don't find decent climb rate in the first 180 degrees of initial circle. This rule is to correct your location in the thermal if your initial turn was in the wrong direction i.e., away from the thermal instead of into it, assuming you didn't barge straight through the center of it on your initial contact.
- 3) on centering: always assume that there is a core, and that it is worthwhile finding. To displace your circle in the direction of the core, three rules are helpful:
  - a) If the vario starts swinging up, temporarily straighten out your circle, or at least reduce the angle of bank, until the vario starts to fall again. (rule of Reichman)
  - b) As soon as vario drops off, tighten the circle considerably for 180 degrees. (Reichman.)
  - c) Note the direction in which the lower wing is pointing when the vario shows its poorest reading, i.e., when the vario falls to its minimum, look out the cockpit and say, aha, the down wing is pointing towards that little lake now. As the glider's circles another 90 degrees, straighten up and head towards that landmark (little lake) for, say, 2 seconds, then resume circling. (Rule due to Harold Wödl) I prefer to make rather smaller corrections, when in doubt- you can further shift the circle on the next turn around if necessary, but a large correction can cause one to lose his mental picture of the thermal structure.
- 4) The three rules stated under #3 depend upon your having a correctly compensated total energy vario with fast response time. God help you if you don't. Since we don't, it is critical to fly at absolutely constant airspeed, for only then does the vario give indications even remotely resembling the truth. If your centering corrections are based on misinformation, you cannot center well at all.

- 5) If all else fails, leave the thermal area either headed into the wind or fly in the wind direction, since the rising air tends to form in lines, which are parallel to the wind vector.
- 6) Cores are very often small, thus it is helpful to fly quite slowly, otherwise your circle will be unnecessarily large. If you could make 3 meter diameter circles, all you'd have to do would be to hit the core once and sit there with your 3 meter circle. We hope to approach this ideal.
- 7) Since we do not have compensated variors in the 2-33s, it might be asked, does our simple vario ever give a truly trustworthy indication? The answer is that if the ASI shows an increase at the same time that the vario is increasing, you are almost certainly at the most opportune position possible for a glider pilot: heading in the direction of the core. Straighten up, then turn steeply as soon as the vario reading drops off, or even before then, since the time constant for our 2-33 variors is on the order of 6 to 8 seconds. (!) Turning before the vario drops off avoids ever leaving the core. Your seat-of-pants feel will be quicker than the vario, so if you feel an acceleration downward, you have left the core too, so turn sharply 180 degrees.
- 8) even if you have a properly functioning vario, it is still important to perceive any substantial speed increase which you have not produced with the stick, and to straighten out whenever this is encountered, as a speed increase in a thermal is usually (but not always) the result of approaching the core.

