



Thermaling 101: How to Stay in a Thermal

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About 50% of 30-hour glider pilots lose 50% or more of the thermals they find (not counting dying or unworkable thermals). Staying in 90% or more of decent thermals is easier than imagined by most beginning and intermediate thermaling pilots, many of whom lose many thermals by thermaling too aggressively. The inability to stay in thermals may be the most common obstacle for would-be cross-country (XC) pilots. This lesson presents a simple but effective method for staying in thermals.

The “Easy as 1-2-3” Thermaling Method

1 circle

Except when making a centering adjustment, fly as steady an airspeed and bank angle as possible. This doesn't mean falling asleep; it just means that your only inputs are to prevent turbulence from disrupting your steady turn. This repeating circle (relative to the airmass) gives you the ideal frame of reference from which to judge whether your circle needs adjusting. Fly as slow as possible while maintaining adequate control authority, and fly 15-25 second circles (40-45° bank for most sailplanes).

2 checks

While flying steady circles, look/listen/feel for a point on your circle where the lift is significantly stronger. Remember this position on your circle by compass heading or by a distant visual reference. Make a decision to move your circle in that direction if and only if you find this spot in the circle to have the strongest lift two circles in a row. This is the “Check Twice Rule”.

3 quarters

After deciding (using steady circles and the “check twice rule”) that you need to move your circle, do so using the 270 centering method. That is, 270° (3/4 of a circle) after the “hot spot”, level out (at least partially) for 2-3 seconds, and then return to the previous steady circle.

Other Notes

1. For a free online thermaling and XC course (live webinars, flight exercises using the Condor soaring simulator, and support from “coaches”), visit <http://sites.google.com/site/thermalxc>. This course includes a 60-90 minute live “Thermaling 101” webinar (also available on YouTube).
2. The Condor soaring simulator (www.condorsoaring.com) is a great way to rapidly build (and maintain) thermaling skill.
3. Touchscreen device (PNA, PDA, smart phone, etc.) flight computers like LK8000 (www.lk8000.it) and XCSOar (www.xcsoar.org) can draw nice colorful lift strength maps (relative to the airmass, which is very helpful) of your thermaling circles, thus making it possible to see (on screen) where the lift is strongest!
4. To see a six-minute video of the “Easy as 1-2-3” thermaling method from a pilot's point of view, go to <http://tinyurl.com/appffbm>, or scan the above barcode with your smartphone.
5. Once you've more or less mastered staying in thermals (but not before then!), you may enhance your thermaling performance slightly by using more-advanced thermaling methods (e.g., dropping the “check twice rule” at times). Beware, though, as more-advanced methods usually increase your risk of losing the thermal.
6. I'd love to hear from you after you've tried this method and to work with you via phone, e-mail, or online (Condor) simulation to improve your thermaling. And if you don't need any help, please refer to me any pilots who do need it. I enjoy helping pilots learn to thermal.