Getting Started in Cross Country at Warner Springs

Bill Palmer

To prepare for cross country flights beyond gliding distance to the airport, both skill and knowledge areas require your attention. The Bronze Badge provides guidance for those activities. It requires:

- A C badge (which includes a solo flight of 75 minutes from a 3000 ft tow)
- 15 solo hours, including 30 solo flights, 10 in a single place glider
- 2 flights of 2 hours or more
- Pass the Bronze Badge written test administered by your CFIG (available at soaringsafety.org)

Additional cross country skills are demonstrated by the first two legs of the Silver badge:

- A 1,000 meter (3281 feet) altitude gain
- A 5 hour duration after tow release

As you work on your thermalling skills in preparation for your Bronze and Silver badges, there are techniques that you can practice all within gliding distance of the airport.

You may be satisfied for now with the game of see-how-long-I-can-stay-up. That game often finds yourself holding on to a weak thermal as it runs its course and dissipates, just to avoid landing. Thermalling is indeed an essential skill, and being able to work a weak thermal when there is no other option, especially when low, is important. However, a cross country flight requires distance made over time. Thermalling produces a forward groundspeed of zero, and as any school teacher will remind you: “nothing averages like a zero!” You may not feel the push of time at this point, but the soarable hours of the day are limited and the farther you want to go, the faster you have to be able to average in order to squeeze the distance into the day.

The objective of working a thermal needs to be changed from getting to the absolute top of it or staying in it until the end of its life to getting the most climb out of it (unless you’re in survival mode) and moving on. Staying in a thermal once the climb rate has decreased (say 25%) just starts to spend more time for diminishing returns. The strength of the thermal may decrease because you are approaching its top or the end of its current cycle, the reason doesn’t matter.

The skill to practice besides the thermalling itself is planning your next step. Keep an eye on any clouds that are developing or have shapes that indicate lift (e.g., developing whisps or flat bottomed cumulus clouds). Also note how long clouds are lasting and watch for signs that the good-looking cloud five minutes ago is dissipating. Other clues include where other gliders have successfully climbed or are climbing. A radio can be very beneficial in this and the weekend private-glider flyers often talk to each other in regards to “what’s working.” Once away from the airport (unicom frequency 122.8) the most common glider-to-glider frequency is 123.3, (backup 123.5). A handheld VHF radio is a useful tool to have.
https://wingsandwheels.com/avionics-instruments/radios-transceiver/icom-transeiver.html

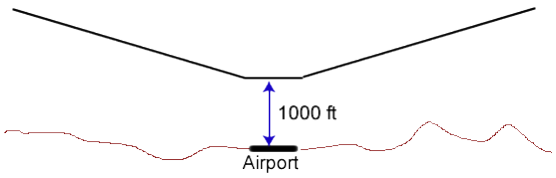
https://www.cumulus-soaring.com/store/index.php?route=product/search&search=Radio

The new game to play is “cover ground!” For example, climb off tow at the helipad, move up to the fire tower or observatory, refill on altitude, then proceed over to Hot Springs and then the Julian VOR.

Lacking cloud clues, you’ll find that there are some fairly reliable thermal spots that are worth trying including:

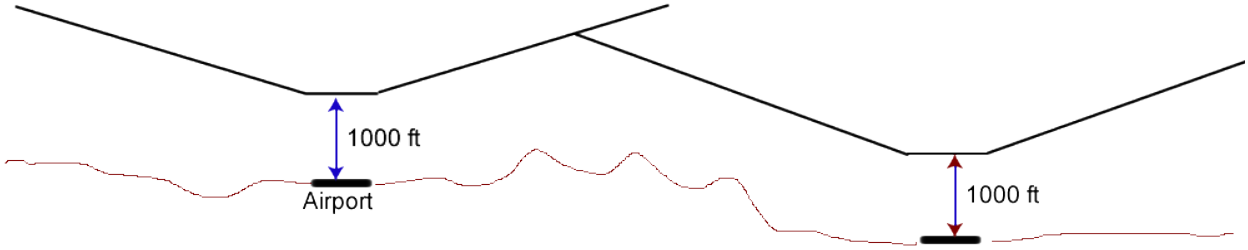
- The Palomar Mtn helipad
- Just east of the Palomar Mountain fire tower
- The base of Palomar Mtn (nearest the airport)
- Hot Springs Peak
- “Polly’s Ridge:” the ridge just on the southwest side of Hot Springs Peak
- No-Name Peak
- Chaney Ranch (the motocross track directly north of the airport)
- Iron Springs (an area with a small lake and dirt road between the hills north of NoName peak)

To prepare for these exercises determine a set of minimum altitudes for increasing distance from the airport to try to “stretch the apron strings.” A common approach is to use ½ of the glider’s still-air maximum glide ratio to arrive 1000 feet over the airport. If you find yourself approaching the floor of this minimum-altitude cone, you need to head back towards the airport until you are above the floor again.
The Warner Springs “cirlce chart” can or similar should be used to determine safe altitudes within the vicinity of the airport.



Here’s an example based on the G-102’s 36:1 glide ratio (reduced to 18:1) with 5 mile rings. This shows a still air minimum altitude over the observatory or the VOR at 7200 feet. You’ll probably want to start with a higher minimum altitude calculation and arrival altitude and progress to these minimums. Additional safety margin *will* be needed for wind and any local conditions of the day. Always stay above the floor of the cone created by this plot of minimum altitudes. If you are over unlandable terrain, an additional safety factor is needed.
A computer program that allows you to make one electronically for any area (sans compass and markers) is GlidePlan (https://www.glideplan.com/), created by Matthew Herron who flies out of Air Sailing north of Reno, NV.

A cross country flight is simply this exercise in series, with each successive alternate airport allowing the flight to proceed farther.



Note that the Sky Sailing “Area Check-Out” limits flights to a 10 mile radius without specific authorization by the Chief Pilot. That range equates to the vicinity of the Palomar observatory and the Julian VOR.

As you “stretch the apron springs” it can get a little scary at times going farther than you have before. Remember:

Knowledge allows for practice
Practice builds skill
Skill overcomes fear

The next step (or concurrent one) is to start working with a flight recorder. The legs of the silver badge must be documented with an approved flight recorder and submitted to the SSA Badge and Records person. The silver badge 50 KM cross country fight the does not require a declared task, but all of the subsequent badges do. It would be good practice to use a task for

the Silver badge flight too. The flight recorder will, however, be necessary to prove the distance claim for your flight.

Practice building a small local triangle task in SeeYou, or manually within the flight recorder, then fly the task. It doesn't have to be big or push your limits: Helipad - Hot Springs - some other point, will do just fine. Complete the course more than once and work on your speed over the course. As your skills advance, make the course larger. At first it will be a challenge to get to either the observatory or the VOR, then after long you'll be able to fly to both, then as part of a task a few times.

When you are ready, try the "Racetrack" task on the Proving Grounds program. It is a task with 2km circles around the Mt Palomar observatory, Iron Springs Canyon, Lost Valley Scout Camp, and the old location of the Santa Ysabel Casino. All of these points are within the 10 mile rental limit. When you complete that task and send in your flight's file, your name and time are posted Proving Grounds Achievement roll at Sky Saililng. For more information see the links at TheSoaringPage.com/#provinggrounds

Plan to take a dual cross country flight with a Sky Sailing instructor to practice these skills beyond 10 miles and discuss the thought process as the flight proceeds.

The Silver badge distance flight requires a turn (or finish) point 50km from both the release point *and* the start of takeoff.

Two suitable Silver badge turnpoints are:

- Mt San Jacinto with alternate airports of Lake Riverside, Hemet-Ryan (to a lesser degree) and landable fields in the Anza plain (though an airport is certainly preferred and only airports should be used as planned alternates).
- Mt Laguna with alternate airports of Borrego Valley and Agua Caliente. Agua Caliente airport is not easily visible from most of the route. It is also NOTAMed closed due to runway condition. While it may be suitable for an "emergency" landing, an aerotow retrieve is not possible. Spending time with Google Earth is a good technique to become familiar with its location and surrounding terrain.

See the article Badge Soaring at Warner Springs for more details on specific tasks and other information.

Warner Springs is an excellent location for cross country soaring and our local pilots routinely have cross country flights in excess of 400 kilometers. See our flights on WeGlide.org to see where we go and how we get there. (every SSA member gets a free WeGlide account).

Once your silver badge is complete, you're well on your way. Continue to expand your reach and improve your speed and welcome to the exciting world of cross country soaring!