Badge Soaring at Warner Springs

Badge soaring recognizes soaring achievement at all levels. Soaring badges mark your achievement beyond just hours. Badge awards are administered in the US by the SSA (Soaring Society of America). The international group, FAI (Federation Aeronautique Internationale), sets the standards for the silver, gold, diamond, and diplome programs. These are supplemented by the SSA with the A, B, C, and Bronze badges at the more beginner level.

Most of the badges focus on the preparation for and execution of cross country flights. Cross country soaring requires the ability to effectively thermal and climb the glider, stay aloft for long periods of time, and to plan and execute flights beyond gliding distance to the home airport and all that that involves.

Warner Springs offers a unique year-round soaring environment that is both challenging and rewarding with opportunities for thermal, ridge, convergence, and wave lift sources. San Diego's Class B airspace to the southwest, Mexico/US border to the south and desert to the east constrain the long distance prospects and geometry of long flights to a more north/south corridor.

In many areas of the country off-airport landing opportunities are plentiful at numerous farm fields as well as at public and private airfields. Soaring from Warner Springs presents us with a lot of terrain that is inhospitable to an off-field landing since much of the open land is rocky, trees, or livestock pasture land (which tends to be rough).There are several alternate airports within the area and care must be taken to remain within gliding distance of one.The Anza plain (north of Warner Springs) is one of the few areas with a selection of cultivated fields that could provide a safe off-airport landing. Nevertheless, Warner Springs glider pilots perform thousands of hours of cross country flights safely within this area and we invite you to join us in this rewarding part of the sport.

The Badges

The A, B, C, and Bronze badges are all easily achievable within the Warner Springs valley and all from within gliding distance to the airport with rental gliders.

A Badge recognizes the solo milestone and its requirements match the knowledge and skills required of all pre-solo students, plus the actual solo flight itself.


The B badge recognizes the acquisition of thermalling skills. This achievement level is attained by a solo flight of at least 30 minutes after release from a 2,000 foot tow, adding 1½ minutes per 100 feet of tow altitude above 2,000 feet. (so, 45 minutes after release from a 3,000 foot tow).


The C badge is referred to as the pre-cross country phase and expands on the experience and skill level.

It requires:

- Dual Soaring Practice, including instruction in techniques for soaring thermals, ridge soaring, and wave (simulated flight and/or ground instruction may be used when suitable conditions do not exist).
- Knowledge of (but not necessarily experience in):
    - Cross-country Procedures
    - Sailplane Assembly, Disassembly, and Retrieves
    - Hazards of Cross-country Flying
- A solo flight of at Least 60 minutes Duration after release from a 2,000 foot tow (add 1½ minutes per 100 foot of tow above 2,000 feet —so 1 hour 15 min from a 3,000 foot tow).
- Demonstrate the Following accompanied by an instructor:
    - Make a simulated off-field landing from the approach without reference to the altimeter
    - Perform an accuracy landing from the approach, touching down and coming to a complete stop within an area no greater than 500 feet in length. (for reference, the distance from the displaced threshold to the takeoff triangle is about 600 ft). Every landing you do should be conducted as an accuracy landing. Land where you want, stop to minimize the walk to parking or the next takeoff!


The Bronze badge is a more sincere effort to prepare the soaring pilot for cross country flight and the Silver badge tasks. C badge completion is a prerequisite.

- 15 solo hours in gliders, including 30 solo flights with at least 10 flown in a single-place glider if possible. At Sky Sailing, you'll find the transition to the single seat 1-26 to be very enjoyable. That model glider has a huge fan club. It's a great thermaller and can be landed on a dime.
- Log at least 2 flights, <u>each</u> having a duration of two hours or more (there is no distance requirement with this).
- Perform at least 3 solo spot landings in a glider witnessed by an SSAI (SSA instructor). The accuracy and distance parameters established should be based on glider performance data, current winds, runway surface, and density altitude. as a guideline, a maximum distance of 400 feet would be acceptable for a Schweizer 2-33 glider.

- Log dual time in gliders with an instructor during which at least 2 accuracy landings are made without reference to the altimeter to simulate off-field landings. This is typically done using the west end of the field or the cross runway and the instructor handing you an adhesive cover to place over the altimeter.
- Pass a closed book examination covering cross-country techniques and knowledge. The minimum passing score is 80%. (The entire 340+ question bank and the test are found on the Soaring Safety Foundation website soaringsafety.org).

The above badges are administered and awarded by SSA instructors.

The silver, gold, and diamond badges are administered and awarded by the SSA upon careful planning, execution, and submission of the required forms and proof of achievement. The proof is in the form electronic flight recorder files and the certification of an official observer (any current SSA member with a “B” badge or better who is familiar with the sporting code may qualify as well as other designated persons). You may be able to borrow a flight recorder, but in the long term you should consider owning one.

The Silver badge recognizes the pilot’s venture beyond gliding distance to the airport into cross country flight. This would typically be done after you have earned your private pilot glider certificate. The silver bade requires three elements:

- A 1000 meter (3281 feet) altitude gain above a low point
- A 5 hour duration flight after release
- And a silver distance flight to a finish fix that is at least 50 KM away from both the release point and the takeoff. Be careful of getting a tow in the direction of your turnpoint! This flight is achievable in the higher performance rentals such as the G-102 or G-103 (though explicit permission is required each time to take a rental glider cross country—beyond 10 miles).

The distance flight intentionally wants to take the pilot beyond gliding distance to the home airport. A 2018 rule change no longer allows a long tow in one direction with a flight over the airport to the other side, all within reach of the home field (beware of older publications that predate this change). The current rule requires the finish turnpoint to be at least 50 KM (about 31 miles) from the release point *and* the takeoff airport. It can be a one direction flight with a landing at another airport or a return flight after achieving the 50 KM finish point. The out and return is the better way to plan as a retrieval tow costs about $250 per hour. Practical targets that meet this criteria from Warner Springs are Mt Laguna to the south and Mt. San Jacinto to the north.

The Gold badge adds two additional elements:

- A 3000 meter (9843 feet) altitude gain from a low point
- A distance flight of at least 300 KM (about 186 miles)
- A 5 hour duration flight—if not already accomplished with the Silver badge.

The Diamond badge requires three elements:

- A 5000 meter (16,404 feet) altitude gain from a low point
- A goal flight of at least 300 KM and
- A distance flight of at least 500 KM. (about 310 miles)

The cross country flights required for badges fall into two categories: distance, and goal. Distance flights can be accomplished in several ways:

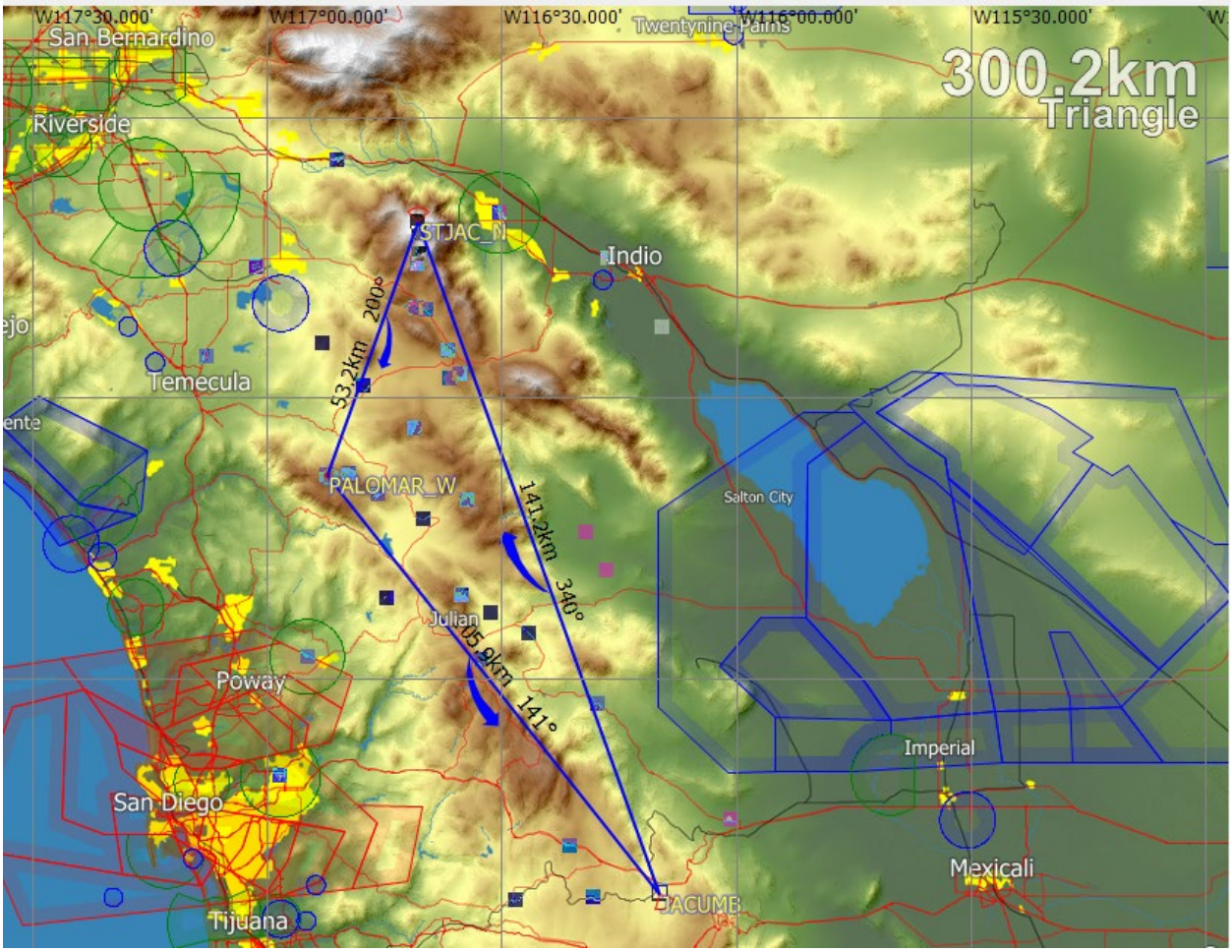
- Straight out (with the option of landing out)
- Out and back
- Triangle with the same start and finish point
- A course with up to three turnpoints that can be used in any order with start and finish points that can be declared during post-flight analysis.

A goal flight requires a much tighter definition (“eight ball, corner pocket”) with defined start and finish points and turnpoints that are used in the declared order.

The 5000m altitude gain would be very difficult to achieve in the Warner Springs area due to the class A airspace floor at 18,000 feet and the ground at nearly 3000 feet. In practical terms the flight is going to require a wave flight to attain the altitude required, as well as a glider equipped with oxygen. A swoop down to a low enough altitude to permit the required gain (e.g., over the desert) would risk encountering the rotor from the same mountain wave used to achieve the height required. Indeed, this flight will almost certainly require a visit to a location with a pre-arranged “wave window” into the class A airspace. Such places generally offer “wave camps” where you can experience a week or so of guided instruction, high altitude flight, and a solo flight into the wave near the end of the course. Many of these camps refer to themselves as “diamond mines” for this reason all in properly equipped gliders (oxygen, transponder, etc). The closest program to Warner Springs is held annually in Minden, NV (near Reno, NV), where the wave is induced by the drop off from the Sierra Nevada mountains by Lake Tahoe and often extends to great heights. The Reno area offers many other excellent soaring opportunities as well. Most of these types of events are listed in Soaring Magazine well in advance.

The 300 KM Diamond goal flight can be achieved in the Warner Springs area with a triangle starting just west of the Palomar telescope, south to Jacumba, north to Mt. San Jacinto (colloquially “SanJacs”) and then finish at the starting point. This triangle is very close to the 300 KM minimum and care must be taken not to miss it by the tiniest bit as 299.9 is not far enough.

This goal flight can also count as the gold 300 KM distance flight, which would be an excellent strategy to apply.



This flight will almost always require flying along the line of convergence (or “shear line”) that aligns north/south and extends down to the border. Since the triangle above requires Jacumba to make the distance most other border turnpoints west of there would fall short of the required triangle distance. However, the shear line does not always go over Jacumba. Strategies to deal with that include flying the shear line, as close as practical, then make an out and back dash around the turn point, and return to the shear line and head back north, or use a border turnpoint better located under the forecast lift and extend the northern turnpoint north of Mt. San Jacinto enough to meet the distance requirement.

North of SanJacs lies the San Gorgonio valley with Barstow on the other side. Unless there is a line of cumulus clouds saying otherwise, you should expect to lose several thousand feet while spanning the valley and will need to climb back up on the other side to be able to make it back. Many pilots have spent a long time in those climbs. Banning airport lies in the valley within easy reach from either side. However, its days as an airport are short and it is notoriously windy there. Yucca Valley airport lies to the east of San Gorgonio while Hemet-Ryan is another usable alternative and also the home of the Cypress Soaring Club.
Of course, if you’re able to span the full San Gorgonio valley then the southern turnpoint can be more conveniently located quite a few miles north of the border.

Documenting your flights

While it would be nice if the SSA could just take you word for having met the requirements for any badge, that is not the case. In days gone by these achievements were met with a pen-scribed tracing on a clockwork-driven barograph and photographs with a film camera mounted to the canopy, photographing the flight's written out declared goal in the first frame and turnpoints in subsequent ones. The official observer was pretty closely involved in certifying that everything was done properly with no opportunity for cheating. Some of the rules still reflect these methods.

In today's world, flights are certified with electronic flight recorders that use both GPS and barometric data to record the parameters of the flight every second or so. Many also double as navigation units, and can be either portable or permanently installed. Some are pocket sized and others require a mount to be of practical use. Several Sky Sailing gliders have the basic Ram mount to attach a flight recorder to. Not all flight recorders are "IGC"(International Gliding Commission) approved for use in badge and record soaring, so that's one thing to consider when purchasing. Flight recorders must also be checked every five years for their recordings to be valid for badge and record soaring. Depending on the goal, the check can be accomplished up to two months after the qualifying event, thereby ensuring that the data was accurate or a 100 meter error margin can be applied to an expired flight recorder (valid for silver and gold tasks only).

Resources

SSA

The Soaring Society of America oversees soaring contests, badges, and records in the United States. They also publish a monthly magazine with many interesting articles for all levels of soaring pilot. Membership is required to participate in the ABC badge program. There are several membership options including free "Cadet" memberships for those up to age 18.

The official rules for badge and record soaring are available from the SSA website under the *Badges and Awards* heading. Included are condensed easy-to-digest guides for each of the badges and the official FAI rules for pilots and observers (which are not so easy to digest), as well as the worksheet and application forms.

A series of recorded webinars is also stored on the SSA website. Many deal with cross country and thermalling. Safety & Training > Webinars or www.ssa.org/Webinars (This section requires SSA membership to view)

Weather Forecasting sites

Skysight is a widely used soaring weather forecasting tool that provides intuitive graphical forecasts in a wide range of parameters over the range times throughout the day. It is probably the most widely used by local pilots. There are numerous videos on SkySight.io's YouTube channel that explain the many functions of SkySight.

https://xcskies.com/ another very good weather site. XCSkies allows (or requires) you to select the forecast model that is displayed, and allows you to have favorite selections of forecasts for quick access. Both sites have a slightly different feel. There are a few YouTube videos on XC Skies by various creators.

OLC (On Lline Contest)
The OLC is where pilots post their flight recordings to share their flights. Each flight is scored automatically, mostly based on distance, though extra points are given for completing a triangle course meeting certain criteria. A small handicap is also applied depending on glider type. If you're wondering where people fly to, this is how to find out. Many pilots also post photos and comments about each flight. The site can be accessed without a membership, though they are free, providing a donation grants you a better map display (google map).
Here's the link for the Warner Springs glider flights: https://www.onlinecontest.org/olc-3.0/gliding/club.html?cc=1943

WeGlide.org
WeGlide is another flight sharing website. It allows you to select units other than metric (select US for mph and feet, and Imperial for knots and feet). It's a slightly more modern feel that OLC, and they aim to be more innovative as well. It's a new sight so participation is lower than OLC.

Recorders
Starting with the Silver badge flight, you're going to need access to a GPS flight recorder. Pocket size portable recorders start in the $400 range. Most cross country pilots utilze a recorder that doubles as a navigation computer providing a lot of useful information during the flight.
There are a selection of them here:
https://www.cumulus-soaring.com/store/index.php?route=product/category&path=18_149
https://wingsandwheels.com/avionics-instruments/flight-recorders.html

Official lists of approved flight recorders (and the slightly less capable "position recorder") are listed here: https://www.fai.org/igc-documents. Look for a document titled "IGC-approval Table plus History of IGC approvals"

Personal Locator transmitters
These are GPS units that periodically (e.g., every 10 min) report your position via satellite link and allow Sky Sailing, other pilots, and friends and family to monitor your position, especially if overdue. They also and more importantly provide a means of location and communication should you land out offer SOS services in case of emergency.
Garmin In-Reach and SPOT are two popular options
Sky Sailing requires pilots on cross country flights to carry such a device. They also will not close for the night until everyone is back and/or accounted for.

Warner Springs Soaring group
A groups.io group has been formed for all Warner Springs Soaring pilots to participate in. The associated website warnerspringssoaring.groups.io hosts a repository for files such as waypoint and task files, photos, and message exchange. Emails sent to the group go to everyone without

having to enter each name individually. Messages like “Hey, Wednesday’s forecast is looking really great, anybody flying?” are the norm.
You are encouraged to join the group by sending an email to Subscribe: WarnerSpringsSoaring+subscribe@groups.io
You may write to the group “owner” WarnerSpringsSoaring+owner@groups.io

Books
Bobwander.com (Soaring Books and Supplies) There are several books on badge and cross country flying: The ABC Badges, The Bronze Badge, The Silver Badge, Breaking the Aprons Strings, Cross Country Manual, Landing Out, Riding on Air
Soaring Cross Country :Ed Byars,
Beyond gliding distance: introduction to cross-country soaring: Flavio Formosa
Cross-Country Soaring: Helmut Reichman

SeeYou
SeeYou (and the cloud version Seeyou.cloud) allow you to analyze flights made with a recorder, plan tasks, and manage the task contents of the recorder. You can also view downloaded IGC files from OLC and view with SeeYou can integrate with soaring weather forecasts from Skysight. and TopMeteo. Includes multiple map views, 3D playback, much more.
Widely used, highly recommended.
naviter.com/products/seeyou/
Free trial then $90 +$50/ year.