

MAKING IT BACK TO TRUCKEE

FOR PILOTS NEW TO THE AREA

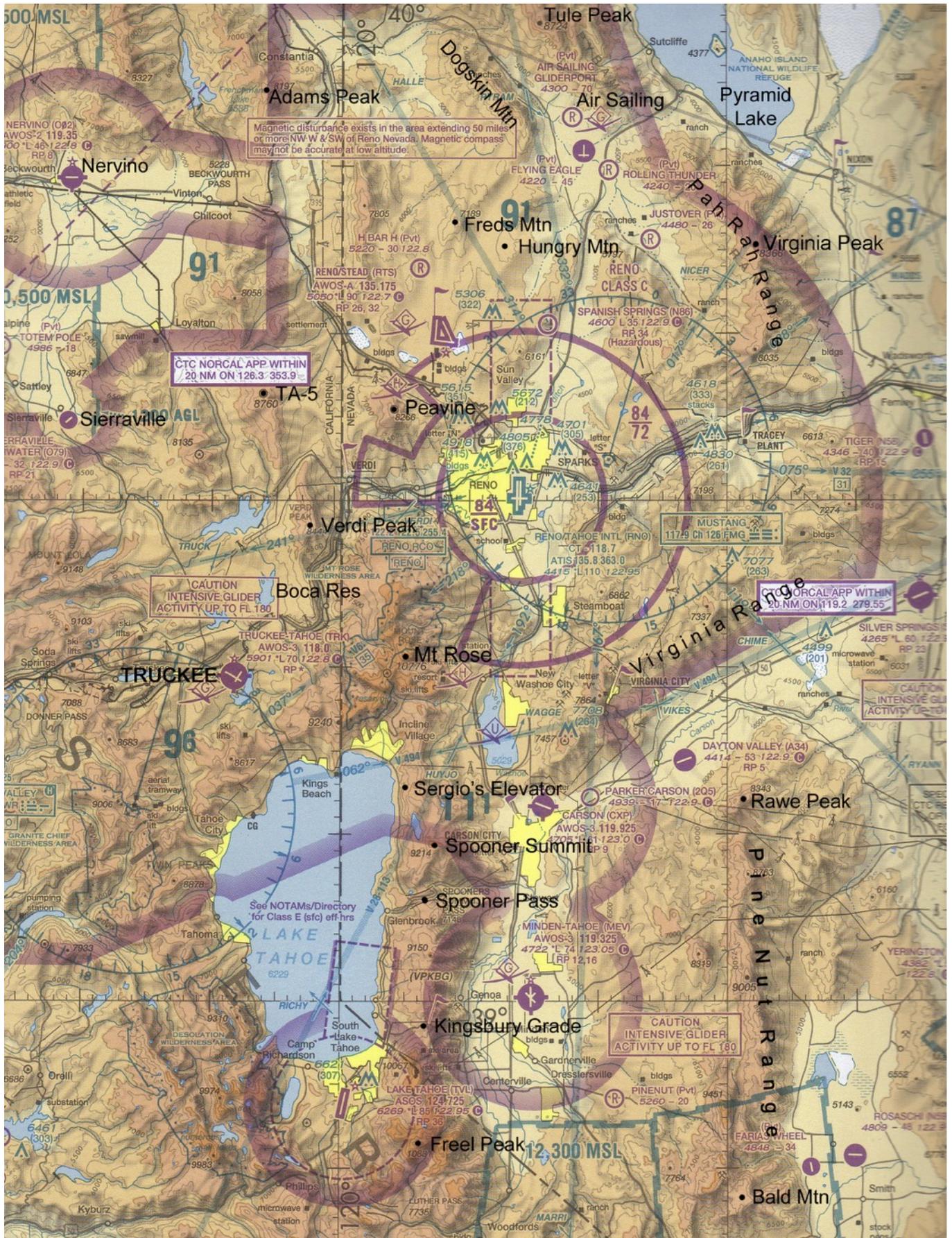
Truckee is a wonderful place to fly from with a glider. And the special people and the beautiful surroundings make the glider site a delightful place to be. Being at the hidden end of the airport blends the convenience of nearby civilization with the remote atmosphere of living in contact with nature, among the pine trees, the chipmunks, and the birds that wake you up in the morning.

Because of its position in a valley that is of the right dimensions, not too small, not too wide, Truckee enjoys early starts and a great variety of choices, to the south, to the north, and to the east. On most days there are clouds everywhere, high bases, just follow the clouds and you can fly far and make it easily home. However on many days the clouds will begin to disappear at the Pine Nuts coming from the south, at the Pah Rah Range coming from the northeast, at Adams Peak coming from the north. Making it back through mountain ranges with blue skies and wind on the nose is challenged by objective difficulties that need local knowledge to overcome. One will learn them all (the difficulties) in a few flights but to abbreviate the learning curve (to overcome them) I will report here some useful information.

I will assume that one is flying a 40:1 ship like a Discus or an LS4. For other glider types, make your own adjustments. I will assume that everybody keeps in the flight computer a 1,000' margin altitude above the designated landing spot, so that, if you have 0 (zero) altitude indicated in the flight computer, it means that you will arrive in Truckee with 1,000' above the runway. Further, I will assume that everybody knows how to correctly execute a final glide and a note on this is at the end of this writing. Finally, all this is valid with the normal west wind flow, which blows at 8 to 15 knots I would say 95% of the time. If not, just fly the weather you see.

Returning from the south Sierra (Tioga Pass etc.). If you are lucky enough to find a good day in the Sierra, you will be coming back ecstatic, euphoric, perhaps a little bit cold but happy. The clouds will normally guide you to Freel Peak. From there, Lake Tahoe must be crossed for its full length. If you have 14,000' or more you can make it home without problems. Stay in the middle of the lake and check your glide to Truckee continuously. I like to start with at least 1000' above glide, better 1,500' or 2,000'. During the glide we also have to monitor our altitude with respect to the east ridge of the Tahoe basin. If in doubt, move slightly to the east to be closer to the ridge and able to cross it to escape to the Minden or Carson City airports, and to the numerous fields in that valley if your margin back to Truckee becomes uncomfortable. As an encouragement, note also that Spooner Pass is 2,000' lower than the ridge tops.

A word on tactic: in the last 20 or 30 miles south of Freel Peak the clouds begin to rarefy, lift is not as strong and is more difficult to find. Better be conservative and stay high, to avoid a long search under the last few clouds (normally there are no clouds over the lake). On the other hand the glide over the lake is pretty smooth, with occasional stretches of mild lift and sink with little effect on the glide. Also there is no need of a special calculation regarding crossing the north rim of the lake. If you can make it to Truckee, you have the same altitude clearance at the ridge.



Returning from the south desert (Sweetwater Range, Mt. Patterson). The best location for gaining the altitude needed to make it back is at the south end of the Pine Nuts, called Bald Mountain. With 14,000' it is possible to make the 50 miles glide to Truckee. If there are no clouds on Bald Mountain, that's the spot to try anyway, it is usually working. There are often other gliders, look up. Trust your computer, and if possible climb higher to have a better margin and fly faster. In the Minden valley (you pass almost over the Minden airport) many times there are no clouds. There may be some sink and also some lift. Often the lift and the sink alternate at a regular distance, indicating presence of wave. The secondary wave may be of useful strength and it will manifest itself approximately at the crossing of Highway 395, the primary is pretty close to the Lake Tahoe ridge. Look up searching for other gliders (they will look very high) and remember that to get into wave you are better be no lower than the ridge.

Expect to lose about 1,000' in the last 3 miles before crossing the east ridge of the Tahoe basin. However after crossing the ridge and entering the lake there is reduced sink and some of that loss can be regained. Here too it is not necessary to make a special calculation about crossing the ridge at the north of the lake, since you have almost the same clearance as the arrival altitude in Truckee. Once inside the Truckee valley, there is plenty of good lift everywhere.

Tactic: From Mt. Patterson going north to the Pine Nuts, clouds and lift become weaker and lower. Better be conservative and stay high, or there is the risk to work for a long time at Bald Mountain to climb enough to make it back. One may think to continue north on the Pine Nuts, gaining distance towards Truckee. Distance is gained, that's right, but the top altitude is lower and lower and not enough to cross towards Truckee also because the west wind becomes more and more on the nose. At that point, better go back to Bald Mountain, and at times even more back toward Mt. Patterson to finally get the altitude to make it to Truckee. However if there are well developed clouds in the Minden valley, then they should work fine and reentry is a piece of cake.

Before giving up and landing in Minden or Carson City, a good pilot experienced in ridge soaring can try and go straight to the Kingsbury Grade gap, run the east Lake Tahoe ridge all the way to the Spooner Summit, and from there reach Sergio's Elevator, gaining there those 500' or 1,000' that allow getting to Truckee. However to be effective the Elevator needs 12 to 15 or more knots of wind perpendicular to the ridge, with the direction of the wind made evident by the wavelets in the lake. Just keep always above the ridge or high enough to reach the Spooner Pass gap as an escape route back to Minden or Carson City. As an encouragement, note that Spooner Pass is 2,000' lower than the ridge tops around it. Increase speed by 5/10 knots and be careful if climbing Spooner Summit, since a smaller ridge upwind produces turbulence and sudden shifts in the flow.

Another (long) way of making it back is going to Rawe Peak at the north end of the Pine Nuts, then all the way to Air Sailing, Reno Stead, Peavine, Verdi Peak and home. It is often doable, it will take two hours but one avoids the tow retrieve and gains in flying more time and more distance.

Coming from the east (Derby etc., passing south of Pyramid Lake) there are two ways to reach Truckee: one is to go along the Virginia Mountains ridge that delineates the northern side of the valley from Carson City toward Dayton and Silver Spring. This ridge is usable when clouds are present, and of sufficient altitude to cross toward Truckee above or to the south of Mt. Rose. The clouds on that ridge often end at Virginia City.

The other way is go to the towers of Virginia Peak on the Pah Rah Range, and from there negotiate another final glide of almost 50 miles, passing above the Reno airspace. If sufficient altitude to do that is not achieved, one will deflect to Reno Stead and try to make it back to Truckee from Peavine Peak.

Coming from the north east (Gerlach etc., passing north of Pyramid Lake) one will go to the Tule Peak and then the Dogskin Mtn. There is a range of high hills aligned between Air Sailing and Reno Stead that is a natural producer of thermals with the highest point, called Hungry Mtn the most active. And there is the isolated Freds Mtn just to the north of it which is higher and sometimes a better producer of lift.

From here one jumps (or crawls) to the Peavine and this is almost a guaranty of making it back since there is consistently good lift there that takes you to sufficient altitude for a final glide. However at the end of weak days and with the wind on the nose at times one has to work hard to fight his/her way from Peavine to Verdi Peak, and then home. If one is level with the Verdi Peak tower, one can make it both to Reno Stead at 35:1 and with a tailwind, and to Truckee at 40:1 but with a headwind. From Verdi to Truckee there is some buoyancy every now and then so one gains a few hundred feet on the glide. Check and trust your computer. As a safety feature, there is a landable field marked by a wheels track just east of Boca Reservoir. It does not look inviting looking from the air, but gliders have landed there without damage in the past.

Returning from the north (Adams Peak, Susanville etc.) one has to reach the ridge that from east of Loyaltton goes to Verdi Peak. If you can reach it, you will make it home. The northernmost mountain of this ridge, Elev. 8058', has the shape of a natural basin, collecting the west wind flow and generating thermals. If there is no thermal present at the moment, just ridge-soar back and forth until one develops. Continue along the ridge keeping in mind that you don't fly it as a normal ridge. Instead you slowly lose altitude until you find another thermal that takes you up again, although not by much.

Reaching the guard station TA-5, elev. 8,760' there is spine projecting west from the tower that often produces no lift or some sink, but the situation usually improves beyond it and it is possible to get altitude from here to cross the gap to the ridge of Verdi Peak. Do not be afraid to cross the gap: If you arrived up to here, then there is lift on the Verdi ridge. See the discussion above regarding the Verdi Peak.

Coming from the northwest (Lassen Peak), just follow the clouds if there are any. If not, one can come back flying on the Sierra, or cross the valley going straight to the hills east of Sierraville. If there are no clouds and the lift is poor or does not take you high enough, consider trying to reach the 8,058' mountain mentioned above, especially if the wind is above 12 knots or so. In this case, monitor the computer for a safe glide back to Nervino A/P, but the valley is landable in many places.

I first wrote an article on this subject years ago to fulfill a promise I made to Les Sebald at a PASCO Banquet. This edition is a refinement on the first article, made specifically in the hope to help glider pilots new to the Truckee area.

THE FINAL GLIDE

This basic procedure is often incorrectly performed but is very mechanical in execution with few choices available. The final glide setting is different from the other glides because the most sensitive data, which is the McCready value to be used for calculation, is not an estimate but an actual number: it is the current rate of ascent. Books give the general idea but often do not present detailed examples of the procedure.

I will assume that everybody keeps in the flight computer a 1,000' margin altitude above the designated landing spot, so that, if you have 0 (zero) altitude indicated in the flight computer, it means that you will arrive in Truckee with 1,000' above the runway.

Say that you are close enough to home that a thermal encountered at this location may take you to an altitude sufficient for a final glide. If the thermal, for example, gives an instantaneous (not an average) value of 6 knots lift, you should input in the computer a McCready value of 6 and wait until you reach the altitude where the computer indicates a wanted altitude value of 0 (which means 1,000' over the runway), and then start your final glide keeping 6 knots as the set McCready value all the way till home is reached.

Clarification: instantaneous means the current rate of climb. If the rate of climb instead of being a constant 6 oscillates between 4 and 6 on the opposite sides of the circle, then use an average of 5 for the instantaneous rate of climb; but do not consider the past rate of climb you had, say 1 minute ago or the average rate of climb you had during the rest of the time spent in the thermal.

Of course you also have set the correct amount of water ballast and the estimated drag due to bugs on the wings, and do not over nor under estimate this one. The computer will also know the wind but you may want to check if you agree or you may expect changes on this parameter along the way.

Now the above is the mathematical solution of the equations. In practice one wants to be conservative and may want to have some margin, a very variable quantity but let's make the case that the pilot today and this far from home wants an additional 1,000' margin. In this case, instead of starting the glide at the wanted altitude 0 (zero) in the computer, one will continue climbing and the glide will be started when the computer indicates a wanted altitude value of 1,000'. This means that one should arrive, mathematically (if no other parameters change) 2,000' above the runway. So let's say that one starts with a wanted value of 1,000' indicated in the computer for this turnpoint.

If we lose on the glide, then we reduce the McCready value until the wanted altitude goes back to 1,000'. If we gain on the glide, then we increase the McCready value until the wanted altitude goes down to 1,000'. Monitor the altitude and keep it at 1,000' by changing the McCready value but give it some plus or minus range around the wanted 1,000' to lessen the number of iterations (and better limit the minus values, it's good to the nerves – say keep it always at 1,000' or above). When we are closer to the airport, and the perilous points are behind us, increase progressively the McCready value so as to fly faster and faster to get rid of that 1,000' extra altitude and arrive at 0 on the wanted altitude, which is 1,000' above the runway as we desired.

To make the discussion complete, if, while climbing, the rate of climb changes from 6 knots to 2 knots as we reach the top of the thermal, we set the McCready at 2. We check with the McCready at 2 if we have less than the wanted altitude margin of 1,000': in this case we will continue to climb until we reach the 1,000' margin and we glide home keeping 2 knots in the McCready and adjusting for variation on the glide as mentioned above.

Conversely, if the check with the McCready at 2 gives a margin higher than 1,000', say that it indicates 1,500', we head for home and as we go increase the McCready in steps reducing the margin until we find that, for example, 3.5 knots give us the wanted value margin of 1,000' and continue the glide keeping the McCready at 3.5 knots and adjusting for variation on the glide as mentioned above.

Finally if it is our lucky day and, while climbing, the lift increases from 6 to 8 knots as we get closer to the cloud, then we set the McCready at 8 and we will continue to climb proceeding as in the above examples that were made for a 6 knots rate of ascent.