# Slope Soaring for Beginners.

By Klaus Weiss.

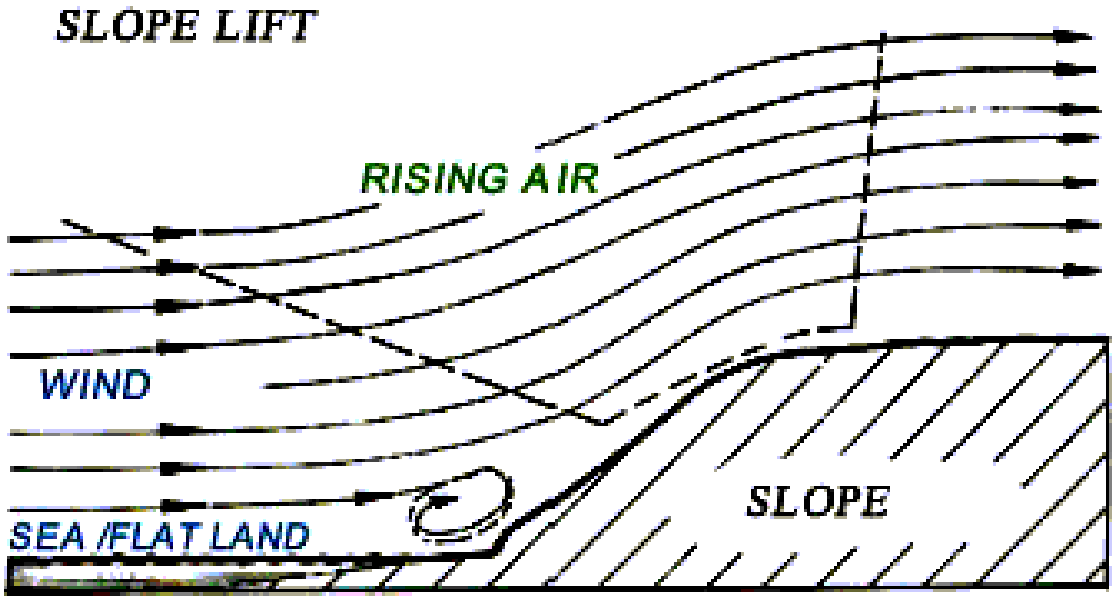
Well, as promised, this is the last installment to the Launching Gliders for Beginners, and an introduction to slope soaring.

I find that when I am flying a glider off the slope, the number of people who come over and ask a multitude of questions about our sport, far outnumber those who approach me at other types of model flying. It is an avenue to promote R.C. modeling, and also provides us with loads of fun and excitement.

Slope Soaring offers a unique brand of flying excitement not found in other types of RC model flying. If the wind is blowing up the hill, you can fly for as long as you wish. From flying lazily along with a floater, to high speed runs, slope racing, combat and aerobatics. There is something for every skill level. Besides being a lot of fun, how many other model pilots do you know who are happy to see the wind blowing? A good prevailing wind will provide hours of lift for slope soaring.

Slope soaring is where the model is kept airborne, by lift generated when the wind is blowing on to the face of a hill or cliff. The air is deflected upwards and over the top. The lift generated is dependant on the size and shape of the hill, the terrain in front of it, and the strength of the wind. If the wind is too light it does not produce very strong lift. Alternatively, if the wind is too strong the lift gets 'flattened' making it difficult to fly the lighter loaded models.

It is easy to see why slope soaring is becoming one of the most popular facets of RC soaring. It is no longer limited to just coastal sites, and as it grows, more suitable flying sites are turning up inland as well. A hill that has a smooth approach to it, such as the ocean, will almost always produce stronger lift.



The diagram shows the section titled ‘RISING AIR’, and this is where the best lift will be generated. The air flow compresses, and is forced over the top of the hill. Places like dams, reservoirs, cliffs, etc, all make good flying sites. The ideal slope site is one in which there is a "bowl" created by either a curved hill or by a series of hills. A 10 metre high hill can generate sufficient lift to fly a model in, or conversely, a hill which tests your physical ability to ascend to the top, can also be suitable for flying. Try and find a hill which is at least 40m high and 150m long, so that you can fly it in a variety of wind speeds, and fly straight for a while before having to turn around and come back. Generally, the steeper a hillside the better it will be for soaring. Many hours of productive slope lift can be found on hills with only a 20 degree to 30 degree slope. One advantage of gentler hills is that they're easier to walk up and down, if you should crash your model. It is a good idea to test the suitability of a hill, by exploring it with a damage resistant model, such as a foam model, or similar.

If trees, buildings and other hills are upwind of your hill, the turbulence they produce will disturb the lift on your chosen hill. A nice, clear, shallow stream will demonstrate this phenomenon. Water runs around and over obstacles in its path. It wells and humps over boulders, as well as streaming around the edges. Air behaves exactly like the water, and much can be learnt about reading it, from watching the action of water in fast and slow flowing streams.

A concave ridge collects and concentrates the wind, increasing the lift. Concave ridges, or bowl-shaped hills, are more sensitive to wind direction, but they concentrate the wind and multiply the lift when they're ‘working.’
Convex hills, on the other hand, dissipate wind and reduce lift but are less sensitive to wind direction. All in all, you will probably have more flyable days on a straight ridge.

There are many sites around the country, where you may be able to fly. It is important, in this age of litigation, to be covered by Public Liability Insurance, and the best way to do this, is to join a Club which is affiliated with MAAA/FAI and which has the necessary insurance cover. You also need to fly at sites, which have MAAA approval, or if flying on private or Crown land, you need to have permission.

You can find many inland slopes which would be ideal for soaring. A hill, which is fairly steep, cleared of trees and upwind obstructions, and rounded on the top would be a good start.

Coastal slopes are fantastic, as they provide the strongest and smoothest lift you are likely to find anywhere. The drawback is often, the landing area. The sharp edge transition at the top of the cliff, often causes turbulence and can create a rotor effect, which will dump your model into the ground if you aren’t careful.
I often fly at a coastal slope, which is only about 20m high, but produces great lift. The lift band at this site however, is quite narrow, so you must fly fairly close in, and along the line of the ridge. There are hundreds of similar slopes all along the eastern coastline, so do some exploring.


*Husband and wife team, Gary & Sue Ratcliffe, flying a coastal site south of Sydney.*

Ideally, the landing area should be flat and obstacle free behind the ridge and have a carpet of long, soft grass. Sorry, I was day-dreaming!
Most landing sites are less than perfect, but practice often makes perfect. This is where a foamie comes into its own. You can botch a landing and survive intact, to try again. When you have mastered the technique, you can be more confident in landing a more heavily loaded or slippery model.


*Coastal slopes offer fantastic lift. A pair of Vectors and an F21 carve up the slope.*

Inland slopes often have good landing areas, as the ground has generally, been cleared. Respect private property and livestock. Don't trespass, and make sure that you have permission from the owners of a property, before you attempt to fly there.

So, you have found a suitable spot. What next?

Slope soaring is the least expensive form of radio control model flying. It does not require expensive engines or radio control equipment. Most slope soarers are flown with a basic 29mHz 2 channel radio. These can be bought complete with servos and receiver, for around the $80 - $100 mark. Visit a local Hobby Shop in your area, and find out what is best for your requirements.

When learning to fly, it isn't a bad idea to start on one of the many EPP/EPS foam models available on todays market. These models are quite damage resistant and

forgiving of mistakes. Once you have mastered foamies, you can go on to more high performance or scale models. Many pilots however, do not ever go past the foam stage, preferring to use them for combat sessions and general slope flying. I would suggest that you explore the entire range of available slope ships, at some stage or other. Join a local Club and get someone to teach you how to fly. It is much more fun to fly with a group, and safer.

When you launch your model, give it a firm toss into the wind, with wings level and nose pointed slightly down. Let the model fly out into the lift band, to pick up speed. Make a turn so that the flight path is parallel to the ridge line, and then when it has gone far enough, make a turn into wind and away from the slope, to fly back parallel to the slope again. Fly a figure eight pattern until you get used to the model, then explore with loops, rolls etc. To make a landing approach, start with a fair amount of altitude, then fly the model slightly behind the crest of the slope, and try to fly a steady descending path right down to a landing on top of the hill. If you are too high on your landing approach, make S-turns to lose altitude or go around and try it again. Another method which I use, is to fly below the top of the ridge, and towards the lip. Coming up the hill washes off speed and is handy when the landing area isn't very big. Don't fly too far back behind the crest, or you may experience the rotor effect and lose control of your model, or crash. When flying at established sites, check with the local flyers to determine what is the best approach for landing at that site.

*About to launch a Mephisto, available from Airsports RC. A great little slope soarer.*

Slope soarers don't have engines to pull them through acrobatic maneuvers like power models do, so we have to rely on the lift and the speed of the model to perform aerobatics. Always pick up speed by diving the model before entering a maneuver. The amount of speed required, depends on the maneuver and the available lift. If you are new to slope soaring make your maneuvers into the wind at first until you feel comfortable.

It will take a little practice to master the art of slope soaring, but it is well worth the effort and a lot of fun. I have taken pilots who have only ever flown power models, to the slope, and they cannot comprehend why the model flies, how fast it can travel and how long you can stay aloft. So, next time the wind blows from the right direction, grab your model and head for your favorite slope.

***PSS is a terrific way to fly models designed for power. Here we see a CSD P63 Aircobra and a BD5J jet. Both of these kits are available from Airsports RC and are recommended for experienced pilots.***

I hope you have enjoyed this brief introduction on 'Launching Sailplanes for Beginners'.

If you have access to the internet, then have a look at a couple of Sailplane sites, to get ideas and information. A couple you could start with, for information and kit sales, are;
Heathcote Soaring League – http://hsl.org.au
Slope Flyer – http://www.slopeflyer.com
Southern Soaring League – http://www.ssl.org.au
Airsports R.C. – http://www.users.bigpond.com/kkw1
Vaggs Hobbies – http://www.vaggshobbies.com.au
Model Flight – http://www.modelflight.com.au , to name a few.