Cross Country Skills

from a Shane McCaffrey Lecture

Being a cross country pilot is not just being able to fly. You should also:

- Be in good physical condition
- Understand what's around you and how to read the conditions
- Know your glider (you need about 100 hrs hours on type to be comfortable)
- Have good instruments

And finally...

- Practice, Practice. Practice

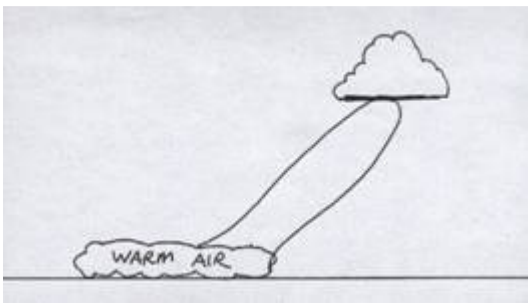
Cumulus Days

Good lift is usually found under the best cu's where the tops are smaller than the bases. Look for the best part of the cu and remember that the darkest part is usually the thickest part of the cloud, and this is where the lift is strongest. Check where the sun is shining as it will give more heating to that part of the cloud. Eg in the afternoon, the Western side of the cloud will be better.

To estimate the distance to next cu from cloud base, look at the shadows of the streets on the ground.

Winds

Winds can displace the lift. When you are at a low height, you will need to look for trigger sources and the cu's above will not be a good indicator. (see Figure below)

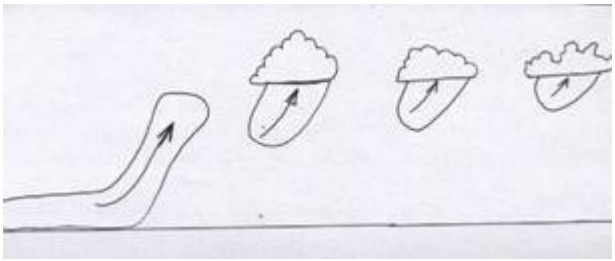


Trigger sources can be fixed and are likely to "pulse". If you have ever seen time-lapse photography on cloud formation, it is easy to see how thermals and hence clouds often develop from a fixed source.

When analysing the ground sources think about wind direction, how strong will the lift be, and look for areas of potential stored heat such as dark fields, high crops, vegetation, and

forests.

These sources will be more or less active depending on the time of day. Take note of the wind strength and direction in working out where the lift will be.



On windy days there is more mixing of cool air at ground level, and thermals are broken down low.

When lift is very strong, the thermals will be further apart.

Trigger Points

To give you an idea of the potential of some ground sources, the following list shows radiant heat energy of different types of ground features:

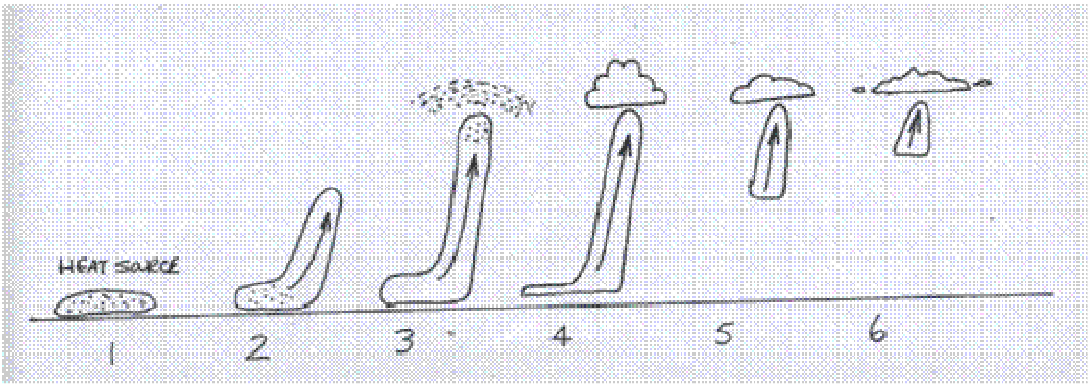
Cropped paddocks and dark ground	<15%
Bare ground/light soils/rocks	<38%
Desert	<28%
Snow	<80%

When looking for trigger sources, look for protected areas where the sunlight has had time to heat the surface. Eg ravines and bowls in mountain areas.

Use your imagination and think - look for hot spots

1. Trigger points in calm conditions – look for an area of temperature difference. Mountain ridges – either side differential heating temperature
2. Edges of forests or wooded areas
3. Lake/river banks
4. Trucks and tractors are triggers
5. Crops and dams – watch for disturbance coming across the surface.

When looking for new thermals, don't always go for a nicely-formed cu. By the time you get there, it will probably already be dissipating. Instead look for the haze domes, as shown below.



Cloud Streets

Thermal under a cloud street if you are below cloud base, or have reached the end of the cloud street and need to leave as high as possible, or if there are no other streets to go under along course.

You should continue to fly under worthwhile cloudstreets when it is close to desired course, or you are flying into strong wind. Your cruising speed under cloudstreets is higher than elsewhere. Use the cloudstreets and cut across (like tacking in yachts) if they are not aligned on track.

Leaving a Thermal

Don’t leave the thermal at thermalling speed as you will lose height crossing the sink on the side of the thermal. Always increase speed about ½ a turn before leaving, so you cross the sink with more speed.