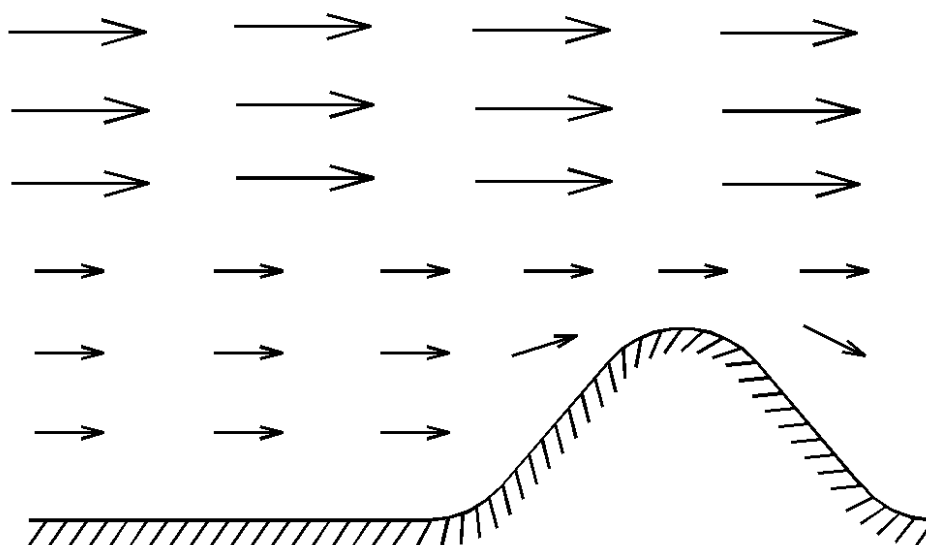


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Thermal Wind Mixing - Nigel Page

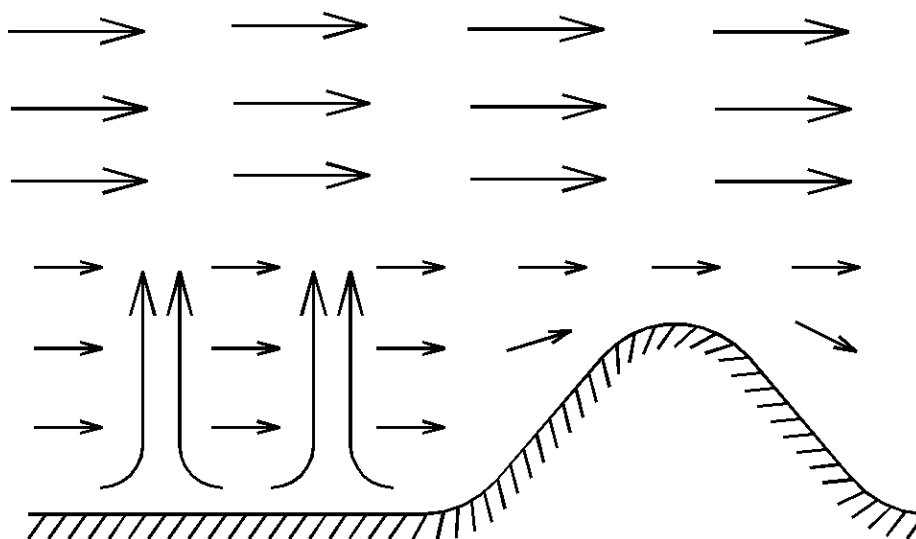
Of several things that can bring a high layer of fast air lower down the most common in summer is probably thermal activity.

Despite a high wind high up, during the night the lower air cools and slows making a layer of very light wind which can extend from the ground or valley floor to well above ridge height (diag.1).



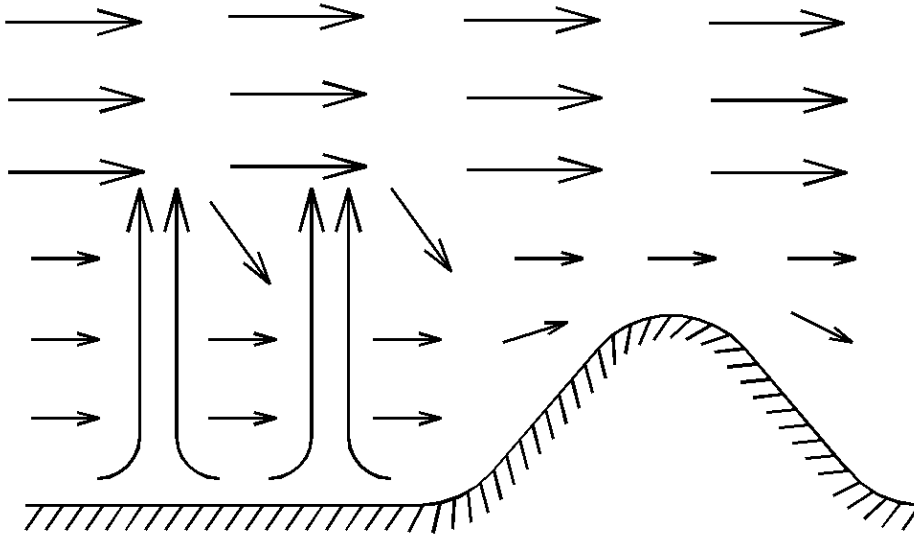
(diag.1)

The lower air is fine for us to fly, some nice thermals start (diag.2) and we happily set about soaring in the hill and thermal lift.



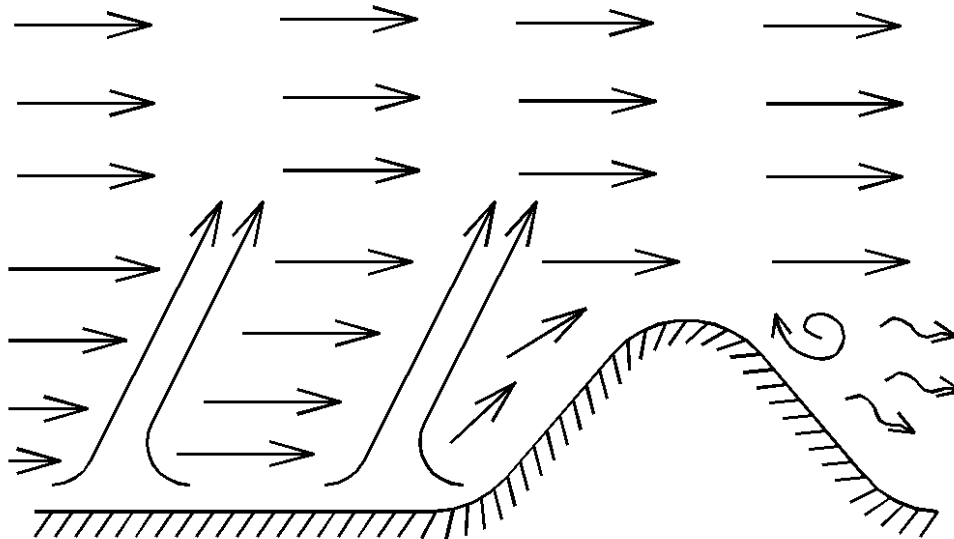
(diag.2)

However, when the thermals rise from the “quiet” airmass lower down, air is displaced from the faster moving layer high up and begins to descend (diag.3). Such sink is commonly associated with thermals.



(diag.3)

Because this descending air originates in the faster air up top it has a lot of horizontal momentum. It mixes with the lower air causing the lower wind to increase rapidly. The fast moving air will often continue descending all the way down to the valley floor (diag.4) producing all the turbulence and rotor we expect from a strong wind.



(diag.4)

Such a combination can make for a fairly wild ride and happen very quickly. On summer mornings the wind can increase from unsoarably light at the ridge top to being blown out in the whole valley in less than an hour. We have to be on our guard and ready to get down fast.