among its inputs. (True, such a device would have to be very carefully compensated to eliminate the accelerations caused by "stick thermals," but it is entirely within the realm of current technology.) Until such time as this wonder instrument appears on the market, we will just have to make do with our own built-in "computer," whose billions of nerve cells still manage to do a more than adequate job even when presented with quite a few "inputs."

As soon as we have determined a direction of increased climb, we note it in relation to surface features, the cloudscape, or the position of the sun. If, as we continue to circle, our outer wing is soon lifted, our suspicion of the presence of a good thermal is reinforced. If we then fall out of the best area, we can still get a good idea of the "hot spot;" we then attempt — whether consciously or unconsciously — to create a spatial picture, one which we could compare with a relief map whose hills and valleys represent lift and sink, respectively.

THREE CENTERING METHODS

How we displace our thermaling circle so that it is exactly concentric about the "core" of the thermal isn't too important. What *is* important is that we do it quickly. Once we know where we want to go, we should not be overly concerned over performance losses caused by hard maneuvering or full control deflections. If we can save 10 seconds getting into 1 m/sec better lift, it is worthwhile several times over. We should be aware, however, that the old-fashioned centering method of leveling out in lift, flying straight for a short time, and then starting to circle again (method 1), is not as certain to hit better lift as other methods. Heinz Huth's technique (method 2) is as follows: as soon as the lift becomes weaker fly a half circle as tightly as possible, until climb begins to increase; then resume the original bank angle.

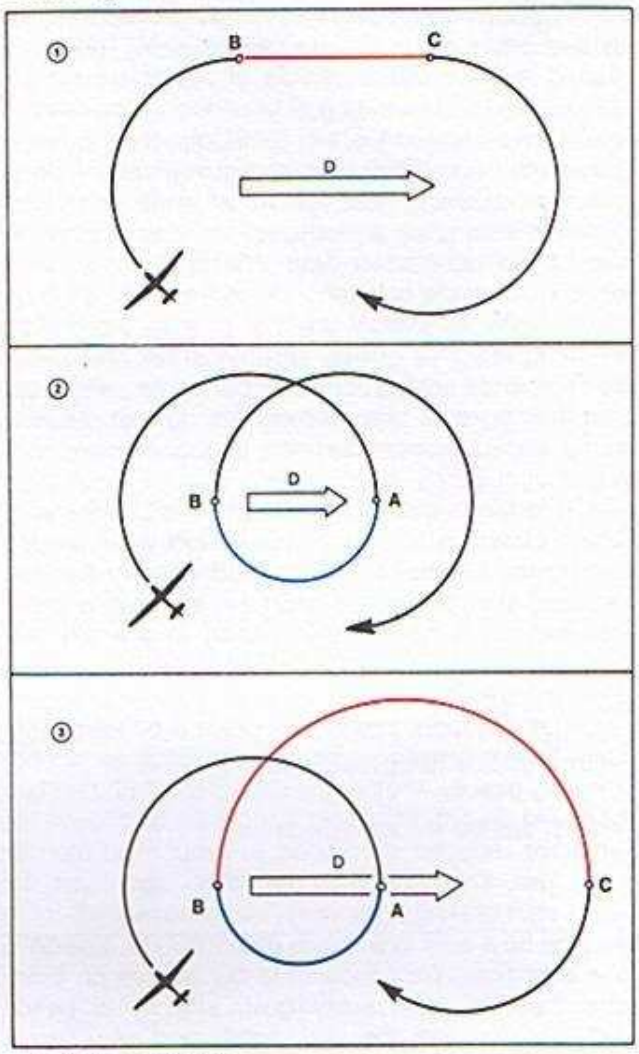
If we wish to displace the circle with a minimum loss of time and with the best chance of finding better lift, I feel that the best method is one that combines features of both of the others (method 3):

- As climb improves, flatten the circle (approx. 15-20°)
- As climb deteriorates, steepen the circle (approx. 50°)
- If climb remains constant, keep constant bank (approx. 25-30°)

Note: these rules are based on *changes* in rate of climb, not absolute climb rate as such.

As we can see in the illustration, method 3 allows a relatively large displacement. This means rapid centering (or equally rapid centering if the phase of steeper circling — from A to B — is not quite as steep). It should be remembered that bank angles in excess of 45 degrees cause significant sink-rate increases.

Centering methods



D = Displacement of circle

Method 1 : Decrease bank as climb increases (B-C) (Disadvantage: inexact)

Method 2 : As climb decreases fly ½ circle steeper (A-B) (Disadvantage: less displacement)

Method 3 : As climb decreases, bank steeper (A-B)
As climb increases, reduce bank (B-C)

Any centering rule has the disadvantage of being somewhat rigid in light of a changing situation. The "recipes" given here should therefore be taken as basic techniques to be refined in the real world depending on such factors as gustiness, thermal strength, and so forth. They will serve, however, as a basis for further practice; ultimately, the ability to visualize thermals spatially should be of paramount importance.

The third method has the advantage of rapid centering while remaining feasible even if the bank is steep to begin with. Moreover, it is certain to take us in the right direction even if we misjudge the exact instant to change the bank angle. On the other hand, it is more susceptible to improper flying (skids, slips) than the method of two-time World Champion Heinz Huth.