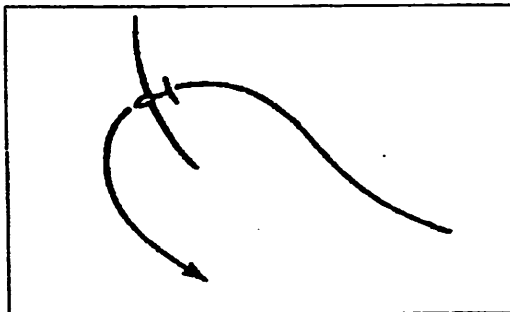


# Flight Exercises- Cross Country

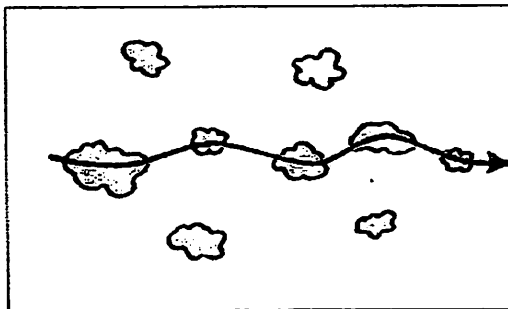
16. A photographic safari. Fly round prominent landmarks ("turnpoints") which you have identified from the air, and take one picture of each turnpoint. Photograph the first turnpoint from due North, the second from the East, then South and West. Make a note on a scrap of paper of turnpoints and directions. Of 36 turnpoint photos, not one should be a failure.

If you have the opportunity, mount the camera on the opposite side of the cockpit and set off on another safari.



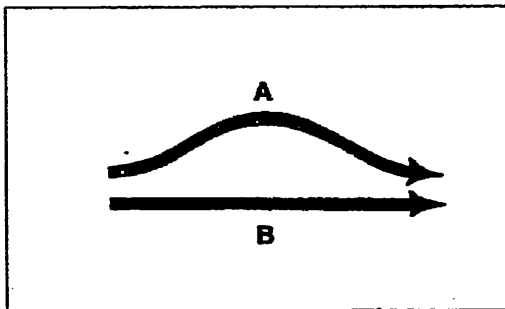
26. To practice approaching and exiting from left and right-hand turnpoints, ensuring that photos are taken as close in as possible without jeopardizing their acceptability as evidence, so that no failures ever occur during badge or contest flights.

18. Vary your heading to minimize height loss. The proportion of flight-time spent circling should be as low as possible, but you should not use too conservative a speed-ring setting.



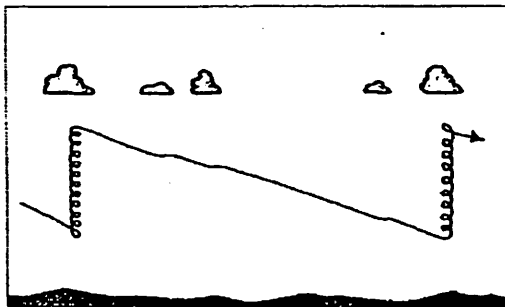
18. Small changes of heading can save height and therefore minimize time spent circling.

17. Even when flying familiar tasks, try out new routes to see if they produced better results—if possible comparing how you make out against another pilot who makes other decisions.



17. To learn to recognize when detours for meteorological reasons are justified.

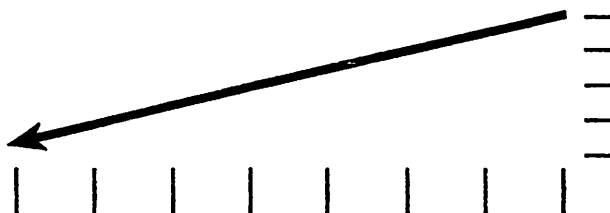
19. Turn as infrequently as possible, by "following the energy" and prolonging the glide, i.e. using a moderate speed-to-fly ring setting (e.g. 150 fpm) and a deep cruising band. Try to circle only in exceptionally strong thermals.



19. To improve average speed by reducing time spent circling in thermals and therefore time spent getting established and centered in them. Practice in "tactical undersetting of speed-to-fly ring."

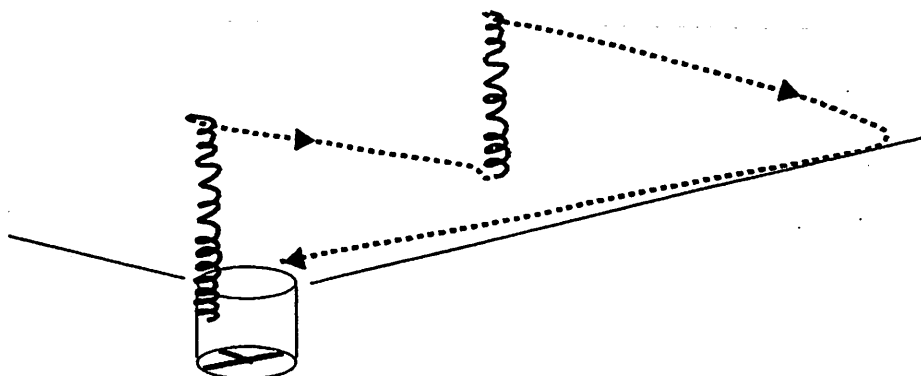
# Flight Exercises- Glides

Using a predetermined distance of approximately 5-10 miles, measure altitude lost and distance travelled. Select a typical cruising speed, for example best L/D speed plus 5 knots. Calculate you achieved glide angle. How does this compare to your sailplane's published glide angle?

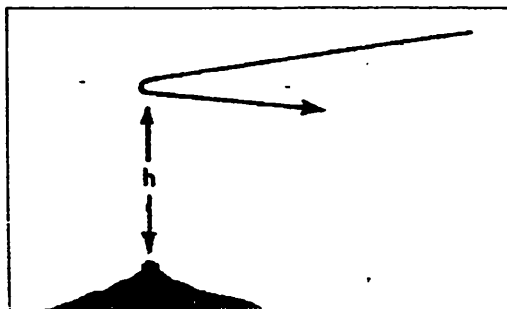


Practice using your cone of comfort by climbing above the airport, extending to the edge of the cone of comfort, and returning to the field. Then repeat the process.

This will assist you in better visualizing glide angles, teach you discipline, and validate your glide angle.

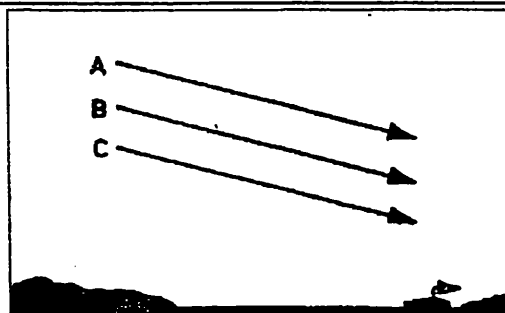


27. Approach turnpoints using properly calculated final glides. Decide in advance at what height you wish to arrive. If you get there below this height, you have "landed out." If above, you have wasted time unnecessarily.



27. Calculating glide approaches to arrive at upwind turnpoints at a given height can produce significant time savings. This exercise establishes a routine and improves pilot confidence in the process.

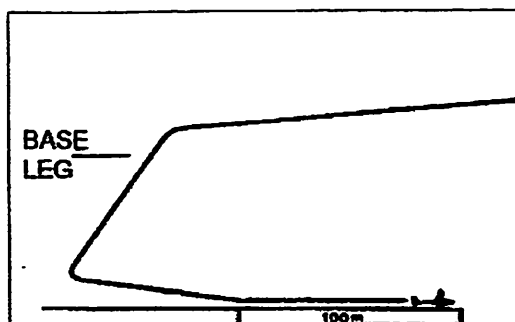
28. At the end of each flight, calculate a final glide back to the airfield for landing. Depending on your level of currency and the prevailing weather, gradually fly to lower limits, down to a minimum of about 1200 feet.



28. To practice and improve the safety of final glides.

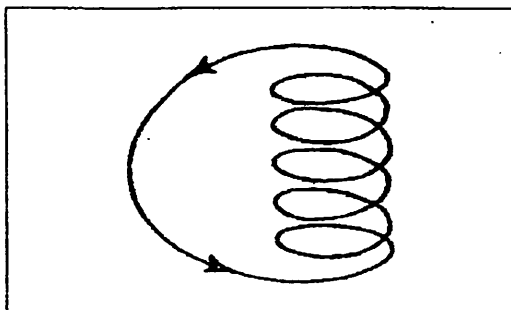
# Flight Exercises- Local Flying

29. Plan for every landing to be a spot landing after a standard circuit with a proper base leg. Select a marker, aim to touch down 100 meters short of it and roll to a halt on the spot.



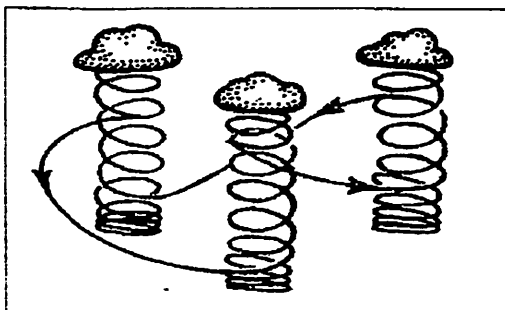
29. Precision in (out-) landing should be practiced on every home field approach. Safety through routine.

1. On nearing the top of a thermal, leave the area of lift, take a good look out and descend about 1500 feet using airbrakes. Then try to relocate thermal, center in it, and climb back up again.



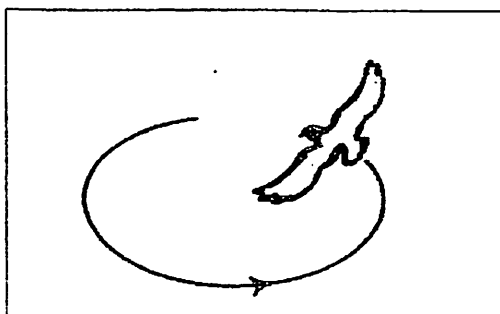
1. To find a known thermal quickly, and center in it promptly. To recognize the structure of thermals at various heights.

2. On a day with cumulus, leave your thermal some distance below cloudbase (optionally, at a pre-determined height) and then try to find another which yields an initial rate of climb better than a minimum figure you have previously decided upon. If you descend below a pre-set height, you may if necessary accept weaker thermals.



2. To seek out and find thermals of a pre-determined minimum strength. To change tactics as altitude reduces.

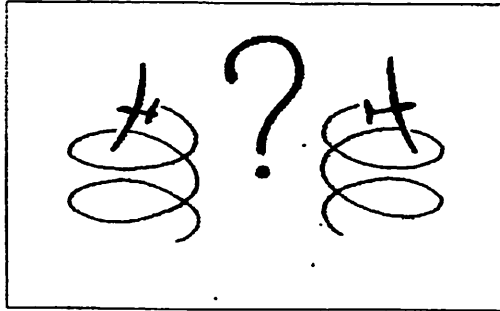
11. Fly like a bird. Turn off the audio variometer and stick pieces of paper over the visual displays. Fly by the seat of your pants, checking the altimeter indication from time to time.



11. In the years before the variometer was invented, all flying was like this. Today, with instrumentation constantly improving, we tend to ignore sensations of movement and acceleration. This exercise is designed to improve sensitivity to the forces at work in a thermal, and develop instinctive "reflex" reactions to thermal gusts. The risk of collision in gaggles is also reduced if you can circle without constant references to instru-

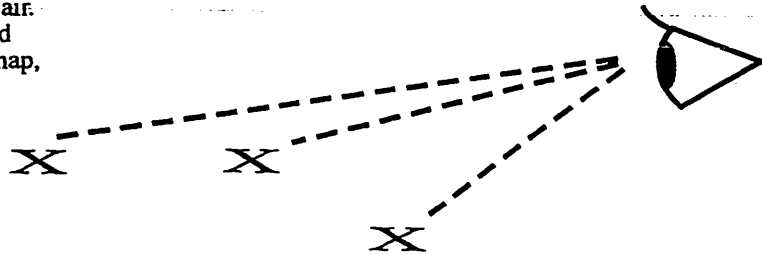
# Flight Exercises- Local Flying

8. Throughout a flight, resolve to circle only in the direction which does not come naturally to you!

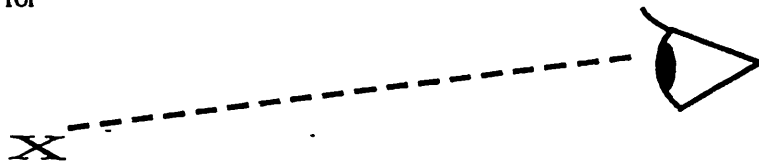


8. Those who can turn efficiently in both directions do not have to make unnecessary positioning maneuvers when entering and centering in thermals.

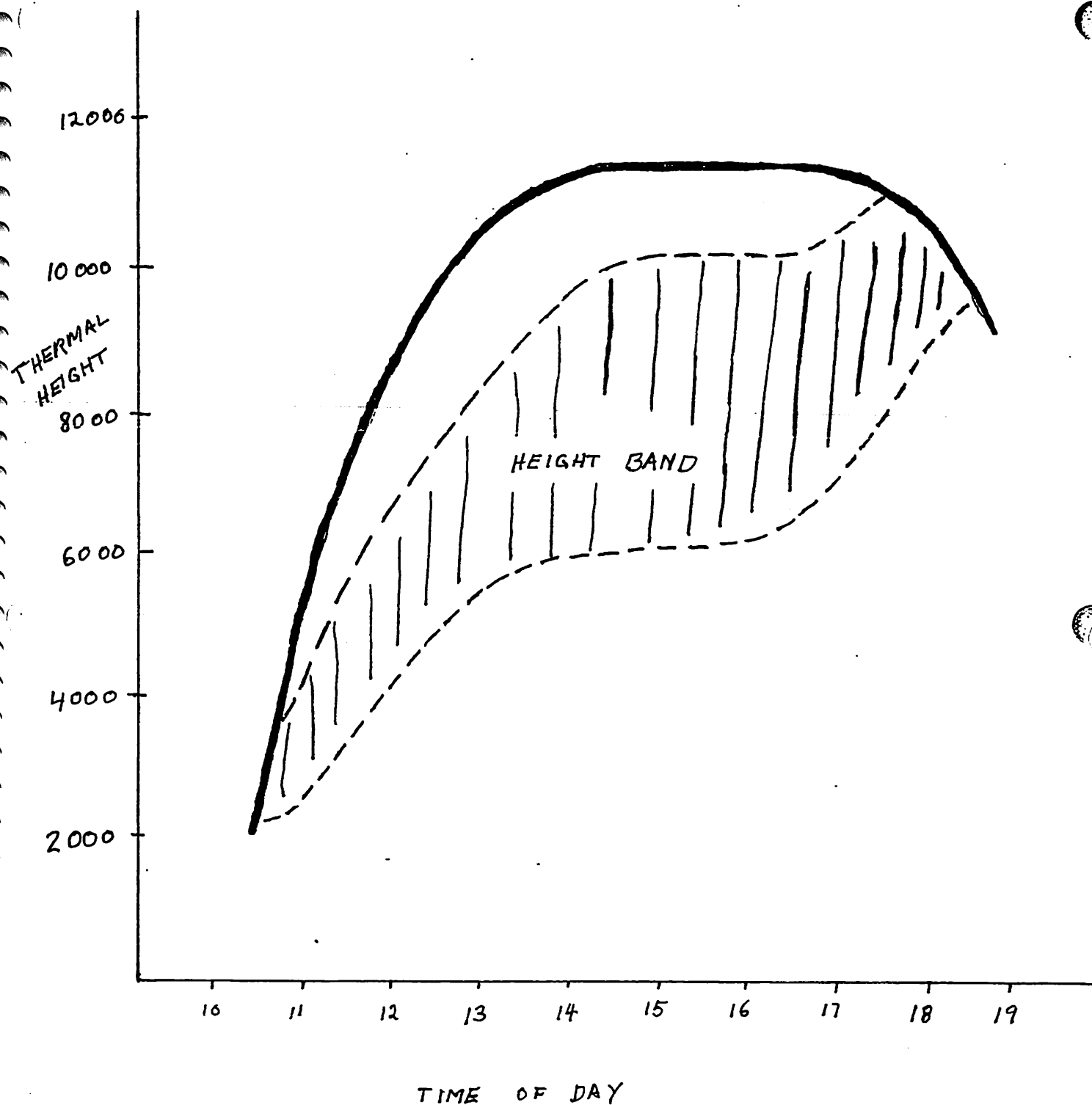
Estimated distances to turnpoints in the air. Estimate how far landable fields are, and figure arrival heights. Then compare to map, and calibrate you eye to distances



After you climb high, estimate the maximum gliding distance with a safe arrival height. If there is a wind aloft, calculate distances for both downwind and upwind.



# HEIGHT BAND VS. THERMAL HEIGHT TIME OF DAY



PERFORMANCE MODEL

Phase A - CLIMB OPTIMIZATION

1. Locating lift

2. Decision to circle or not

Transition from Phase B

3. Entry and centering

4. When to leave !

- NOT LAST THERMAL

- LAST THERMAL

5. Exit thermal

Transition to Phase B