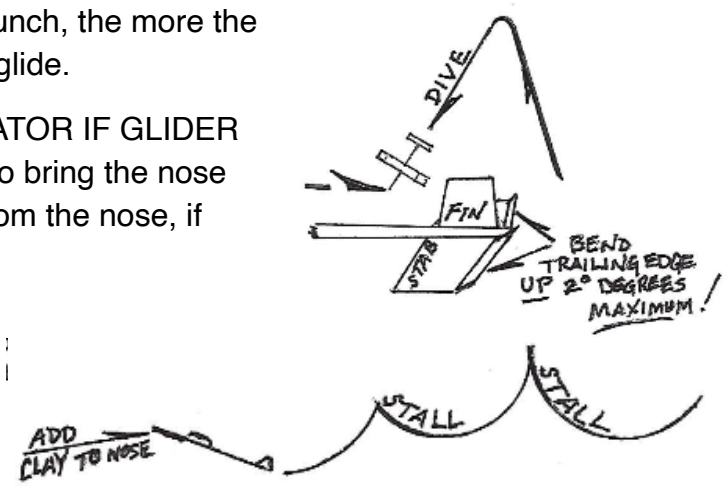
Launching and trimming a basic, non-flapper glider

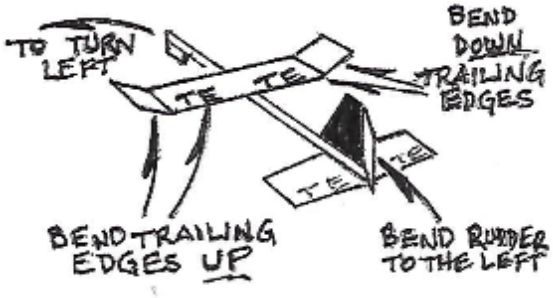
First Flights

1) Balance the glider 1/3 back from the leading edge of the wing. The balance point is the center of gravity (CG). This does not need to be exact, just close. Add or subtract clay to move the CG. **Only Add Ballast to the Nose!**
2) Hand-launch the Glider pointed down specifically towards the seam where a wall meets a floor. This will be close to the glide angle. Give enough thrust and follow-through like throwing a hand dart. Video this from a side view to confirm the glider is released in a nose-low attitude. This activity will confirm the glider's tendencies, especially in which way it wants to orbit, left or right.
3) It is best to use 1/16" rubber on your launching device. Larger than 3/32" may cause a shock wave on the wings that can cause them to break either on the launch or due to a rough landing.
4) When beginning to launch with a catapult, begin with "shots" slightly above the horizontal and bank the glider toward the natural turn tendencies.
5) Typically the more the stretch and higher the launch, the more the glider needs to bank to enter a transition into a glide.
6) BE PREPARED TO BEND IN SOME UP ELEVATOR IF GLIDER DIVES! Pinch the stab's trailing edge wood up to bring the nose up. An alternative is to remove some ballast from the nose, if there is ballast to remove.
7) If Glider stalls, either move wing assembly aft in 2 mm increments or add clay to the nose. Avoid using "down" elevator as this will induce a severe dive on release.



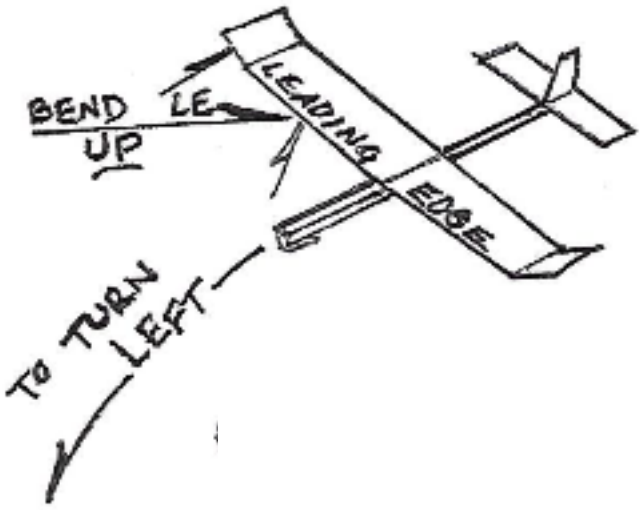
Additional trimming recommendations

8) To get more turn:
   A) Bend trailing edge of fin (rudder) toward direction of intended turn.
   B) Bend the tailing edge of the wing on the side opposite the turn down slightly. For example, if the airplane needs more turn to the left, bend the TE of the right wing down.
   C). Alternately, if glider needs to turn more left, bend the trailing edge of the left wing up.



(Reverse adjustments to turn glider to right)

D). More lift on a wing will bank the glider to the opposite side, causing it to turn toward the lower wing. So to turn left, bend the LE of the right wing up as shown.



9) Transition**:** Each glider will transition differently.

Gliders heavier than 4 grams will usually react best to a parabolic pattern when launched. As they arc during climb, they reduce speed. The trick is to practice having enough speed so that the glider does not stall and lose half its altitude before recovering. In most cases, gliders need to be launched with some degree of bank for them to transition smoothly.

