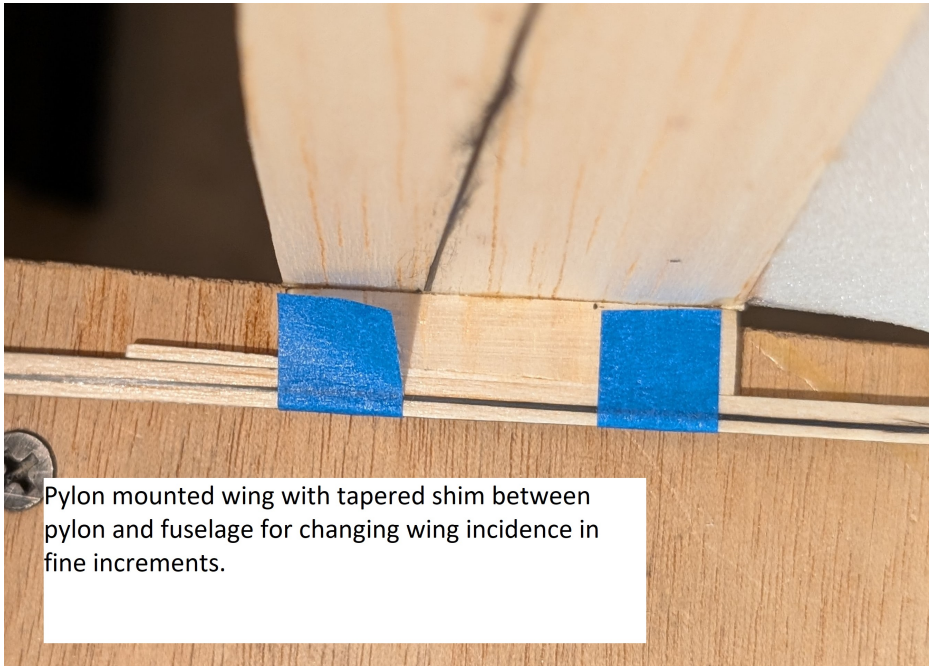
Building Tips for a Flapper Glider - SO Glider Event 2026-27 season
NFFS Youth Development Program
By: Brian Turnbull

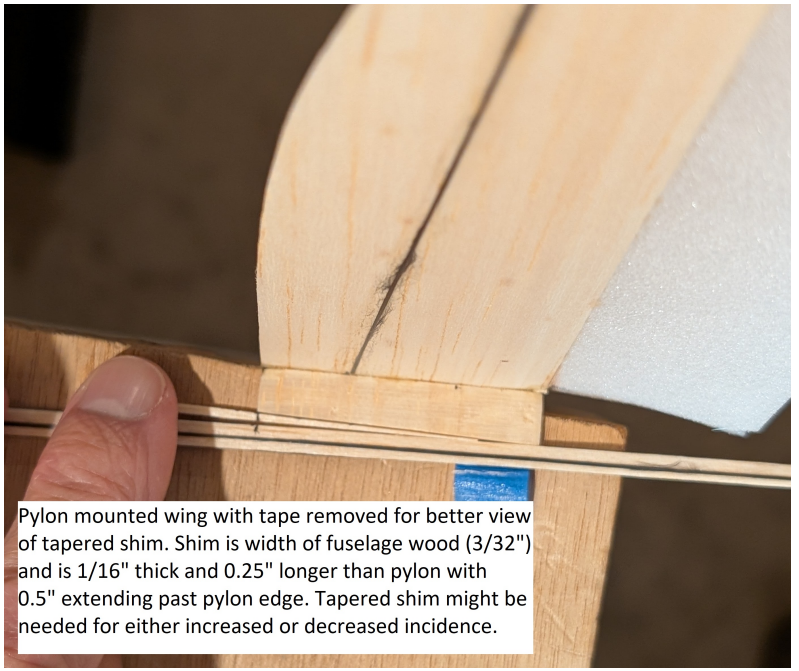
Watch the NFFS Glider Overview video before reading this. This will help you to understand the terminology and concepts embodied in the building advice detailed below.

Building

1. A heavy glider always flies poorly and is difficult to trim; BUILD LIGHT; as close to rules allowed minimum weight as possible!
2. Flapper only - build the glider with the wing mounted on a pylon, which allows adjustable wing incidence (see step #3). If flying in a very high ceiling (50+ feet, see Advanced Trimming resource for “stick” pylon.

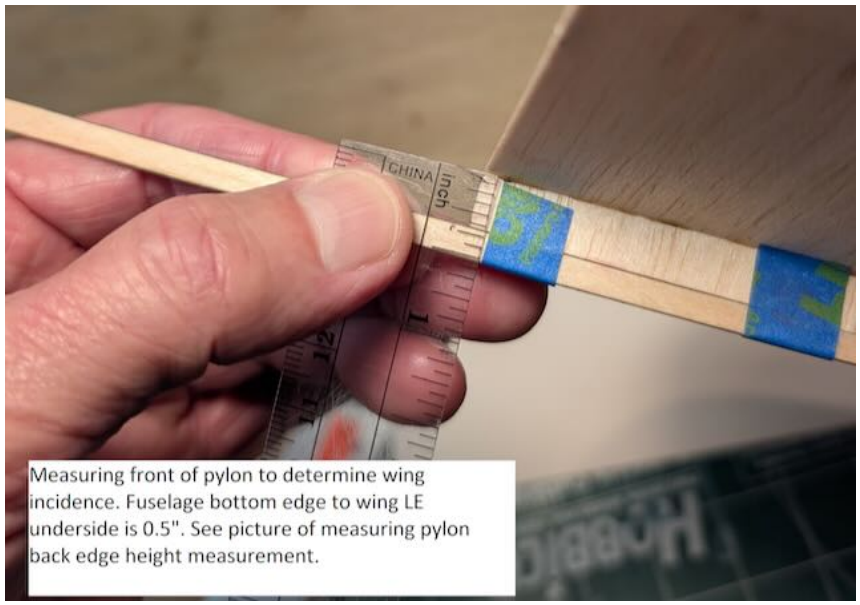


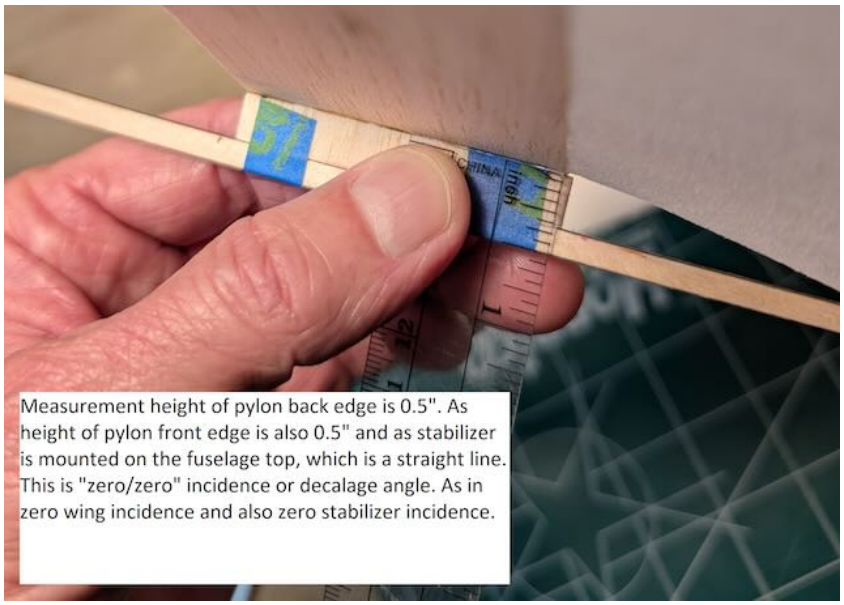
Pylon mounted wing with tapered shim between pylon and fuselage for changing wing incidence in fine increments.



Pylon mounted wing with tape removed for better view of tapered shim. Shim is width of fuselage wood (3/32") and is 1/16" thick and 0.25" longer than pylon with 0.5" extending past pylon edge. Tapered shim might be needed for either increased or decreased incidence.

3. Start trimming with incidence at “zero/zero” (see photos below). This contrasts with a non-flapper/basic glider, where you would build 0.5-0.7 degrees of incidence into the fuselage rear or wing mount (see Glider Overview video)

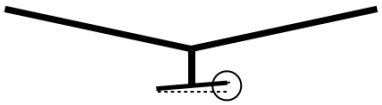




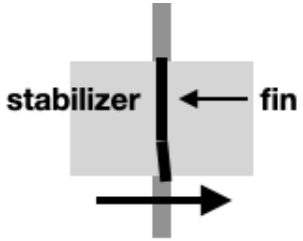
4. Verify that all glider parts are perfectly aligned: straight fuselage; no wing, fin or stabilizer warps or twists; wing mounted straight on the fuselage; wing and stabilizer at zero-zero decalage angle to each other. This means that the stabilizer should be at zero incidence relative to the line of the fuselage, as shown for the wing in #3.

5. Stabilizer tilted, with right tip about 1/8”-3/16” higher than left. (For right-handed launcher, reverse if left-handed)

#5, view from behind:



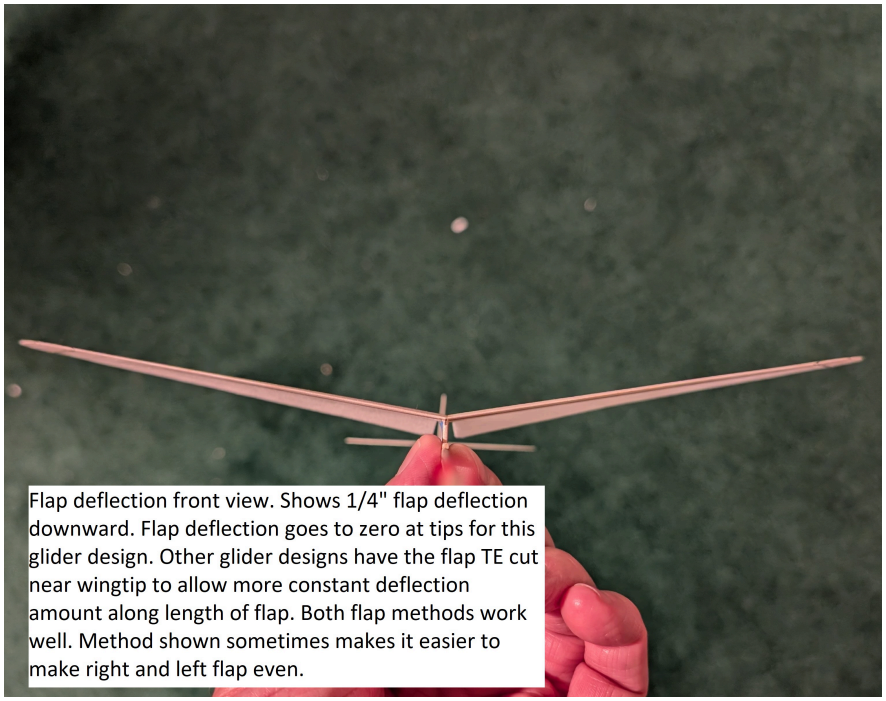
#6, view from top with rear of glider on the bottom:



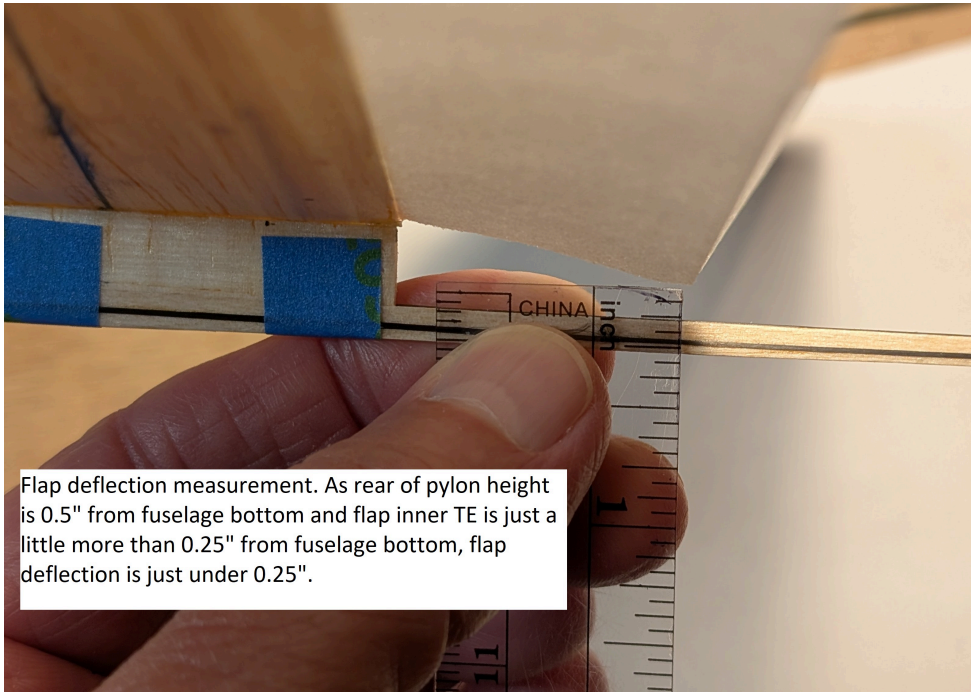
6. Trailing edge (TE) of the vertical fin bent 1/32” as shown by arrow for right turn. Bend just the rearmost part of the fin. (Also for right-handed launcher , reverse if left-handed)

7. Set Center of Gravity (CG) per the plan or kit instructions; usually about 50% wing chord.

8. Flap deflection (downward curve to TE) should be same on both flaps, and set to 3/16” to ¼” drooped down.



Flap deflection front view. Shows 1/4" flap deflection downward. Flap deflection goes to zero at tips for this glider design. Other glider designs have the flap TE cut near wingtip to allow more constant deflection amount along length of flap. Both flap methods work well. Method shown sometimes makes it easier to make right and left flap even.



Flap deflection measurement. As rear of pylon height is 0.5" from fuselage bottom and flap inner TE is just a little more than 0.25" from fuselage bottom, flap deflection is just under 0.25".