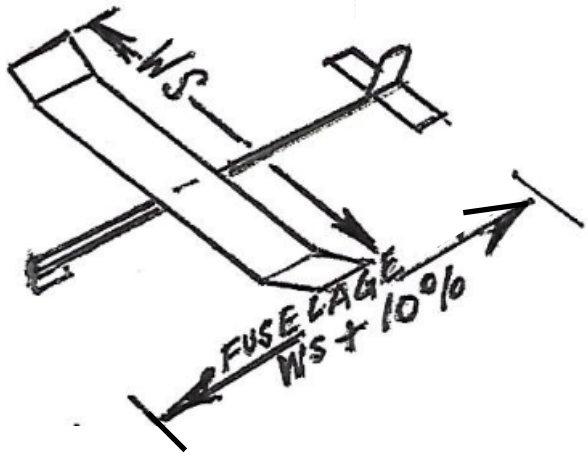
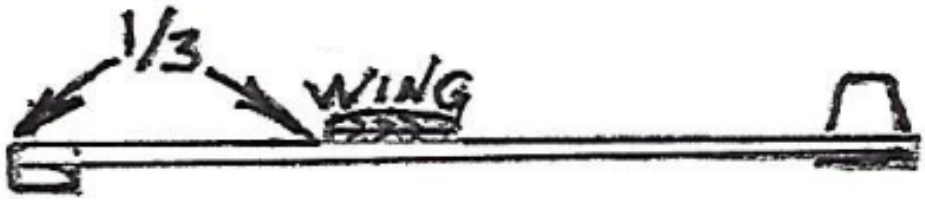
## Building Tips for a basic, balsa winged, non-flapper glider




1) Fuselages resembling side profiles of airliners are doomed for their added mass!
2) Fuselage: Use the hardest wood or carbon fiber No more than 3/32" wide X 1/4" high.
3) Best designs have the fuselage at least 10% longer than the wingspan for enhanced pitch stability (nose up/nose down). As shown by the diagram on the right.
4) The back portion of the wing and stab (20% of the chord) should be tapered (sanded) to edges that are 1/32" thick, or less. This allows the trailing edge to be bent slightly for trimming, and is also better aerodynamically. A resource that details how to do this will follow in the future. If you attempt it on your own, sand carefully, as it is a delicate operation!
5) Locate the leading edge of the wing roughly 1/3 to 2/5 the fuselage length aft from the tip of the nose.



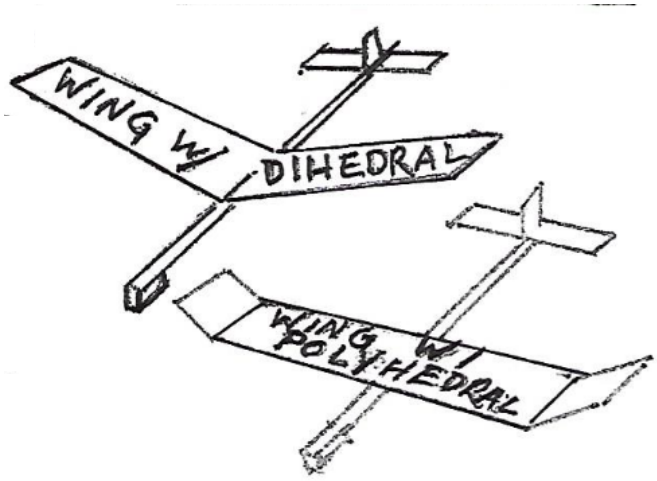

6) Nose assembly (launch hook) should have cross-grain caps on either side for strength.
7) Incidence Angles - 1◦ positive on the wing (wing leading edge will be <u>higher</u> than trailing edge) and 1◦ negative on the stab (stab leading edge will be <u>lower</u> than the trailing edge. **Never more than 3 degrees combined** (combined incidence aka "decalage")



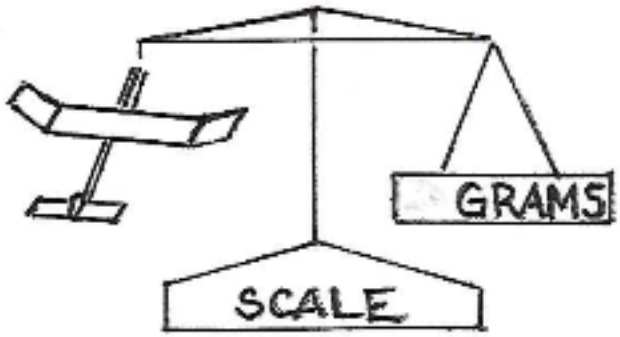

<u>Note 1</u>: For a wing with a 6 cm chord (front to back dimension), 1 degree results in the leading edge being very close to 1 mm higher than the trailing edge. Adjust this proportionally for other chord dimensions.

<u>Note 2</u>: To cut that angle for the stabilizer on the lower side of the aft fuselage, lay another strip of balsa in parallel so the steel straight edge remains both level and stable.

8) Make sure the wing features some form of dihedral. A glider without dihedral (or polyhedral) will not fly! The most typical methods are shown here. Polyhedral is sometimes referred to as “tip dihedral”, since only the wing tips are angled upwards.




9) Build as close to the minimum mass allowed as possible. This results in easier transitions, and the glider will react better to trim adjustments. A lighter glider will fly longer than a heavier one!




**When your glider is built, before you attempt to launch it, read through the next resource, “Launching and trimming a basic, non-flapper glider”. This document will give you some tips to help you to reduce the chances of breaking your glider before you figure out how to fly it!**