

# Painless, Productive Trimming

by Mike Midkiff

Basic steps for the flight trimming of rubber models.

In order to understand and apply these steps correctly one needs to understand trim vs. stability as they impact the process. Stability relates to the CG location. Trim relates to the stab angle. One will not work to take the place of the other. A model needs both.

Set the stab at 3 degree negative. This angle is set as related to the mean aerodynamic cord line of the wing. (Note: not necessarily the wing bottom)

Remove motor and prop and add ballast to achieve a CG. location 30% back from the LE.

Test glide model and adjust stab angle only to achieve best glide (farthest glide distance) Lock in stab angle.

Add motor and prop block and add ballast to balance model at same 30% CG location.

Wind in 25% of max winds and fly. Add down thrust to prevent a stall. Add right thrust to prevent torque roll. Do not make adjustments to CG or stab angle.

Wind 50% power and again shim for stall if it occurs or turn with opposite shim.

Wind 75% power and continue to correct stall or too much turn with appropriate shimming.

Power burst and climbout should be mostly straight away. Very gradual turn to either side is OK. Too much turn to either side robs climb.

After altitude, observe glide. Flat glide either direction is fine. If severe stall occurs in glide recheck CG and braid motor. If severe turn to right or left occurs add wing tip weight to high wing and compensate with opposite small changes in side thrust.

When you are satisfied that the model is flying reasonably in the power, cruise and glide faze, you can optimize with small CG vs. down thrust changes.

In summary the results of a well trimmed model is its ability to use all of the power available to gain altitude. Any stall or stall and roll wastes power and is non productive toward maximum flight performance. Many trim flights, under varying conditions, are needed to have the confidence to put 'er on the shelf knowing the model is trimmed.

When the next contest arrives you know what to expect, there is no embarrassment.