

## **Gordy's Travels #4**

### **Balance Affects Landings!**

In my recent past articles I talked about how to find the 'balanced' point of a full flying stabilizer thermal duration sailplane. I talked about how a 'balanced' model is free to indicate the smallest lift, turn tighter slower and safer, and land slower.

Most guys I meet react with the usual over reaction of 'rearward' balanced models are uncontrollable.... As if 'balanced' meant un-balanced.

I often ask them this question: If you balanced your model according to my system, and it flew slower, indicated the smallest lift, turned tighter at slower speeds, needed less surface deflection and landed slower, then took it home, measured the balance point, found it to be 2" behind what the plan showed – would you move it up to the plan mark?

I seldom get an answer....but there is a reason to move the balance point forward from what seems to be a really optimized balance point!...and I figured it out today at the flying field.

I had brokered a purchase of a sailplane for a relatively new full function sailplaner, and decided to set the plane up for him. I flew it as it came from a talented contest pilot... and found it to be a real dog. To be fair the wind and humidity weren't the best for TD flying... but the model really was NOT my cup of tea.... Sluggish on rudder, quick to stall, and tight thermal turns spiraled downward.

So I flipped it upside down to check the balance...to find, it was carrying a considerable amount of lead in the nose. How could that be, when the guy who had it has won a lot of tough contests? Simple, many of us learn to fly the models they have...well.

I pulled all the lead out (about an ounce or so), then launched again. Inverted showed that it didn't need any down to keep it flying level, so I went looking for thermals. It flew great! No problems what so ever, it showed lift, rudder yawed it like it was on rails...it wasn't till I brought it down for a landing that I found that it was not 'balanced'.

It tracked in on line to the spot with out a hitch, smooth in yaw, pitch and roll...until I poured in some landing flap, then she popped up and wallowed around...no way I was going to make it near the spot.

Turns out that the balance point was dead on...for the chord of the un-flapped wing.

Learning about balance, can only be done through experimenting, getting your model optimized will allow you to spend more time learning to read air. Have you found that point that is perfect for your un-flapped chord? Then added in some nose weight to get your model set for all conditions?

So many of us move from one new 'super' model to the next, only to find they all seem to fly as disappointing as the last....maybe its because they are 'hobbled' by your balance and trim set ups. Measuring a CG, is what you've done in the past, why not give flying to diagnosis balance instead. Balance to fly, not to match some drawing.

Give it a try, you'll find that the plane you have maybe the plane you have been paying for!  
I did!

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