

TRIMMING A TOUCHY MODEL

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This short discussion probably won't interest the "PRO" modeler but I think it might help others. Before offering any trimming advice let me state that all those "Trimming " articles you've read, by top modelers, are all TRUE. That said, let's continue. To understand where I'm coming from, my concept of a good flying model is one that will repeat stable, well mannered flights from climb to cruise to glide. Not necessarily long flights, that's another problem and should only concern you after achieving a consistent flight pattern.

Have you ever built a proven winner that was designed by a top modeler, who'd had great success with it, and just couldn't get yours trimmed out? I have, and I fought those suckers until they were reduced to rubble and I still couldn't get them to fly well. About a year ago I pulled out a couple of these "hangar queens", that I had stored before they were completely destroyed, with the objective of making them fly regardless of what I had to do to them. I had built these according to the plans, without deviation, and I had expected them to fly. They didn't. During my original trimming attempts I had resisted making any changes to the models other than CG, stab incidence and rudder adjustments because the models were well designed by top designers and theirs flew.

I started my re-trimming process from scratch (as if these were totally untested models). The first one turned out to be directionally unstable. Depending on the rudder setting it would turn right or turn left without climbing and would end up in a spiral dive. To me, this meant the rudder was too large. With a pair of scissors I cut off about a third of the rudder without much effect, so, I cut off half of the remaining rudder and BINGO. The model climbed out in a graceful left-hand turn, transitioned into a good cruise and ended in an acceptable glide. Hmmm. I couldn't fly a scale model with a 1/3 sized rudder so I compromised by reducing the original rudder by 15-20% and increasing the wing dihedral about 1/2". The model is now a pussycat.

The second model appeared to be unstable fore-and-aft no matter where I set the CG and also seemed to have a mild Dutch roll although it was hard to tell. To me, this indicated the stab wasn't large enough and also the rudder (probably). I didn't fight it. I removed the rudder and stab and replaced them with sheet balsa ones about 30% larger. Again, BINGO. The model had a good climb, cruise and glide. I knew I had oversized the rudder and stab so to determine the size needed I started trimming them down (scissors again) until they had a negative effect on the flight pattern.

What does all this mean? Did these top modelers tell me a lie? NO! It simply means I'm not as good a "trimmer" as they are and I need more "forgiveness" in my model parameters to get it to fly well. I believe these top modelers try to build their models as close to scale as possible and if this means they are on the edge of instability, no big deal. These guys are GOOD and are able to trim touchy models when necessary.

I think most of the building/flying articles I've read stress "building light" more than "fly-ability", at least that's the way I've interpreted them. I've built light models that I couldn't trim out and I've had heavy models that trimmed out well but just didn't have long flights. Hmmm! For me (and I'm a duffer), if I don't have the model basically trimmed out within an hour then something is usually on the verge of instability. If you've had these kind of experiences try this approach on your next three or four models.

Tack glue sheet balsa stabs and rudders on the model for trimming purposes. If you need to change their size for stable flights it's easy and quick to do. When you are happy with the flights, then construct the stab and rudder with stick and tissue of the size needed. Now, build light and with the right prop/rubber combination you'll get those long and consistently stable flights.