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“He who launches highest, WINS.” Every form of RC Soaring competition is driven by the launch. From Hand Launch to F3B to Thermal Duration to F3J, if it is possible to start just a few feet higher than the next guy, then you’ll have a huge advantage. Assuming an L/D of 20/1, a 20-foot launch advantage equates to 400 ft. of forward flight in search of a thermal, before realizing the same altitude. It’s also about an extra 15 seconds of flight time assuming a no-lift situation. Have you ever noticed that top flyers typically out launch the competition? How do they do it? It’s a combination of sailplane set-up, and launch technique.

My planes will rotate instantly out of my hand, and will pull tremendously hard all the way up tow. This is accomplished in three ways: towhook position, launch camber, and elevator pre-set.

**Towhook position.** This is what creates the instant rotation of the model. In order to determine the optimum position for the towhook, we need to determine where the model TRULY needs to be CG’d. I do this by slope flying the model prior to installation of the hook. But then of course, I don’t assume manufacturers will get it right. After I have determined a CG that works for me, I’ll then set my towhook so the TE of the hook is about even with the CG of the model. This may sound a bit extreme for some of you, but we’re talking about optimizing the plane for launch. I could probably recommend about 3/32” in front of the CG. No more, or you’ll lose performance. Your plane will now rotate, hard!

**Launch Camber.** We need to create a situation where the wing will pull as high a Cl (*Cl is lift - Editor.*) as is possible. We do this with camber. I don’t worry about drag for launch. Why? We have to overcome the amount of line drag, which is huge. On an F3B launch, we can generate up to 50-60 lb. of line drag in the wind, so I don’t personally worry about drag induced from excess camber. I use camber to produce as much lift as possible, and then I do something different from most: I use the camber to stabilize the plane. What we’re really looking for is a wing that will pull as hard as possible without stalling. This doesn’t just mean tipstall, as some planes will actually stall at the root first (depending on planform). So, for best results, run full span camber, meaning, use the same amount of aileron deflection as flap deflection. If the control surfaces are different sizes, then run equal degrees of deflection: if you run 15 degrees of flap deflection, then use 15 degrees of aileron. It has been said in the past, and is still believed by most thermal pilots today, that less aileron deflection creates “washout” and should make the model more stable on tow. This simply is not the case in practice. You will need to learn to use your rudder on tow, as your ailerons become less effective with more droop. I probably run between 15 and 20 degrees of full span camber. Thinner, lower camber sections can’t carry as much as thicker, higher camber sections.

How do you set your elevator pre-set? That’s the easy part. If your towhook is in the right place, it won’t take any up at all. I’ve actually had planes that were stable with the hook behind the CG, and required down throw for the pre-set. I don’t recommend you do this. If your hook is in front of the CG, you’ll need to add some up. This isn’t something that I can define. It’s totally dependent on the model, the hook position, and your personal trim settings. But I can tell you what to look for. This is where everything comes together. The model

should come out of your hand, and give the appearance of going straight vertical. If this doesn't happen, keep adding up until it does. Keep adding up until it stalls. Be ready for this, and be careful, but you have to go past optimum setup to find out where optimum is. If the plane stalls under a lot of line tension, you have too much up.

You'll need to work your camber against your elevator pre-set to determine optimum settings for both. You'll do this by trial and error. If I don't have a plane that's pulling as hard as I think it ought to, I keep changing the setup until it's right. Once it's right, it's right for all conditions, from windy weather to downwind launches.

As far as technique goes, practice, practice, practice. Your technique will change in varying conditions, so it would be tough for me to go through it. But once your plane is right, it makes the rest pretty easy. If you can master this then I guess I'll be seeing you at the Worlds!