

# MY TAKE ON CATAPULT JET GLIDERS

by Walter Farrell

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Editor*

I am a huge fan of catapult gliders and cut my teeth on several different designs, but I have only made a few "scale" type catapult jets. My belief is that there are two kinds of catapult gliders, those that can go up aggressive, fall over on their backs and then transition into a glide (Joe Mekina's "Straight UP", which is launched near vertical, is one such design). The second type, which I think scale-like gliders fall into, are those that have to fly their way up to the top and then transition to the glide such as Stan Buddenbohm's "Scout" which is launched at about a 30 degree bank and 30 degree launch angle.

Catapult gliders are incredibly touchy, and they require that you develop some motor memory for your launch and bank angles. Also, it is most important to be sure of the direction the wind is coming from when you launch. You may want to be off to the side of the wind so that your glider will be facing into the wind when it comes to the top.

I believe most FAC flyers are still trying to figure out the Jet Catapult "program". There seems to be a fair amount of variability in wing span and weight based on my observations at regional meets. Some guys are flying flat plate, or very thin airfoils, on models with only a 10 inch span. I am moving toward trying to apply what I learned from unlimited catapult competition over to FAC Catapult Jet Scale. So far I have avoided jet subjects with really swept wings because they seem to have very little tolerance for any perturbation in their flight path. Once they stall, there is not much hope of recovery. For wingspan, I think 15-17 inches seems about right, with weight about 25-30 grams. I feel that the model needs to be built strong enough to survive cartwheels on sod. To this end, I have used a Tyvek center on the fuselages.

In my opinion, you need to have at least a 1/8" thick airfoil. Then, I would tilt the stab 1/8" high on the left side viewed from the back. Add at least 1/32" of left rudder as this will be critical to getting height. When you bank the model the rudder should act like an elevator of sorts. Use a thin wedge on the left or right wing tip to get a nice flat turn in the glide. When you launch, start with a 45/45 degree bank and launch angle. If it just goes up and down, you are too vertical in your launch angle or you are not getting enough power to push the ship through to the glide. Your bank angle could also be wrong.

Another trick is to use some stab twist to make the plane transition. You have to be very careful about this, but you can take the very center of the stab and give it some up on one side and some down on the other (1/64" or less!). This may help you force the transition but you may also wind up changing your rudder setting a little if the flight circle gets too tight.

The CG setting/decalage is another huge issue. If you build in a smidge of up (1 degree or even less) that should be plenty. You want to stay near 0-0. A very small amount of clay up front can

also magically turn a model into a real "floater". As with rubber ships, there is no substitute for good air.

If my Catapult Jet glider does 25 seconds in dead air, I figure that it a competitor. To get a great flight, however, I still need to launch it into thermal lift. That's another whole article in itself, so I'll have to save that discussion for another time. Have fun with the FAC Catapult Jet event; if you're looking for a real challenge, the event will provide more than you can imagine.