

CATAPULT GLIDER LAUNCH PRIMER

by Stan Buddenbohm

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This article was written by Stan with non-scale catapult gliders in mind. However, the information it contains is applicable to jet catapult gliders as well. Stan is a past master when it comes to this aspect of our hobby, so read on to further enhance your aeronautical knowledge - Editor.

Catapult Launching: The optimum launch angle for most catapults is 50 to 70 degrees with a 15 to 30 degree bank. With the thumb and forefinger pointed up, grasp the rear fuselage of the model below the stab. Hold the launcher in front of you, above your head, at the appropriate angle, and pull back hard ! When the rubber is at maximum stretch, release the model and observe what happens.

Incidence: Using the bottom of the wing as the zero reference line, the higher the model's horizontal stabilizer trailing edge (TE) is, compared to its leading edge (LE), the more loopy the model will be at high speed. Loopiness robs altitude, but you need some incidence for a good, stable glide. Don't be fooled; just because hand launched glide tests look good, doesn't mean you have the right amount of incidence. The correct amount depends on the launch. As you progress, you'll want to get all of the altitude you can so you will need to fine tune the adjustments.

At the top of the launch, the glider should almost stop before turning and plopping into the glide. At this point, it should be just past vertical, at about 100 degrees. The amount of stab incidence depends on the launch speed. If the model zooms past 100 degrees, looping, then decrease the incidence (stab TE down). If the glider never gets to the 100 degree angle before stopping, increase the incidence (stab TE up). Take it slow and use very small adjustments — like bending an area no wider than your finger next to the fuselage, 1/64" at a time.

Turn: Use rudder adjustments to counter excessive banking at the launch. You shouldn't need to bend the rudder TE more than 1/32". Always bend the rudder near the fuselage. If the top of the rudder is bent, it can exaggerate spiraling problems at high speed, even if the glide looks okay. Too much rudder turn will do the same thing. Once you have the right rudder setting for launch, adjust the glide circle with tip weight. Simply add weight (very small dabs of clay work well) to the left wing tip to make a smaller circle, or add weight to the right tip to open up the circle. A 50 to 70 foot circle is very good. Remember, make one small change at a time!

I hope these suggestions and tips will get you started. I'm sure you'll be successful, and that you'll have a bunch of fun with your gliders.