

SOME ASPECTS OF LAUNCHING A CATAPULT GLIDER by Glen Simperts

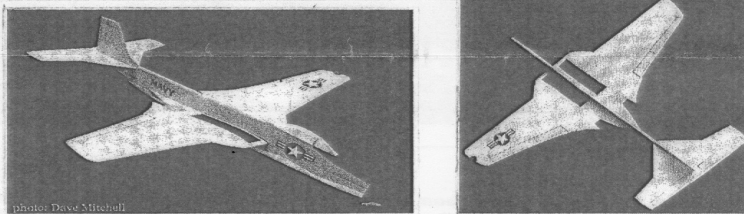
This piece was extracted from a much larger article entitled "Thoughts on Jet Catapults" written by the author for the 2016-3 issue of MaxFax, Journal of the D.C. Maxeceptors. It contains some interesting and informative observations that I feel could be of value to FAC Jet Catapult Scale enthusiasts – Editor.

My wife, Bonnie, has been trying for some years to get a good photo of my jetcat in flight shortly after launch. Careful examination of these photos revealed two problems with my launch technique. In an effort to get more pull on the rubber loop I had taken to gripping my model not at the back of the fuselage but at a point not far from the launch hook. I found in some of the photos that the axis of my grip and the launch hook were at an angle from the intended direction of flight. This would lead to a waggle of the fuselage from side-to-side upon launch. You couldn't see the model move in this side-to-side way but I noticed that some flights just didn't go as high as others. This was particularly noticeable with a P-80 glider that had enough side area to cause big side forces if launched poorly. Since the model is off to the side of your head it is hard to see this misalignment. Being aware of this problem made it easy to correct. Secondly, I was also, on occasion, holding the launcher at a different tilt angle from the tilt of the glider. This twisted angle would impart some rotation during launch.

I have now adopted the practice of AMA catgliders with a hook near the nose. This means that the first motion of the glider has the wing at a low angle of attack. It is only as the glider slows that the decalage drives the wings towards a lifting condition. Thus while going fast the wing lift and hence drag are low. Because of this I launch the glider more vertically than I would if I relied upon the wing to take it skyward. As you position the launch hook back towards the wing, the wing generates more lift during launch. If you find yourself losing sight of the glider behind your head immediately after launch it is often from a rearward hook location. Image a line made by the rubber band to the hook and think of where the center of gravity is on the model. The rubber band orients the wing in the air upon launch.

An airplane that is very stable requires significant incidence to successfully glide well. This incidence can be made to work with a lot of bank angle in the launch to force the glider that would otherwise loop, into an upward spiral. The size of the loop is directly related to the relative incidence between the wing and the stab. The extra stability helps in flying on windy days and makes the glider fly in a predictable path.

I have some ideas for my future jetcats. I want to go to a glider that is a bit larger than my current 11" span designs. I thought that I could drive a small glider further above ground turbulence to smooth air. This hasn't worked well for me because the higher speeds made tiny adjustments overly effective. The next airplanes will be larger, more in line with the 15-18" size commonly used in AMA non-scale gliders. I also want to go to a slightly thicker 6% airfoil. This thicker wing trade-offs launch altitude for greater lift in the glide. I hope this will also improve consistency in flight.



VIEWS OF GLEN'S SNAZZY NAVY BANSHEE JET CATAPULT GLIDER.
DAVE MITCHELL PHOTOS.

