

Executive Summary

This month I had two launches of the MkI Viper. Initializing the flaps down on the first launch did not compensate much for the pitching up. I made my nose cone longer in the second launch but had an equipment failure, so no data. I printed a fuselage mold out of PLA, glued the pieces together, and sanded and waxed the surface. I used the mold to make a fiberglass fuselage. After curing, the fiberglass fuselage popped right out of the mold. The results were better than expected.

Technical Stuff

This month I had two launches of the MkI Viper. The first launch ([video](#)) I had flaps down to compensate for the pitching up of the Viper, not very effective. On the second launch, I had flaps down and a longer nose cone. Unfortunately, I had a burn through at the injector. The burn through damaged all three servo leads. As such, I had no control of the Viper. In over 100 rocket engine test, I've never had a burn through at the injector. After examining the rocket engine, I believe it was a poor assembly. I will be more diligent during the assembly process.

Also this month I printed a fuselage mold out of PLA (pictured below), glued the pieces together, and sanded and waxed the surface. The first fiberglass fuselage from the mold worked out better than expected. I used a metal ruler to break the bond and the fiberglass popped off with little effort. I surmise that the wax filled the pores in the PLA preventing the epoxy from bonding to the PLA making it easier to remove the fiberglass.

Not much more to report. Most of the month was dedicated to a major rebuild as the impact with the wall resulted in a unscheduled major disassembly of the Viper.



Next month, I plan to increase the size of my fins. I have found a larger area styrofoam fin that has a mass close to the present PLA fins. To fit the fin onto the fuselage requires a redesign of the aft strut.