**Important Rocketry Tips!**

Design:

* Keep the CG/CP distance between 1 and 2 calipers, but make sure the fins are large enough to provide enough restoring force (no tiny little fins).
* Try to keep use of transitions to a minimum as they reduce the consistency of a design.
* Designs that are used for consistency should use composite motors whenever possible, as their design tolerances are typically about 2%, compared to the 10-15% of most black powder motors.
* Try to keep your rocket decently long, as otherwise it tends to oscillate.
* For motor selection, especially for consistent designs, in general the shorter the motor burn time the less the rocket will be influenced by the wind.
* Remember that OpenRocket tends to overestimate the peak altitude by around 100ft so simulate it by going 100ft over the target altitude.

Construction:

* Airfoiled fins give better performance, but flat fins (preferably laser cut) give more consistency.
* BT-80 gives more room for maneuvering and it’s really a challenge to fit two parachutes and a nomex in BT-70
* ALWAYS use fin fillets as they make the fin joints much stronger.
  + fillet motor mounts and bulkheads as well, they provide a lot of additional strength.
* NEVER use launch lugs (always use rail guides) because they tend to fall off easily and can cause catastrophic rocket failure!
* Make sure to glue bulkheads in securely as they like to break out, especially if there isn’t enough shock cord.
* PLEASE don’t use copperheads. Mr. Woodford (and everyone else) calls them “crappyheads” for a reason.
* Always use more shock cord than you think is necessary. 10 feet of ~300 lb kevlar is a good length for TARC.
* Don’t get excess glue on your rocket. On the same token, don’t use too little glue. everything should have a solid filet, but nothing more.

Launch:

* WRITE A LAUNCH PROCEDURE (for consistency, of course)
  + Make sure that it is so detailed that anyone on your team can follow it and launch the rocket correctly
  + It should be detailed enough that anyone can follow it, this ensures that there are no discrepancies between two different launches with different people.
* DO NOT prepack the motor before you get to the launch site
* Don’t put grease on the delay grain if using a reloadable motor
  + Actually, be sure to follow the instructions very thoroughly for the reloadable motors, its easy to forget something.
  + If there are parts missing from your reload, DON’T USE IT
  + Make sure you remember to actually put the ejection charge in