

Assembly Instructions for CAUTION: ROCKET

This rocket is a very simple design on the exterior, yet it has more "under the hood" than you'd think. It has two 13mm motors for extra speed and altitude! The other unique thing about this rocket is that it uses CAUTION tape as streamer material. You can pick up 1000' lengths of this material at your local hardware store, and it will last you a lifetime and a half! Anyways, enjoy building this rocket. Here is a parts list of the items you will need to build this rocket!

BT-55 tubing, 9" long

One Balsa nosecone from a Fliskits Nomad or Plastic cone from a Estes Black Brant 2 kit.

3/32nd balsa sheet, 4" x 9"

One Fliskits EMK2-13-55 cluster motor mount kit

2" length of 1/8" launch lug

4" of 1/8" or 3/16" elastic shock cord material

32" of Caution tape (4 or 5 "Cautions" would work fine)

Now that we got that out of the way, let's start building this rocket! I hope you have as much fun as I did when I built it!

1. Begin by assembling the Fliskits cluster MMT kit via the instructions provided in the kit. When you have finished, set it aside to dry.

2. Cut the fins out of the 3/32" balsa sheet using these measurements to draw the pattern:

Trapezoidal.

Root Chord: 2.5"

Span: 2.75"

Tip Chord: 1.0"

Sweep Length: 0.965"

Sweep Angle: 20 degrees

This should give you a nice trapezoid pattern. Lay this pattern out on the balsa three times, each time with the leading edge parallel with the grain of the wood. An easy way to do this is to line the leading edge up with the edge of the wood itself.

3. Now that you have all the fins cut out, stack sand the fins until they are even.
4. Now you're going to want to sand an wedge into the leading edge and the trailing edge. The way that I prefer to do it to get an even wedge is mark a certain distance from the edge of the root and tip edges then lay a piece of masking tape between those two marks on both sides of the fin. Then you'll use a sanding block to make a wedge. On this model we're going to have the fins with a 1/8" wedge shaped into them. So, now choose a fin, and grab a ruler, a pencil, and a roll of masking tape. Mark on both the root edge and the tip edge a mark that is 1/8" from the leading edge. Repeat this for the trailing edge and the other side of the fin. Connect the two marks with a length of masking tape. Now use your sanding block and carefully sand a wedge into the leading edge. With this thin balsa, it should only take 5-10 strokes with 220 grit paper. When you've finished this step, you should be left with a nice wedge in the leading edge of the fin. Repeat this for the trailing edge and the other two fins. **DO NOT SAND THE TIP!** All you do when you sand the tip is add more drag via turbulent airflow, reducing the rocket's speed and altitude.
5. Now that the fins have been shaped, go ahead and fill the fins using you favorite filler!
6. After that, you're going to want to mark the body tube. Using your choice of marking guide, go ahead and mark the body tube for three fins.
7. Attach the fins using CyA (Super Glue). We will be using CyA on this rocket to keep the rocket as light as possible. Make sure the fins are straight!
8. Now that you've attached the fins, use white or yellow glue and your finger to create fillets for the fins. It is very important to use the same finger for EVERY fillet to keep them even!
9. After you've finished creating the fillets, and while the glue is still WET, drop the launch lug into one of the fillets, and try to keep it straight while the glue sets. Alternatively, you could mark another line on the body tube and use that as a guide for marking the launch lug!
10. You've got a pretty rocket going there, don't ya? Now it's time to install the guts. Go ahead and pick up the MMT assembly. Using yellow glue, run a thick bead of the glue right at the end of the body tube, then **QUICKLY** push the thrust ring end of the motor mount into the tube until the upper

centering ring is most of the way into the tube. If you chose to build the motor mount using the Tulanko Tail style, set the bottom centering ring onto a table, and push the motor mount/body tube assembly into the tube. You should feel a pop when the MMT snaps into the end of the body tube and is flush. Alternatively, if you chose to build the MMT with the recessed centering ring, push the motor mount tubes against the table until everything is flush. Let dry.

11. Using your favorite method, insert about a quarter ounce (7 grams) of noseweight. This is essential to keeping the rocket stable.

That is it for the assembly steps. Now you can go ahead and finish the rocket your favorite way. To keep with the theme of "Caution: Rocket," I recommend that you paint your rocket yellow and black!

To fly your rocket, I recommend A3-4T motors or A10-3T motors. You do not have to use a clip whip, but it is recommended that you do so. You will have to friction fit the motors with masking tape to ensure that they won't come out upon ejection. Then pack the recovery system with wadding and then fold the streamer in half multiple times, then tightly roll it, then gently insert it into the body tube. Finally, insert the nosecone and shock cord and take her out to the pad! You should expect a flight of about 250 feet! Have fun!