

Instructions for Building and Flying the "SEEKER".

Parts List

- 1.....Large Body tube (1)
- 2.....Small Body Tube (1)
- 3.....Steel Eyelet (1)
- 4.....Engine Tube (2.75")(1)
- 5.....Engine Hook (1)
- 6.....Centering Rings CR2055 (2) & Engine Block Ring CR520P (1)
- 7.....Screw for Nose cone weight (1)
- 8.....Launch Lug 2x 1/8 x .25" (1)
- 9.....Nose Cone BNC50Y (1)
- 10...Transition TA5055 (1)
- 11...Parachute kit w/instructions 12-18"(1 kit)
- 12...Kevlar Cord and Elastic Shock Flat Cord (1 kit)
- 13...Fin Stock-BS-12-332 3/32 x 4 x 12

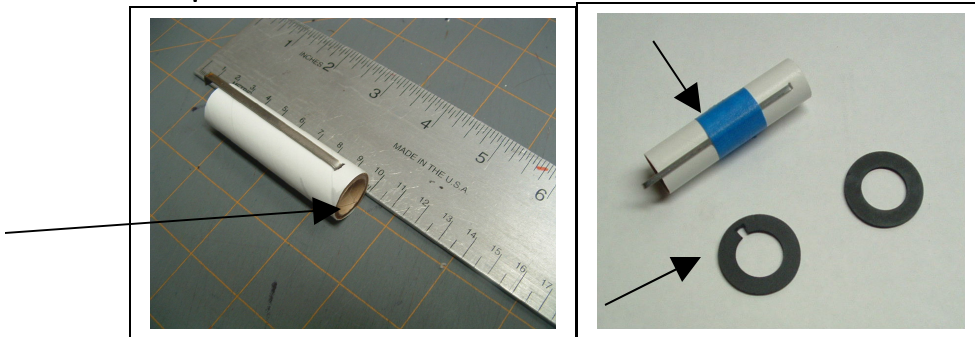


Thanks for choosing Thrustline Aerospace! This rocket was designed, built and flight tested by me, John Rowan-Stern. I think you'll really enjoy this eye popping rocket!
There are a lot of rocket companies out there these days; we do appreciate you choosing Thrustline!

Please read through all of the instructions first!

Engine Mount Assembly-

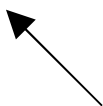
1- Locate the engine tube and mark it $\frac{1}{4}$ inch from the one end, this will become forward end of the engine tube. Make another mark, $\frac{1}{2}$ inch from the other or exhaust end. This will be the aft centering ring position mark. Now make a slit on the forward mark about $\frac{1}{8}$ inches wide. This will be the engine hook insertion point.

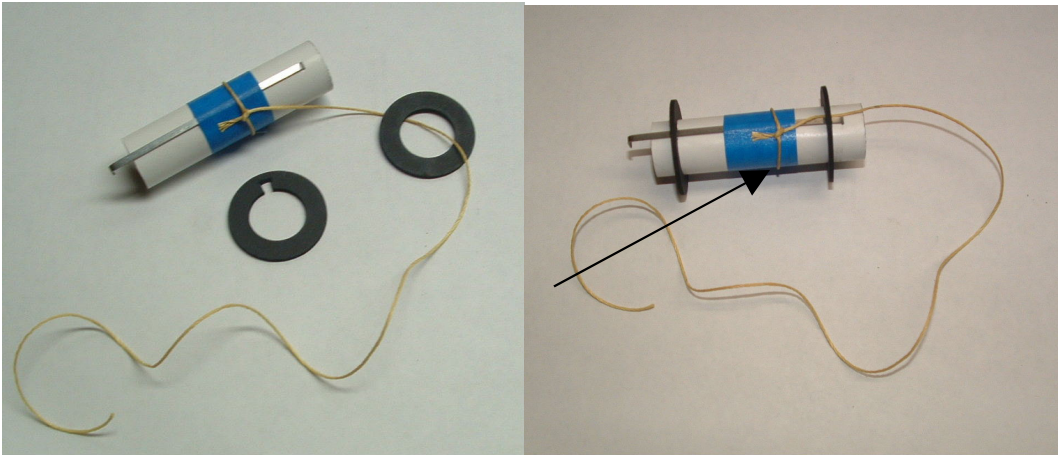


2. Insert the engine hook and wrap with one layer of masking tape to hold it in place as shown. Glue the engine block into the forward end of the motor tube so that the block is up against the forward end of the motor hook. You should have a motor tube similar to the one below. The engine hook will still need to be anchored; the steps coming up will accomplish this.

3- Take one of the engine centering rings and cut a $\frac{1}{8}$ th of an inch gap on the inside of the ring to accommodate movement of the engine hook. This will be the aft centering ring; the notch is created so that the engine hook can be easily sprung for engine installation and removal. It should be about $\frac{1}{8}$ th inch by $\frac{1}{8}$ th inch. TIP>>If you have a paper punch, this is a neat way of making a clean notch!

4- Tie one end of the Kevlar cord around the engine mount as shown. You will have to thread the other end through the forward engine ring and then slide that ring into place. Thread the Kevlar cord through the un-notched forward ring and glue it just over the forward end of the engine hook as shown in the photo. It just covers the engine hook about $\frac{1}{8}$ th of an inch. Now, take the ring with the notch you cut earlier, and glue it at the $\frac{1}{2}$ " inch mark so that the notch is right above the motor clip. This is a good time to check to make sure that motor clip is straight.

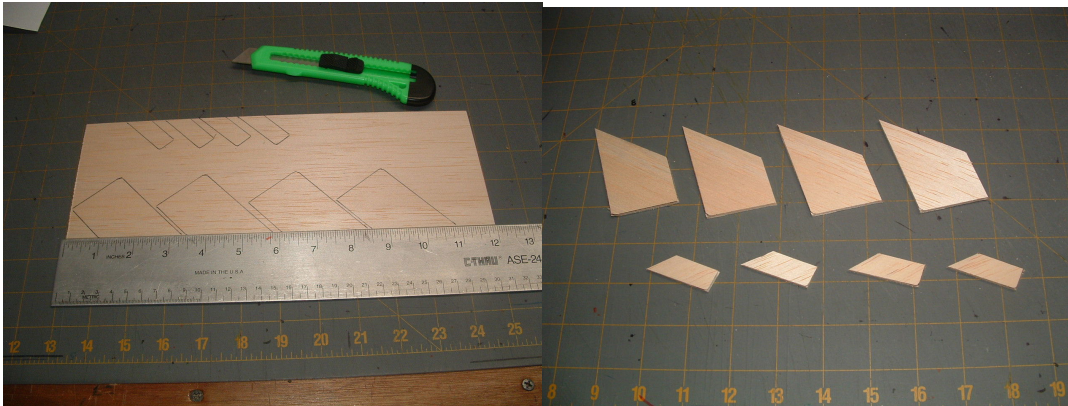




Coat the Kevlar cord where it wraps around the motor mount liberally with glue. Remember, this acts as the anchor point for your recovery system. You can set this assembly aside to dry. Now would be a good time to grab a soda!

FIN SECTION

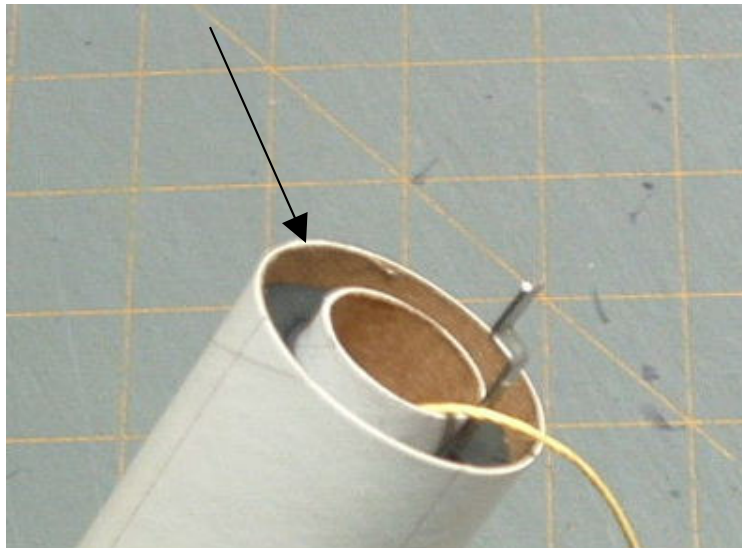
5- With a pair of scissors or a Xacto knife and straight edge, cut the fin pattern from the fin pattern sheet supplied with these instructions. Trace out 4 fins of each pattern noting the direction of the grain. The grain of balsa always runs parallel with the leading edge of the fin. If you trace them properly, there should be plenty of balsa for the fins. Once your done tracing, carefully cut them out!



6. Stack each group of fins together and sand them until they are all uniform. To give the seeker a more military look you can try beveling the edges of the fins, make them a streamlined profile or simply round them. Which ever way you choose, once the general shape is done, to give the fins more strength, you can coat the fins with a layer of thinned white/yellow glue or a thin layer of thin CA. If you use the white or yellow glue method, make sure you coat both sides at once to prevent warping. And use just a little and let it soak into the wood. Now once your sealer has dried, sand again and set aside.

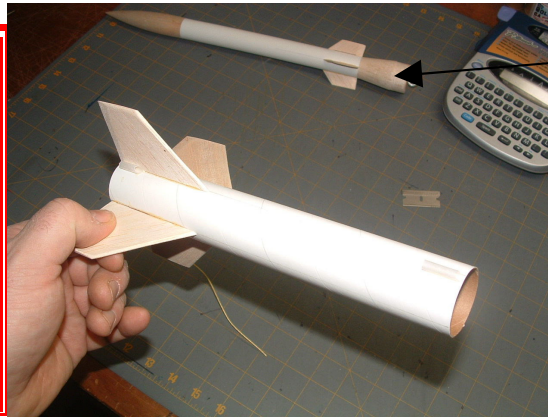
7. Cut out the fin positioning sheets from the instructions and wrap it around them upper and lower body tubes, then mark all of the fin positions. Now using a piece of triangular stock or even a door jamb, draw the fin all the fin lines on the two body tubes. Now, in the center of two fin positions on the larger tube section, draw a straight line for your launch lug placement. Later, you'll be gluing 2 pieces of launch lug, one at each end of this tube so make the line from one end of the tube to the other (On the large tube).

8. Now that we have everything marked for the fins, glue the motor assembly into the aft section of the larger tube. Make sure that the motor mount is flush with the outside of the body tube. After placing a line of glue around the inside of the body tube, slide and glue the engine mount assembly inside the aft body tube until the engine mount tube is flush with the outside of the body tube. See illustration below. The picture shows the fins already glued in place which is a bit deceiving. Rest assured, you will be gluing the fins in the *NEXT* step.



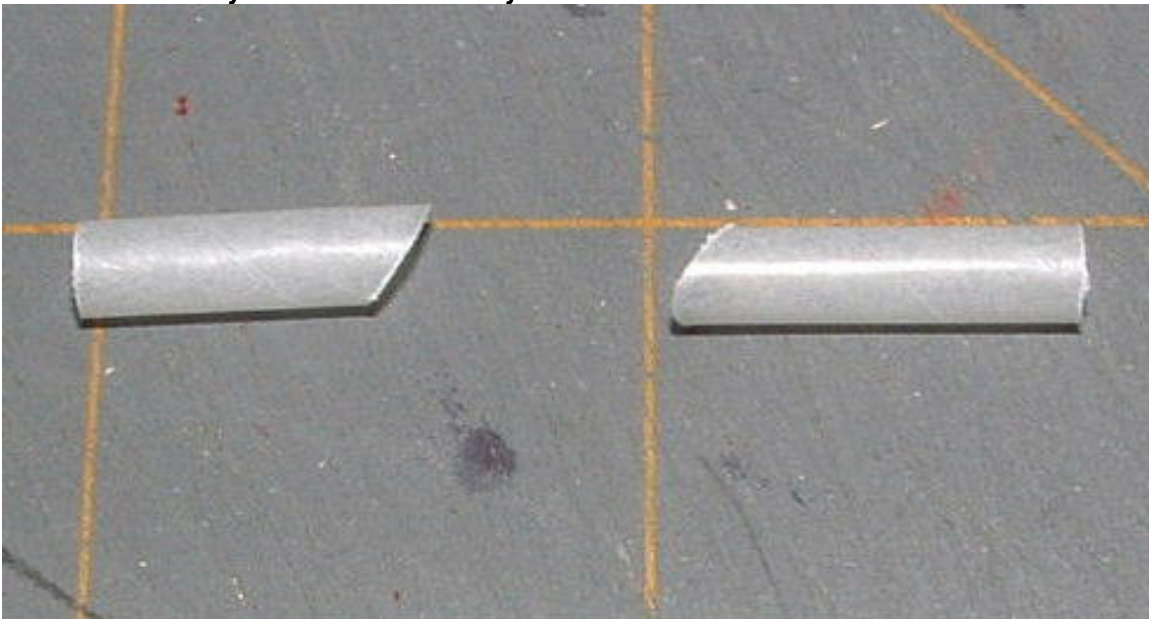
9. Glue the lower fins into place so that the trailing edges of the fins are flush with motor end of the body tube. Make sure all fins are perpendicular from the body tube and that alignment is parallel with the length. The straighter the fins are, the better this rocket, or any for that matter, will perform.

10. Before we glue the upper fins in place, let's glue the small end of the balsa transition into one end of the small body tube. Now glue the steel eyelet into the larger end of the exposed transition. (See photo that follows for clarity.) When this is dry, glue the upper fins so that they are flush with the point where the transition and upper body tube you have just been joined. The nose cone is "fitted" and not glued to the forward end of the upper or payload section. It should fit snug enough so that it does not fall off during any ejection phase of flight. Most cones provided are usually snug enough but if yours is not, simply use a little tape until the degree of "tight" is achieved.



11. If you haven't done so already, thread the free end of the Kevlar thread through the front end of the body tube and tie a loop in the end. Then tie the elastic shock cord to the end of the Kevlar thread and the other end to the eyelet of the nose cone. Put a dab of glue (CA) on each of the knots (arrows), this will keep them from coming loose. After assembling your parachute, attach the chute, by way of the swivel, to the eyelet on the payload section. Pack the chute only when you are ready to fly.

12. Cut the launch lug provided into two equal sections using a 45 degree angle. Glue one section at the upper and the other on the lower end of the launch lug line. Take a look down the length to the tube to make sure they are even. Let dry.



Insert weight screw into nose cone by simply screwing it in, removing it, fill hole with glue and screwing the screw back in! Give all joints one last coat of glue or fillet then set aside to dry. Fill all areas with wood filler as necessary. I usually do my fillets first, sand, and then coat the fins and nose cone and sand again. Apply a small length of tape around the

shoulder of the nose cone and transition. This will help keep from having any filler or paint from ending up where it's not supposed to!

The wood filler helps fill in all those imperfections in the wood, and anywhere that it's needed. Once sanded this will give everything a really smooth surface to be painted! Also fill in any spiral lines on the tube the same way. Sand using a medium, then fine sandpaper. You will want to coat the rocket with at least 2-3 coats of a good sandable primer, again sanding in between coats.

Once you're ready, paint the rocket with a color that *you* like. Remember, if you are going to apply decals or trim to consider your color choices first I trimmed out my fins with black and fluorescent orange Krylon.

FLYING THE SEEKER-

Your Engine choice will depend on a number of variables including wind conditions and field size. My suggestion here is to start out with an A8-5 and work your way up. Although the Mylar chute that was included in your kit is very heat resistant, it will melt if you don't use proper wadding.

If you have any questions, feel free to e-mail me a rocketman1959@netzero.com

