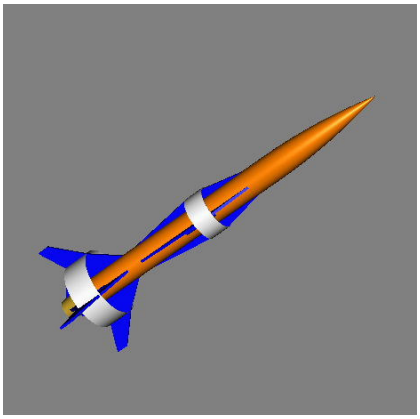
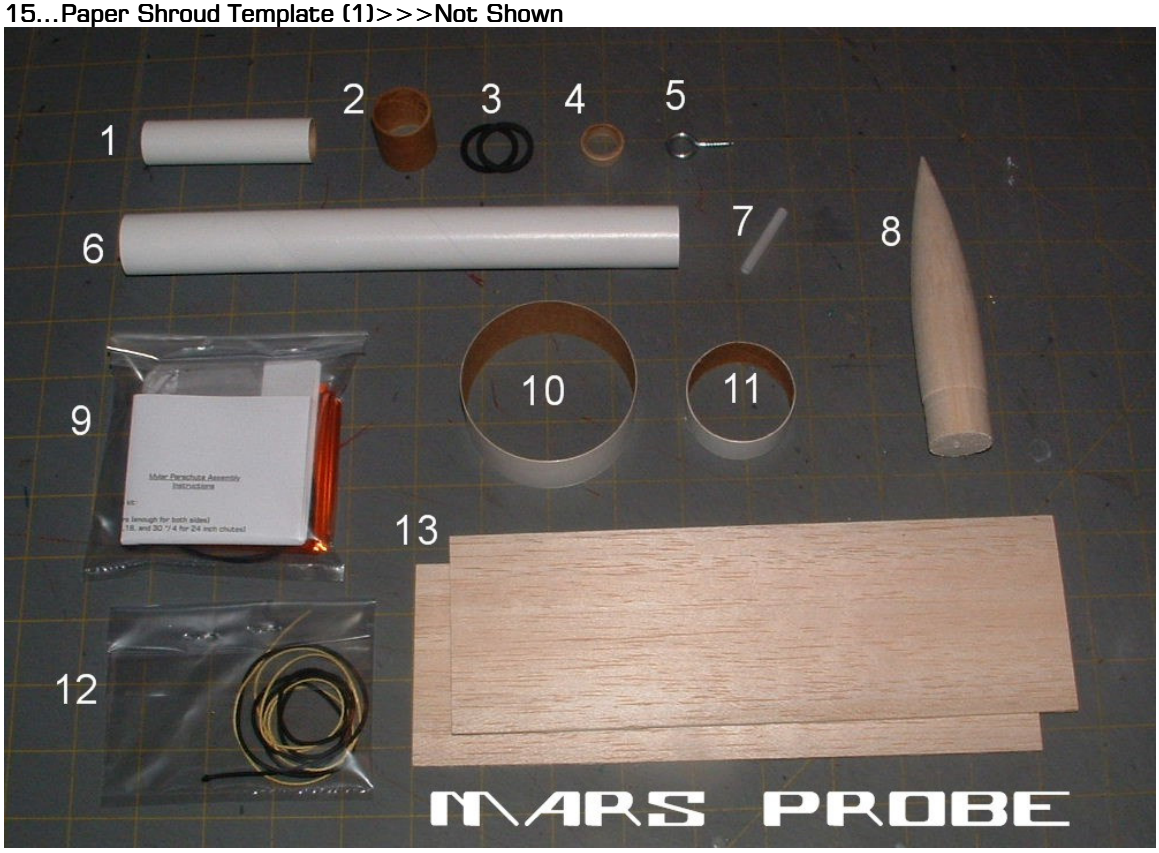
Mars Probe II



Instructions for Building and Flying

Parts List

1.....Engine Tube (1)
2.....Coupler 1" (1)
3.....Centering Rings (2)
4.....Thrust Ring (1)
5.....Steel Eyelet (2)
6.....Body Tube 8.75" (1)
7.....Launch Lug (1)
8.....Balsa Nose Cone (1)
9.....Parachute kit 12" (1)
10...Large Fin Ring (1)
11...Small Fin Ring (1)
12...Kevlar/Elastic shock cord kit (1)
13...Fin Stock BFS 1/16-9 (2 total)
14...Fin Wrap Marking Guide and fin pattern sheet (1)>>>Not Shown
15...Paper Shroud Template (1)>>>Not Shown

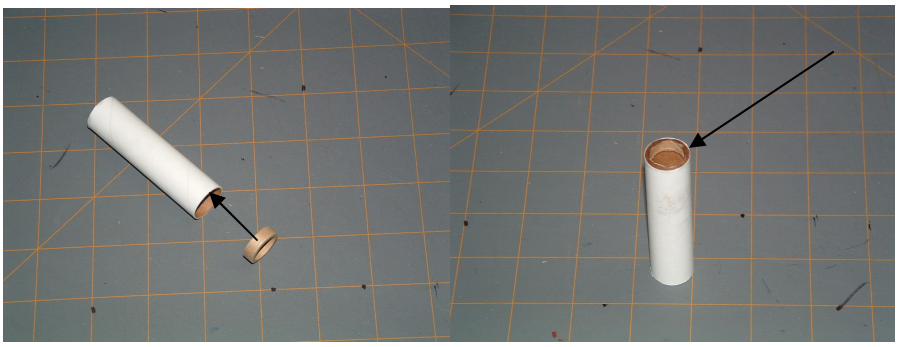


Thrustline Aerospace
WWW.THRUSTAERO.COM

Thank you for choosing a Thrustline model rocket kit! Please read through the entire instruction pack prior to starting. If you have any questions, please feel free to contact me. John Rowan-Stern **rocketman1959@netzero.com**

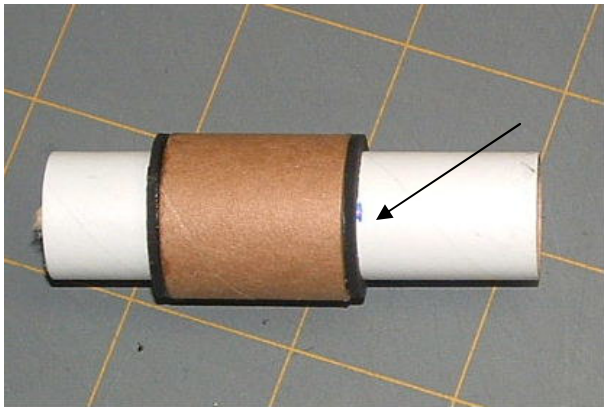
Engine Mount Assembly

1- Glue engine block ring so that it is flush with the end of engine tube.



2- Glue the centering rings to the coupler, one on each end. Make a mark on the engine tube 1 inch from the opposite end where you glued the thrust ring.

3- Glue the coupler assembly so that the aft end rests on the 1 inch mark you made in step 2. (see next photo)



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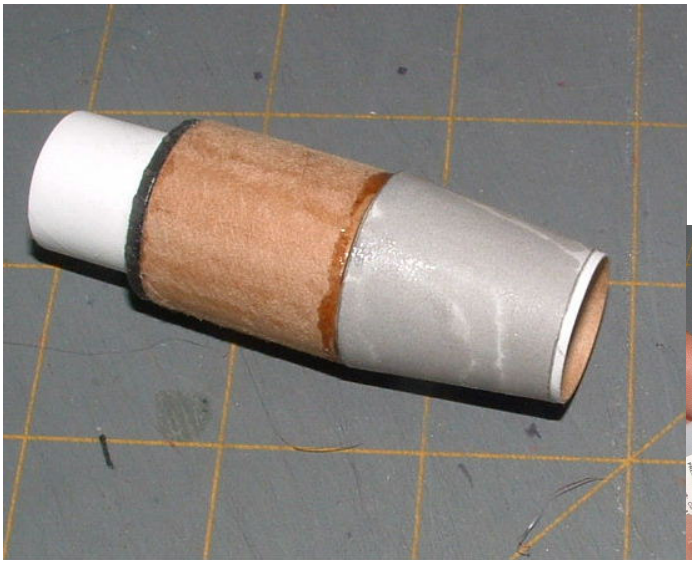
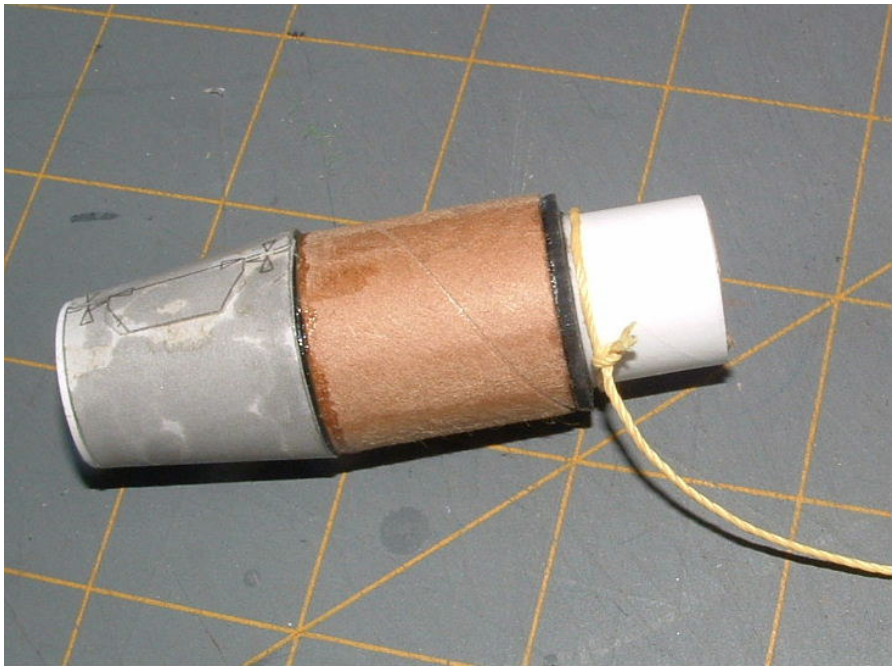
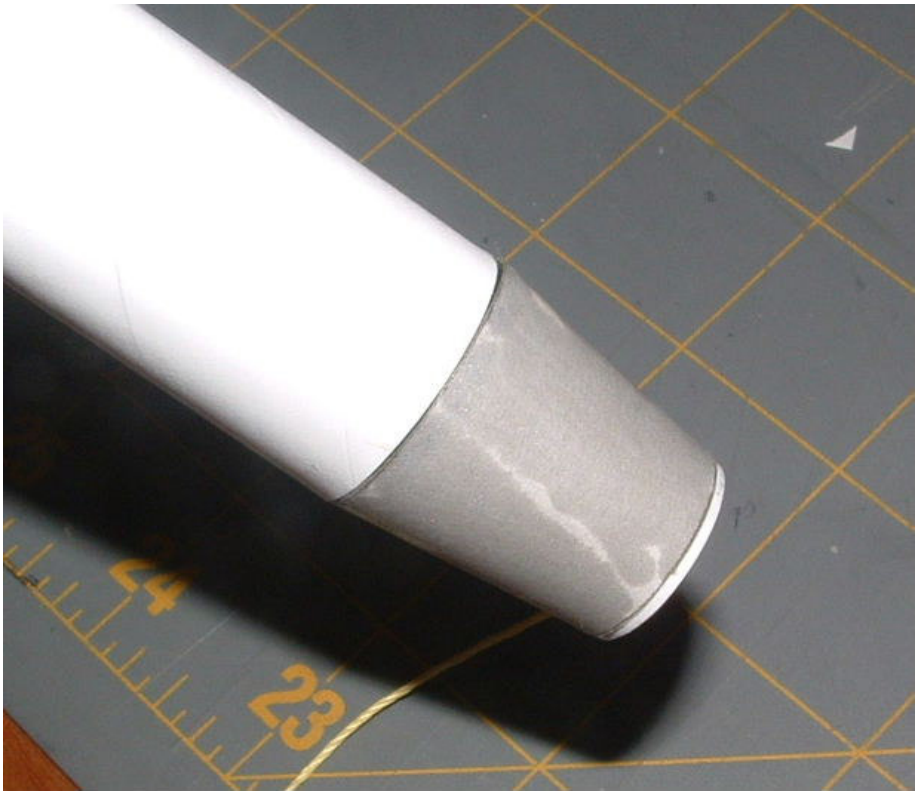
4- Cut out the shroud pattern and glue so that it forms a cone. Sometimes “pre-curling” makes it easier to form and glue. Use a pencil or pen and curl the pattern by pulling it through between your finger and the pen until it begins to curl. When dried, slide over aft end of motor mount and check for fit. Glue into place. Coat tail shroud with thin CA. This will stiffen and give it strength.



5- Tie the Kevlar cord around the forward end of the engine mount assembly as shown in the next photo. Tie it so it’s snug but won’t collapse the motor tube. ***Tack*** glue with thick CA.



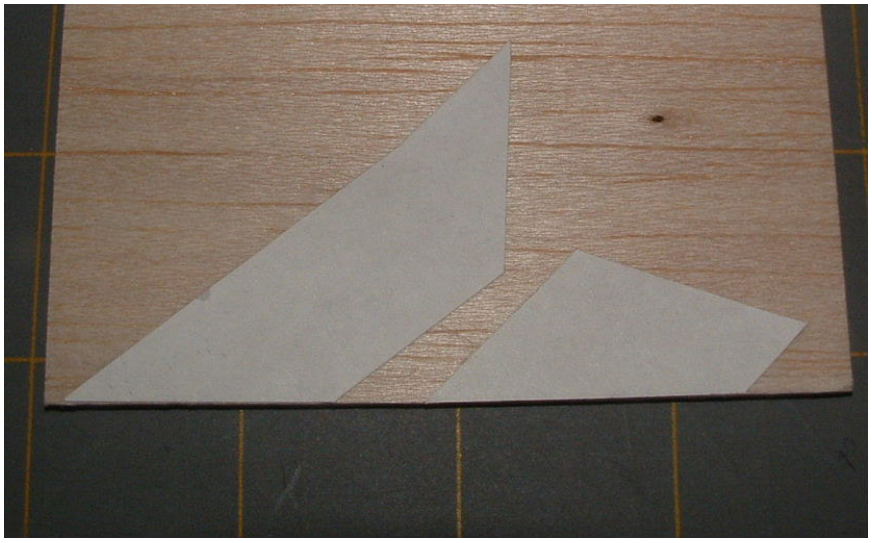
6- Tuck the Kevlar cord back through the motor mount. Place a bead of glue on the inside of the Body Tube. Insert the mount assembly so that the shroud abuts the end of the body tube. Stand the tube upright while it dries. This will allow the glue to settle in and around the Kevlar anchor area. Check once in a while that glue ***does not*** run into the engine tube area.

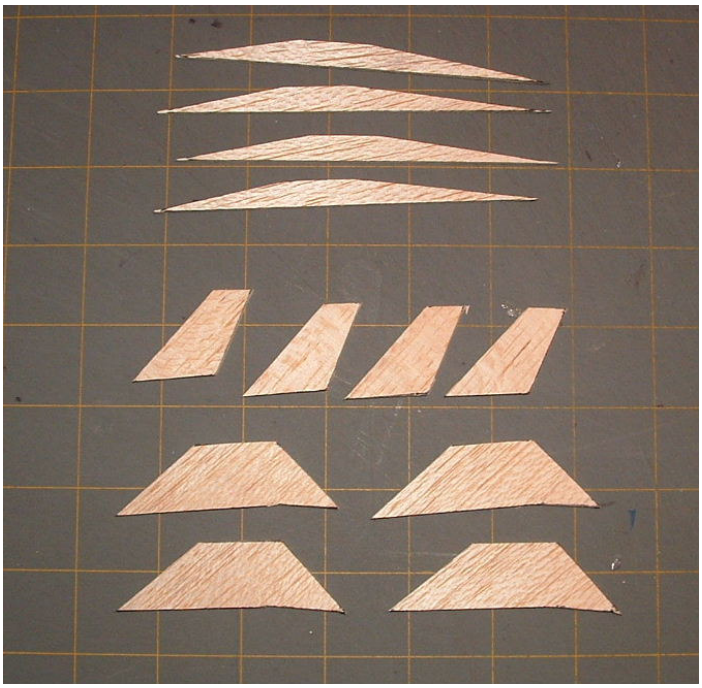


7- Wrap the fin marking guide around the body tube and mark off the four fin marks. Draw the four fin lines the entire length of the body tube.

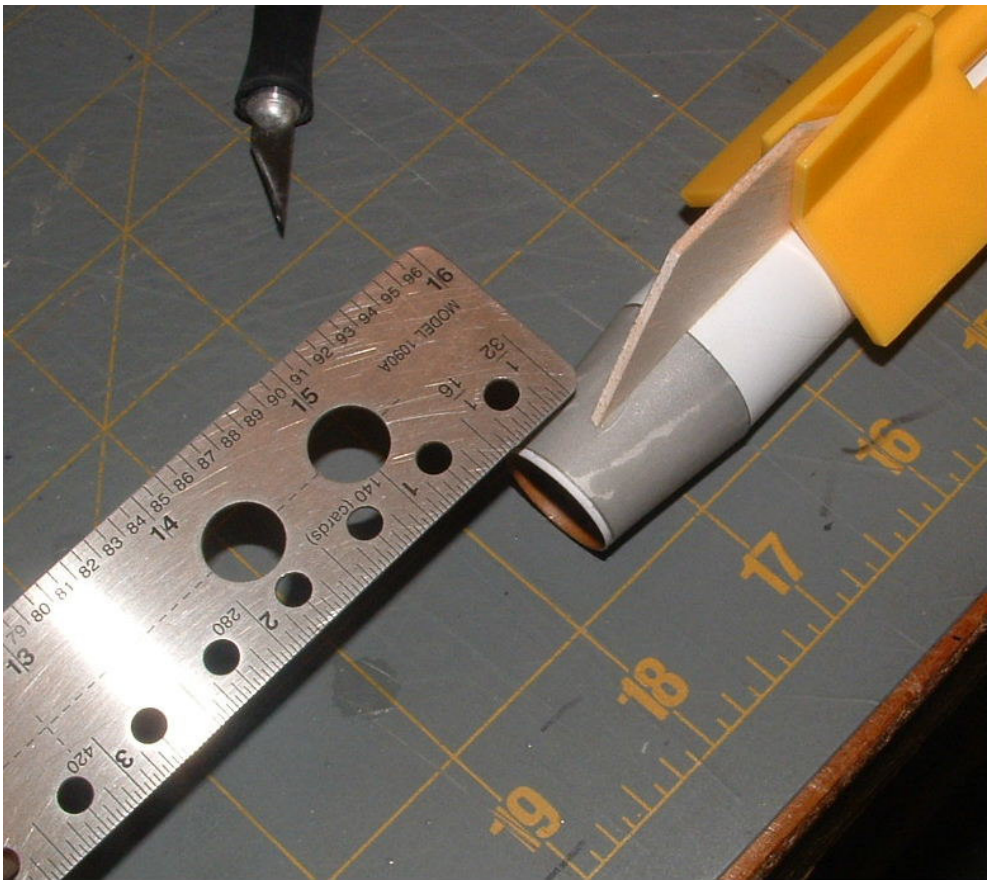
8- Cut out the fin patterns and trace onto fin stock paying attention to grain direction.

9- Cut fins out using a sharp knife. DO NOT sand any root edge as this ma affect the fit of either of the rings.

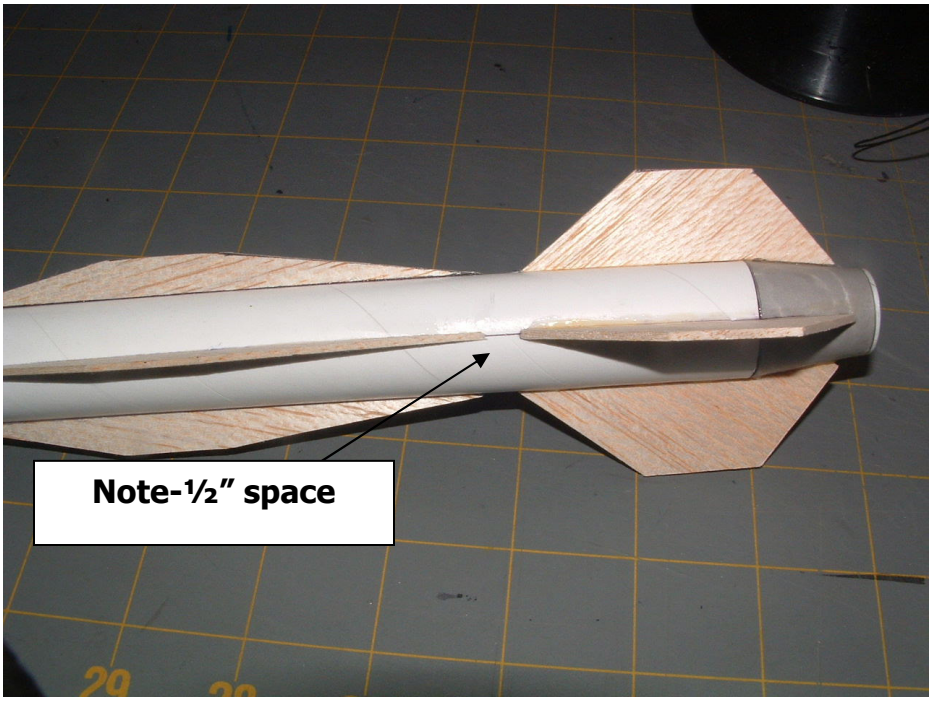




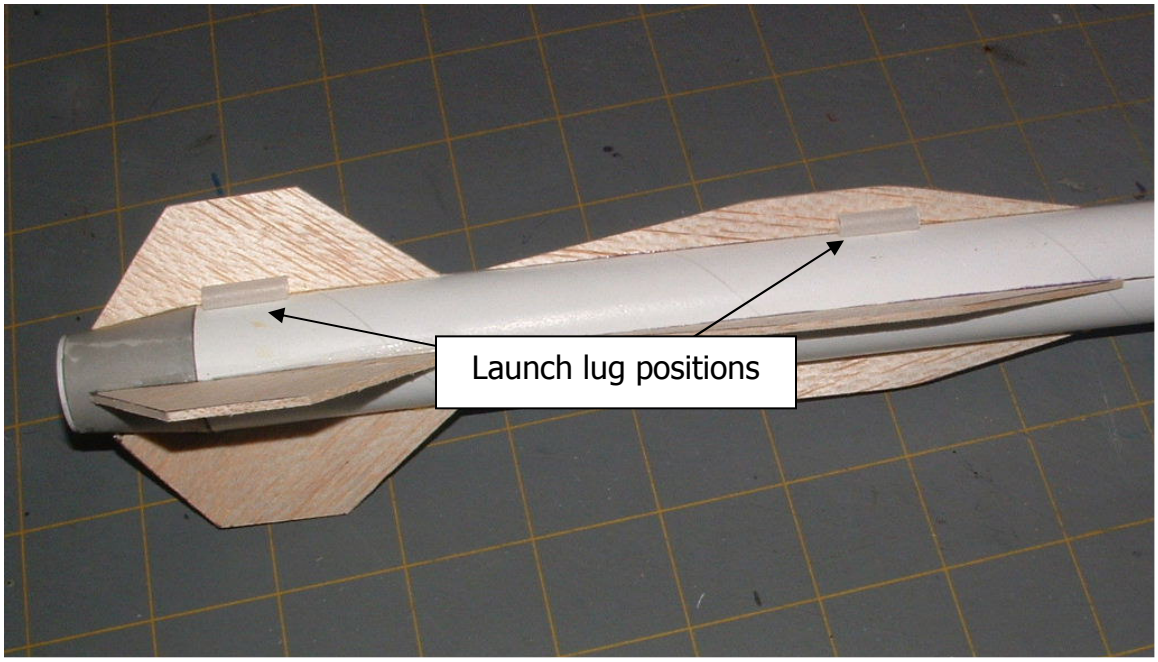
10- Glue the aft fins in place. Notice I use a ruler to check distance from the aft end of the body tube? The actual amount isn't important. Just make sure that all of the fins are the same.



11- When all of the aft fins are in place, glue the forward fins in place. The gap between the forward fins and the aft fins should be 1/2 of an inch.

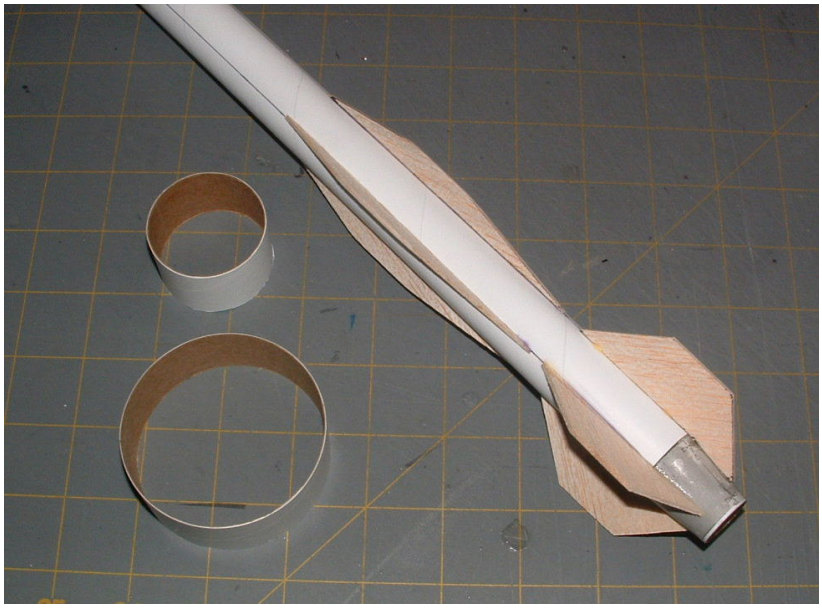


12. Cut the launch lugs into 2 equal lengths. Glue them to the inside of a forward and aft fin. Their placement should be such that they are mostly hidden by the "Ring" fins when they are installed later. The ring fins will be placed on the "flat" areas of each fin. See photo for placement.

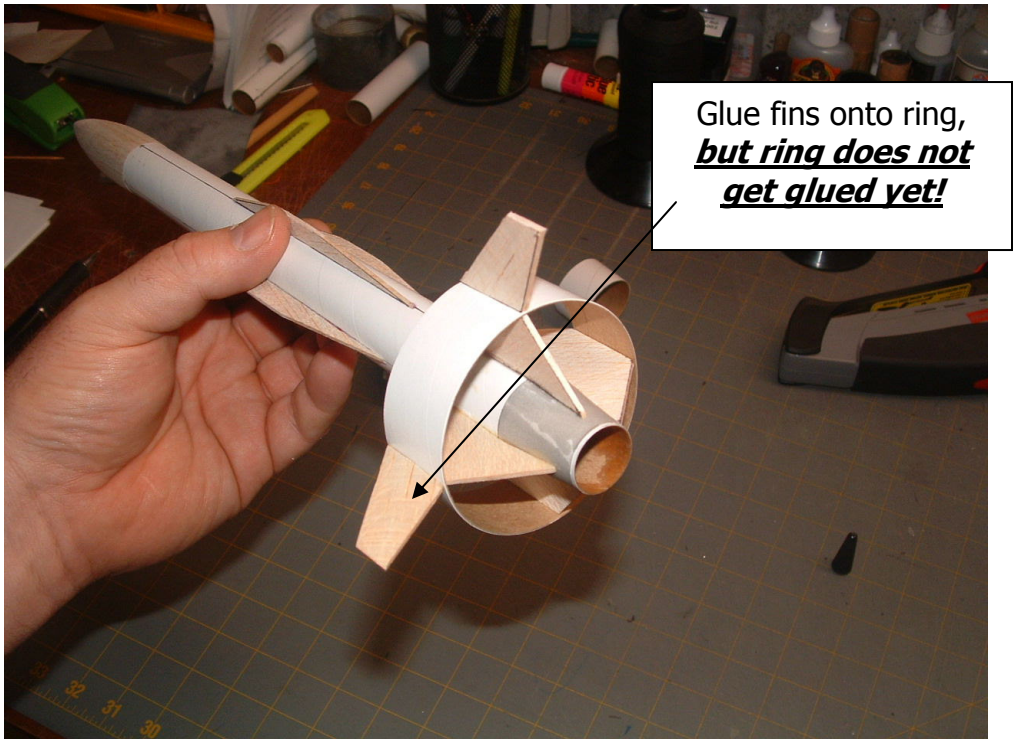


13- Once everything has dried, add an additional bead of glue to all the fin joints and the launch lugs.

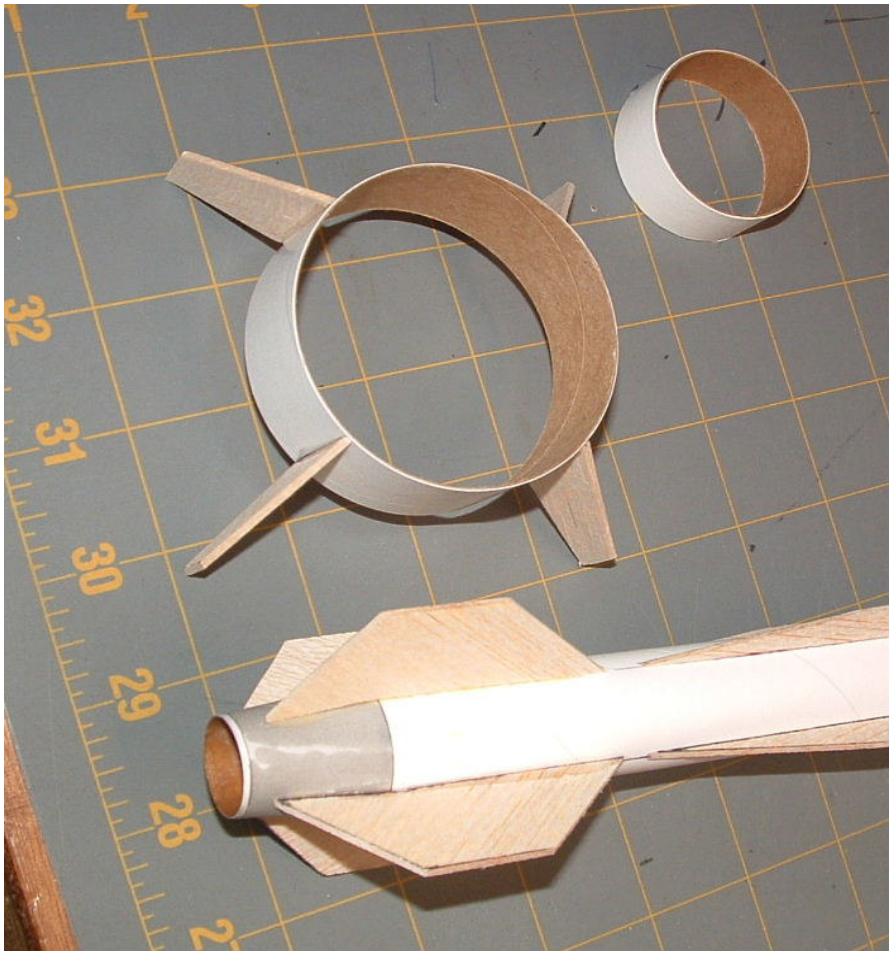
14- PLEASE READ ENTIRE STEP BEFORE PROCEEDING> Dry fit both the forward ring fin and the aft ring fin. Fit should be snug, but not so much so that it stretches or distorts the ring when installed. If the rings do not fit, lightly flat sand the fin outboard edges until proper fit is achieved. Do not glue fin rings into place!!



15- Slide aft ring into place but DO NOT GLUE! Glue each of the outboard ring fins in place so they line up with the inboard aft fins. See Photo. This ring assembly (with fins) will be removed after the fins dry to help facilitate painting.



16- When fins on ring have dried, remove ring. This will allows for easier painting and finishing. When painted, simply glue rings in place! Apply another coat of glue to all ring fin joints and let dry.



17- Using whatever method that you are used to, seal all balsa surfaces (except where rigs will be glued) and sand. At this time think about what type of paint scheme up you want and prime the entire rocket including rings (Upper and lower).

18- Prep Rocket components for finish coat using whatever technique works best for you. I prime coat with Krylon sandable primer twice, sanding with 320 grit paper in between. Then I use 2-3 coats of Krylon Acrylic top coat and let dry for at least 24hrs before adding a different color if any is required.

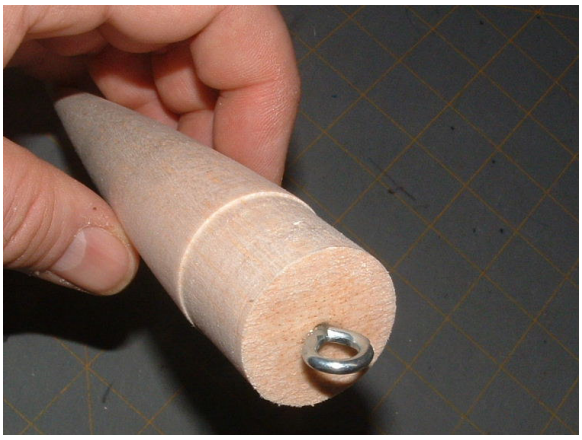
19. Once the rocket has had a chance to dry fit the rings again to assure a good fit and proper alignment. When you are sure that everything fits properly, glue the aft and forward rings in place.

Recovery System-

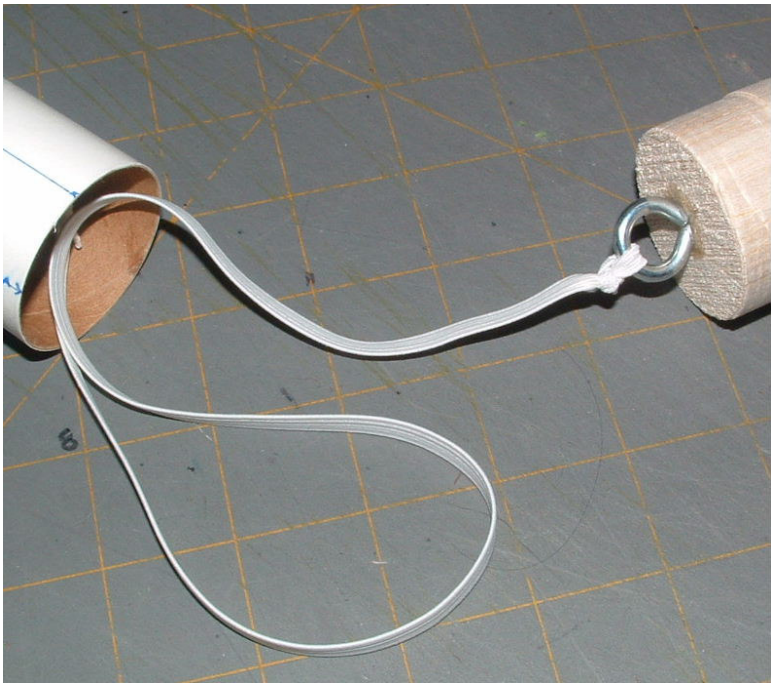
I find that this is easily done if the Kevlar cord has been left hanging out of the back of the motor tube. The steps below are written accordingly

1. Tie (square knot works best) the Kevlar cord to an end of the round black elastic shock cord..
2. Put a dab of glue on the knot to hold it secure.
3. Thread the shock cord back through to the front of the body tube.
4. Glue the steel eyelet into the nose cone.

5. Check fit of nose cone and sand shoulder for proper fit. If for some reason you over sand the shoulder and the nose cone becomes to loose, simply apply a layer of tape to build it back up and re-establish a good fit.



6. Tie the shock cord to the eyelet. Put a drop of glue on the knot for security.



Flight Prep-

1. Assemble parachute according to instructions.
2. Attach parachute to Steel eyelet by way of snap swivel.
3. Use appropriate wadding and pack chute as usual.
4. For first flight, it is recommended that you use either a A8-3 or B6-4..
5. Be sure and follow al NAR safety guidelines when launching this rocket. If you would like to review them, go to: http://www.nar.org

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

Rocket Specifications:

Length.....13.5 inches
Diameter..... .976 inches
Weight.....1.5 oz.
Recommended motors..... A8-3, B6-4, C6-5
Parachute Diameter.....12 inches
Anticipated Altitudes..... 300-1200 feet
Design Type.....Futuristic
Designer.....John Rowan-Stern
Skill Level.....3

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