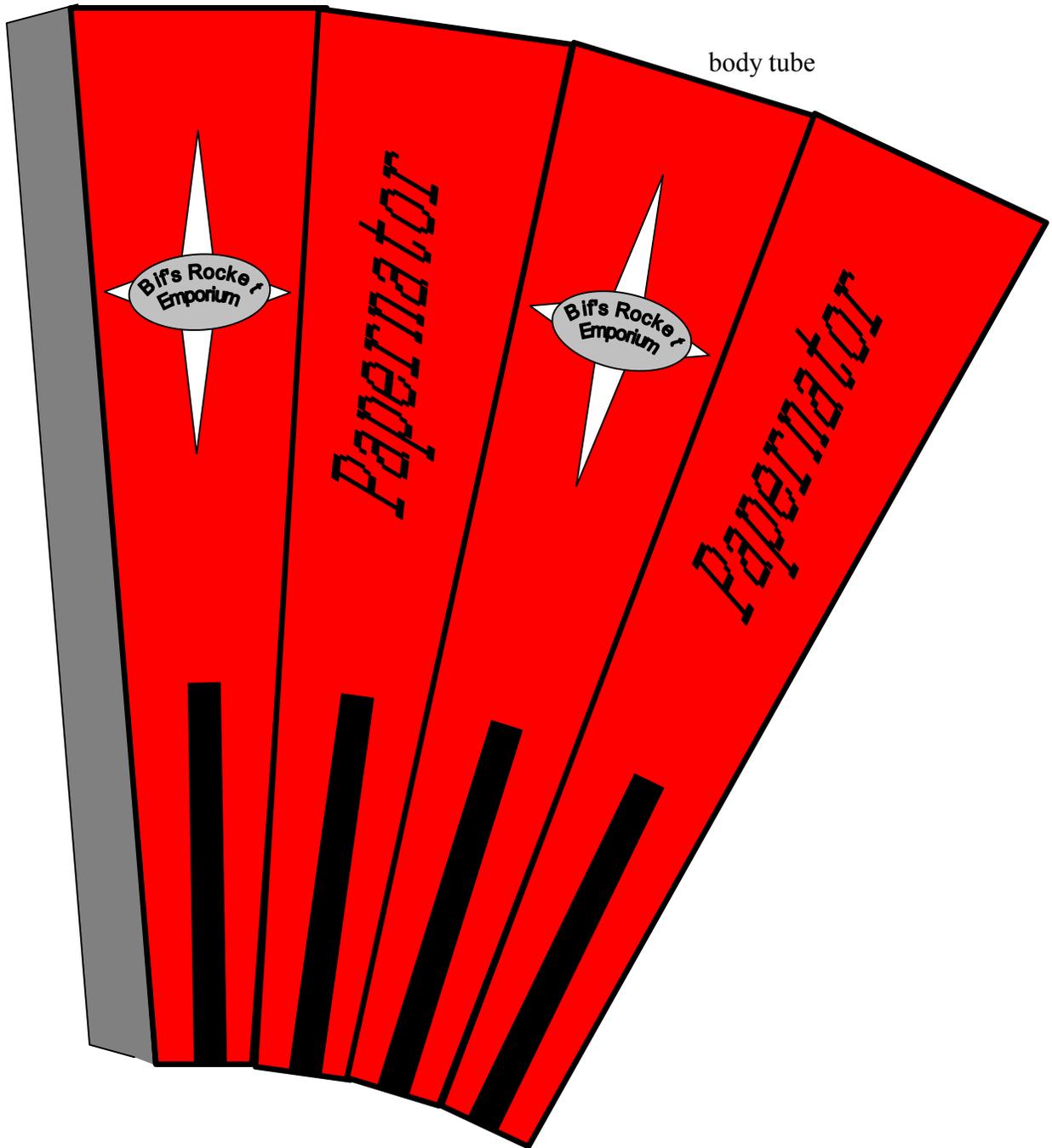


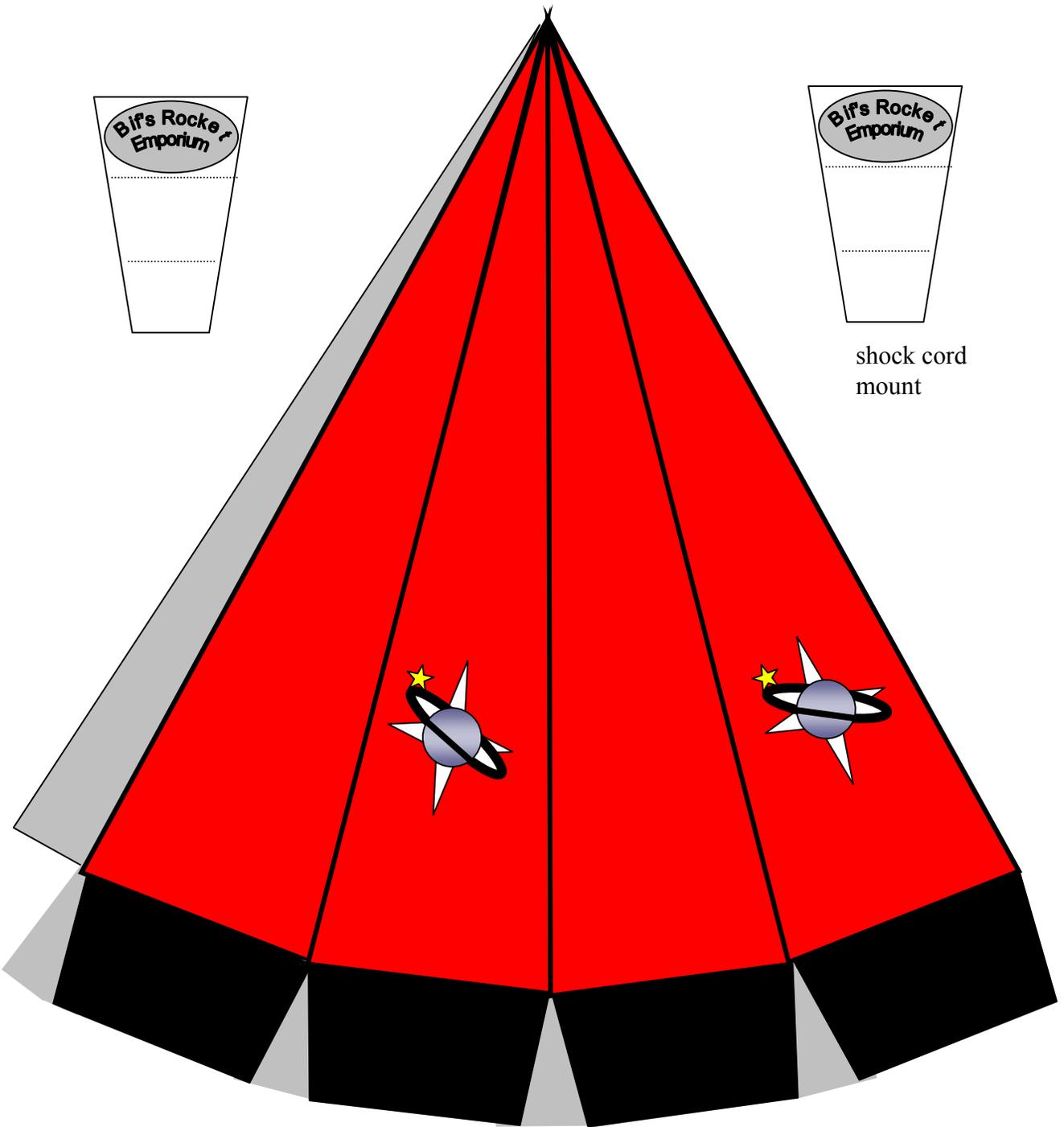
# The Papernator © 2003

created and designed by Clive Davis, NAR #80412



CG with motor loaded= 3.75" (9.6 cm) from base  
nose weight = 1/2 oz or 15 grams





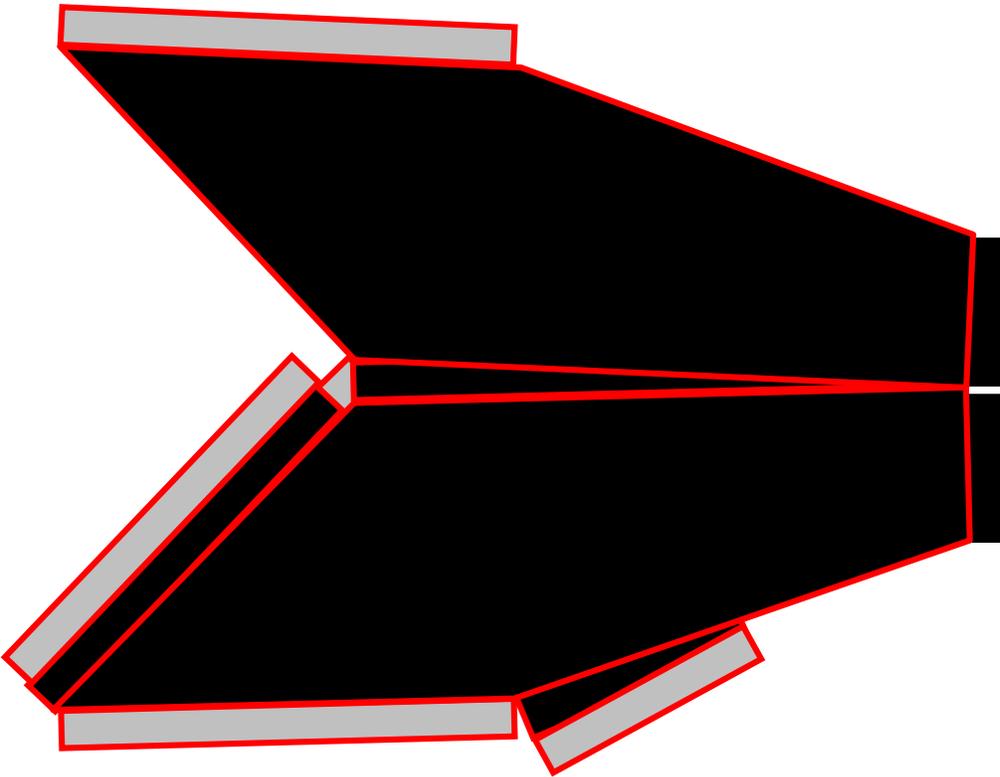
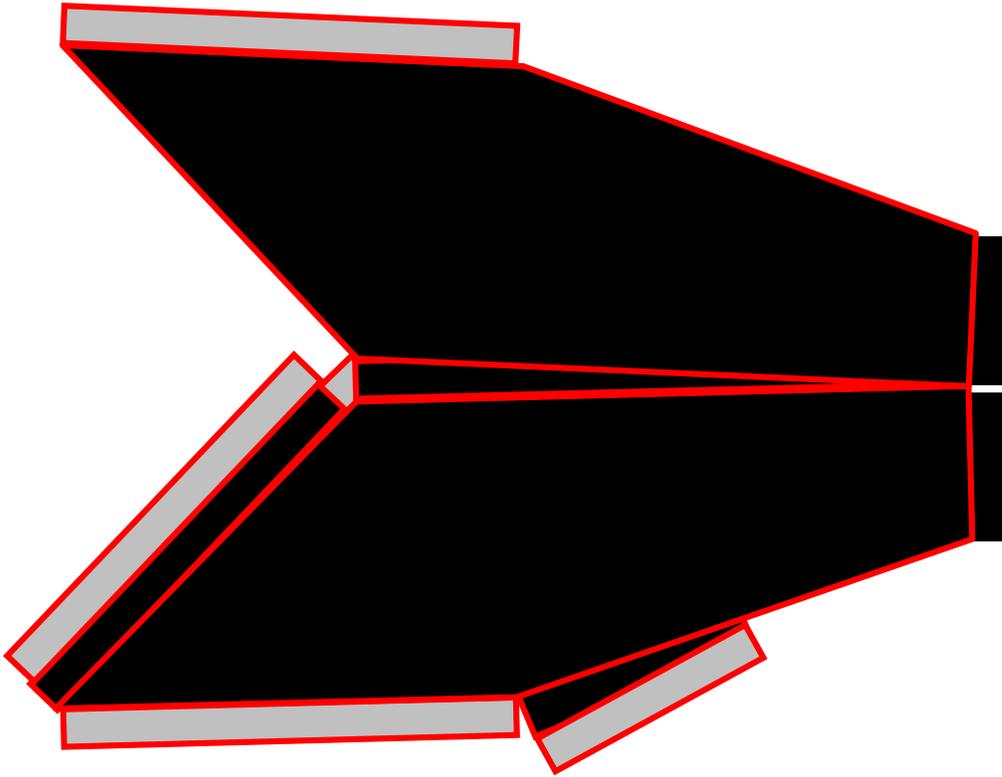
Bif's Rocket  
Emporium

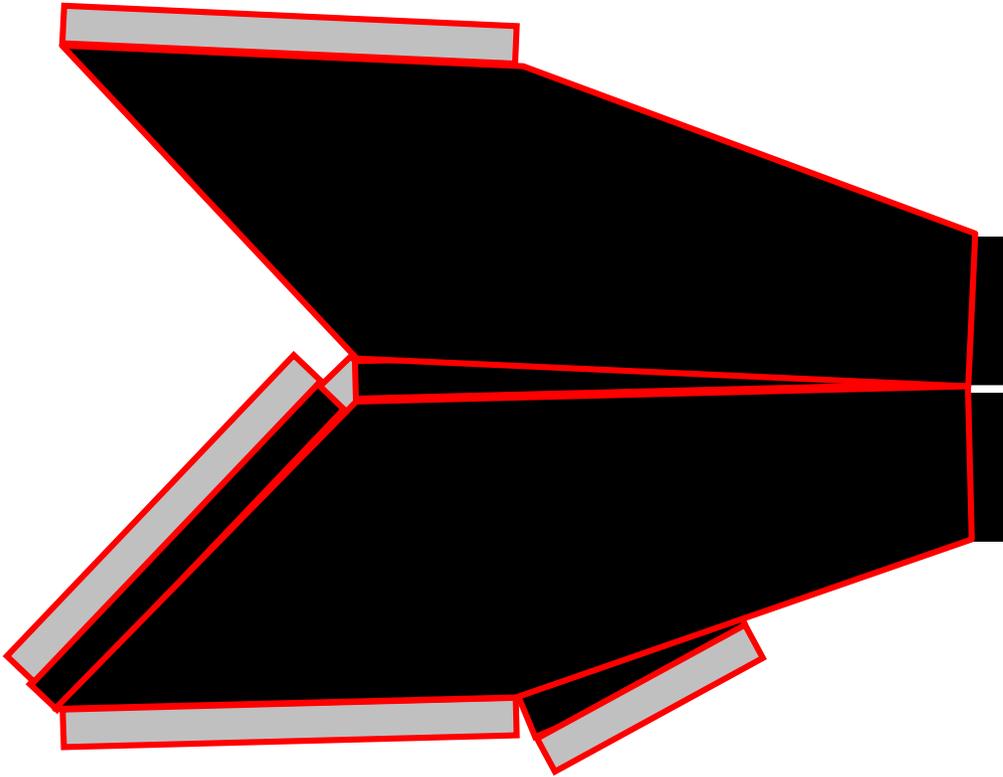
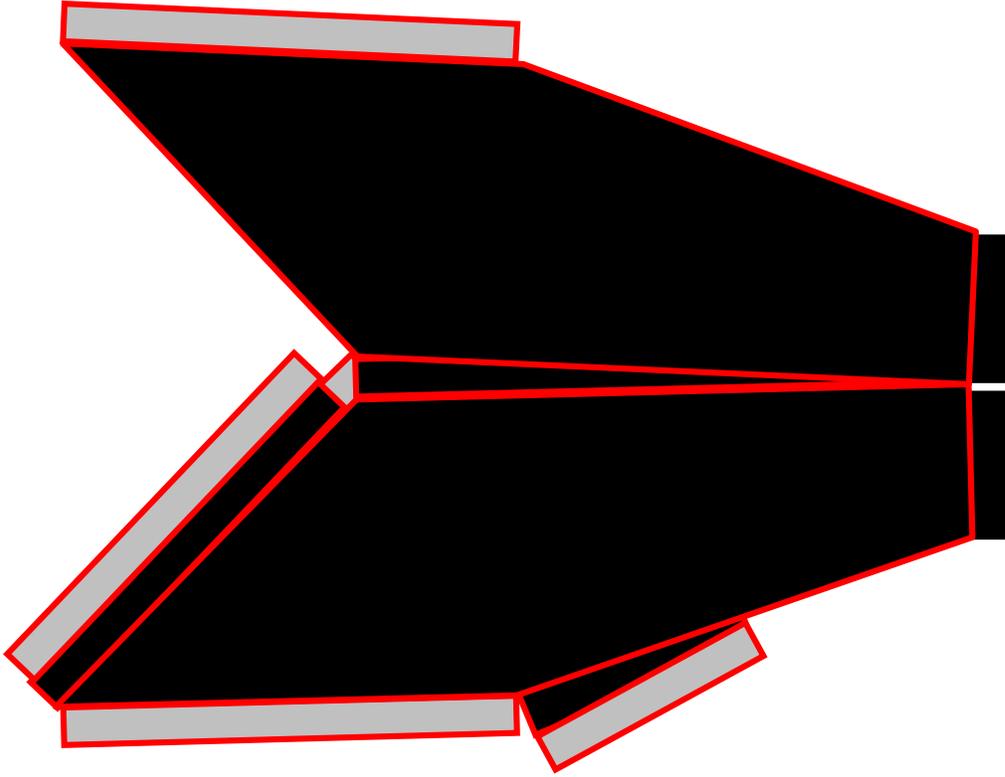
Bif's Rocket  
Emporium

shock cord  
mount

nose cone

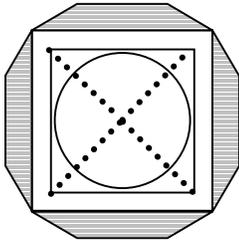
fins (4 qty)



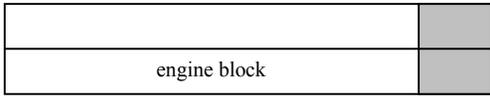




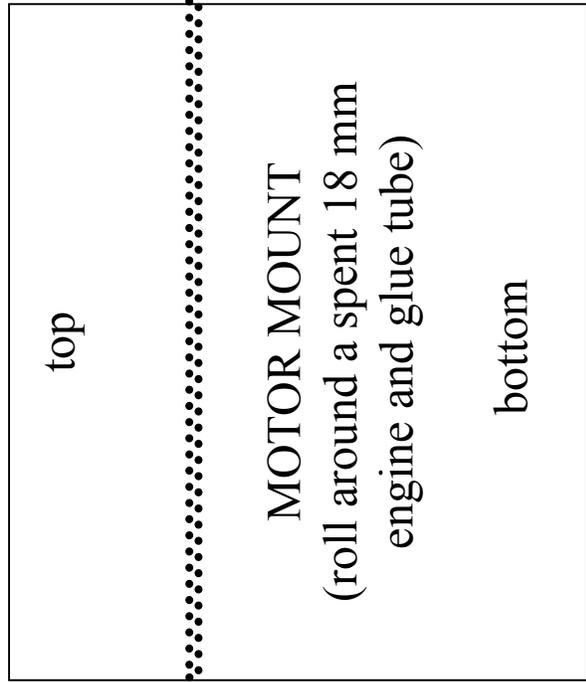
launch lug



centering ring



engine block



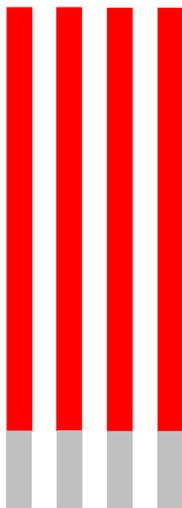
top

MOTOR MOUNT

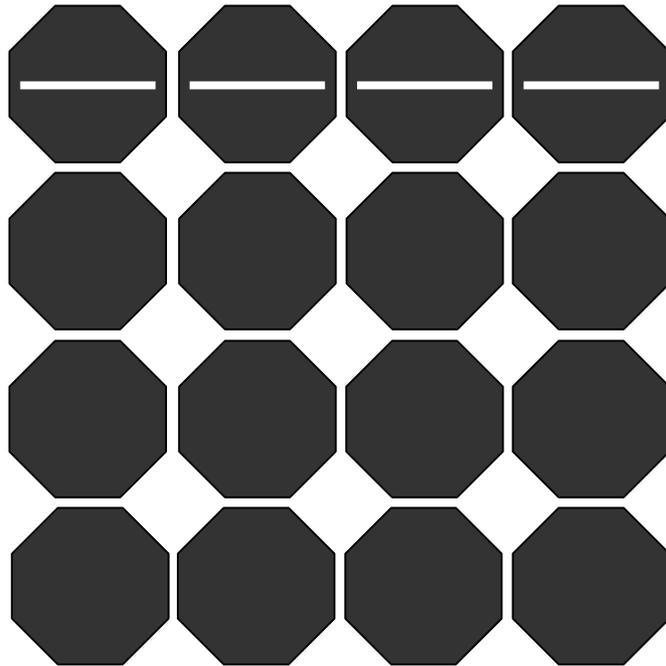
(roll around a spent 18 mm engine and glue tube)

bottom

pad rings



fin pads



## Instructions for the Papernator:

read all instructions before beginning assembly

Supplies needed to complete the Papernator:

- Five 8.5 x 11" sheets of bristol board or other appropriate card stock
- wood glue
- X-acto knife
- 12" Fliskits style plastic parachute with shroud lines and snap swivel
- 18" Fliskits style shock cord
- 15 grams of nose weight (clay, epoxy, BB's, etc.)

- 1.) Print the first five sheets of this file on Bristol Board using a color ink jet printer or color laser printer.
- 2.) Cut out all parts with an X-acto knife or a scissors.
- 3.) Beginning with the nose cone and the body, lightly score the black lines with a straight edge and an X-acto knife. The grey portions are tabs that glue the sides together.
- 4.) On the nose cone, cut one side of the grey tabs at the bottom, but not the other side. You will only need to make three cuts because one grey side is already unattached to both black bottom folds. Fold the black bottom folds inwards as well as their grey tabs.
- 5.) Fold both nose cone and body "tube" into a rectangular shape. Put glue on grey tab and glue "tubes" into rectangular shape. Once the nose cone is dry and in a decent rectangular shape, fold and glue the grey tabs of the lower black folds so that they attach to the other black folds. Once accomplished, the bottom black portion should flair inwards like the shoulder of the nose cone.
- 6.) Using a spent 18 mm motor, roll the motor mount around the spent motor and glue into a tube. Set aside to dry.
- 7.) Fold the engine block in half lengthwise using the mid-section line as a guide. Glue together and then roll into a small cylinder. Test fit into the motor mount before gluing the engine block together in a "circle". Once it fits, glue it together and let dry. Once dry, place some glue inside the motor mount. Using the spent motor, push the engine block into the motor mount so only .25 inches of the motor is sticking out the bottom of the motor mount. Wipe away any excess glue and allow to dry.
- 8.) Using an X-acto knife, make two cross-wise slits in the "centering ring". CAREFULLY fold the triangular folds upwards and test fit over the motor mount. Once you get an exact fit, put glue on the outside of the motor mount on the dotted line and fit the centering ring over the dotted line. Add extra glue to the triangular tabs to make sure they are securely glued to the motor mount.
- 9.) Once the motor mount, engine block and centering ring are glued and dried, place glue on the outside of the centering ring and the bottom of the motor mount. Slowly and carefully slide the motor mount unit into the bottom of the body tube (from the top down) until the motor mount is flush with the bottom of the body tube. Let dry.

- 10.) Score and fold all the fold lines on the fins. At the bottom of the fin, fold the two small black tabs outward. The fin pods will be attached to these folds. Important: don't glue these black tabs together when constructing the fins!!!  
On the smallest grey triangle at the top of the fins, cut one side (you may decide which). Fold this small portion in. It may be easiest to glue the fin from the top down, beginning with the small grey triangle first and working your way down the fin. The grey portions are glued inside and should not be visible and on the outside of the fin. (The only grey portion showing is the "root edge" which will be glued onto the corresponding black rectangles of the body tube.)
- 11.) Glue the hexagons together, back-to-back, so that you create 8 separate black landing pads. Make sure the black is on the outside and the back of the paper (white part) is glued together. On four of the hexagons, there is a white, slim line. These lines are guidelines to attach to the fins. Make sure you don't glue a slim line hexagon to another slim line hexagon.
- 12.) Take the four red small strips and fold them into circles, using the grey tabs as glue supports for the inside of the red circles. Once dried, glue them onto four hexagon pads. When the red rings are dried on the hexagon pads, glue another hexagon pad on top. When dried, glue the completed hexagon pad to the bottom of the fin unit, using the fin's black fold tabs as a glue support for the hexagon pads.
- 13.) Once the fins and pads have dried, glue the fins onto the body tube so that they correlate with the black rectangles on the body tube. The fin root edge should be flush with the bottom of the body tube.
- 14.) Fold the shock cord mounts. Glue shock cord mounts ala Estes style to each end of a large elastic shock cord. Once dried, glue the shock cord mounts at least 1" inside both body tube and nose cone.
- 15.) Using BB's and clay, add 15 grams of weight to the nose cone. Be careful packing the clay into the nose cone that you don't rip the paper structure. Epoxy and BB's work well as does just clay. Take your pick. After the nose cone is complete and assembled onto the body tube, about .25" of the black shoulder will be visible on top of the body tube. This is intended and part of the design.
- 16.) Attach a 12" parachute (with a snap swivel) of your own choosing to the shock cord.
- 17.) Roll the single red rectangle around a launch rod and glue into place. This is the launch lug. Glue onto the body or onto one of the fins of the rocket. Allow all gluing to dry completely.
- 18.) You are ready to fly the Papernator. This paper rocket is designed for B4-2, B6-2 and C6-3 motors. Follow all NAR safety rules for prepping, flying and recovering model rockets. The parachute can be fit either into the space of the body tube or the nose cone. If the nose cone is too loose, add masking tape to the bottom of the shoulder portion to make the fit a little more snug.

