

Estes Industries Rocket Plan No. 53

Aero-Fin

A Fine Sports Flyer

Designed by GARY LINDGREN
of West Covina, California

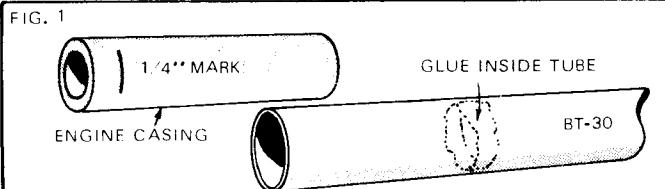
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PARTS LIST

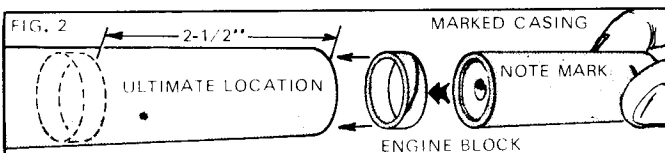
- 1 Body Tube - Part #BT-30
- 1 Nose Cone - Part #BNC-30N
- 1 Sheet Balsa Fin Stock - Part #BFS-30
- 1 Engine Block - Part #EB-30A
- 1 Launching Lug - Part #LL-2A
- 1 12" Parachute Kit - Part #PK-12
- 1 Shock Cord - Part #SC-1
- 1 Screw Eye - Part #SE-1

Tools and supplies you will need in addition to these parts are scissors, a model knife, white glue, sandpaper, sanding sealer and paint or dope in the colors of your choice.

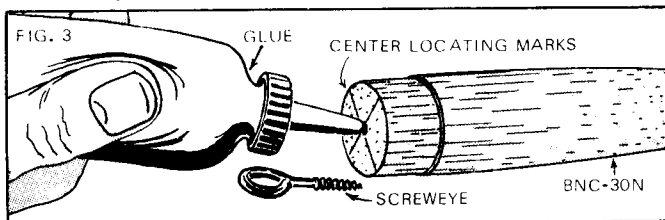
Building the AERO-FIN



1.) To install the engine block, first mark an expended engine casing 1/4" from one end. Put a dab of white glue near the tip of your little finger and, reaching into the tube as far as you can, spread the glue around the inside of the tube.



2.) Fit the engine block into the end of the tube. Use the marked engine casing (holding it by the 1/4" end) to push the engine block into the tube until the mark is even with the rear of the tube. Do not stop or the glue may set with the block in the wrong place. Withdraw the engine casing immediately.

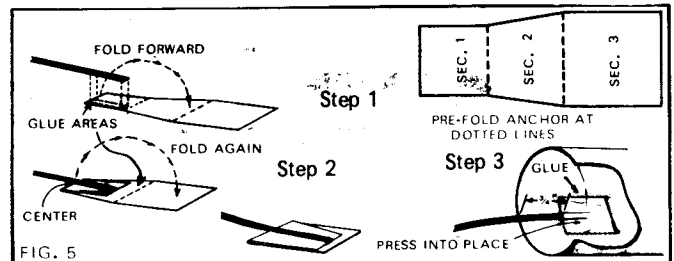


3.) Locate the center of the base of the nose cone and turn the screw eye into place. Remove it and squirt white glue into the hole. Replace the screw eye and wipe off any excess glue.

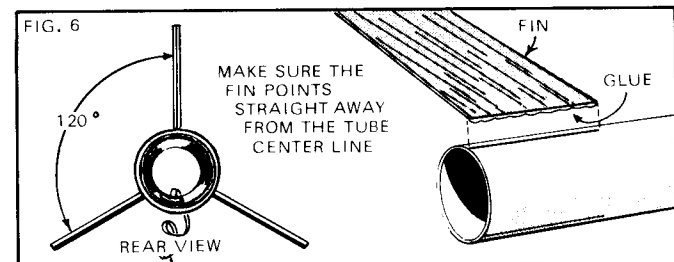


4.) Trace the fin patterns, shock cord anchor and marking guide onto stiff paper and cut them out. Wrap the guide around the rear end of the tube (the end with the engine block) and mark the tube at each arrow point. Draw a connecting line between each pair of marks. (The lines should be parallel to the tube centerline.)

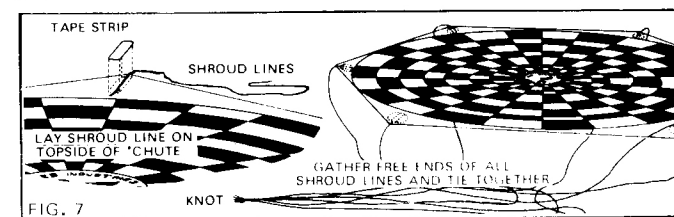
5.) Lay out 3 each of the main fin pattern and the tip plate pattern on the BFS-30 (be sure the tip plate centering marks are placed on the balsa tip plates.) Carefully cut out all the balsa parts and sand them to a symmetrical airfoil shape.



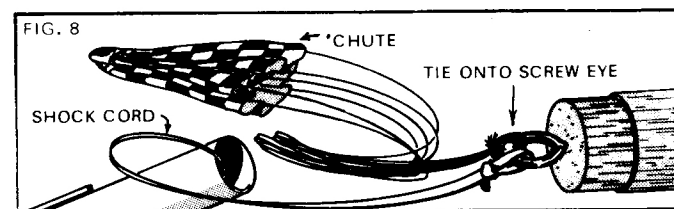
6.) Prefold the shock cord anchor on the dotted lines, then flatten it out. Spread glue over section 1. Lay one end of the shock cord in place and fold section 1 over. Spread a thin layer of glue over the back of section 1 and the exposed parts of section 2 and fold again. Clamp the unit together with fingers until the glue sets. Spread a thin layer of glue about 3/4" in from the front end of the body tube (about the size of the anchor) and press the anchor onto the glue. Hold the anchor in place until the glue has set.



7.) Spread glue on the root edge of one of the main fin pieces and position it on one of the guide lines. The fin should stick straight away from the body tube as seen in the rear view. Repeat this step with the other two main fin pieces. Stand the bird on its nose while the main fins are drying.



8.) Trim the parachute on its edge lines. Make sure the 'chute material is spread out printed-side up, then cut and attach six 12" lengths of shroud line, one to each point of the 'chute. Use one tape strip to attach each shroud line. Gather the free ends of all shroud lines and tie them together with a small knot as near the end as possible.



9.) Tie the free end of the shock cord to the screw eye. Also, tie the knotted end of the shroud lines to the screw eye. Temporarily insert the 'chute, lines, cord and nose cone into the front of the body tube.

10.) Stand the bird gently on its fins. Apply glue the length of the tip plate centering mark on one plate and locate it on the tip edge of one fin. Correct alignment is when the plate is attached at a 90 degree angle to its fin, the centering mark is covered by the fin tip-edge and the trailing edge of the

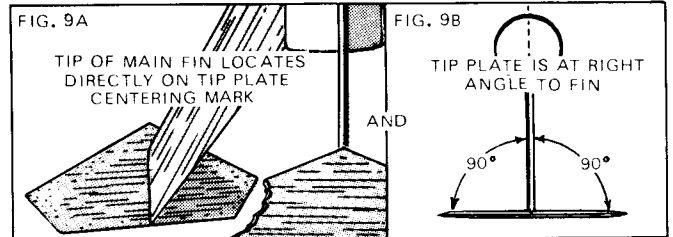
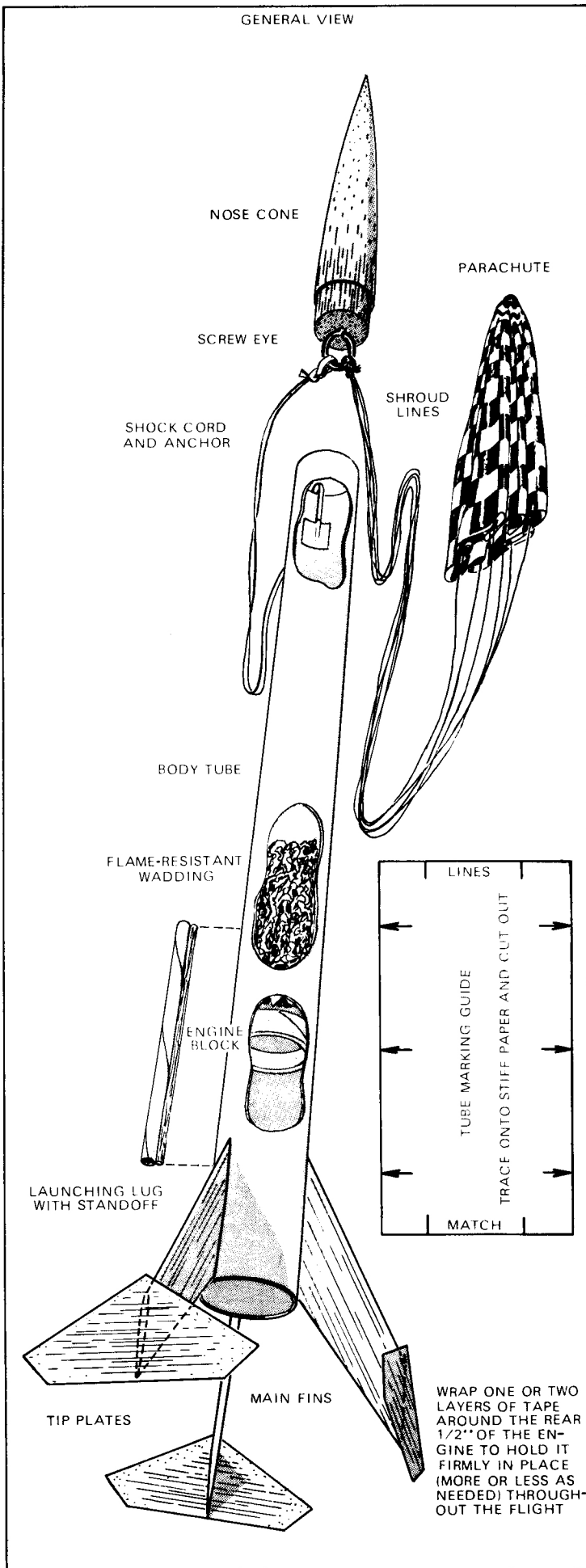


plate is resting flat on the table top. Repeat this step with the other two plates and fins. Stand the bird aside to dry.

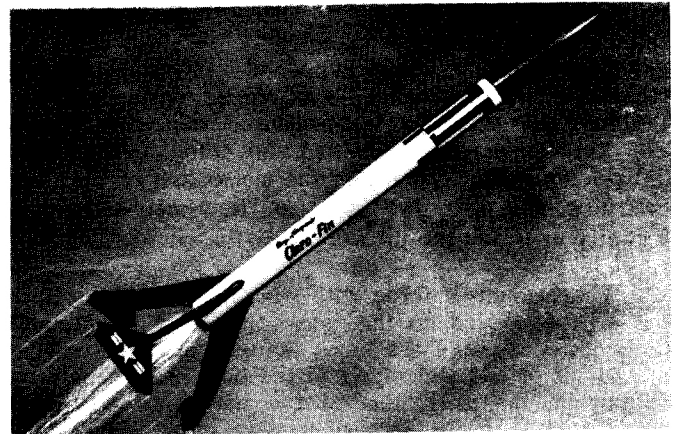
11.) There are two ways to mount the launching lug. You may simply apply a line of glue along the lug and place it on the body tube with its trailing edge even with the front edge of the fins, centered between two fins. Or, you may obtain a piece of 1/12" dowel (WD-2) and cut it the length of the launching lug and glue it to the lug, then apply a line of glue to the dowel and align this assembly on the body tube as you would a regular lug. This gives your bird dual capability—you may launch it from a standard rod launcher or from a C-rail launcher.

Prepare to Paint

12.) Give all balsa fin and body tube joints a fillet of white glue and allow to dry. Support the model horizontally while the fillets are drying.

13.) Give all balsa parts a coat of sanding sealer and let dry. Lightly sand, seal, sand and seal again until the surfaces look and feel smooth and all the wood pores are filled.

14.) Give the bird two coats of glossy white enamel, allowing at least two hours drying time between coats. Then apply the color trim of your choice. The original bird had a royal blue nose cone, royal blue fins and tip plates and specially cut decorating tape made the roll pattern. Air Force stars and bars decals on each tip plate supplied the finishing touch.



General Information

15.) Three squares of flame-resistant wadding provide protection for the chute. Any Series I single-stage engine from 1.2A6-2 on will give a good flight. Have binoculars for tracking and fly on a calm day, however, if you use a C6-7, . . . for this engine can put the AERO-FIN nearly out of sight! Use the "Parachute or Streamer" countdown checklist on your Estes Flight Data Sheet.

