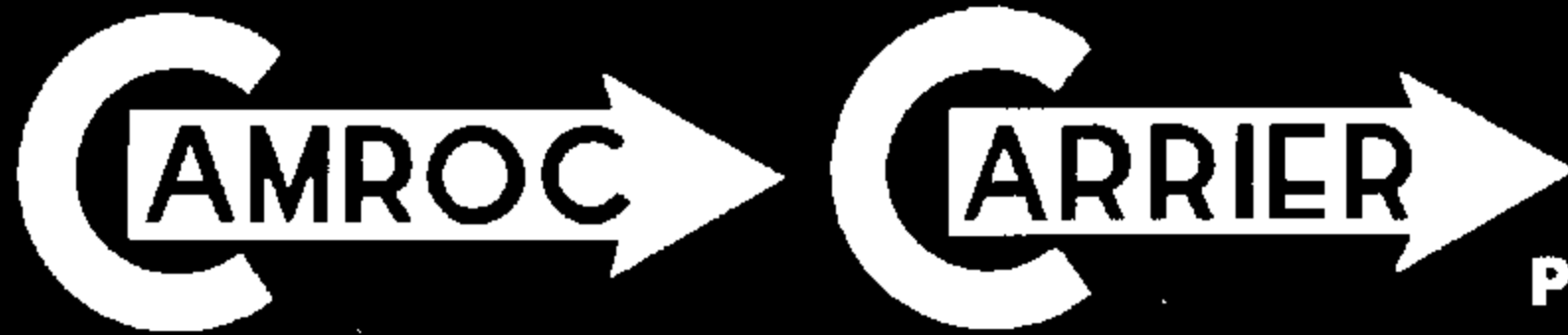


# Estes Industries Rocket Plan No. 60



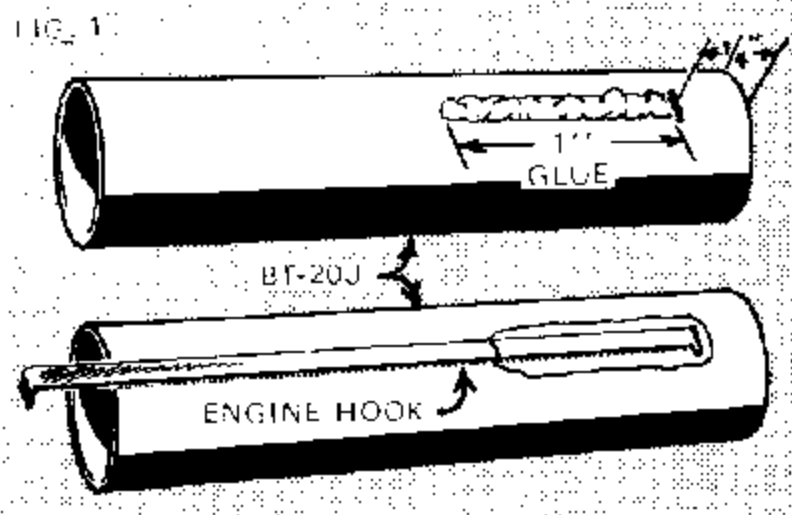
**High Performance  
Single Engine  
Bird for  
Photographic Missions**

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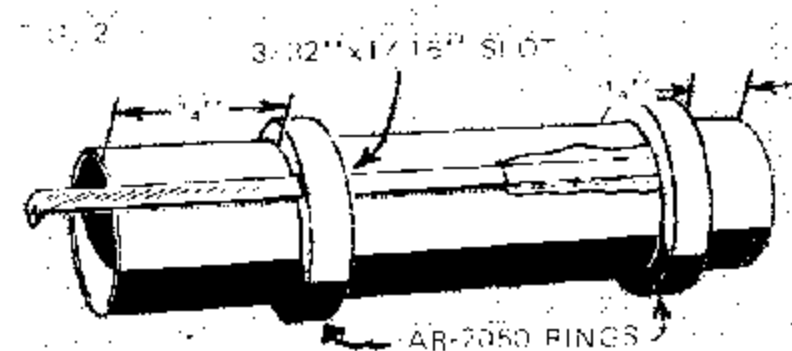
Want to take a photo from 1000 feet up? The Camroc Carrier can do it—and use only one C6-7 engine in the process. Ultra-low drag design and light weight result in exceptional performance. When high altitude isn't necessary, a B6-6 will boost the Carrier to a respectable altitude for taking good aerial photos. If you have successfully built three or four single stage rockets, you can build the Camroc Carrier. All you need to do is use moderate care.

Here's how it goes together. . . .

## CAMROC CARRIER INSTRUCTIONS



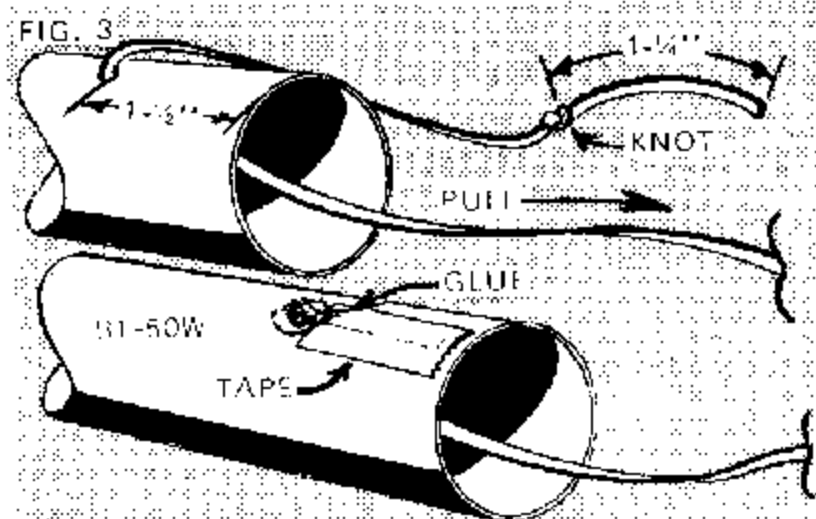
1. Cut a 1/8" long slit in the BT-20J engine mount tube 1/4" from the end as shown. Apply a line of glue 1" long along the tube starting at the slit. Push one end of the engine hook into the slit and press the main part of the hook into the glue. Hold the hook in place with a piece of masking tape at its middle while the glue dries.



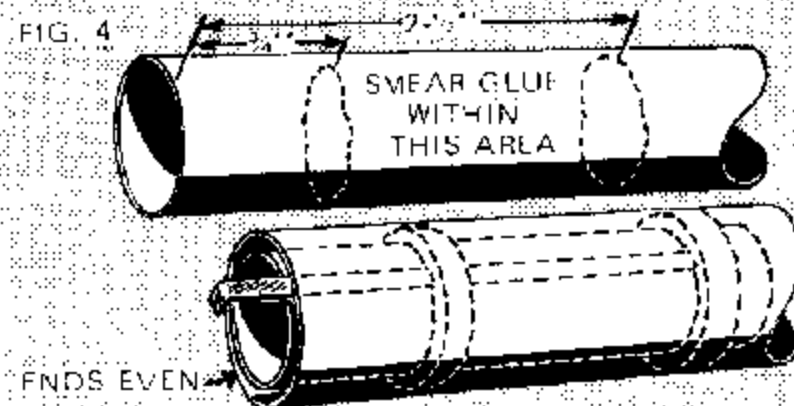
2. Cut a 3.32" wide slot 1/16" deep on the inside of one of the AR-2050 rings. Glue this ring to the engine mount tube 3/4" from the rear end (the end with the over-hanging hook) so the slot is over the hook. Avoid getting glue in the slot. Glue the other ring to the front of the engine mount tube 1/4" from the end as illustrated.

3. Very carefully trace the cone pattern onto heavy paper (about the thickness of an index card) or draw one directly on the paper to the dimensions shown. Cut out this cone and preform it by wrapping it around itself once. Apply glue to the flap area and join the edges

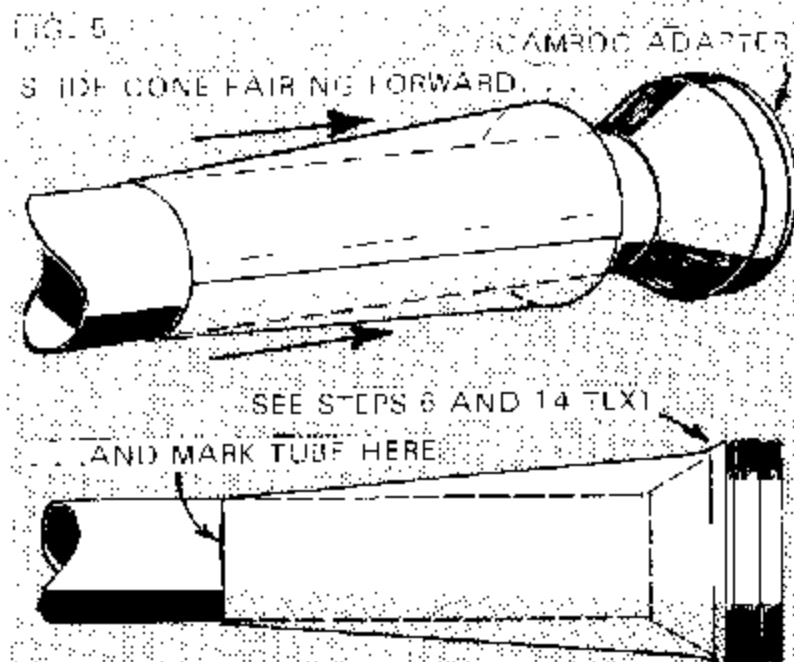
as shown. Clamp the joint with your fingers until the glue sets.



4. Cut a small hole in the BT-50W body tube 1-1/2" from one end. Tie a knot in the shock cord 1-1/4" from one end and insert the other end into the hole. Pull the shock cord through until the knot is against the hole. Anchor the short end of the shock cord along the outside of the tube with masking tape, self-adhesive paper (PRM-1) or glue-soaked gauze. Apply extra glue to the knot.

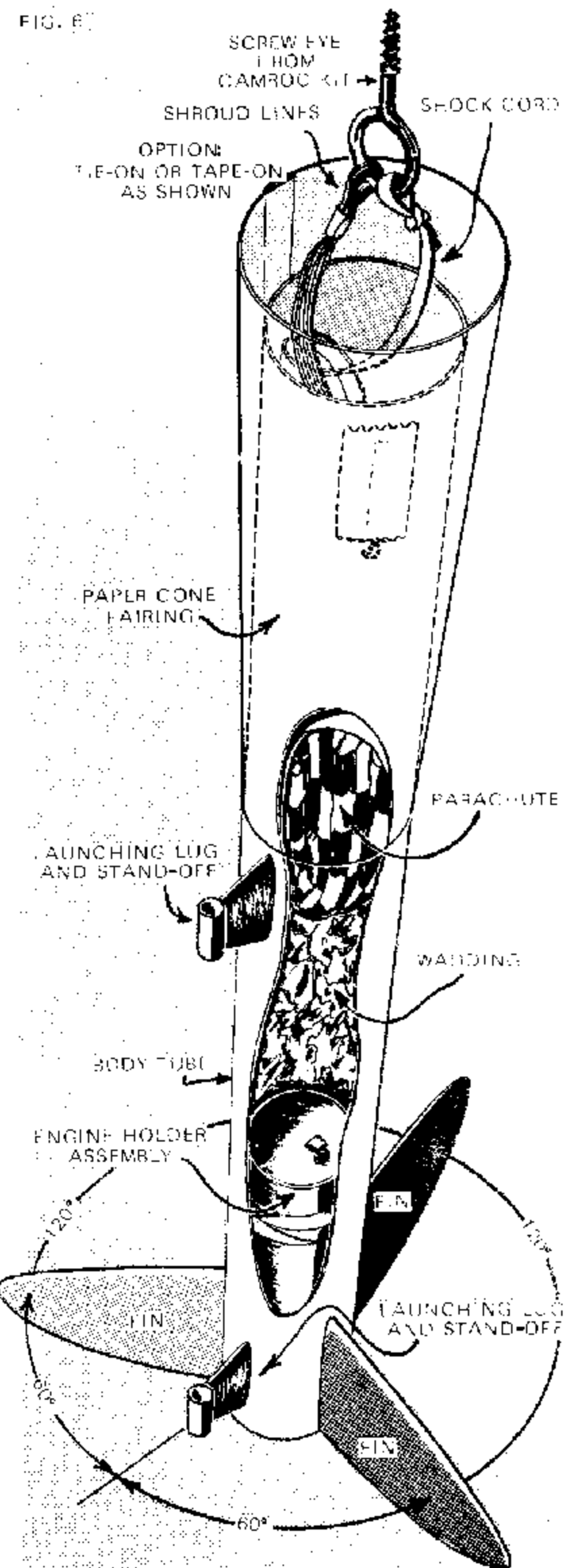


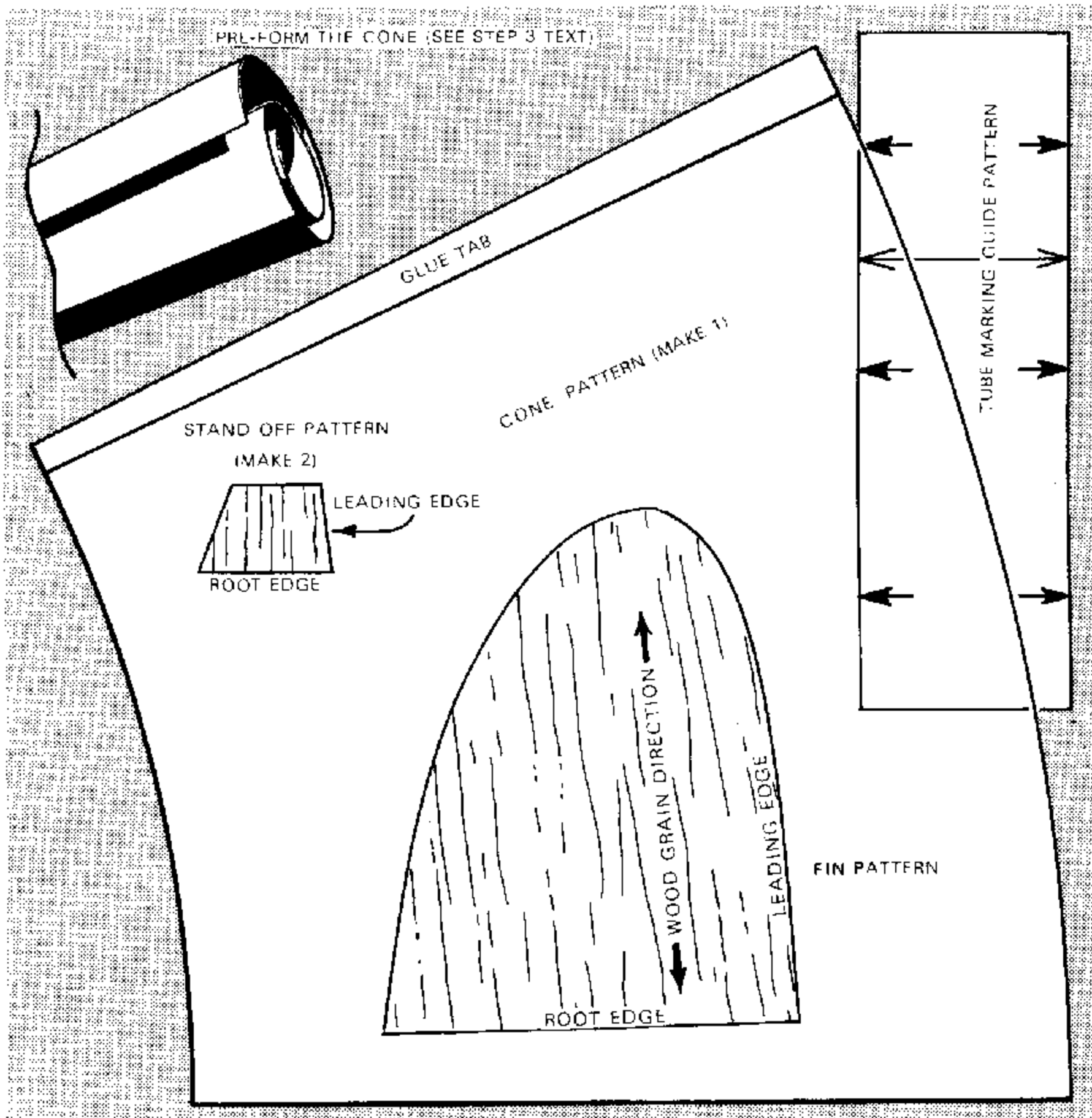
5. Smear glue around the inside of the other end of the BT-50W body tube to cover an area extending from 3/4" to 2-1/2" from the end of the tube. Immediately insert the engine mount unit, being careful to turn it so the projecting engine hook will be on the outside of the tube. Push the engine mount in with one smooth motion until the ends of the tubes are even.



6. Slide the adapter from your Camroc kit into place in the front end of the tube. Slide the paper cone onto the tube from the other end and bring it forward until it seats against the Camroc

adapter. Mark the tube at the rear of the cone. Slide the cone back out of the way, smear glue all the way around the tube at the mark and bring the cone forward into place again. (For best results, pull the Camroc adapter out 1/16" before sliding the cone forward. This will provide a tight seal at the adapter/cone joint in flight.)





PRE-FORM THE CONE (SEE STEP 3 TEXT)

STAND OFF PATTERN (MAKE 2)

CONE PATTERN (MAKE 1)

TUBE MARKING GUIDE PATTERN

FIN PATTERN

**PARTS LIST**

- 1 Body Tube--Part #BT-50W
- 1 Body Tube--Part #BT-20J
- 2 Adapter Rings--Part #AR-2050
- 1 Engine Holder--Part #EH-2
- 1 Parachute Kit--Part #PK-12
- 1 Shock Cord--Part #SC-3
- 1 Launch Lug--Part #LL-2A
- 1 Fin Stock--Part #BFS-30
- 1 Camroc--Part #C-1

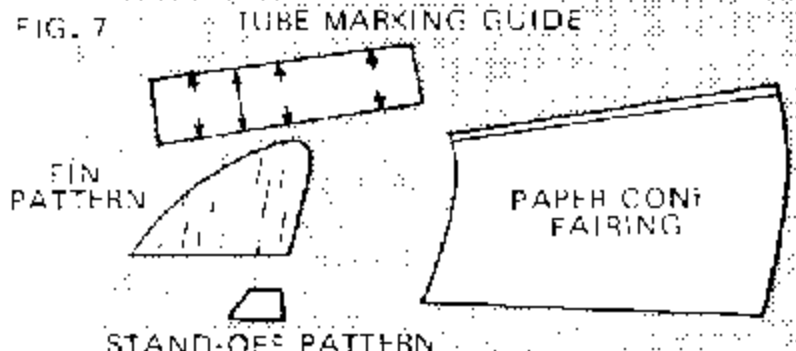


FIG. 7. Carefully trace the fin pattern, stand-off pattern and tube marking guide onto a separate piece of paper (typing paper will do). Cut out the copies you have made.

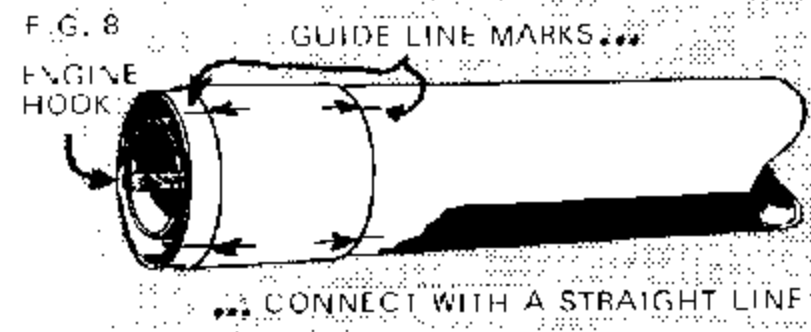


FIG. 8. Wrap the tube marking guide copy around the rear of the body so the engine hook is half-way between two fin arrows. Mark the body tube at each of the arrow points. Draw a straight line connecting each pair of marks as shown.

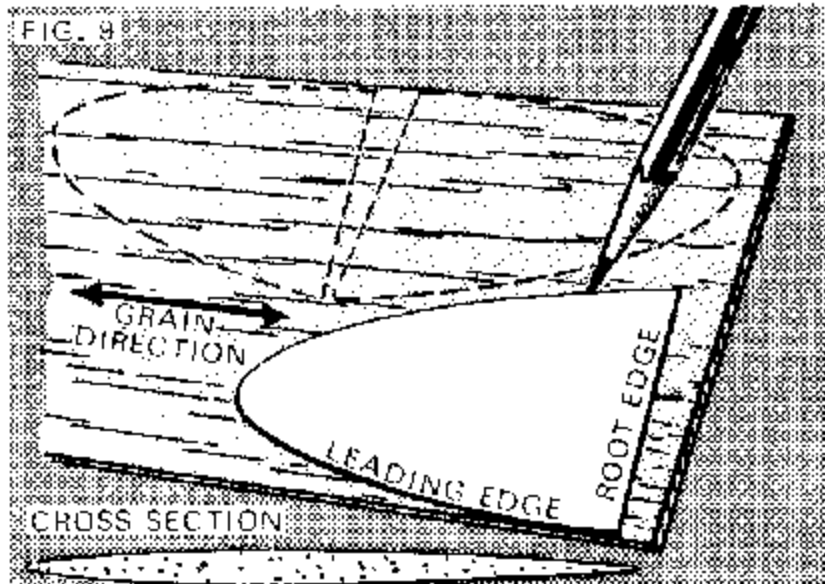


FIG. 9. Position the fin pattern you made on the balsa sheet with the grain of the wood parallel to the leading edge of the fin as shown. Trace around the pattern, then reposition and trace two more identical fins. Cut the fins out carefully and sand them to the airfoil shown.

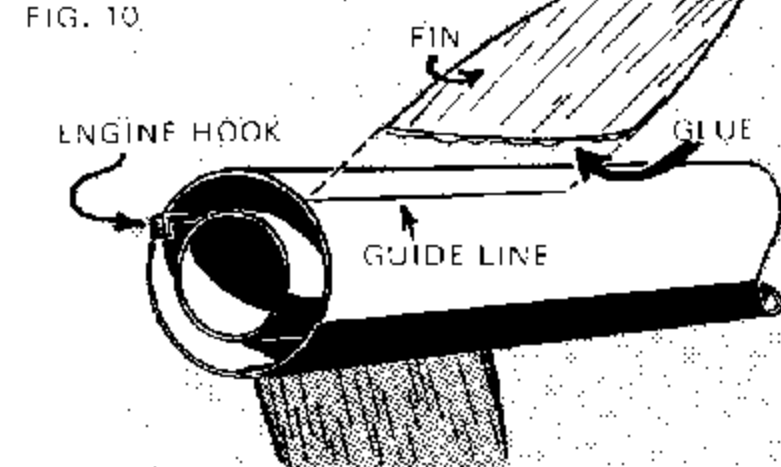


FIG. 10. Apply glue to the root edge of one of the fins. Attach the fin to the rocket's body with the fin centered on one of the lines drawn in step 8. Align the fin so it projects straight away from the body tube. Following the same procedure, attach the other two fins. Do not set the rocket on its fins while the glue is wet.

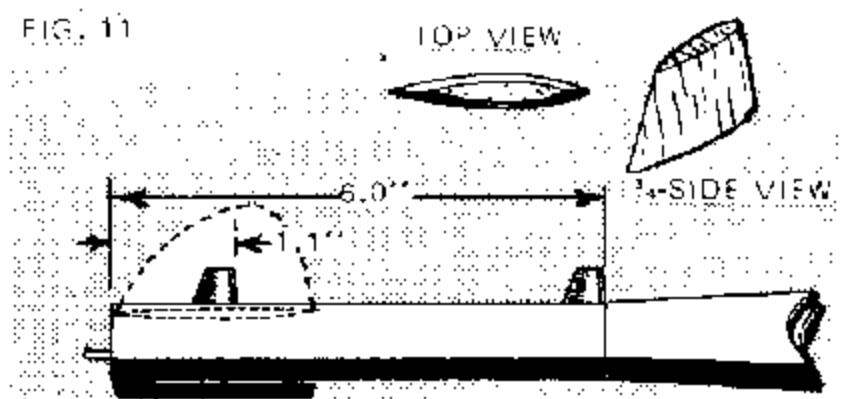


FIG. 11. Trace two copies of the launch lug stand-off onto the balsa. Make sure the grain of the wood goes in the direction shown on the pattern. Cut out the stand-off pieces, sand them to the airfoil shape illustrated, and glue them to the body in the positions shown. Align these pieces carefully to get good Camroc flights.

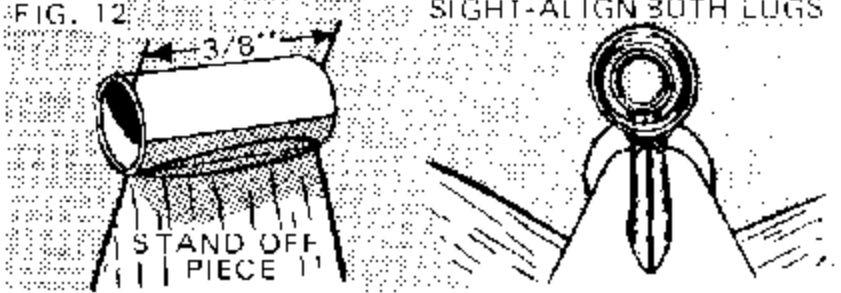


FIG. 12. Cut two 3/8" long pieces of launch lug. Glue one piece to each stand-off. Check alignment by sighting through the two pieces.

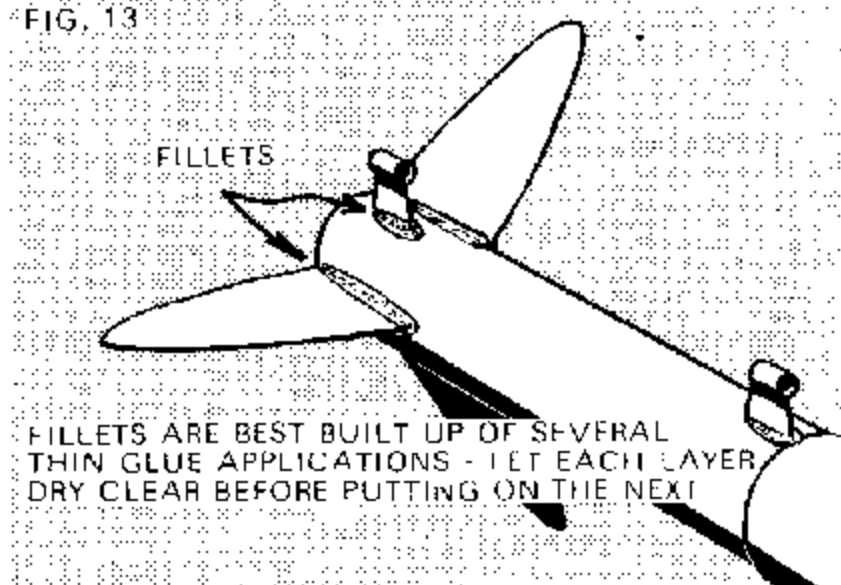


FIG. 13. Assemble a 12" parachute while waiting for the glue to dry. After it is dry apply a fillet of glue to each fin-body joint as shown. Support the model horizontally while the fillets dry.

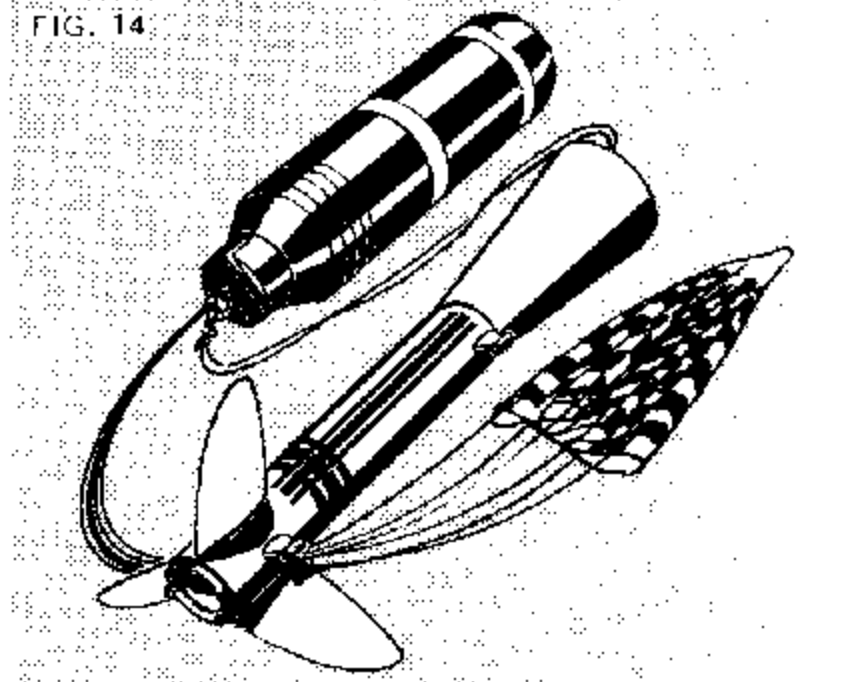


FIG. 14. Seal and paint the model in a normal fashion. After all paint work is finished, connect the parachute, Camroc and rocket as shown. NOTE: Follow the "Preparing for Flight" procedure detailed in the instructions which came with your Camroc. Make sure the base of the Camroc adapter fits tightly in the body tube. When the Camroc is in place on the rocket the cone should show a slight lip all the way around as illustrated.