

# Estes Industries Rocket Plan No. 54

## Space Freighter

Estes Design Contest  
First Place Winner

Rearward Ejection Payloader By SCOTT AMUNDSON Satellite Beach, Fla.

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### PARTS LIST

- (A) 1 Payload Section--Part #PS-50A
- (B) 1 Body Tube--Part #BT-50H
- (C) 1 Body Tube--Part #BT-60R
- (D) 1 Body Tube--Part #BT-20J
- (E) 1 Balsa Adapter--Part #TA-5060
- (F) 1 Balsa Sheet--Part #BFS-30
- (G) 4 Paper Adapter Rings--Part #RA-2060
- (H) 1 36" Shock Cord--Part #SC-3
- (I) 1 Launch Lug--Part #LL-2B
- (J) 1 Parachute--Part #PK-18
- (K) 1 Snap Swivel--Part #SV-12
- (L) 1 Gauze Reinforcing--Part #GR-2

### ASSEMBLY INSTRUCTIONS

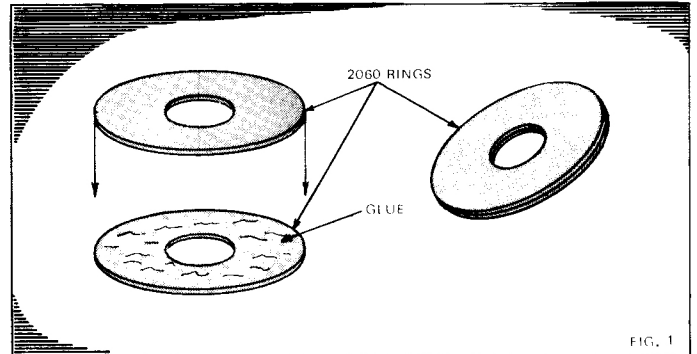


FIG. 1

1. Punch out the four 20-60 paper adapter rings. Spread glue over one side of one ring and press another ring firmly into place so the edges of the two match perfectly. Wipe off any excess glue. Repeat this with the other two rings.

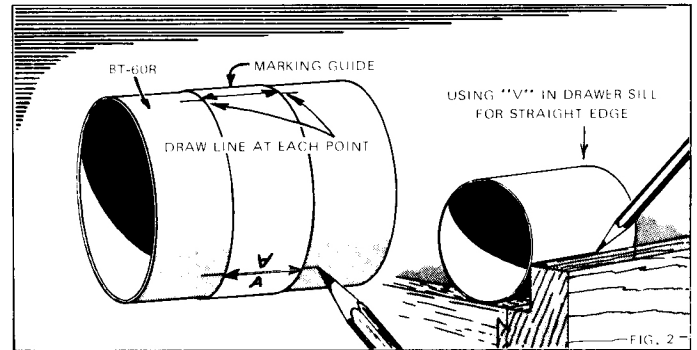


FIG. 2

2. Trace the tube marking guide and the fin pattern onto a piece of fairly heavy paper. Cut out the copies of these patterns you have made. Wrap the tube marking guide around the BT-60R body tube and mark the tube at each of the arrow points. Extend a straight line the length of the tube at each mark using the edge of a drawer notch or other straight "V" groove for a pencil guide. Cut the BT-60R to 3 inches long.

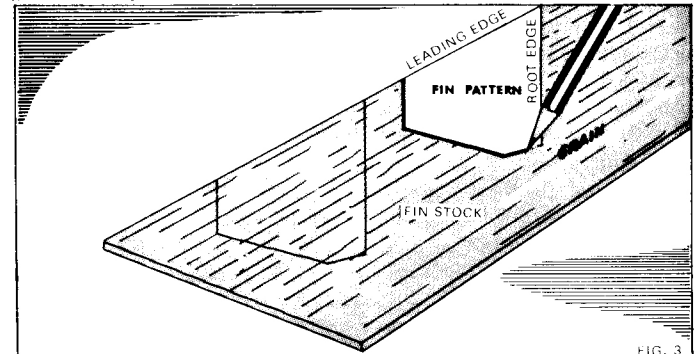


FIG. 3

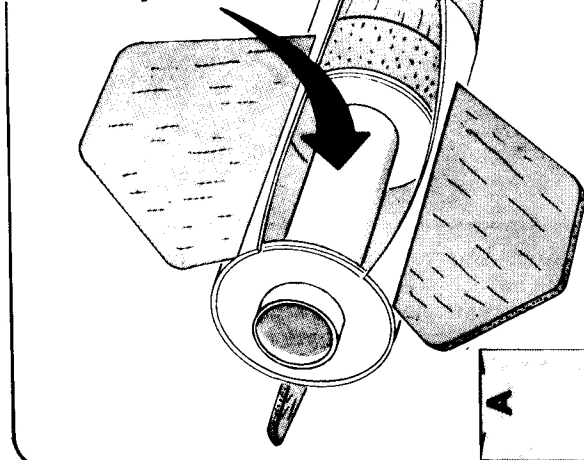
3. Lay the fin pattern on the balsa fin stock with the grain of the balsa *parallel* to the *leading edge* of the pattern. Trace three fins with the pattern positioned in this way. Cut out the fins using a sharp knife. Sand the root edge (the edge that will be glued to the body) of each fin so it is perfectly flat. Sand the other edges until they are smooth and rounded. In one fin cut a small notch as shown for the shock cord attachment.

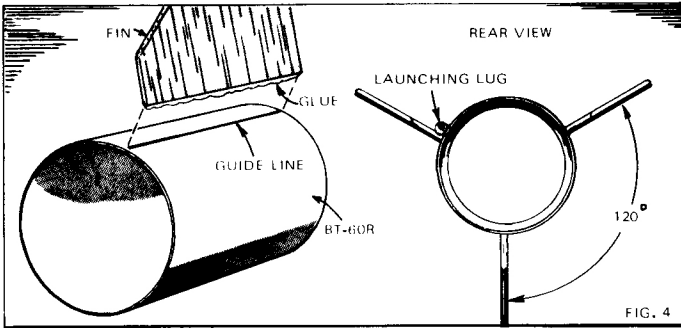


NOTCH IN ONE FIN ONLY

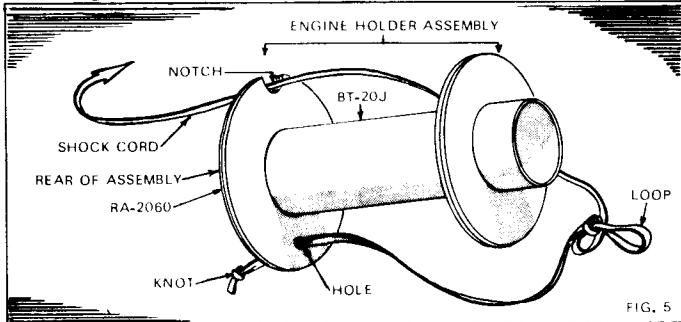
Recommended Engines  
A8-3 B6-4 B14-5 C6 5  
(Use A8-3 engines for first flights.)

Parachute  
Compartment

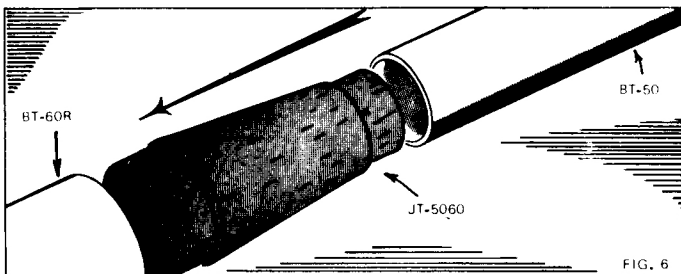




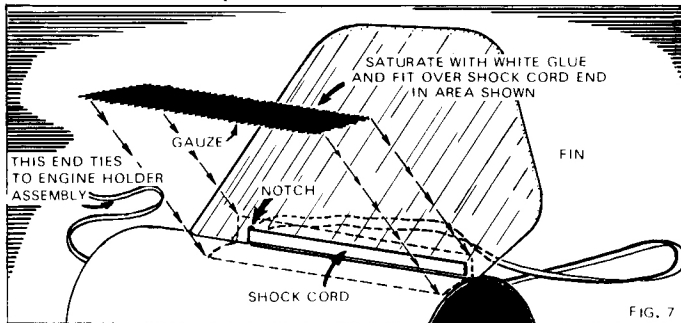
4. Glue the fins to the BT-60R body exactly on the lines made in step 3. To do this, apply glue to the root edge of a fin, hold it for a minute to let the glue get "tacky" and then press the fin onto the body over the line. The fin should stick straight away from the body tube as shown in the rear view. Repeat this step with the other two main fins. Stand the body section on its front while the glue dries. Glue the launch lug to the fin as shown.



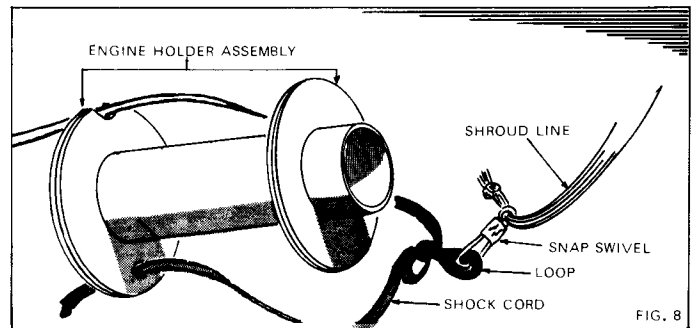
5. Cut a notch and a small hole in one glued pair of rings as shown. Slide the rings onto the BT-20J engine holder tube so the rings are each 1/3" from the ends of the tube. Apply a fillet of glue to all ring-tube joints and smooth the fillet with your finger. Set the unit on its end while the glue dries. Sand the paper rings as necessary so they slip in and out of the tail section.



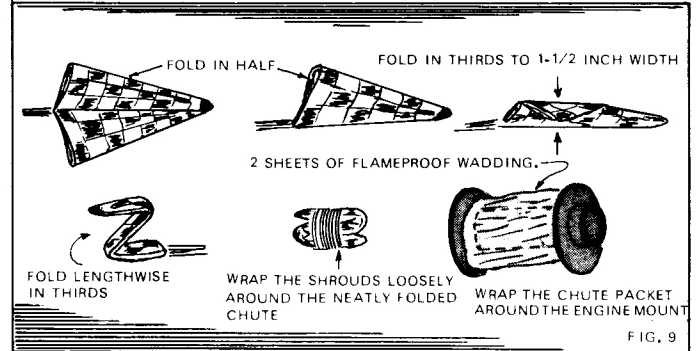
6. Glue the balsa adapter (TA-5060) to the tail section and then also to the smaller body tube (BT-50).



7. Put the end of the 36-inch shock cord through the notch in the fin and using a small amount of rubber cement or contact cement, glue the shock cord along one side of the fin. When the rubber cement has dried, glue a 1/2" X 2" piece of gauze reinforcing material over the shock cord. Use your finger to spread glue fillets (don't use rubber cement for fillets!) on all fin joints and at least three coatings over the shock cord.

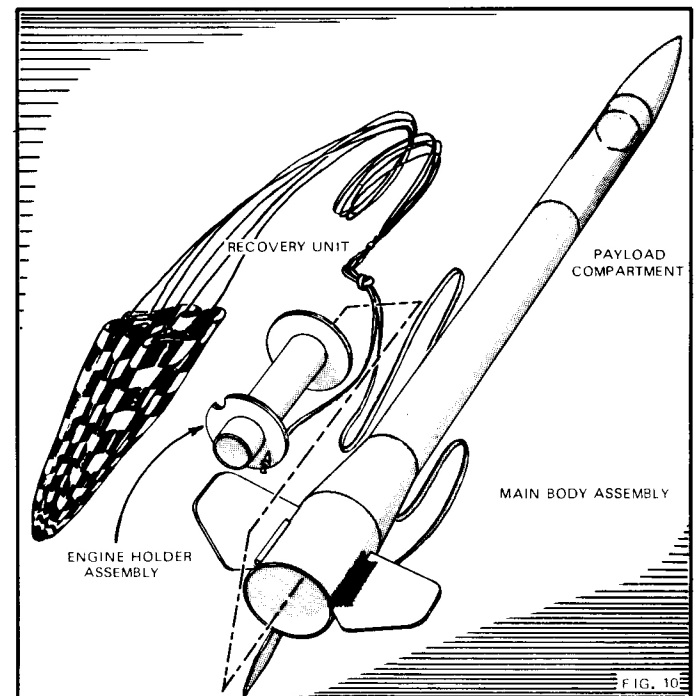


8. Assemble a plastic 18-inch parachute (PK-18) and attach it by tying a snap swivel to the shock cord of the tail section, 2/3 of its length from the fins. Then put the end of the shock cord through the small hole in the ring and tie a knot in the end to prevent it from slipping through.



To prepare the rocket for flying, fold the parachute neatly according to the drawing. For this rocket it is especially important to fold the parachute rather than rolling it, since rolling the chute or shroud lines around the engine mount will usually result in an unopened tangled chute.

## General Assembly View



## CONTEST WINNERS

Results of judging in the 1968 Estes Single Stage Design Contest (see Notes from the Boss, page 4) were formally announced by the Estes Industries Research and Development staff August 1. Those receiving awards were:

**FIRST PLACE** and a \$50 merchandise award went to Scott Amundson, Satellite Beach, Fla., for his Space Freighter payload bird. See pgs. 10 & 11.

The **SECOND PLACE** \$25 merchandise award was presented to Don Silar, Willow Street, Pennsylvania, who submitted the Andromeda, a high-performance sport model.

**THIRD PLACE** with \$10 in merchandise, was taken by Paul Kohlberg, Westlake, Ohio, for his Comet, a high-performance competition model.

**FOURTH PLACE** award of \$5 in merchandise went to J. T. Kealey, Harrisburg, Pennsylvania, whose 8-Ball design featured fins and fillets made from body tubing.