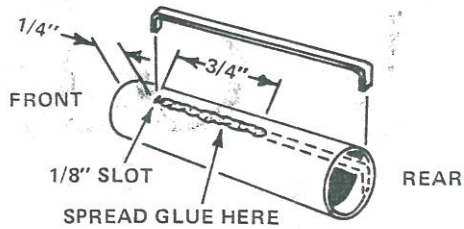


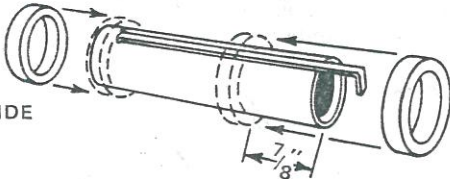


# ASSEMBLY INSTRUCTIONS



**1** Cut a 1/8" long slit in the engine mount tube (part G), 1/4" from one end as shown. Apply a 3/4" long line of glue to the tube as shown. Push one end of the engine holder (part I) into the slit and press the main part of the hook into the glue.

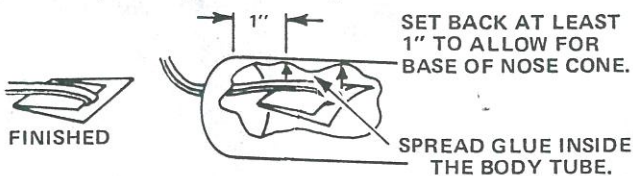
POSITION THE RINGS AS SHOWN AND APPLY A GENEROUS GLUE FILLET TO EACH SIDE OF EACH RING.



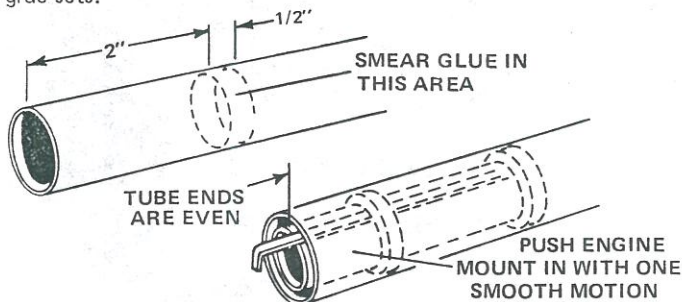
**2** Glue one of the adapter rings (part H) to the front of the engine mount against the end of the engine hook as shown. Slip the remaining adapter ring onto the opposite end of the engine mount tube and over the hook. Slide the ring 7/8" from the rear of the tube and apply glue along both sides where it touches the tube.



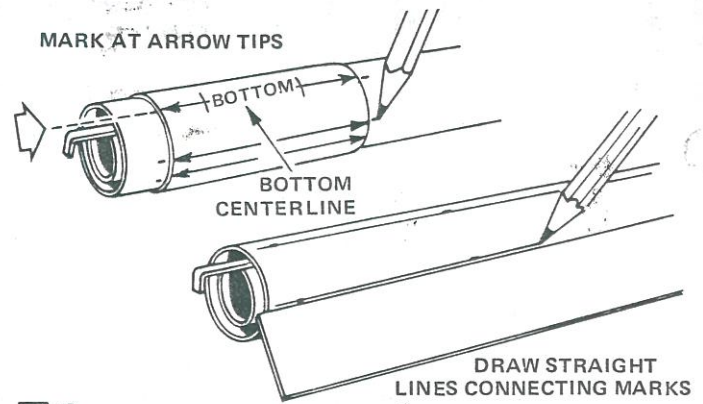
**3** Cut out the shock cord mount from the pattern sheet (part O). Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part F) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets.



**4** Apply glue to the inside of the body tube (part B) at one end over an area about 1" to 2" from the end. The glued area should be about the same size as the shock cord mount. Press the mount into the glue as shown and hold it until the glue sets.

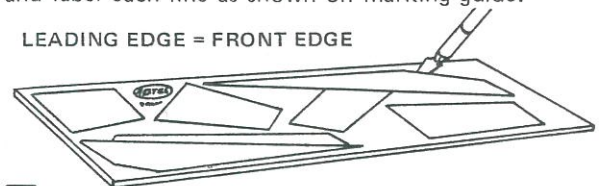


**5** Use a stick or wood dowel to smear glue around the inside of the other end of the body tube to cover an area about 2" to 2-1/2" from the end of the tube. Immediately insert the engine mount unit, being careful to position it so the engine hook will stick out the end of the body tube. Push the engine mount in with one smooth motion until the end of the engine mount tube is even with the end of the body tube.



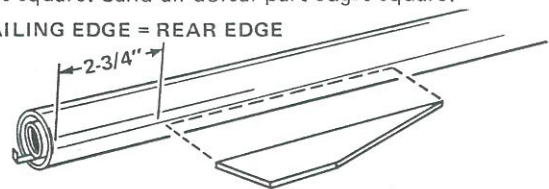
**6** Cut out the body tube marking guide from the pattern sheet. Wrap it around the rear of the body so that the bottom centerline is in line with the engine hook. Mark the tube at each arrow point, front and rear. Draw a straight line connecting each matching front and rear mark. (Use a ruler when drawing lines.) Extend each line the length of the body tube and label each line as shown on marking guide.

LEADING EDGE = FRONT EDGE

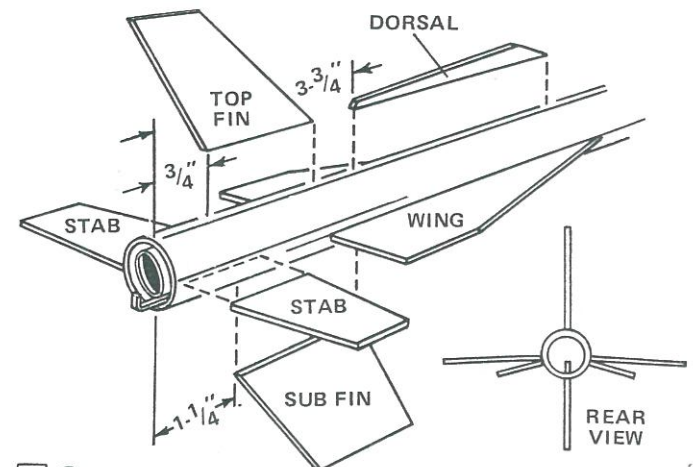


**7** Using a sharp model knife (or a single edge razor blade) and a metal ruler, carefully cut out all balsa parts from the printed balsa sheet (part L). Sand the leading (front) edges round on the wings, stabs, top and sub fin only. Leave all other edges square. Sand all dorsal part edges square.

TRAILING EDGE = REAR EDGE



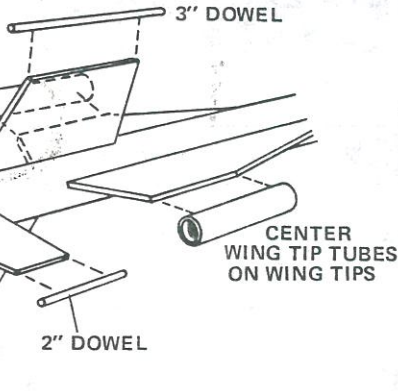
**8** Rub a line of glue into the body edge of each wing and allow to dry. Glue the wings to the body tube NEXT TO their alignment lines drawn in step 6. Refer to the illustration to be sure you position the wings correctly. Position the trailing (rear) edges 2-3/4" from the rear of the rocket body tube. Adjust the wings so they project straight away from the body tube. Do not glue the wing tip tubes on the wing tips yet.



**9** Following the same procedure as in step 8, glue the stabs to the body tube NEXT TO their alignment lines as shown. Trailing edges of stabs should be flush with rear of body tube. Glue the dorsal, top and sub fin to the body tube as illustrated. NOTE: Be sure to CENTER these parts on their alignment lines.

ALL DOWELS PROJECT 3/8" FORWARD OF LEADING EDGE

MODEL SHOWN UPSIDE DOWN



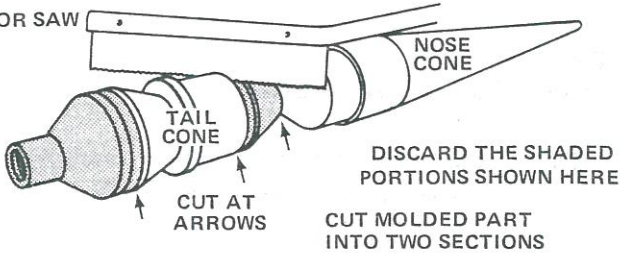
CENTER WING TIP TUBES ON WING TIPS

2" DOWEL

3" DOWEL

**10** Cut fin tip dowel (part N) into two 2" lengths and one 3" length. Round the leading edge of each piece. Glue the 3" length to the tip of the bottom fin and the two 2" lengths to the stab tips. Wing tip tubes (part M) can now be glued to the wing tips. Center these on each tip.

RAZOR SAW



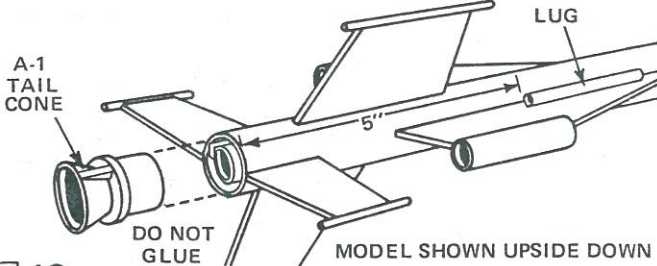
DISCARD THE SHADED PORTIONS SHOWN HERE

CUT AT ARROWS

CUT MOLDED PART INTO TWO SECTIONS

**11** If you have a razor saw, use it to cut the molded nose-tail cone (parts A & A1) into two parts as shown. If you do not have a razor saw, use a model knife or single edge razor blade. Make very light cuts around the parting lines (bottom of grooves) and repeat until you have cut completely through the plastic. Work carefully to avoid tearing the plastic. The short cones on both ends of the tail cone are to be discarded.

A-1 TAIL CONE



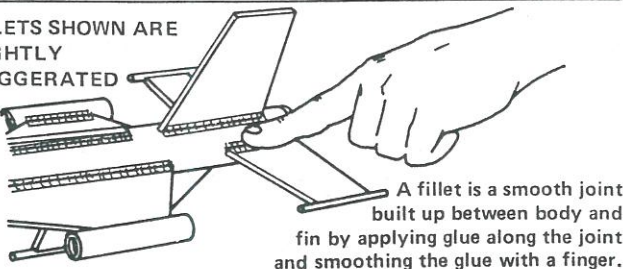
DO NOT GLUE

MODEL SHOWN UPSIDE DOWN

**12** Glue launch lug (part J) to body tube under left wing where the wing joins the body tube. Position rear of launch lug 5" from the rear of the body tube.

**NOTE:** DO NOT glue plastic tail cone (part A-1) to rocket body. Tail cone is for display use only. Remove tail cone when launching your rocket. Sand cut edges of tail cone smooth. Trim any remaining flash or rough edges from inside of tail cone for neatest appearance.

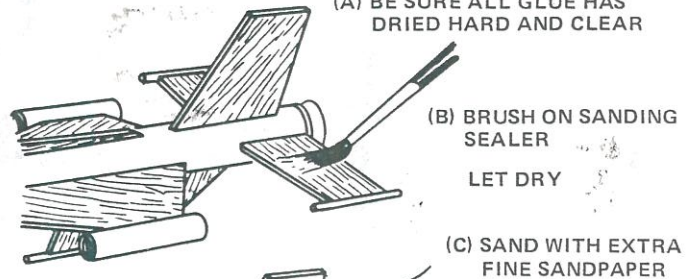
FILLETS SHOWN ARE SLIGHTLY EXAGGERATED



A fillet is a smooth joint built up between body and fin by applying glue along the joint and smoothing the glue with a finger.

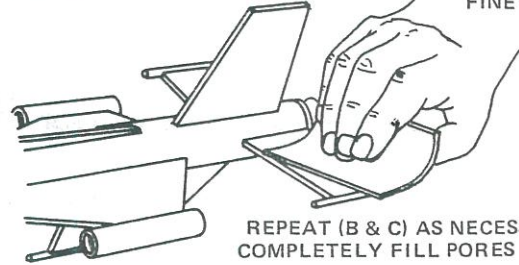
**13** Apply a glue "fillet" to each balsa part joint. Holding the rocket horizontally (level), apply a line of glue to both sides of each joint. Smooth out the glue with your finger. Repeat this with all body tube joints. Keep the rocket level until the glue dries.

(A) BE SURE ALL GLUE HAS DRIED HARD AND CLEAR



(B) BRUSH ON SANDING SEALER  
LET DRY

(C) SAND WITH EXTRA FINE SANDPAPER

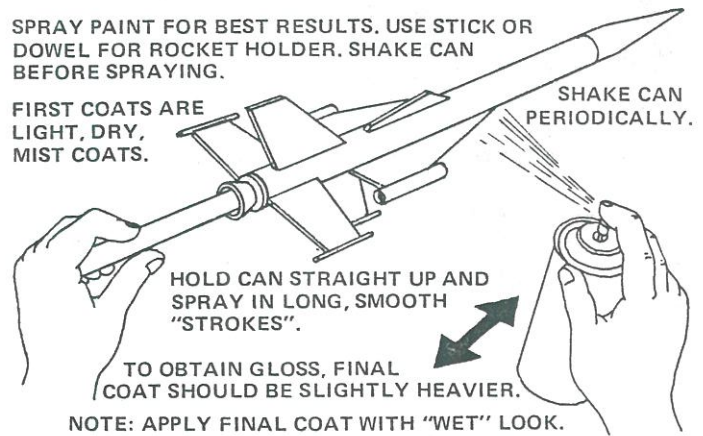


REPEAT (B & C) AS NECESSARY TO COMPLETELY FILL PORES IN WOOD

**14** When all glue on the outside of the model is dry, prepare the balsa parts for painting. Apply at least two coats of sanding sealer to all wood surfaces. Let dry and sand lightly between coats. Do this until the tiny holes in the wood are filled and everything looks and feels smooth. Insert nose cone.

SPRAY PAINT FOR BEST RESULTS. USE STICK OR DOWEL FOR ROCKET HOLDER. SHAKE CAN BEFORE SPRAYING.

FIRST COATS ARE LIGHT, DRY, MIST COATS.



SHAKE CAN PERIODICALLY.

HOLD CAN STRAIGHT UP AND SPRAY IN LONG, SMOOTH "STROKES".

TO OBTAIN GLOSS, FINAL COAT SHOULD BE SLIGHTLY HEAVIER.

NOTE: APPLY FINAL COAT WITH "WET" LOOK.

**15** After the sanding sealer is completely dry, paint the entire model flat white. Let this coat dry overnight. Finish paint should be gloss white. Follow instructions on spray can for best results. For a sharp finishing touch, spray or brush paint the exhaust cone a bright red.

TAPE DISC



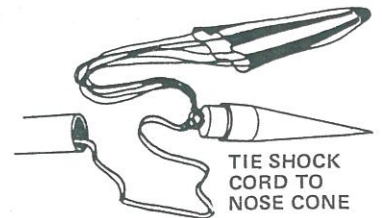
SHROUD LINE



PARACHUTE



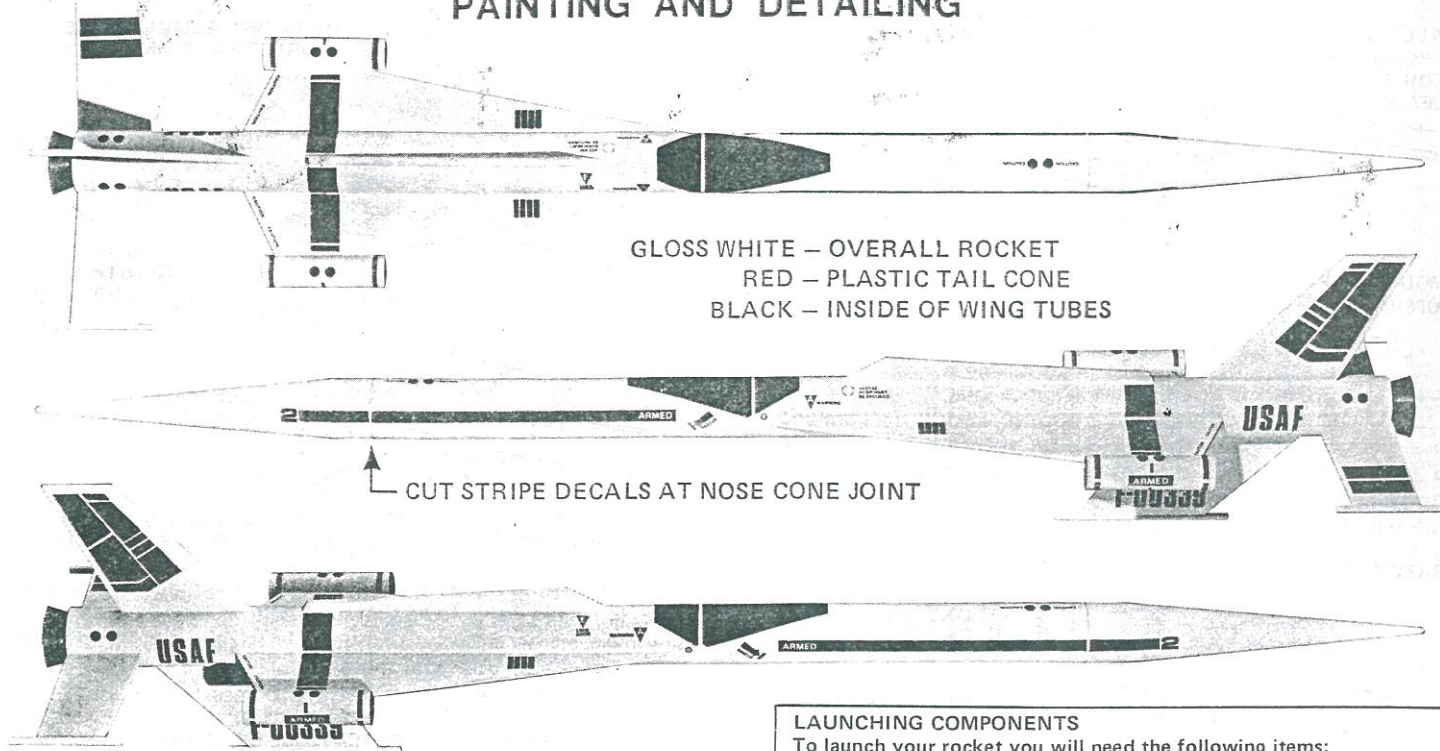
PASS PARACHUTE THROUGH LOOP, PULL TIGHT



TIE SHOCK CORD TO NOSE CONE

**16** Cut out the parachute (part C) on its edge lines. Cut three equal lengths of shroud line (part E). Attach line ends to the top of the parachute with tape discs (part D) as shown. Pass the shroud line loops through the ring on the nose cone (part A). Pass the parachute through the loop ends and draw the lines tight against the ring. Set the knot with a drop of glue. Tie the free end of the shock cord to the nose cone.

## PAINING AND DETAILING



**17** When all paint is dry, apply decals (part K). To apply the water transfer decals, cut out an individual section of the decal and dip in lukewarm water for about 10 seconds. When the decal slides freely on the backing paper, slip it from the backing sheet onto the model. Blot excess water away with a damp cloth. Allow decals to dry overnight.

### LAUNCHING COMPONENTS

To launch your rocket you will need the following items:

- An Estes model rocket launching system and battery
- Parachute recovery wadding (Estes Catalog No. 2274)
- Estes model rocket engines

Be sure to follow the HIAA-NAR\* Model Rocket Safety Code when carrying out your model rocketry activities.

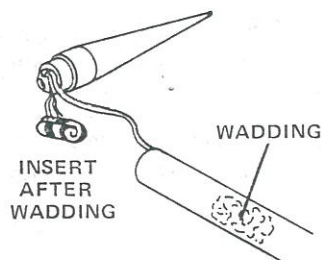
\*HIAA-NAR - Hobby Industry Association of America  
National Association of Rocketry

## COUNTDOWN CHECKLIST

**T-14** Pack four or five squares of loosely crumpled recovery wadding into body tube.



FOLD AND WRAP SHROUD LINES AROUND PARACHUTE



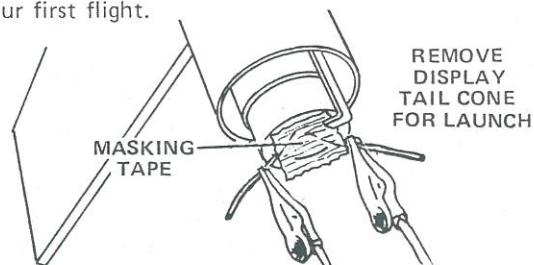
INSERT AFTER WADDING

**T-13** Fold the parachute into a triangular shape. Roll 'chute tightly as shown and wrap shroud lines around it. Slide 'chute into body above wadding. If 'chute is too large, unroll and re-pack until it slides easily into rocket. A fit that is too tight may prevent parachute from ejecting properly.

**NOTE:** DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust 'chute with ordinary talcum powder, especially in cold weather.

**T-12** Pack shock cord neatly into rocket, then slide nose cone into place. Nose cone should separate easily from rocket body tube, but should not be extremely loose. If it is too tight, sand inside of body tube end and shoulder of nose cone with extra fine sandpaper.

**T-11** Select an engine and install an igniter as directed in the engine instructions. Engines recommended for use with this rocket are A8-3, B4-4, B6-4, and C6-5. We recommend a B4-4 for your first flight.



MASKING TAPE

REMOVE DISPLAY TAIL CONE FOR LAUNCH

**T-10** Insert engine into rocket. Engine hook must latch securely over end of engine.

**T-9** Disarm launch panel---remove safety key.

**T-8** Place rocket on launch pad, making sure rocket slides freely on launch rod. Clean micro-clips and attach them to igniter leads.

**T-7** Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in recovery area.

**T-6** Arm launch panel---insert safety key.

**-5-4-3-2-1-LAUNCH!!**

## MISFIRE PROCEDURE

Occasionally an igniter will heat and burn into two parts without igniting the engine. This is almost always caused by a failure to install it correctly. Disarm launch panel, remove the model, clean igniter residue from nozzle, and install a new igniter. Follow launching procedure again.