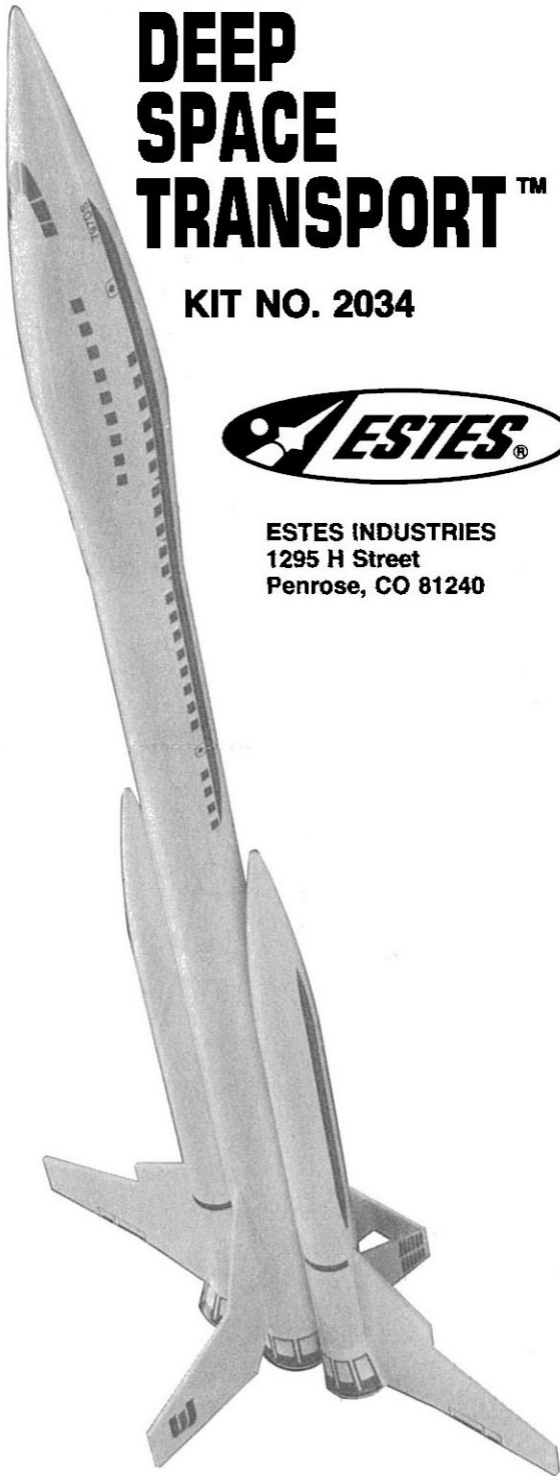


DEEP SPACE TRANSPORT™

KIT NO. 2034



ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240



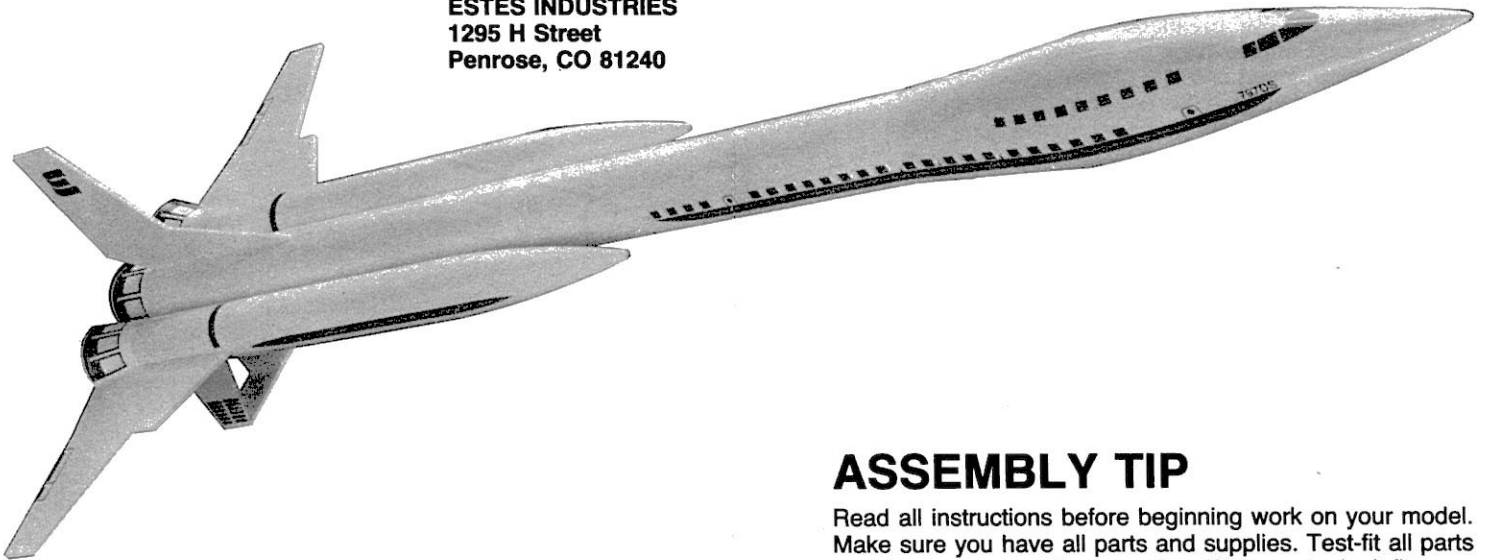


DEEP SPACE TRANSPORT™

KIT NO. 2034

FLYING MODEL ROCKET KIT

ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240

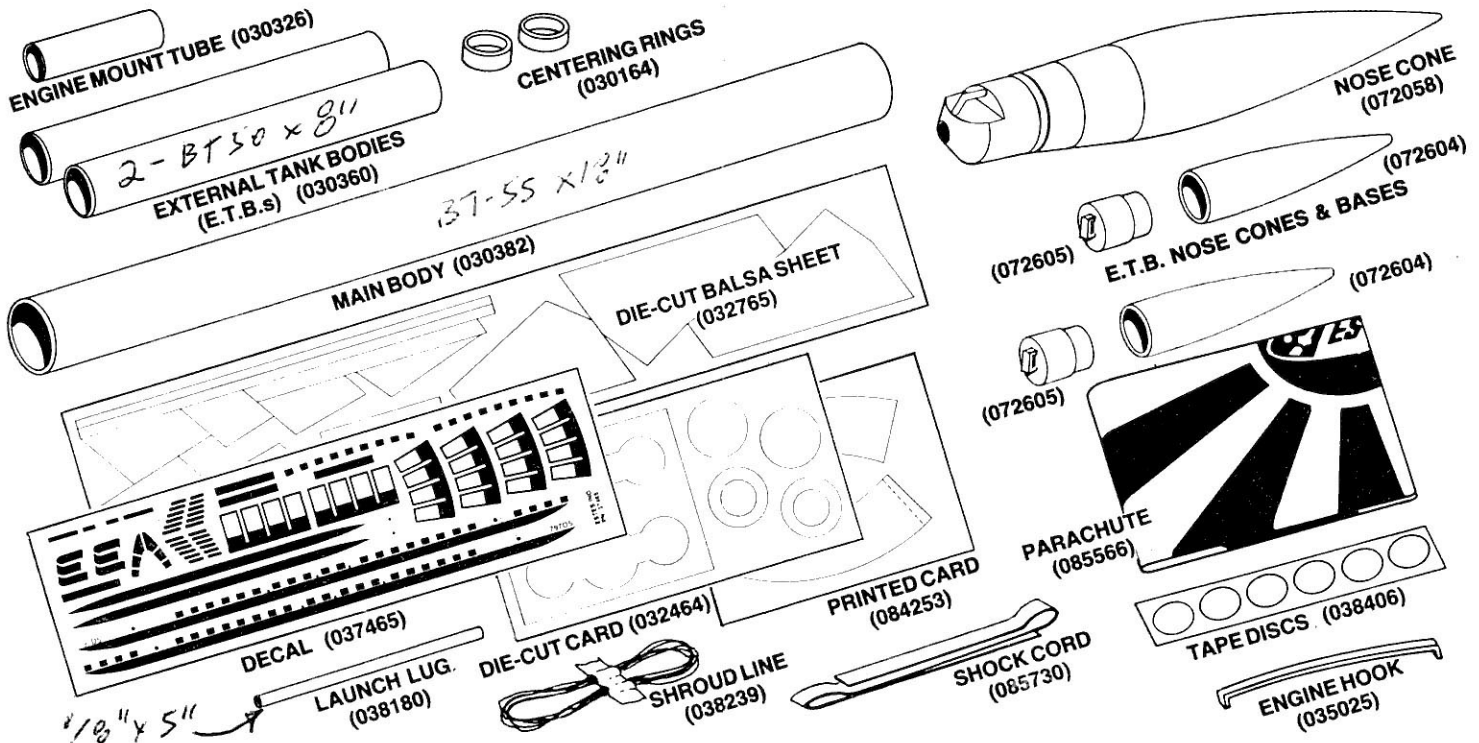


ASSEMBLY TIP

Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

PARTS AND SUPPLIES

Locate the parts shown below and lay them out on the table in front of you.



In addition to the parts included in the kit you will also need:



SCISSORS



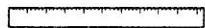
PENCIL



PAINT BRUSH



HOBBY KNIFE



RULER



CARPENTER'S GLUE OR WHITE GLUE



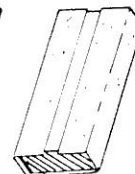
MASKING TAPE



SANDING SEALER



FINE SANDPAPER



SANDING BLOCK



PLASTIC MODEL CEMENT

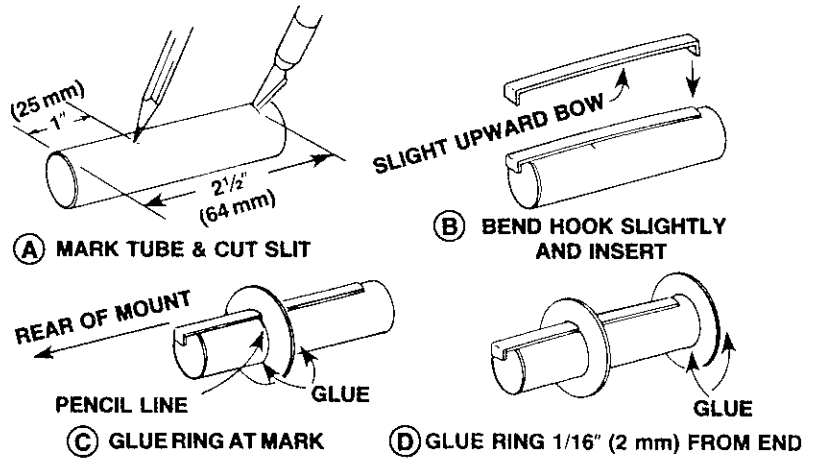


GLOSS WHITE ENAMEL

ROCKET ASSEMBLY

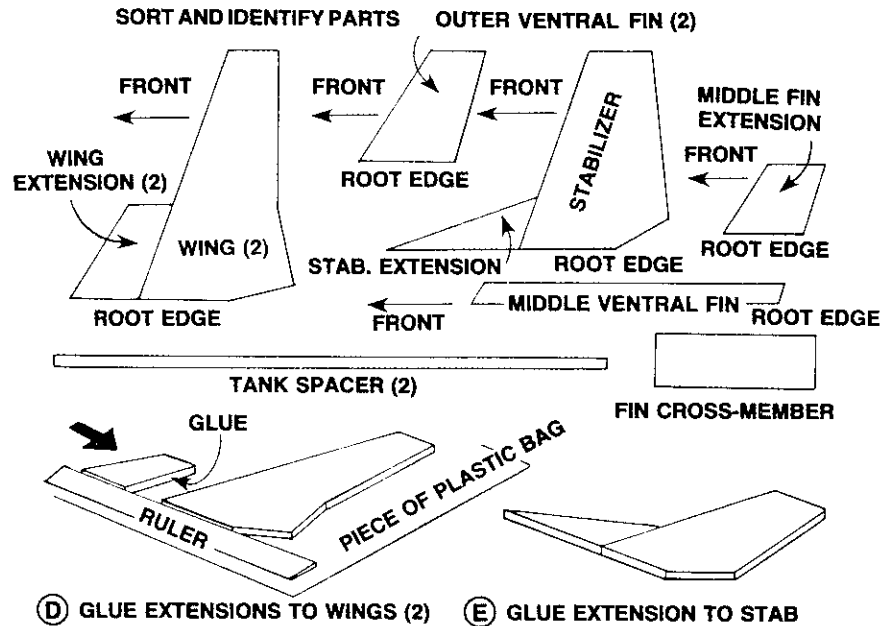
1.

- Mark engine mount tube 1" (25 mm) and 2½" (64 mm) from one end. Make a 1/8" (3 mm) wide slit in the tube at the 2½" (64 mm) mark.
- Gently bend engine hook so it has a very slight upward bow. Insert one end of hook in slit.
- Use a knife to free the two centering rings from the die-cut card. Slide one ring over front of tube and push down to 1" (25 mm) mark. Make sure ring is straight on tube. Apply a bead of glue to both sides of ring/tube joint.
- Position second ring about 1/16" (2 mm) from front of tube and glue in place in same manner. Stand assembly on end until glue dries.



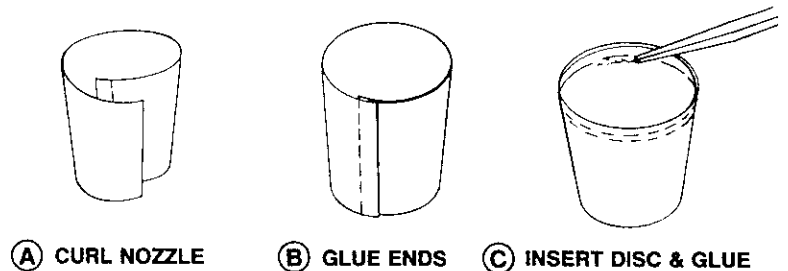
2.

- Lightly sand both sides of balsa die-cut sheet.
- Run a knife blade along die-cut lines to remove parts from sheet.
- Lightly sand edges of parts, but leave edges square. Sort and identify all parts as shown. Note: Root edge is the edge of a part that glues to body tube.
- Cut a 4 inch square piece from plastic kit bag. Lay one wing and wing extension on plastic with root edges against a ruler. If necessary, sand rear edge of extension to obtain perfect butt joint fit. Apply glue to rear edge of wing extension and glue to wing. After glue has dried, smear a thin film of glue over both sides of joint.
- Using same procedure, glue extension to remaining wing and glue stabilizer extension to stabilizer.



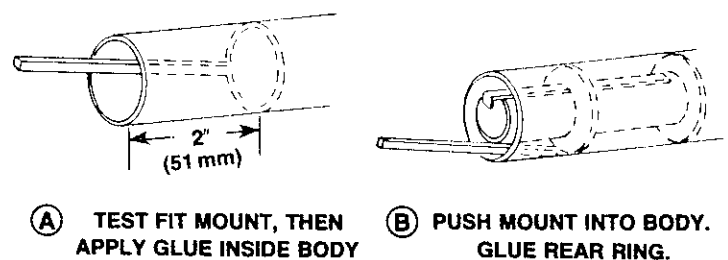
3.

- Carefully cut out engine nozzles from printed card. Gently curl nozzles around a nose cone. Work slowly to avoid getting creases in card stock. Curl nozzles until they remain in circular shape.
- Apply glue to tab area of a nozzle and glue ends together. Hold the nozzle until the glue sets. Glue second nozzle together.
- Remove two discs from die-cut card. Push a disc into the large end of a nozzle. Make sure that disc is set into nozzle at the same depth all around. Use a toothpick to apply a small bead of glue to the joint. Glue other disc into remaining nozzle.



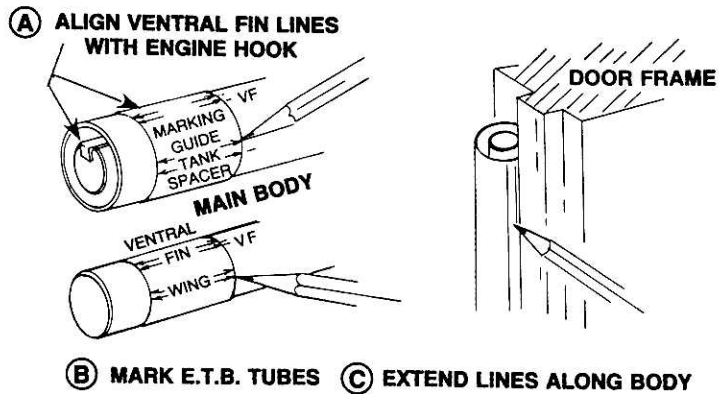
4.

- Test fit engine mount into main body. If fit is too tight, sand edges or rings so mount will slide into body. Apply a bead of glue around the inside of main body about 2" (51 mm) from one end.
- Push engine mount into body until rear of engine tube is even with rear of body. Using a piece of scrap balsa, apply a bead of glue around the joint between body and rear ring. Stand body in vertical position until glue dries.



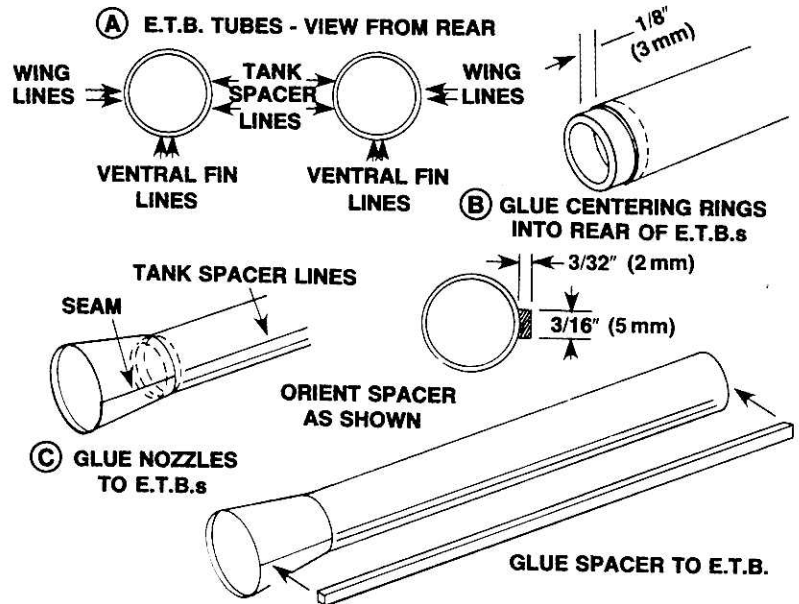
5.

- Cut the two body marking guides from page 5 of these instructions.
- Wrap the BT-55 marking guide around rear of main body and tape ends together. Rotate guide so pair of ventral fin lines are aligned with engine hook. Mark body at arrow points. Print "V.F." on body next to ventral fin marks.
- Using a door frame as a guide, draw lines on body at each mark. Extend lines about 9" (229 mm) from rear of body. Extend ventral fin lines the entire length of the body.
- Wrap the BT-50 marking guide around one of the external tank bodies and tape ends together. Note: These body tubes will hereafter be referred to as E.T.B.s. Mark the body and print "V.F." on body next to ventral fin marks.
- Again using the door frame as a guide, draw lines on E.T.B. Extend lines the entire length of tube. Repeat marking procedure with remaining E.T.B.



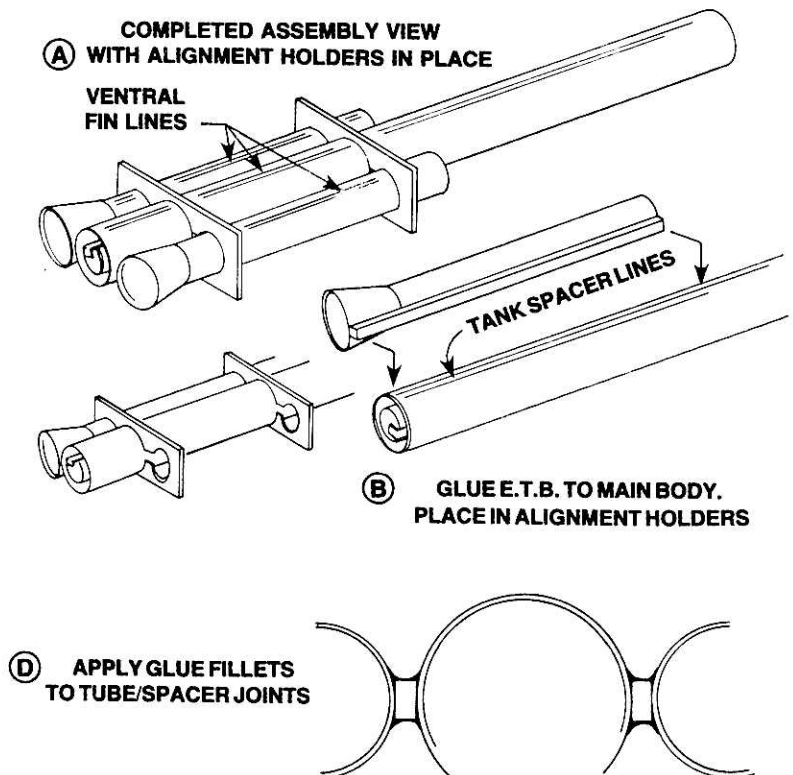
6.

- Orient the E.T.B.s so the pencil lines are arranged as shown. Remember, you printed "V.F." next to the ventral fin lines. Also, the tank spacer lines are farther apart ($3/16"$ - 5 mm) than ventral fin and wing lines. Mark an 'R' on the rear of both bodies.
- Apply a bead of glue around the inside rear of one E.T.B. Push a centering ring part way into the body, leaving $1/8"$ (3 mm) of ring extending beyond rear of body. Let glue dry.
- Apply a bead of glue around the inside front of a nozzle. Slide nozzle over exposed portion of centering ring with seam in nozzle centered between tank spacer lines. Push nozzle against end of body. Attach remaining nozzle to rear of second E.T.B. in same manner.
- Balsa tank spacers are attached to E.T.B.s with the spacers between the pencil lines and the spacers oriented as shown. Study the drawings to make sure you have the spacers correctly positioned before gluing to E.T.B.s.



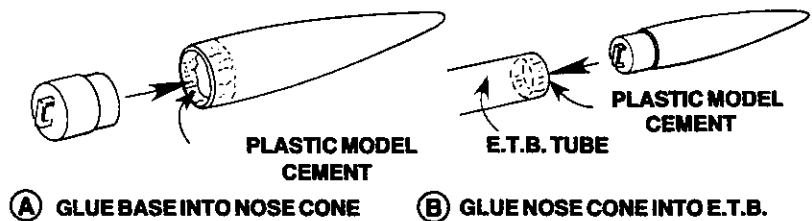
7.

- Remove the alignment holders from the die-cut card. Study the completed assembly drawing to see how the E.T.B.s are attached to body. Note that the "V.F." lines on all three bodies must be on same side of assembly. Hold the parts together and test fit the alignment holders over them. If the holders are tight, lightly sand inside of openings to remove any burrs or flanges.
- Apply a bead of glue to the tank spacer of one E.T.B. and glue to main body. Slide the alignment holders over assembly from the front. Check for proper alignment of bodies, then leave parts in holders until glue is dry.
- Remove holders from assembly. Glue remaining E.T.B. to opposite side of body and slide alignment holders back in place.
- After glue is dry, remove holders. Apply a bead of glue to joints between a tank spacer and tubes. Pull your little finger along the joints to smooth the glue into an even fillet between the body tubes.
- Apply glue fillets to remaining tank/body joints. Place the assembly flat on the table until glue is dry.



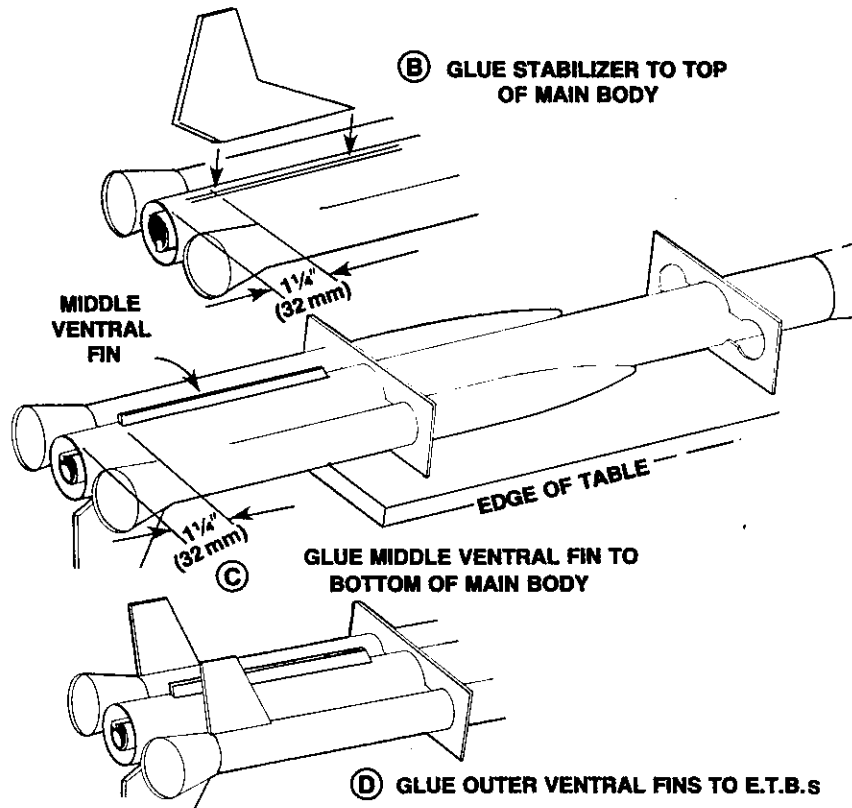
8.

- Using plastic model cement, glue the bases into the external tank nose cones.
- Apply a bead of plastic model cement around the inside front of both E.T.B.s. Using your finger, rub the glue into the walls of the tubes. Apply a second bead of plastic cement around the inside of the E.T.B.s and socket nose cones in place.



9.

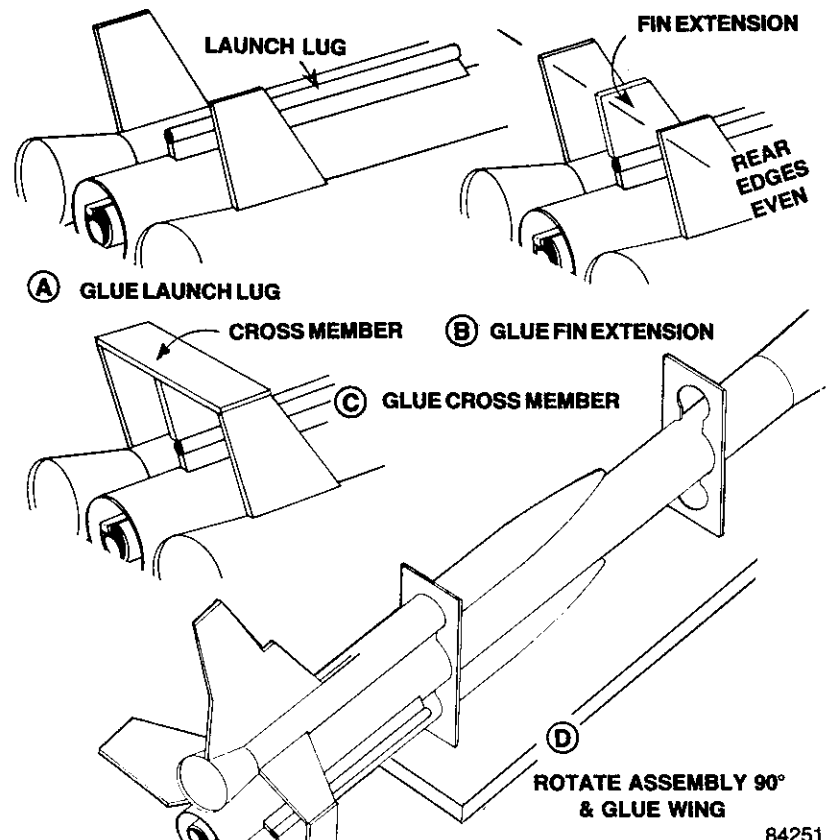
- Place a mark across main body ventral fin lines $1\frac{1}{4}$ " (32 mm) from rear of body. Turn model over and mark stabilizer lines at same dimension.
- Apply a bead of glue to the root edge of stabilizer. Glue stabilizer to main body between pencil lines with rear edge of stabilizer on $1\frac{1}{4}$ " (32 mm) mark. Make sure stabilizer points straight up, then leave assembly flat on table until glue dries.
- Slide alignment holders back over bodies and position as shown. Insert nose cone into main body to provide additional weight on front. Turn model over with stabilizer extending off edge of table. Glue middle ventral fin to main body with rear of fin on $1\frac{1}{4}$ " (32 mm) mark. Check vertical alignment.
- Glue the two outer ventral fins to the E.T.B.s. The rear edges of these fins are on the joints between tubes and nozzles. As before check vertical alignment, then allow glue to dry before proceeding with step 10.



FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!

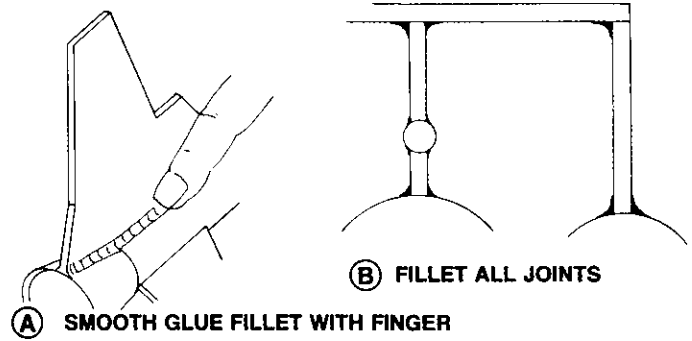
10.

- Glue the launch lug to the top of the middle ventral fin. Let glue dry.
- The ventral fin extension is glued to the top of the launch lug with rear edge of fin even with rear edges of outer fins. When gluing this fin, place a ruler across rear edges to facilitate alignment. Check vertical alignment and let glue dry.
- The fin cross member fits across top edges of fins. Check the fit of this part. If necessary, sand tops of middle or outer fins so cross member rests flat across all three. Glue cross member in place.
- Turn assembly 90 degrees. Place wing on an E.T.B. with rear edge of wing even with rear edge of nozzle. Check fit and sand root edge, if necessary, so wing matches body. Glue wing to body, check vertical alignment and let glue dry.
- Glue remaining wing to opposite side of assembly in same manner.



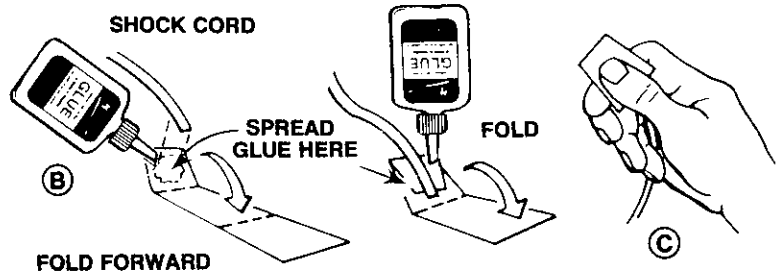
11.

- A. Glue fillets are applied to strengthen joints and to fill any small cracks between bodies and balsa parts. Apply an even bead of glue along the joint between a wing and E.T.B. Pull your finger along the joint to smooth the glue and to remove any excess glue.
- B. Apply similar fillets to both sides of all joints, including those between launch lug and ventral fin and between ventral fins and cross member. Keep model in a horizontal position during this step so glue will not run or sag. After glue is dry, remove nose cone and remove alignment holders.



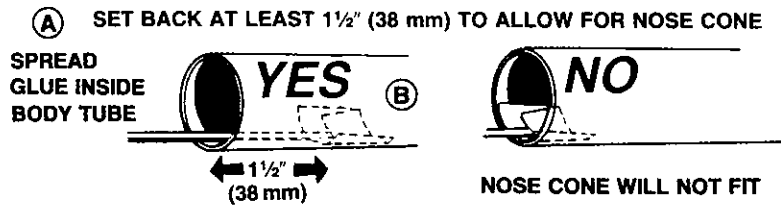
12.

- A. Cut shock cord mount from page 5 of instructions.
- B. Crease on dotted lines by folding. Spread glue on section 1 and lay end of shock cord into glue. Fold over and apply glue to back of first section and exposed part of section 2. Lay shock cord as shown and fold mount over again.
- C. Clamp unit together with fingers until glue sets.



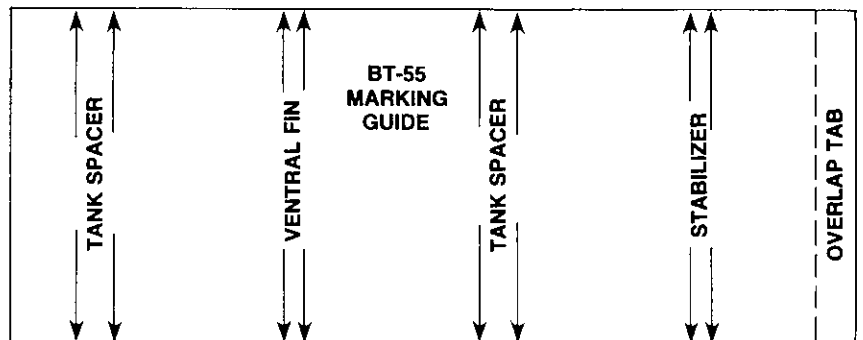
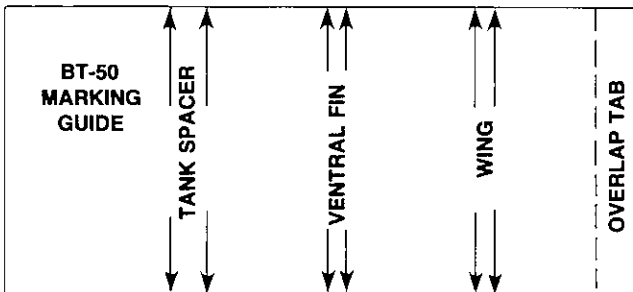
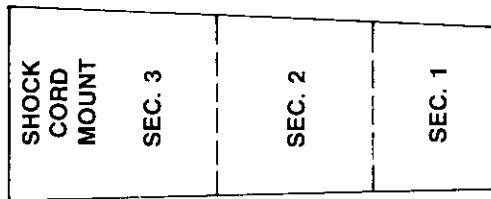
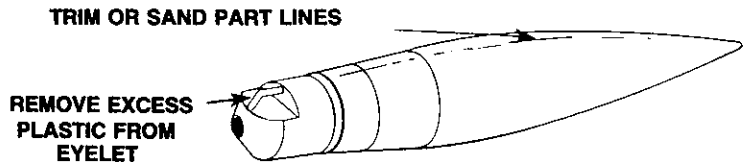
13.

- A. Apply glue to inside front of body tube to cover an area no less than 1 1/2" (38 mm) to 2 3/4" (70 mm) from end. The glued area should be same size as shock cord mount.
- B. Press mount firmly into glue as shown.
- C. Hold until glue sets.



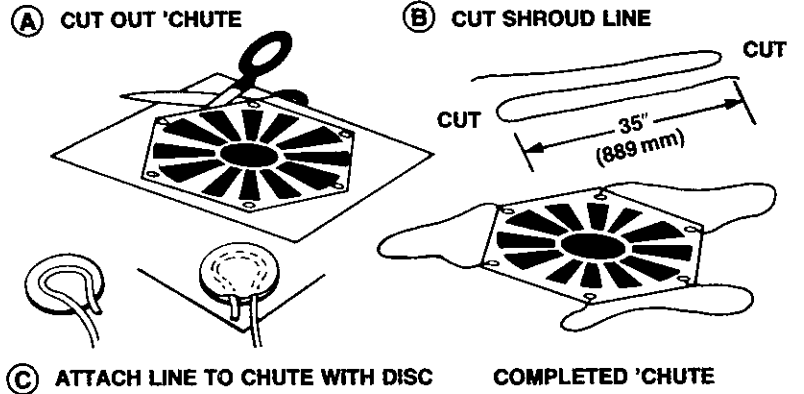
14.

- A. Trim excess plastic from part lines of nose cone with sharp knife. Also remove any excess plastic from inside molded eyelet. Wipe nose cone with damp cloth to remove oil and dirt.



15.

- Cut out parachute on edge lines.
- Cut three 35" (889 mm) lengths of shroud line.
- Form small loops with ends of shroud line and press onto sticky side of tape discs. Attach tape discs with line ends to top of parachute as shown.
- Press tape discs firmly into place until tape discs and parachute material are molded around shroud line loops.
- Pass shroud line loops through eyelet on nose cone. Pass parachute through loop ends and pull lines tight against the nose cone.
- Tie free end of shock cord to nose cone eyelet. Push 'chute and shock cord down into body and socket nose cone in place.



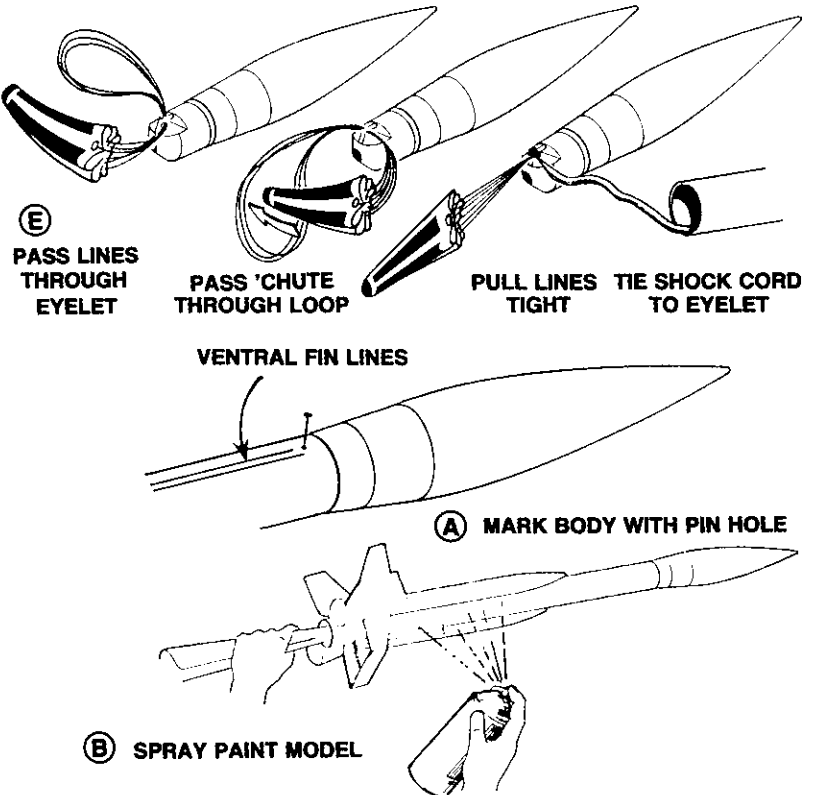
16.

Note: Proceed with this step only after glue fillets are thoroughly dry.

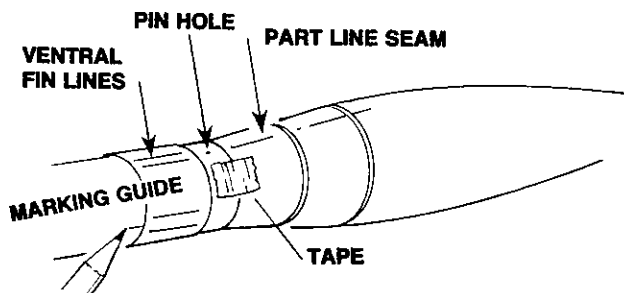
- Brush a coat of sanding sealer onto all exposed balsa surfaces. Let sealer dry, then lightly sand with fine sandpaper. Seal and sand a couple of more times for a smooth finish.

17. FINISHING THE MODEL

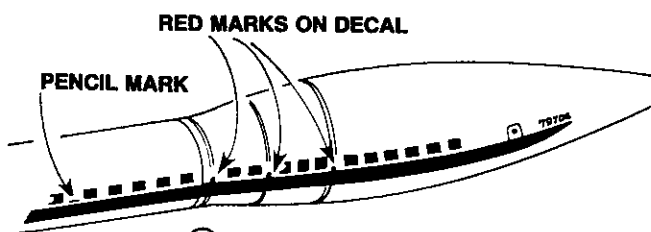
- Make a small pin hole near the front of the body, centered between the ventral fin lines. This will provide a visual reference point after model is painted.
- Wipe the model with a slightly damp cloth to remove sanding dust and oily finger prints. Place a dowel or tightly rolled sheet of paper into the engine tube to serve as a painting holder. Spray paint the model with gloss white enamel. Let the model dry overnight before applying decals.



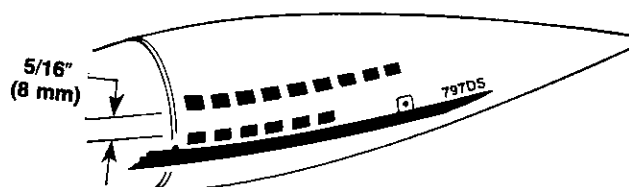
- C. Before decals are applied, the body must be marked. Rotate the nose cone so one of the two part line seams is aligned with the pin hole. Place a small piece of masking tape over the body/nose cone joint to keep nose cone aligned. Wrap BT-55 marking guide around body and tape ends together. Rotate guide so ventral fin lines are centered on pin hole. Place a light pencil mark on both sides of body at the center point between tank spacer lines. Remove guide.
- D. Using a ruler as a guide, cut out the long decal at bottom of sheet that consists of multi-color stripe and row of windows. This decal fits on the right side of body and nose cone. Note the three small marks extending above the red stripe. These will be used to position the decal. Dip the decal in water for 20 to 30 seconds (until decal slides on backing material). Slide decal from backing onto right side of model. Move the decal so the three marks are over the three grooves in the nose cone. Note: If decal doesn't slide easily, brush a little water over the surface. Move the decal up or down so the top of the red stripe is on the pencil mark. Visually align decal so it runs straight along side of body and nose cone. Beginning in the middle of the decal, gently blot away water with a soft cloth. Push the decal down into the depressions of the three grooves. Using same procedure, apply the remaining long decal to the left side of the model.
- E. Cut one row of upper windows from decal. The row of windows is curved downward in the middle so it will be straight when matched to the compound curves of the nose cone. The rear window of this decal is slightly forward of the front groove in the nose cone and the windows are centered above the lower windows. Place a mark on nose cone $5/16"$ (8 mm) above top of lower windows. The bottom of upper row of windows is positioned on this mark. Apply the decal, position according to above instructions and blot away water. Apply remaining row of windows to opposite of nose cone.
- F. Cut the cockpit window unit from the decal. Place a mark on the top center of nose cone $1\frac{3}{4}"$ (44 mm) from tip. The front edge of cockpit window unit goes on this mark. Apply the decal. Sighting from front of nose cone, align cockpit windows with upper rows of side windows. Once decal is properly aligned, blow away water.
- G. The two stripe decals are applied to the sides of the E.T.B.s with the stripes centered on wings and with rear edges $1/2"$ (13 mm) in front of wings. Make sure these are applied with the red stripe at the top.
- H. Use the kit panel photo as a guide to apply the remaining decals. After decals have dried for a couple of hours, wipe model with a damp cloth to remove any water spots.
- I. Cut through the two side window/stripe decals at the nose cone/body joint and remove the piece of tape. If desired, a gloss clear spray enamel may be applied to protect decals and paint finish.



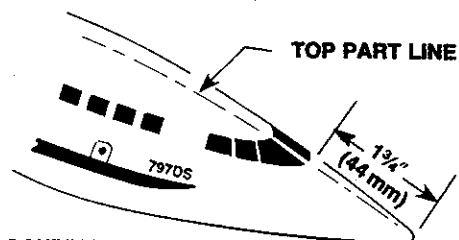
Ⓒ MARK BODY ON BOTH SIDES BETWEEN TANK SPACER LINES



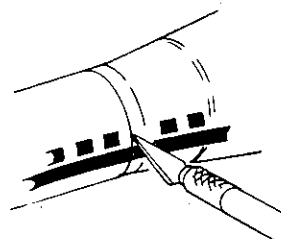
Ⓓ APPLY LONG WINDOW/STRIPE DECAL



Ⓔ APPLY ROW OF UPPER WINDOWS

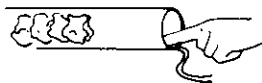


Ⓕ APPLY COCKPIT DECAL

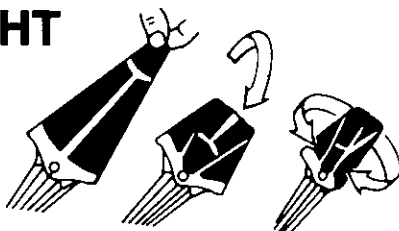


Ⓖ CUT THROUGH WINDOW/STRIPE DECALS AT NOSE CONE/BODY JOINT

ROCKET PREFLIGHT

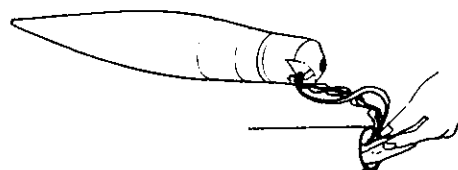


CRUMPLE AND INSERT
4 SQUARES OF RECOVERY WADDING



FOLD PARACHUTE

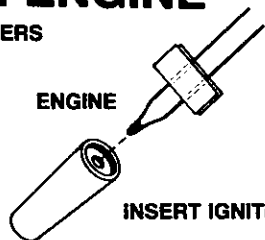
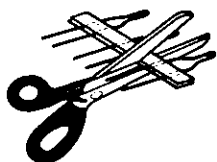
WRAP LINES LOOSELY AROUND 'CHUTE.
INSERT 'CHUTE INTO BODY



INSTALL NOSE CONE

PREPARE ENGINE

SEPARATE THE IGNITERS



ENGINE

INSERT IGNITER

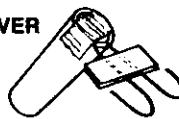
IGNITER TIP MUST TOUCH
PROPELLANT DEEP INSIDE
NOZZLE OPENING



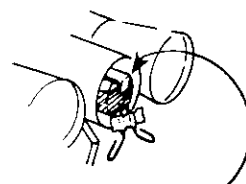
FOLD OVER

**BEND LEADS
IN U SHAPES**

APPLY AND FIRMLY
PRESS MASKING
TAPE IN PLACE



INSTALL ENGINE IN ROCKET



**ENGINE HOOK MUST LATCH
SECURELY OVER END OF ENGINE**

LAUNCH SUPPLIES

To launch your rocket you will need the following items:

- Estes Electrical Launch System
- Estes Recovery Wadding No. 2274
- Recommended Estes Engines: B4-2, B6-2, C5-3 and C6-3.

To become familiar with your rocket's flight pattern, use a B4-2 engine for your first flight.

Use only with Estes products.

FLYING YOUR ROCKET

Choose a large field away from power lines, tall trees, and low flying aircraft. Try to find a field at least 250 feet (76 meters) square. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great.

Launch area must be free of dry weeds and brown grass.

Launch only during calm weather with little or no wind and good visibility.

Don't leave parachute packed more than a minute or so before launch during cold weather, (colder than 40° Fahrenheit (4° Celsius)).

Parachute may be dusted with talcum powder to avoid sticking.

MISFIRES

Failure of the model rocket engine to ignite is nearly always caused by incorrect igniter installation. An Estes igniter will function properly even if the coated tip is chipped. However, if the coated tip is not in direct contact with the engine propellant, it will only heat and not ignite the engine.

When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then tape the igniter leads firmly to base of engine as illustrated above. Repeat the countdown and launch procedure.

FOR YOUR SAFETY AND ENJOYMENT

Always follow the NAR* MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.

*National Association of Rocketry

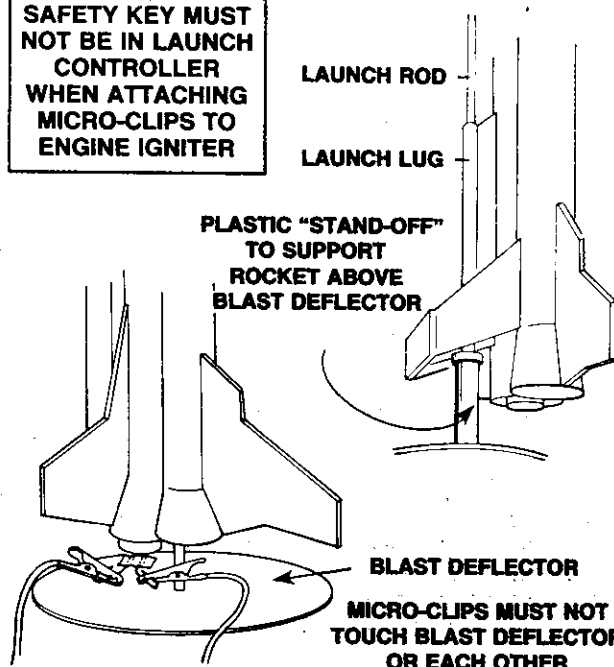
COUNTDOWN AND LAUNCH

SAFETY KEY MUST NOT BE IN LAUNCH CONTROLLER WHEN ATTACHING MICRO-CLIPS TO ENGINE IGNITER

LAUNCH ROD

LAUNCH LUG

PLASTIC "STAND-OFF" TO SUPPORT ROCKET ABOVE BLAST DEFLECTOR



BLAST DEFLECTOR

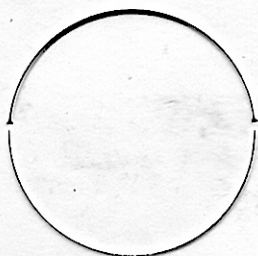
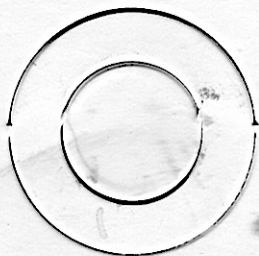
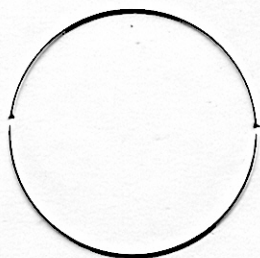
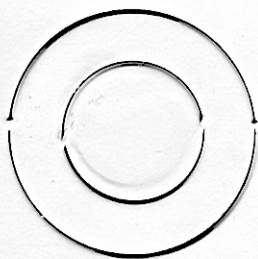
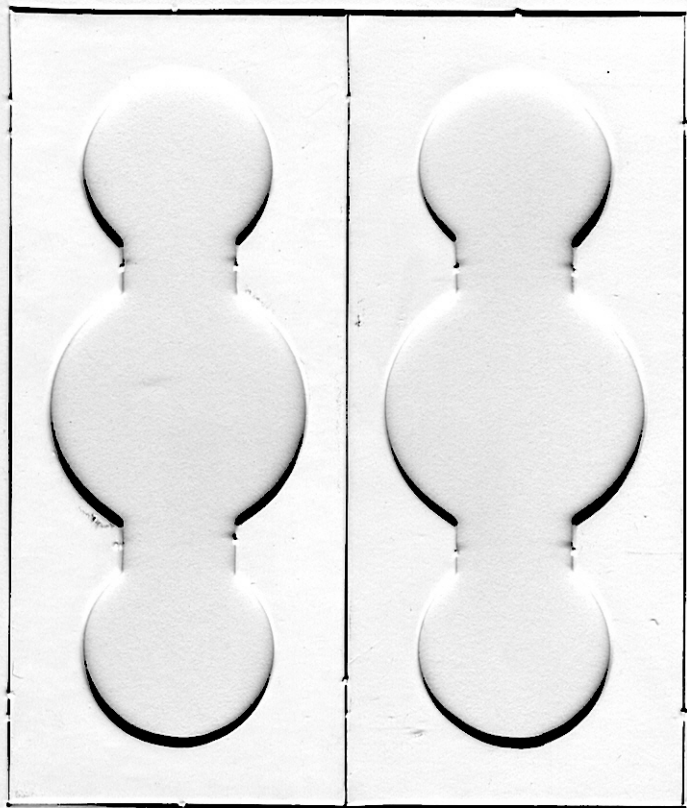
MICRO-CLIPS MUST NOT TOUCH BLAST DEFLECTOR OR EACH OTHER

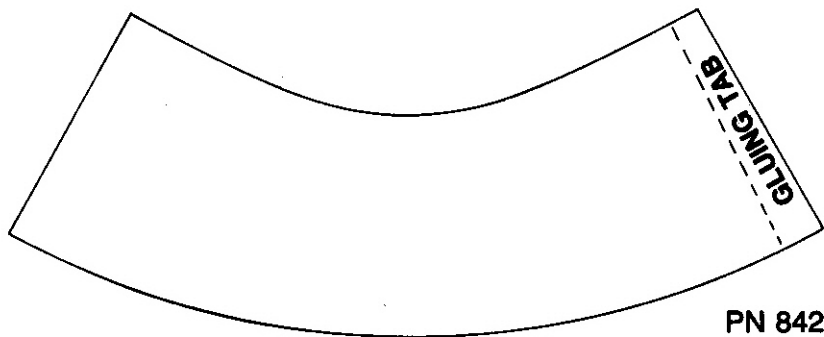
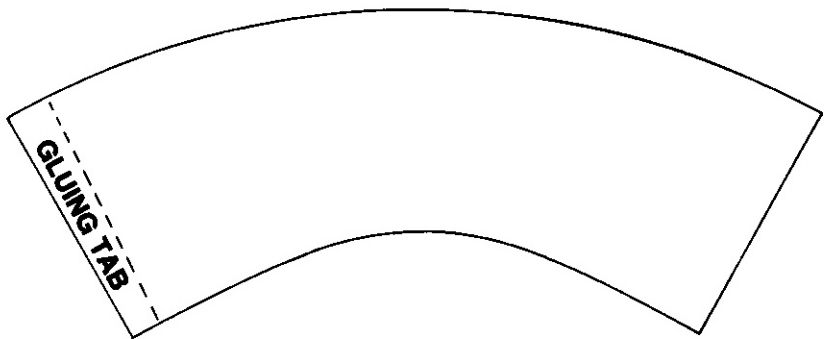
- ⑩ BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.
- ⑨ Remove safety cap and slide launch lug over launch rod to place rocket on launch pad. Make sure the rocket slides freely on the launch rod.
- ⑧ Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.
- ⑦ Move back from your rocket as far as launch wire will permit (at least 15 feet).
- ⑥ INSERT SAFETY KEY to arm the launch controller.

Give audible countdown 5...4...3...2...1

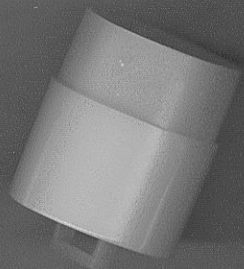
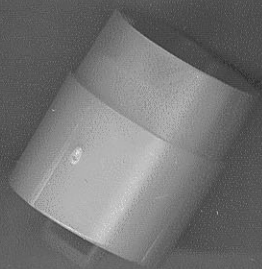
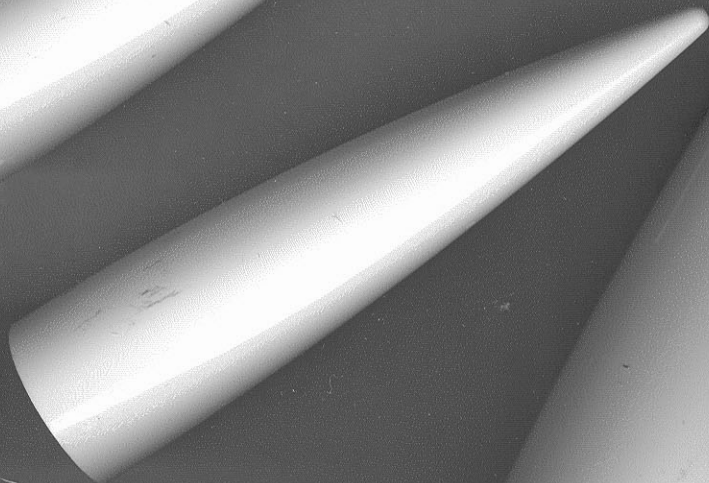
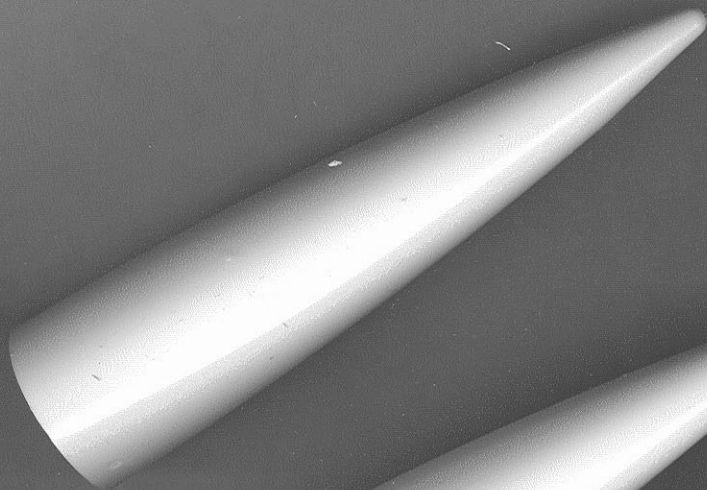
LAUNCH!!! PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES

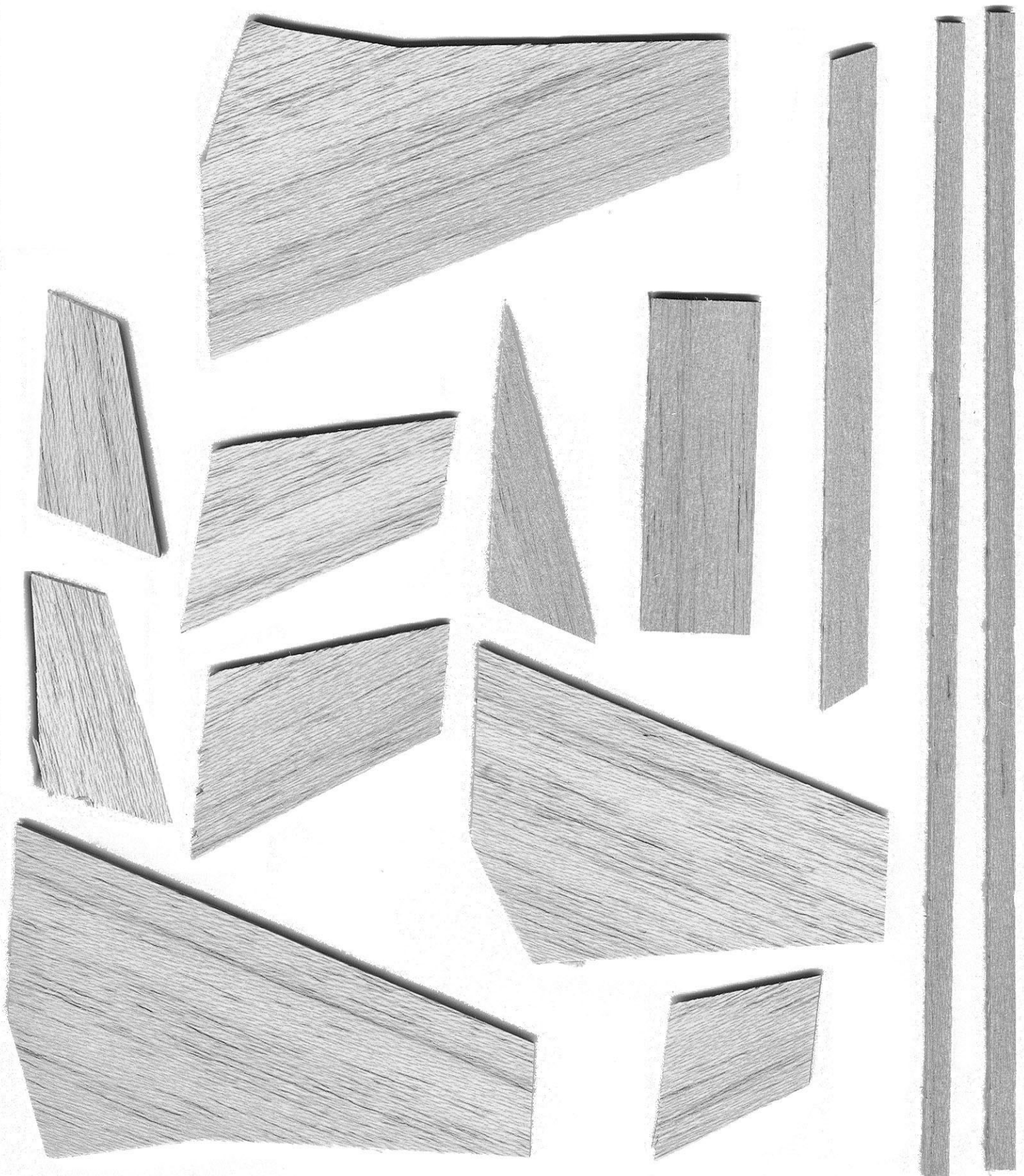
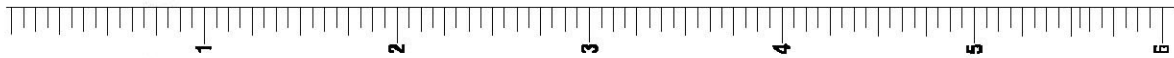
REMOVE SAFETY KEY FROM LAUNCH CONTROLLER. REPLACE SAFETY KEY AND SAFETY CAP ON LAUNCH ROD.

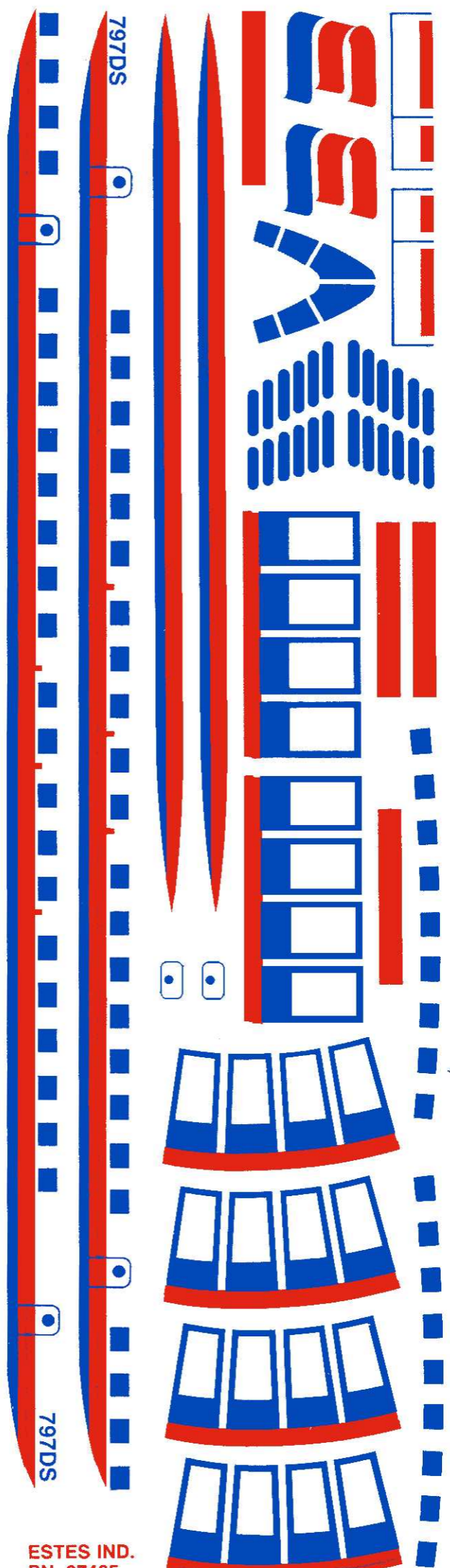




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