

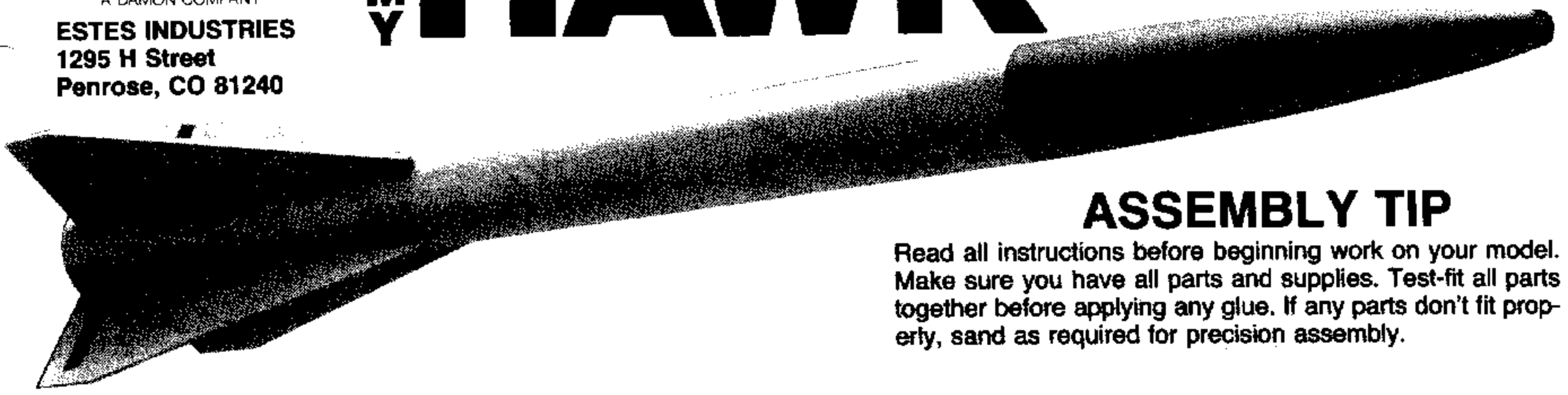


A DAMON COMPANY

ESTES INDUSTRIES
1295 H Street
Penrose, CO 81240

ARMY HAWK™

FLYING MODEL ROCKET KIT #2031

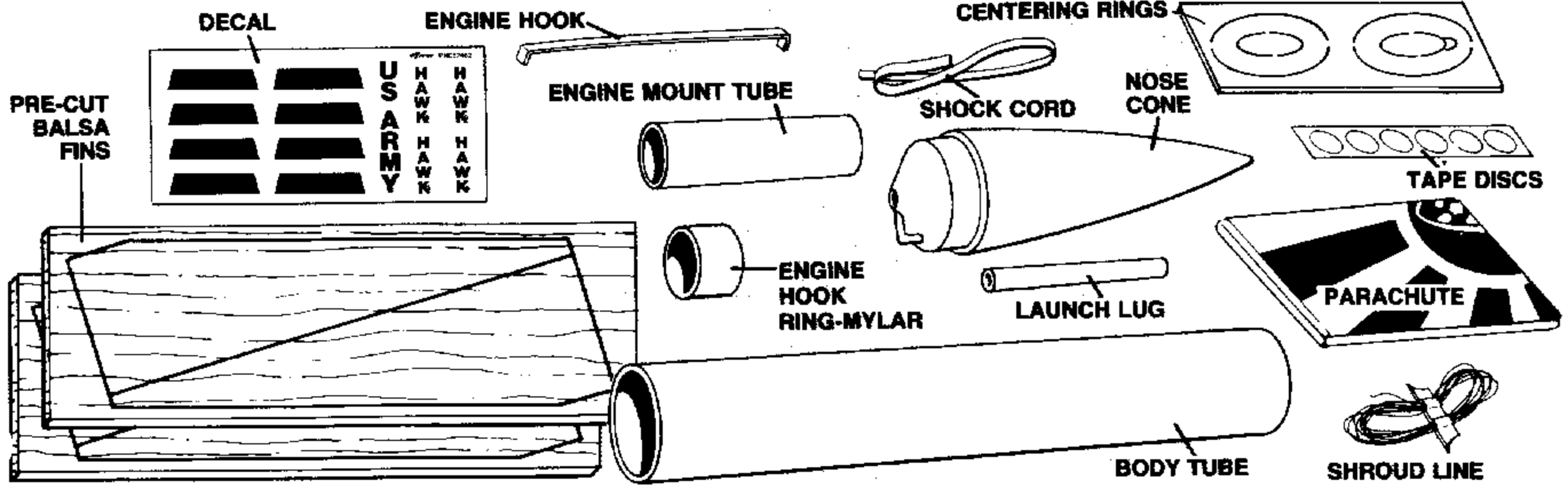


ASSEMBLY TIP

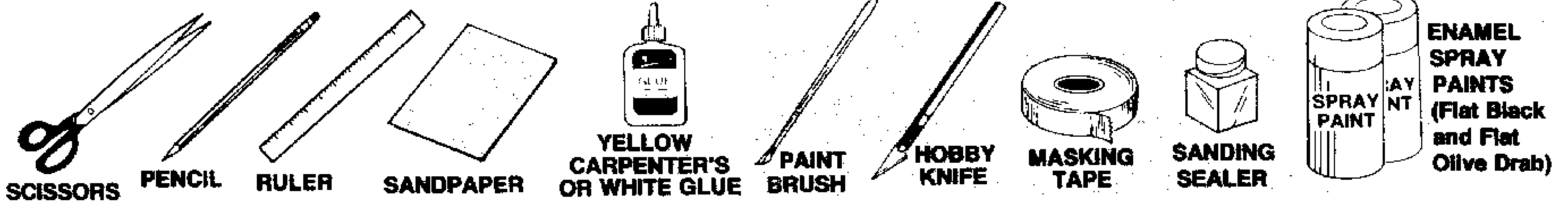
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

PARTS AND SUPPLIES

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



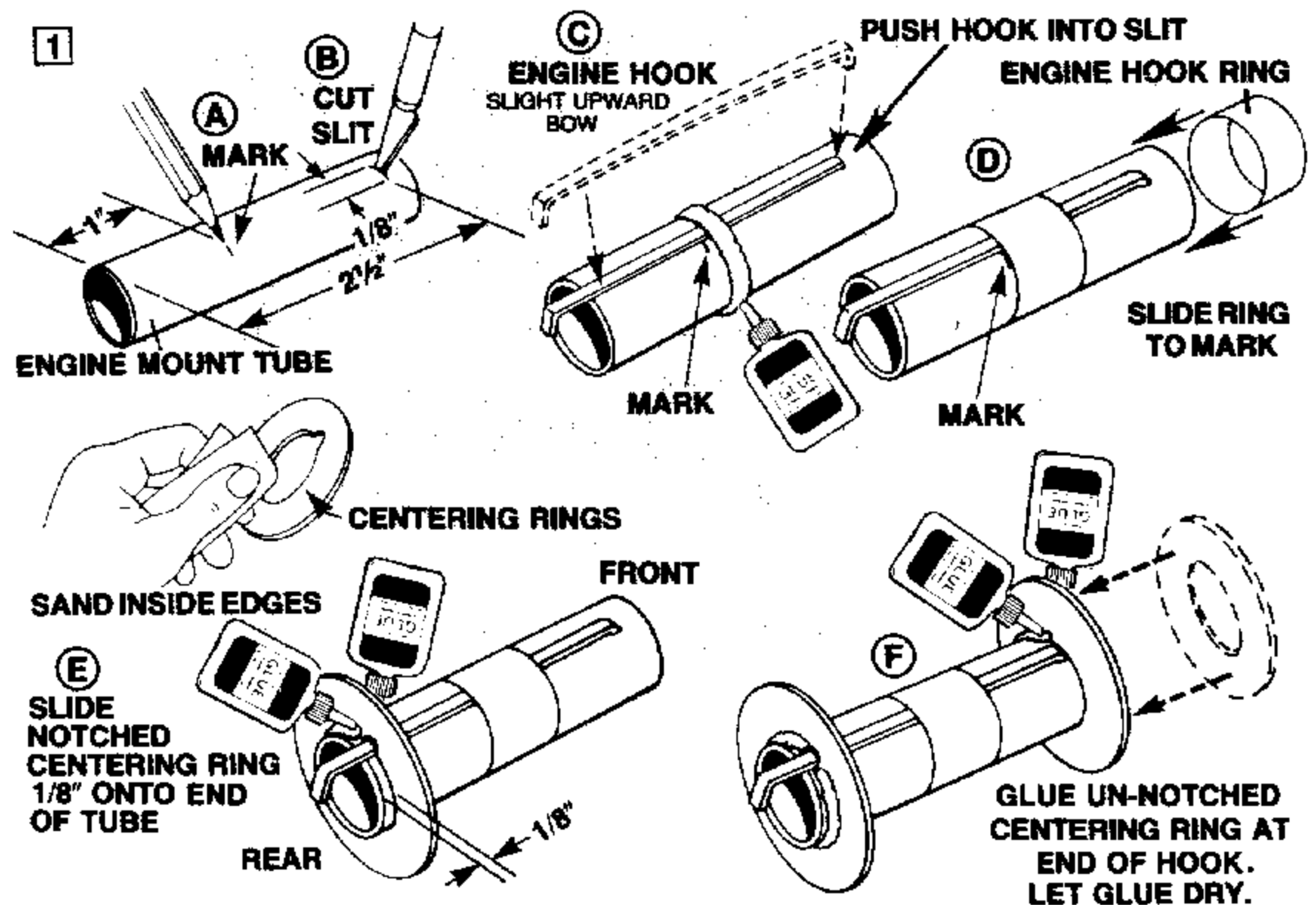
In addition to the parts included in the kit you will also need:

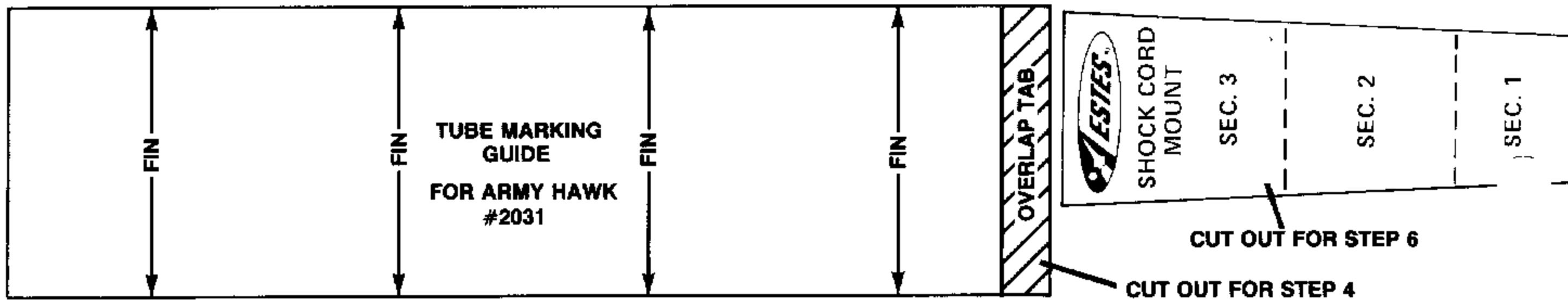


ROCKET ASSEMBLY

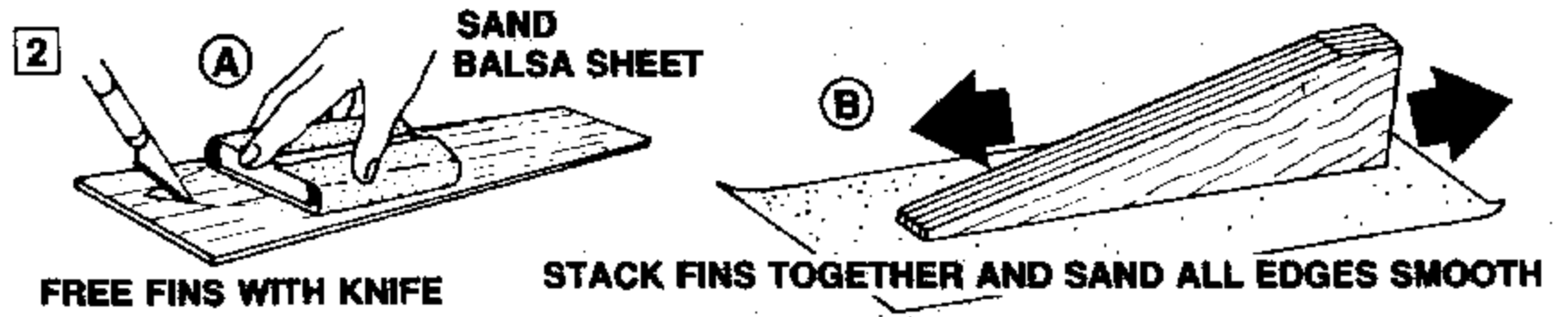
1.

- Mark engine mount tube 1 inch and 2 1/2 inches from one end.
- Cut 1/8 inch long slit at 2 1/2 inch mark.
- Insert one end of engine hook into slit. Apply a ring of glue for the engine hook ring as shown.
- Slide engine hook ring over glue to the 1" mark.
- Slide notched centering ring 1/8" onto rear of engine tube. Notch fits over engine hook. Glue both sides of ring/tube joint.
- Slide remaining un-notched centering ring over front of tube and down to end of engine hook. Glue both sides of ring/tube joint. Allow glue to dry.

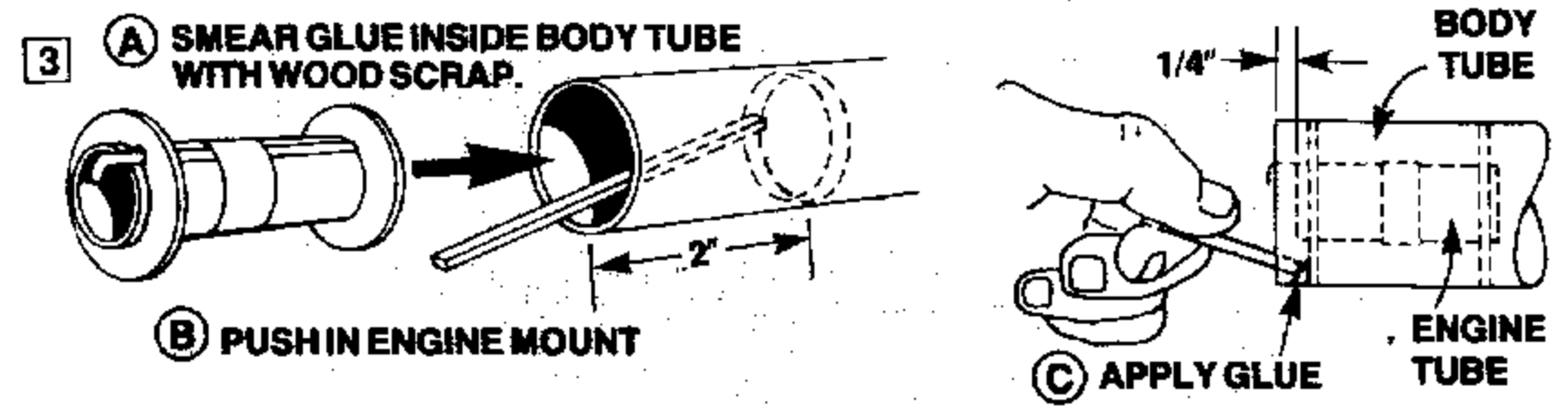




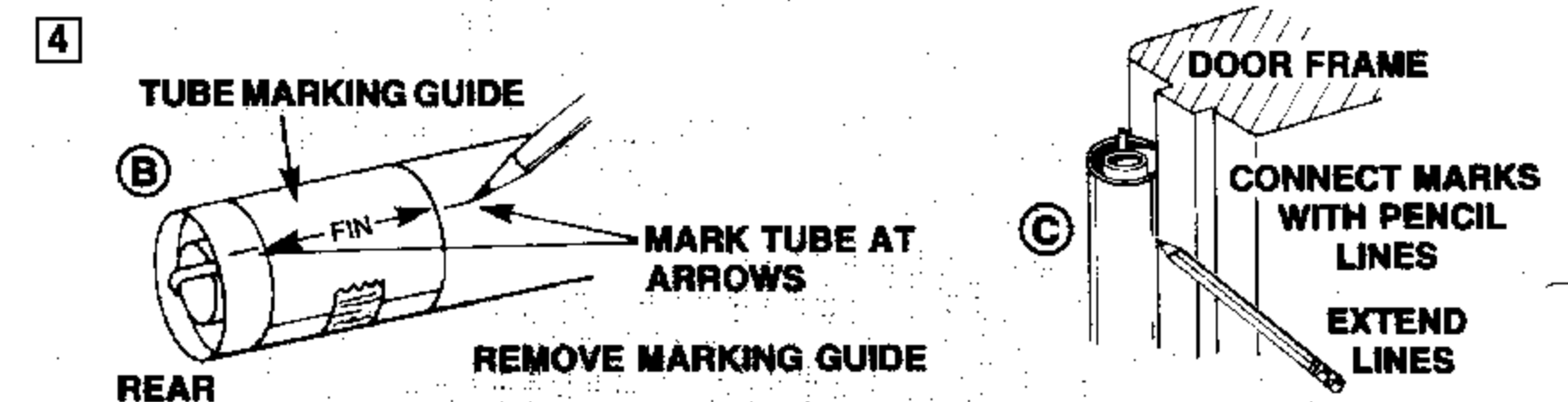
- 2.**
- A. Fine sand balsa die-cut sheets. Carefully remove fins by freeing edges with sharp knife.
 - B. Stack fins together. Sand all edges smooth.



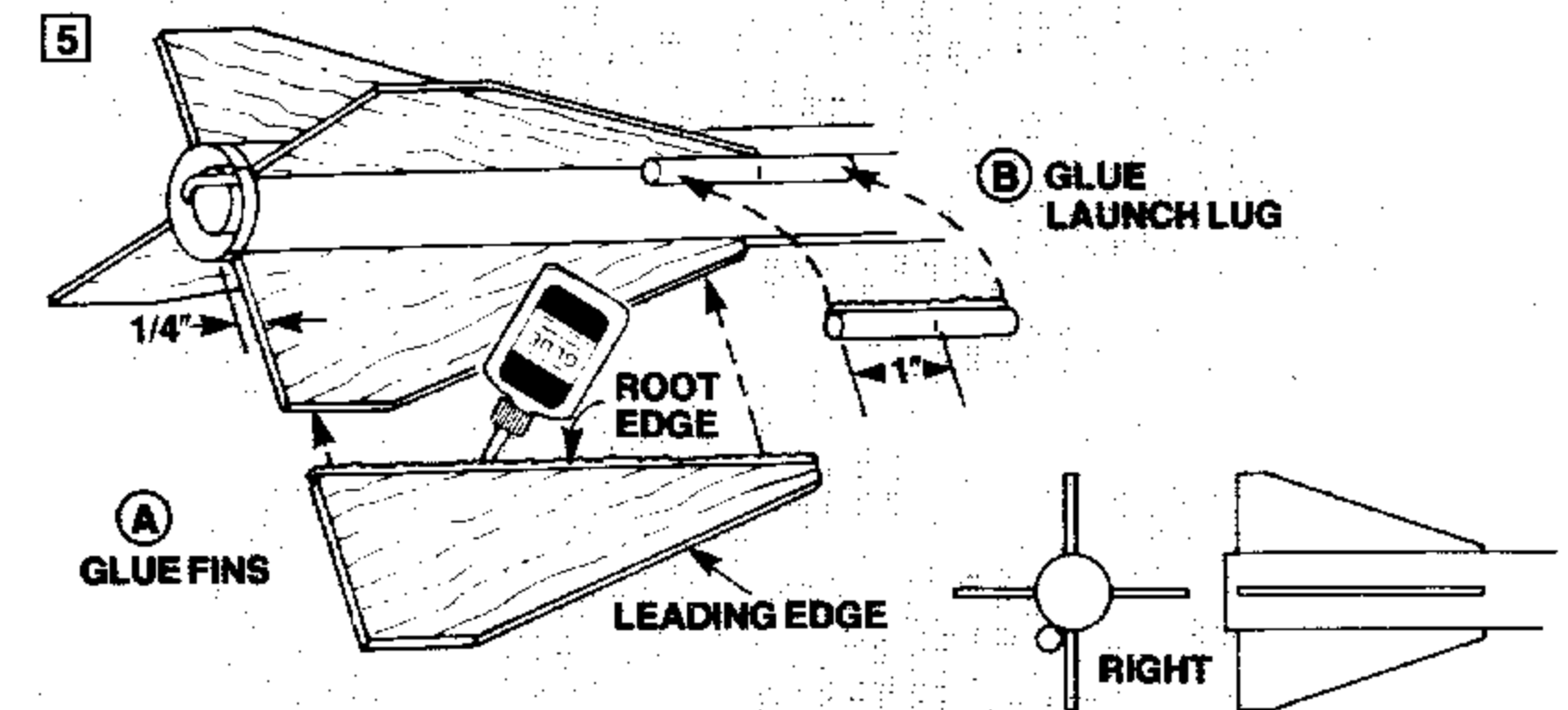
- 3.**
- A. Using a piece of scrap balsa, smear glue inside body tube 2 inches from one end.
 - B. Push engine mount in until engine mount tube is 1/4" beyond end of body tube. (See drawing C).
 - C. Apply glue reinforcement around rear ring and body tube joint as shown.



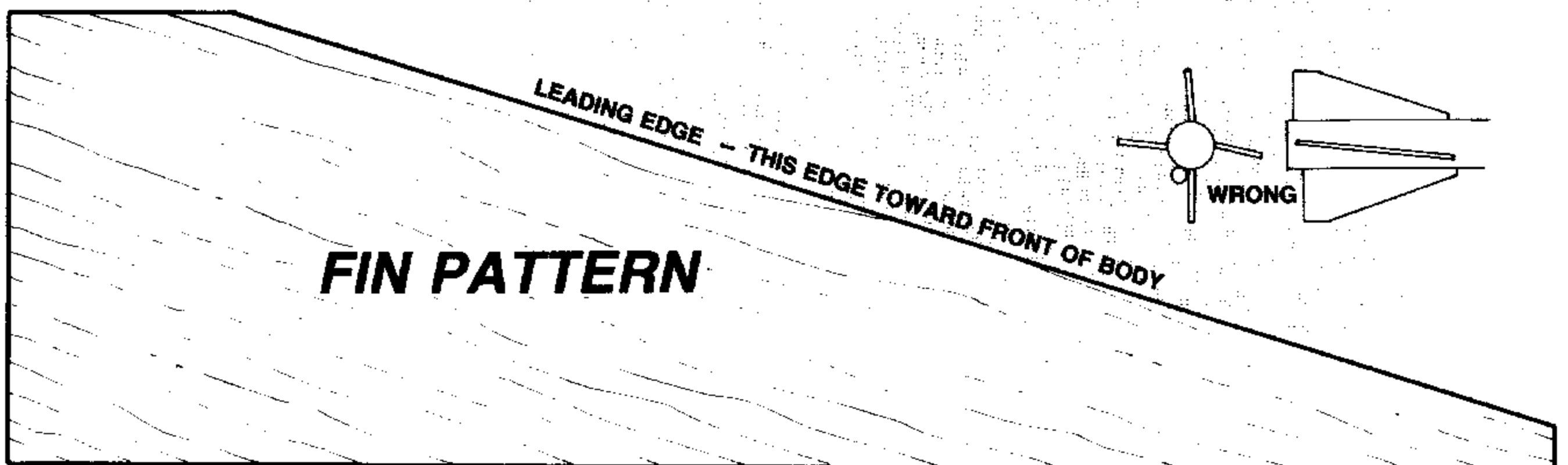
- 4.**
- A. Cut out tube marking guide from top of this page.
 - B. Wrap guide around the tube and tape. Mark tube at arrows. Remove guide.
 - C. Draw straight lines connecting each pair of marks. Extend all lines the length of the tube.



- 5.**
- A. Apply a small amount of glue to root edge of a fin. Glue fin on alignment line with the rear of fin 1/4" from the end of the body tube. Repeat for other fins. Let each fin dry several minutes before applying the next fin. Looking at the rocket from the rear, the fins should be in the positions shown.
 - B. Glue launch lug to fin-body tube joint as shown.

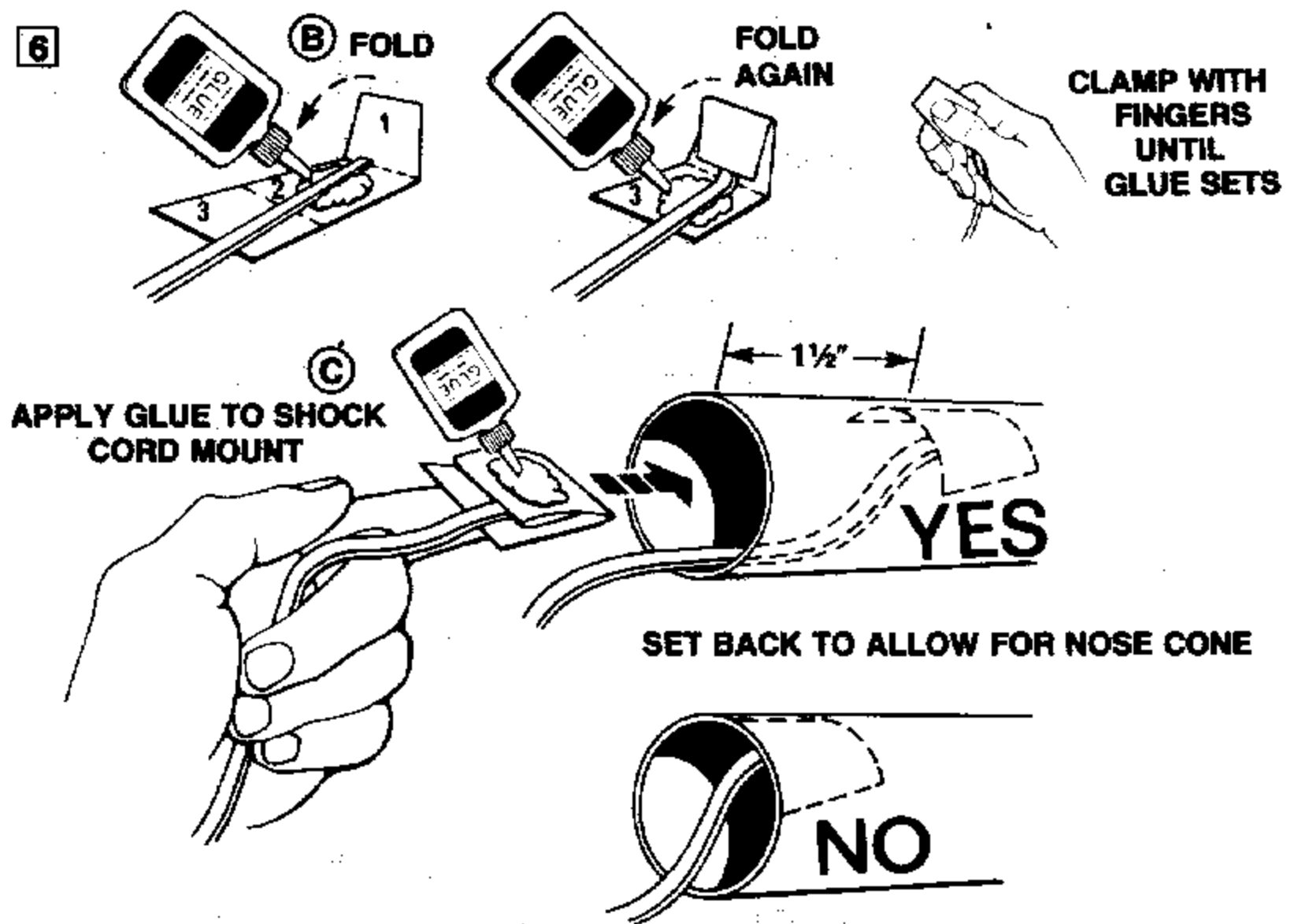


FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT!



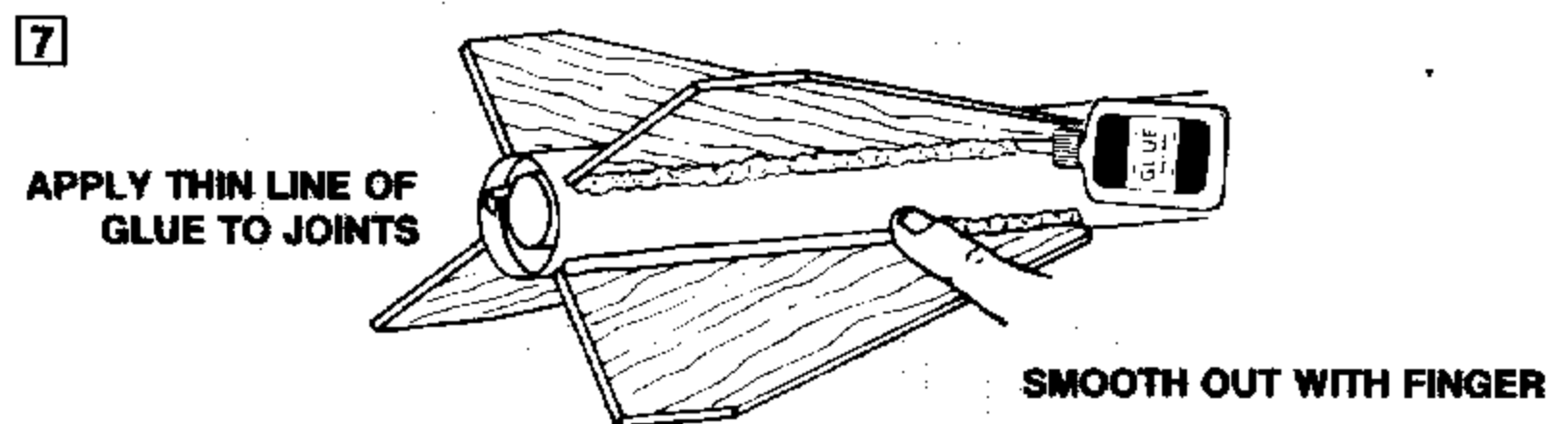
6.

- Cut shock cord mount from top of page 2.
- Crease on dotted lines by folding. Spread glue on section 2 and lay end of shock cord into glue at a slight diagonal as shown. Fold section 1 forward. Apply glue to section 3. Fold forward again. Clamp firmly with your fingers until glue sets.
- Apply glue to the shock cord mount. With the shock cord mount positioned on the end of your finger or a pencil, gently position the mount into the front of the body tube. Set back far enough from the front edge of the tube to allow the nose cone to fit into place (1½"). Press shock cord mount into position. Smear a film of glue over the mount and surrounding area in the body tube to insure a good bond and a smooth surface.

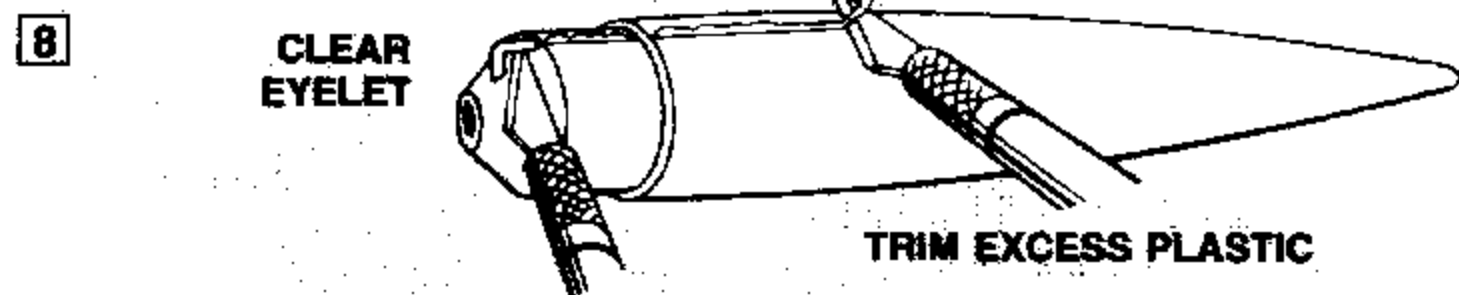


7.

- Apply a bead of glue as reinforcement to each side of each fin/body tube joint and to each side of the launch lug. Smooth them out with your finger. Support the rocket horizontally until glue dries thoroughly.

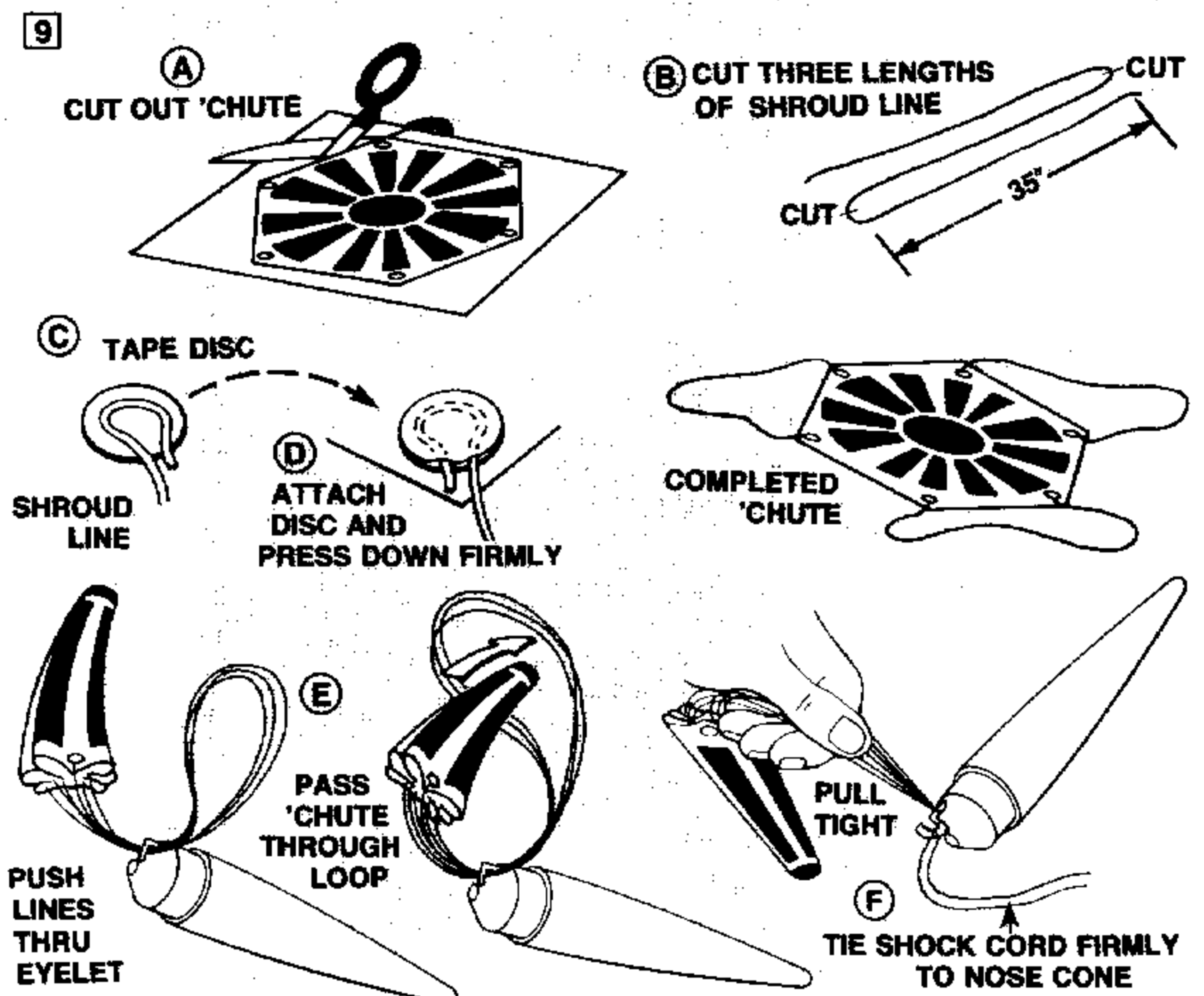


Trim excess plastic from around sides of nose cone with a sharp knife. Also remove any excess plastic from inside molded eyelet. Wipe nose cone with damp cloth to remove oil and dirt.



9.

- Cut out parachute on edge lines.
- Cut three 35 inch lengths of shroud line.
- Form small loops with shroud line ends and press onto sticky side of tape discs.
- Attach tape discs with line ends to top of parachute as shown. Firmly press tape discs into place until both 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 against the nose cone.
- Tie free end of shock cord to nose cone eyelet with double knot.



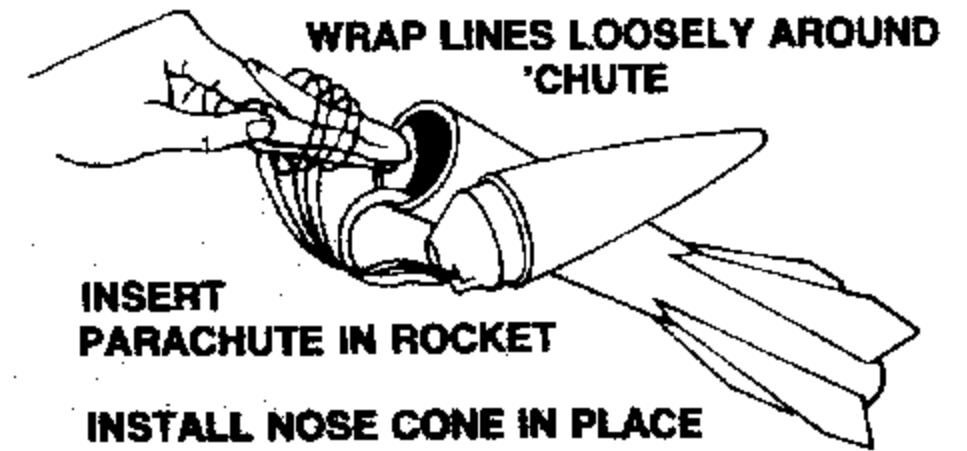
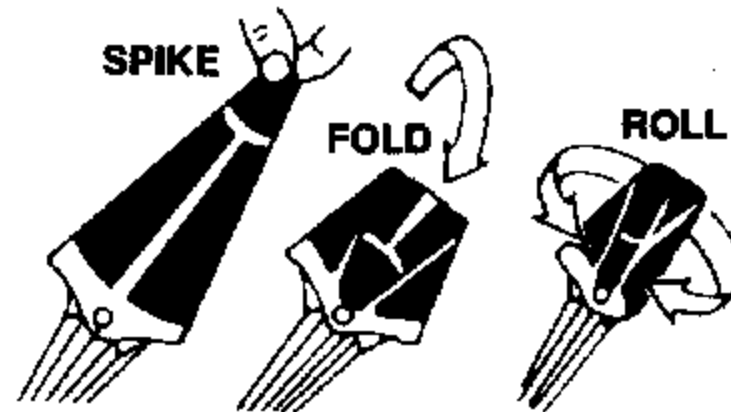
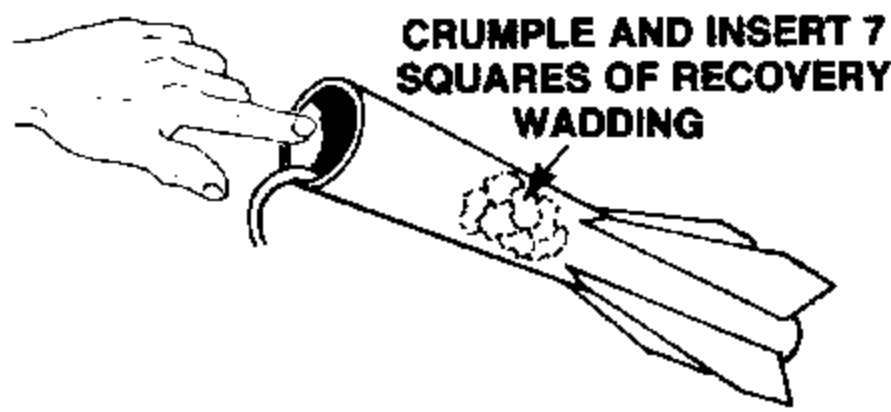
FINISHING YOUR ROCKET

Apply sanding sealer to wood parts with a small brush. When sealer is dry, lightly sand all sealed surfaces. Repeat sealing and sanding until balsa grain is filled and smooth. Let dry completely. Paint nose cone flat black. Paint body with flat olive drab. Follow directions on spray can for best results. Let paint dry overnight. **MASTER MODELER**

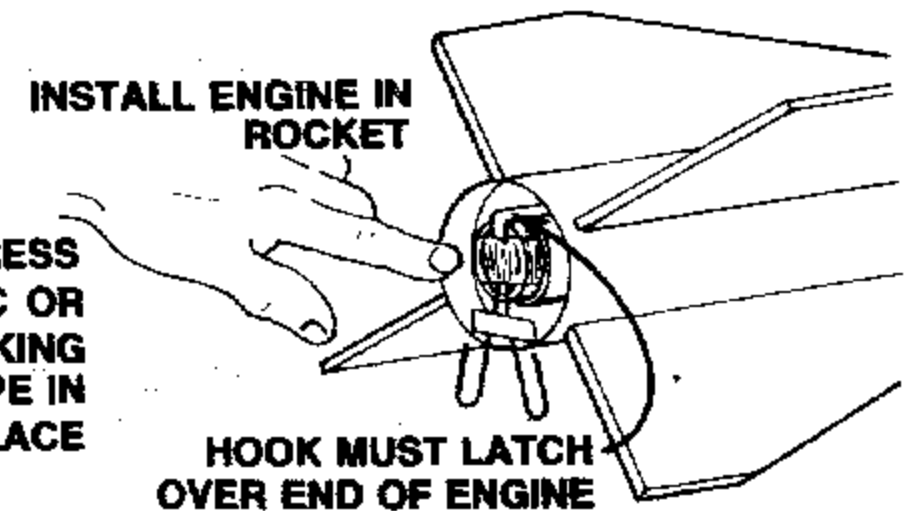
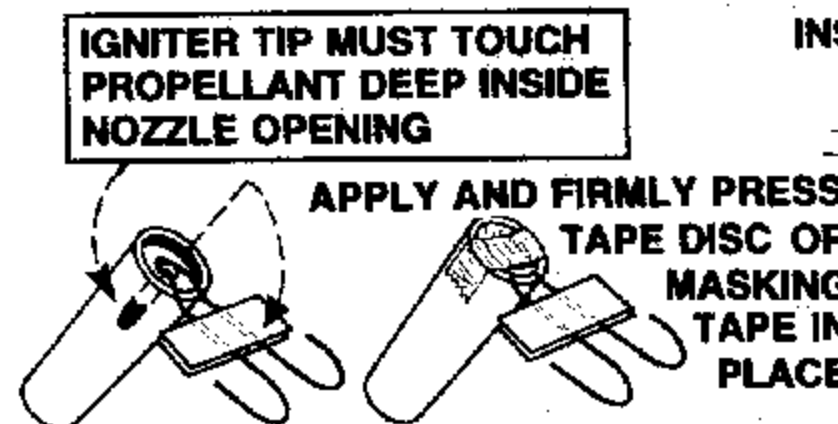
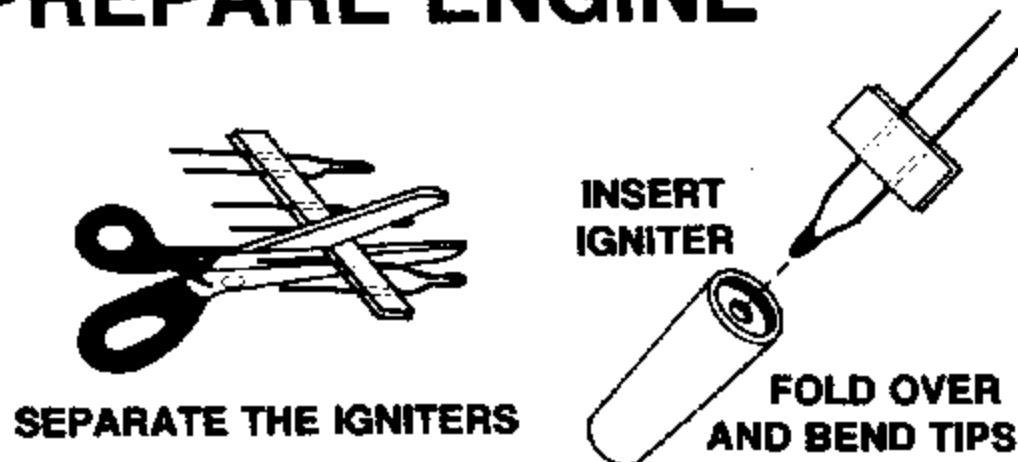
HINT: Paint entire body with gloss clear spray before applying decals. Let dry completely.

To apply decals, cut each out, dip in lukewarm water for 20 seconds, and hold until it curls. Refer to front of panel for decal placement. Slip decal off backing sheet and onto model. Blot away excess water. For best results, let decals dry overnight and apply a coat of clear dull cote spray to remove shine on surface and to protect the decals.

ROCKET PREFLIGHT



PREPARE ENGINE



LAUNCH SUPPLIES

To launch your rocket you will need the following items:

- Estes Electrical Launch System and Launch Pad
- Estes Recovery Wadding No. 2274
- Recommended Estes Engines: B4-2, B6-2 (First Flight), B6-4, B8-5, C5-3, C6-3, C6-5, or C6-7.

To become familiar with your rocket's flight pattern, use a B6-2 engine for your first flight.

Use only Estes products to launch this rocket.

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 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.

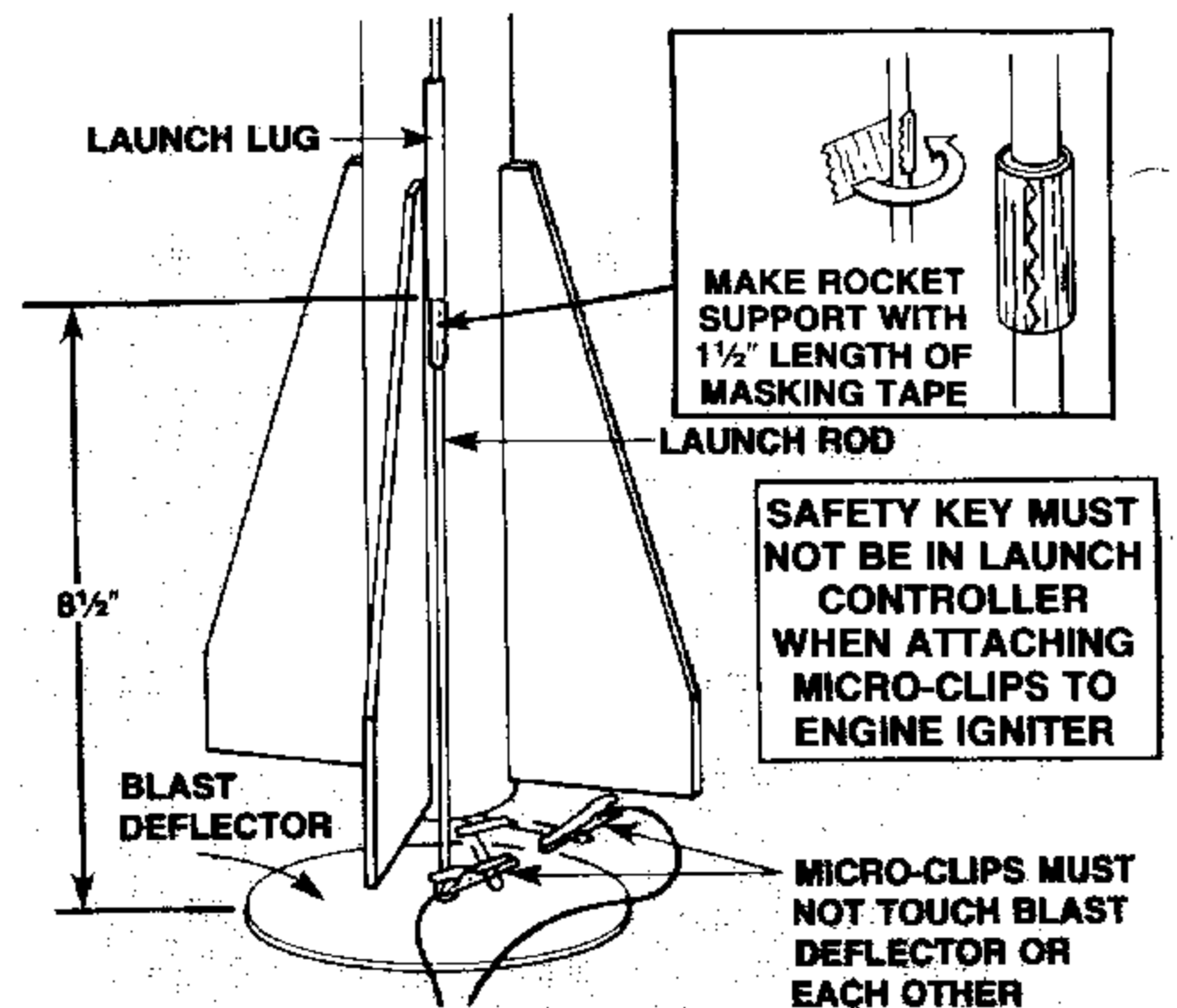
When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then tape the igniter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

FOR YOUR SAFETY AND ENJOYMENT

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

*National Association of Rocketry-The Hobby Industry of America
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COUNTDOWN AND LAUNCH



- BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.
- 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.
- 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.
- Move back from your rocket as far as launch wire will permit (at least 15 feet).
- 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.