





A DAMON COMPANY
ESTES INDUSTRIES
 1295 H Street
 Penrose, CO 81240

S.W.A.T.TM

FLYING MODEL ROCKET

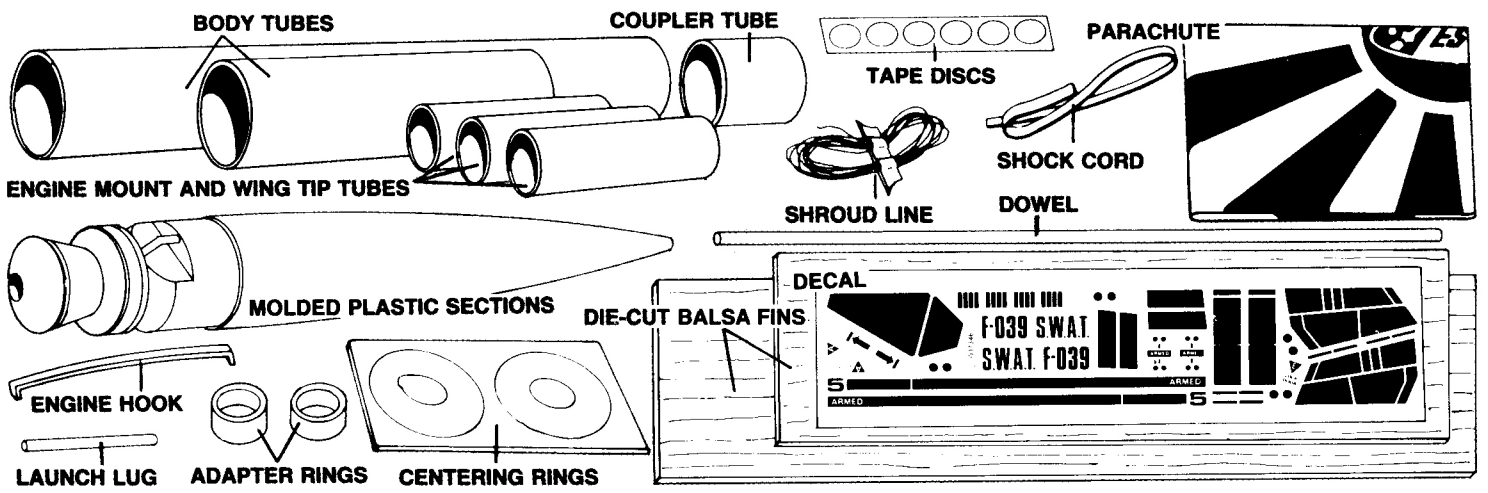
#2017

ASSEMBLY TIP

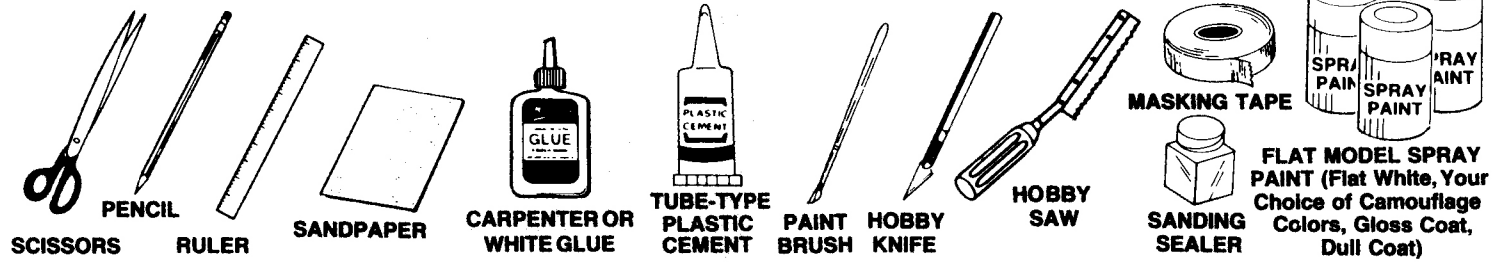
Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.

PARTS AND SUPPLIES

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

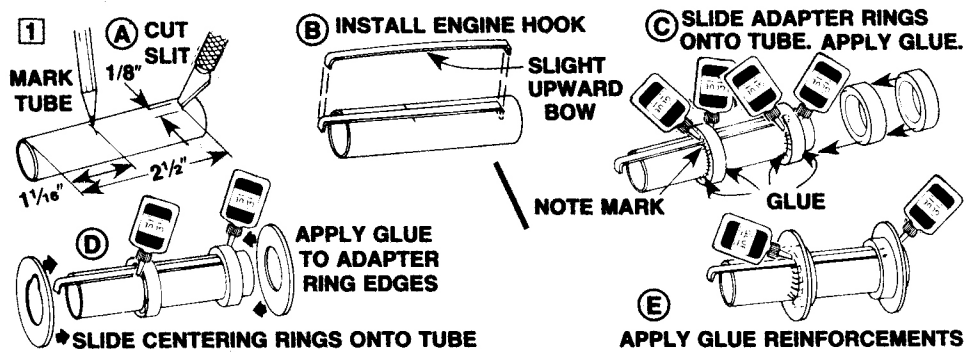


In addition to the parts included in the kit you will also need:

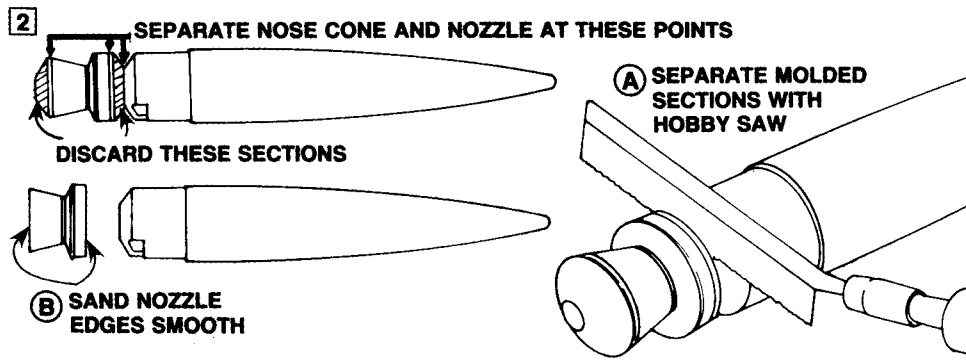


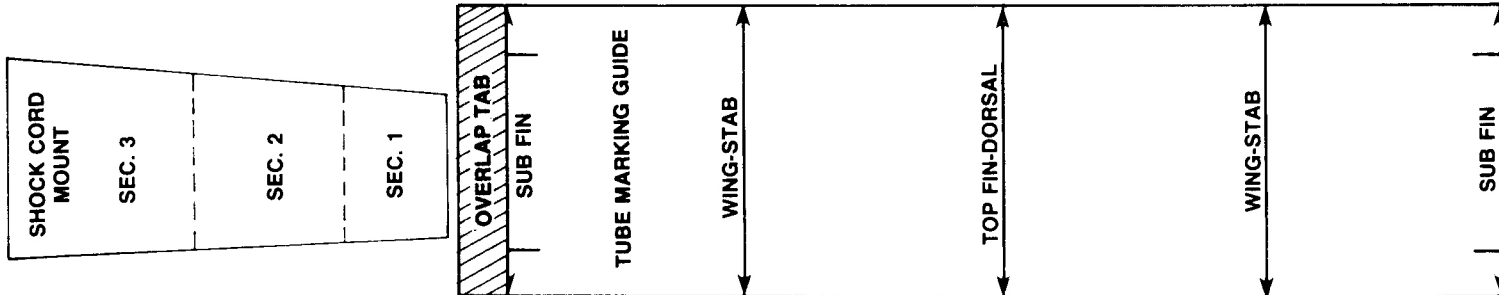
ROCKET ASSEMBLY

- Mark engine mount tube $1 \frac{1}{16}$ inches and $2 \frac{1}{2}$ inches from one end. Then cut $1/8$ inch long slit at $2 \frac{1}{2}$ inch mark.
 - Insert one end of engine hook into slit.
 - Slide one adapter ring onto engine mount tube stopping at mark. Slide remaining adapter ring onto engine mount tube just over forward end of engine hook. Apply glue to both sides of both rings where they touch the tube.
 - Apply glue to adapter ring edges as shown. Slide centering rings onto engine mount tube and against adapter ring.
 - Add glue reinforcements to centering rings as shown.

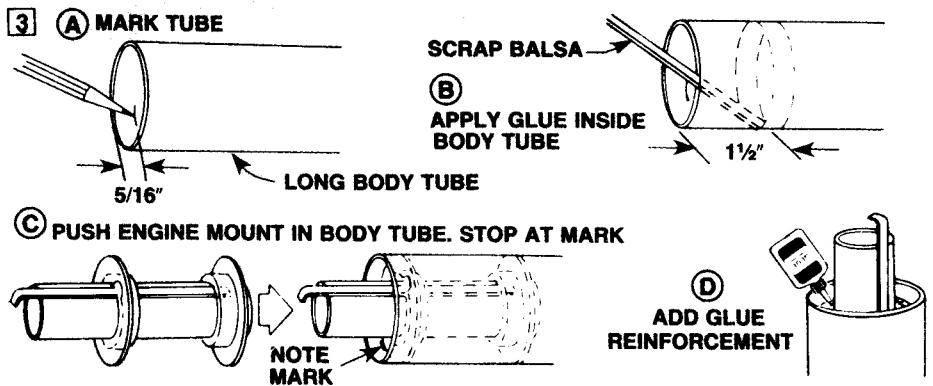


- Separate the plastic nose cone and nozzle sections using a hobby saw. Discard the sections indicated.
 - Sand indicated nozzle edges smooth.

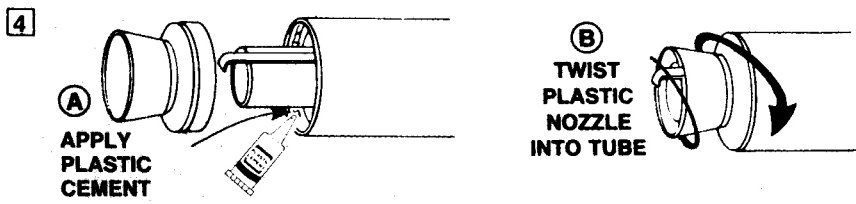




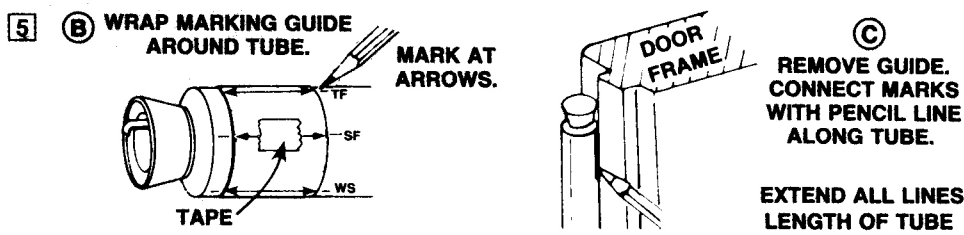
- 3.**
- Mark inside long body tube 5/16 inch from one end.
 - Smear a band of glue around the inside of the tube 1 1/2 inches from the marked end.
 - Push engine mount into the tube stopping when rear centering ring is at mark.
 - Apply glue reinforcement where ring touches tube. Allow glue to dry.



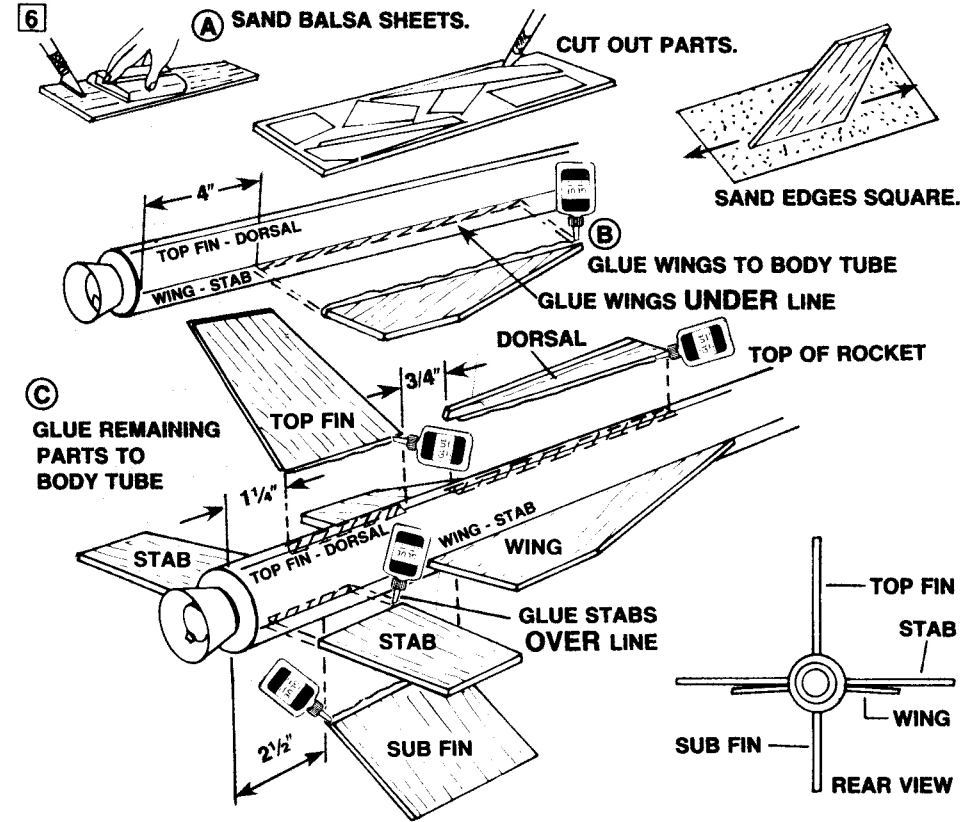
- 4.**
- Apply plastic cement around the inside of the body tube as shown.
 - Install plastic nozzle section with a twisting motion.



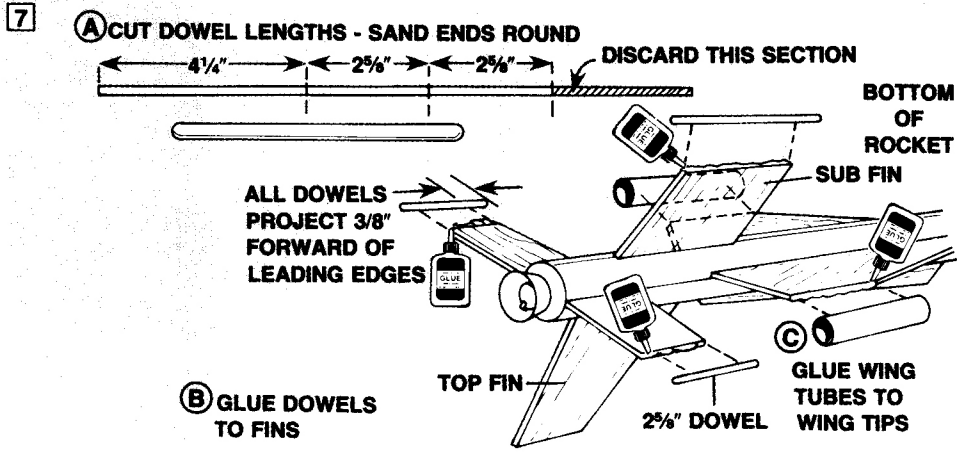
- 5.**
- Cut out tube marking guide from top of page.
 - Wrap guide around the tube and tape. Mark tube at arrows. Remove guide.
 - Draw straight lines connecting each pair of marks. Extend all lines the length of the tube.



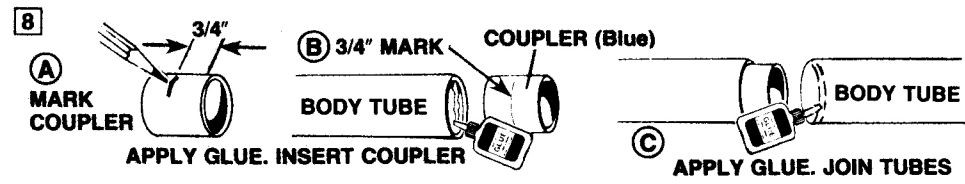
- 6.**
- Fine-sand both balsa die-cut sheets. Carefully remove parts by freeing edges with sharp knife. Sand all edges smooth and square.
 - Rub a line of glue into the root edge of each balsa part and allow to dry. Attach the wings to the body tube first. Glue the wings to the longer body tube next to and BELOW their alignment lines drawn in step 5 and 4 inches from the rear of the tube. Note from the rear view illustration that the wings have a slight droop.
 - Glue the remaining balsa pieces to the body tube as shown. Note that the stabs are glued next to and ABOVE the wing alignment line, and even with the end of the tube. The top fin, dorsal, and sub fin are glued centered on their lines. Position the top fin 1 1/2 inches from the rear of the tube. Position the sub fin 2 1/2 inches from the rear of the tube. Position the dorsal fin 3/4 inch in front of the top fin. Be sure all parts are aligned properly and project straight away from the tube before the glue sets.



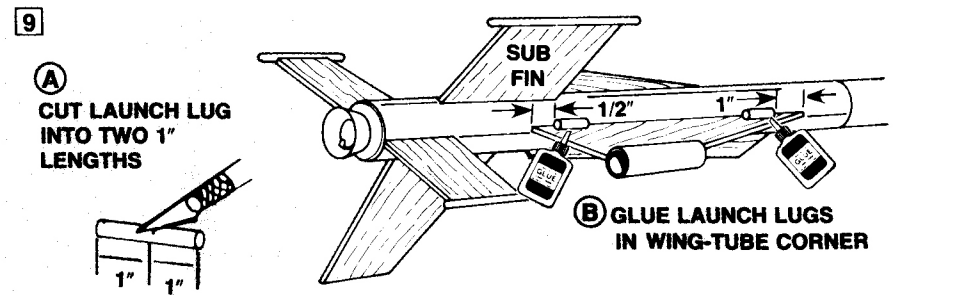
- 7.**
- Cut the dowel into the lengths indicated and discard the remaining section. Sand each dowel end round as shown.
 - Position the dowels so that they project 3/8 inch from the leading edges. Glue the 4 1/2 inch long dowel to the edge of the sub fin. Glue the 2 5/8 inch long dowels to the edges of the stabs.
 - Glue wing tubes to wing tips.



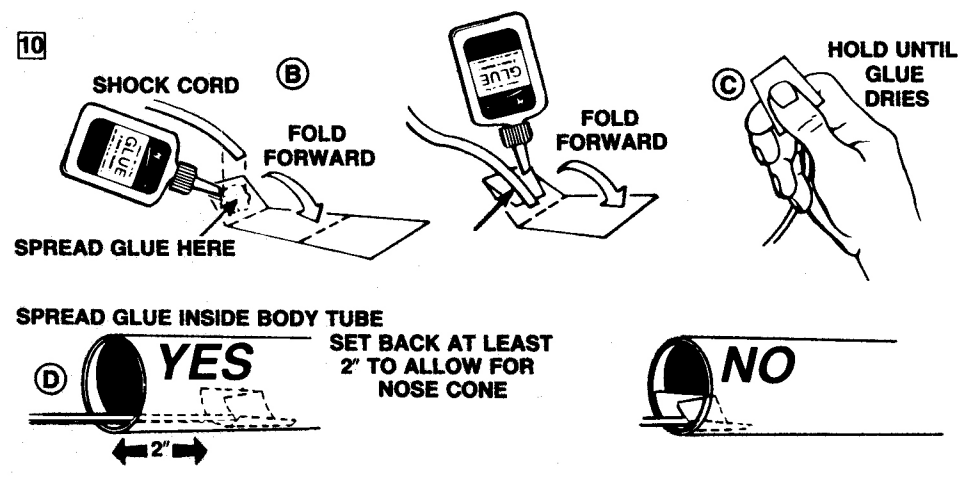
- 8.**
- Mark coupler tube 3/4 inch from end.
 - Apply glue to inside edge of body tube with fins as shown and insert coupler to 3/4 inch mark. Let glue dry before proceeding.
 - Apply glue to one end of remaining body tube and insert exposed coupler into body tube until both body tube ends are touching and are straight.



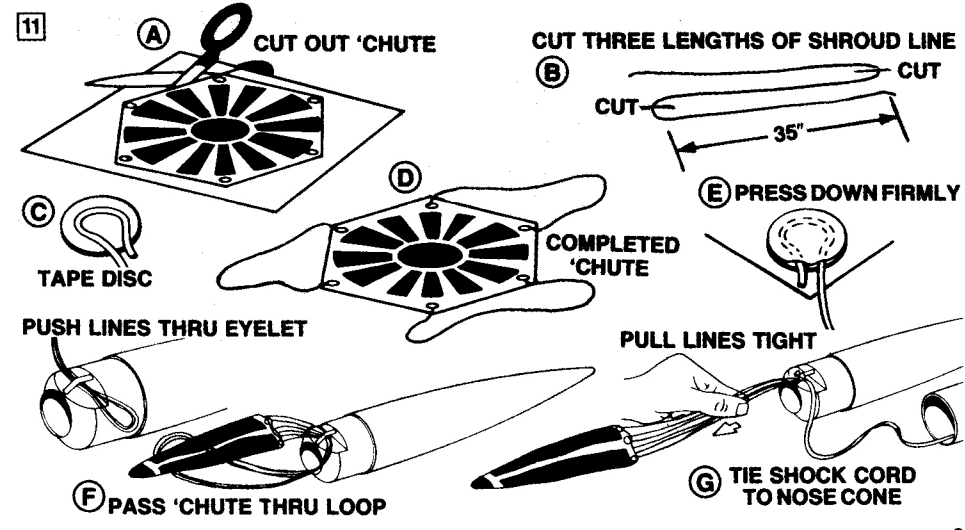
- 9.**
- Cut the launch lug in half to give two equal pieces, each 1 inch in length.
 - Glue the launch lugs at the corner formed by the underside of one wing and the body tube. Glue one lug 1/2 inch from the trailing edge of the wing. Glue the other lug 1 inch from the leading edge of the wing.



- 10.**
- Cut shock cord mount from top of page 2.
 - 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.
 - Clamp unit together with fingers until glue sets.
 - Apply glue inside front of body tube to cover an area no less than 2 to 3 inches from end. The glue area should be same size as shock cord mount. Press mount firmly into glue as shown. Hold until glue sets.



- 11.**
- 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.



FINISHING YOUR S.W.A.T.

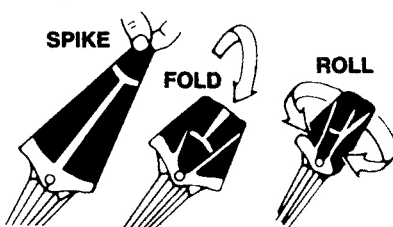
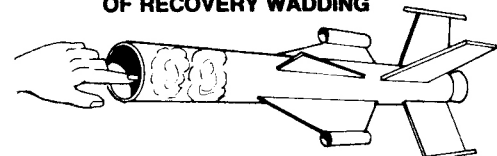
Apply sanding sealer to all balsa surfaces. Allow to dry and sand lightly. Repeat sealing and sanding until all balsa grain is filled and smooth. When sanding sealer and glue are completely dry, paint entire model flat white. Let the white dry completely. Your S.W.A.T. may be painted any color you wish but was intended to be finished in military camouflage.

Applying a camouflage finish to the S.W.A.T. is relatively simple. First, use masking tape and paper or plastic film to protect the white underside of the model from paint overspray. Apply strips of jaggedly torn masking tape at the model center line to achieve a realistic uneven separation between the bottom white and top camouflage color pattern.

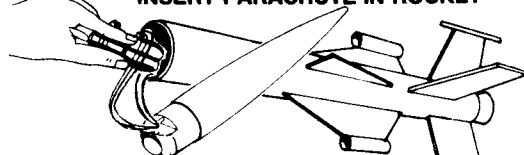
Next, choose the color pattern you wish to use. Military aircraft photos can provide a wealth of ideas. Paint the entire top of the model with the **LIGHTEST** color first and allow to dry. Note: Do **NOT** remove the masking tape and paper protecting the underside of the model until painting is complete.

ROCKET PREFLIGHT

CRUMPLE AND INSERT 6 TO 8 SQUARES OF RECOVERY WADDING



WRAP LINES LOOSELY AROUND 'CHUTE INSERT PARACHUTE IN ROCKET



INSTALL NOSE CONE IN PLACE

PREPARE ENGINE

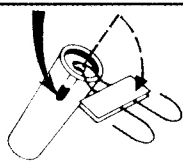
SEPARATE THE IGNITERS



ENGINE

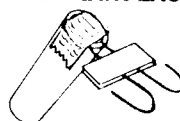
INSERT IGNITER

IGNITER TIP MUST TOUCH PROPELLANT DEEP INSIDE NOZZLE OPENING

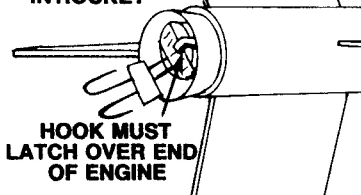


FOLD OVER AND BEND LEADS

APPLY AND FIRMLY PRESS MASKING TAPE IN PLACE



INSTALL ENGINE IN ROCKET



HOOK MUST LATCH OVER END OF 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)
- Estes Maxi-Rod No. 2239
- Recommended Engines: Estes C6-3 or C6-5

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 500 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.

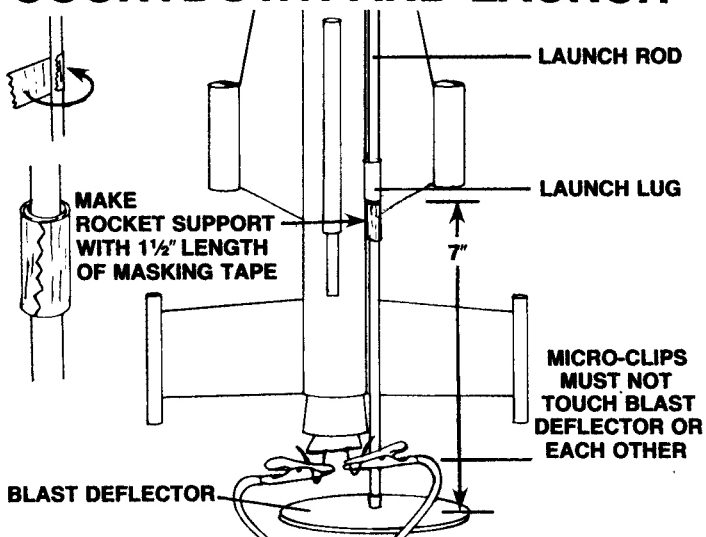
*National Association of Rocketry-The Hobby Industry of America

The second darker color(s) can be applied in a number of ways. The simplest is to hold the spray can nozzle within 1 or 2 inches of the model while passing over it in a random fashion. Use single strokes to control the pattern. Don't try to paint the entire pattern all at once. Excellent results can be achieved using this method. For sharper color edges, mask off the selected pattern areas. For truly 'show-piece' finishes, an air brush is highly recommended.

Once the camouflage pattern is complete, remove all masking and paint the entire model with gloss clear such as Testor's Gloss Cote. Allow the paint to dry thoroughly. Apply the decals, as explained in the next paragraph. Allow them to dry for at least 24 hours, then paint the entire model with flat clear such as Testor's Dull Cote.

To apply decals, cut out each, dip in lukewarm water for about 20 seconds, and hold until it uncurls. Refer to the model photographs for decal placement. Slip decal off backing sheet and onto model. Blot away excess water. Always allow all decals to dry at least 24 hours before applying any clear protective spray.

COUNTDOWN AND LAUNCH

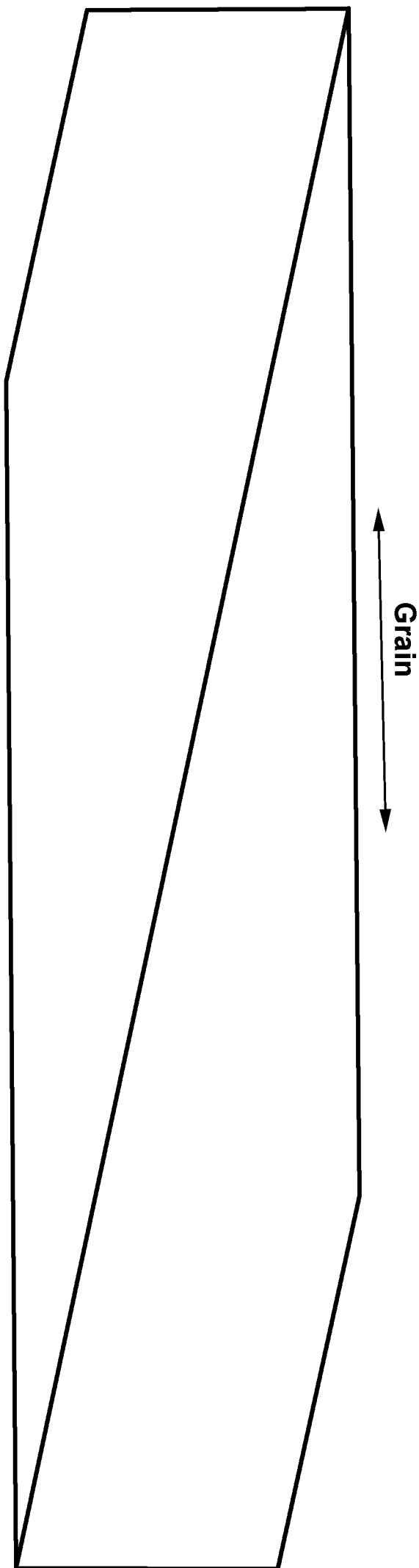


- ⑩ REMOVE SAFETY KEY to disarm the launch controller.
- ⑨ Remove safety cap and slide launch lugs over launch rod to place rocket on launch pad. Make sure the rocket slides freely on the launch rod.
- ⑧ Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the 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—Replace cap on launch rod.



1/8" Balsa

1 Inch

Grain

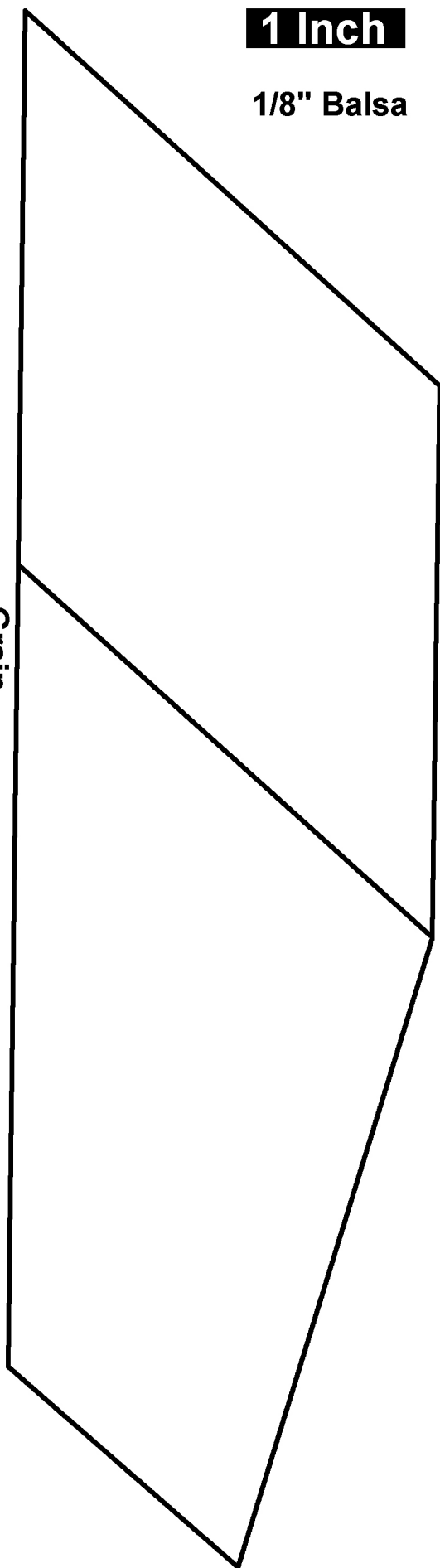
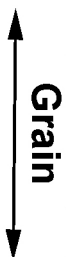
A technical drawing of a wooden component, possibly a wing or tail section, oriented vertically. The drawing shows a long, narrow section on the left that tapers to a point at the bottom. This section is attached to a larger, wider rectangular section on the right. A vertical double-headed arrow on the left side of the narrow section is labeled "Grain", indicating the wood's grain direction. The entire drawing is a simple black outline on a white background.

1 Inch

1/8" Balsa

1 Inch

1/8" Balsa





WARNING

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RESCUE



WARNING



RESCUE

CAUTION



CAUTION

037346



CAUTION



CAUTION

F-039 S.W.A.T.

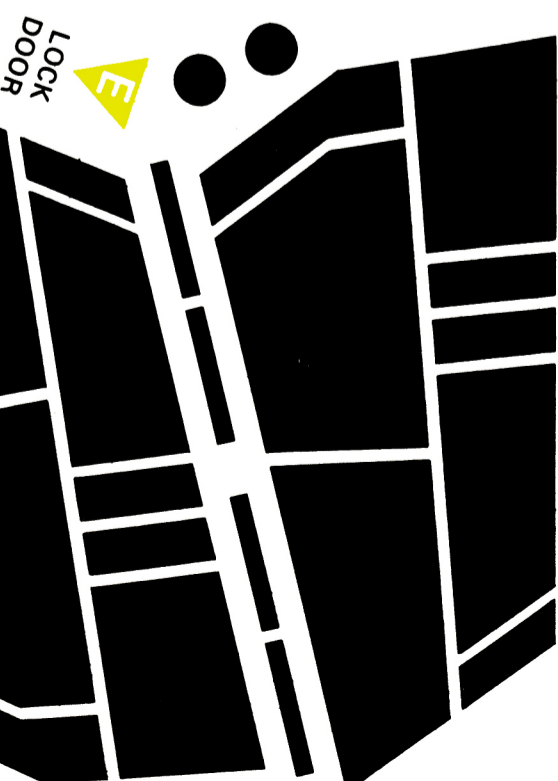
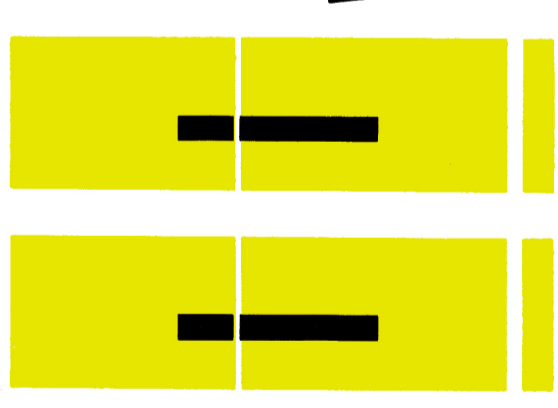
S.W.A.T. F-039



ARMED



ARMED



LOCK DOOR



5



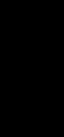
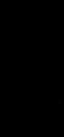
S.W.A.T.



S.W.A.T.



5





S.W.A.T.

FLYING MODEL ROCKET

SKILL LEVEL 3

Recommended for the Advanced Builder

- **HUGE HYPERSONIC FIGHTER**
- Camouflage Decor Scheme
- Big 18 Inch Recovery Chute
- Quick-Release Engine Mount

Length: 34 in. (86.4 cm)
Dia: 3.037 in. (77.0 mm)
Weight: 4.00 oz. (113.4 g)
Fin Span: 9.75 in. (247.7 mm)

Recommended Engines:
C6-5 (First Flight) or C6-5

3-1/2" Motor Not required for launch—Not included

**FLIGHTS
OVER
400 FEET!**

This is a model kit requiring assembly. Glue and finishing supplies, launch system and engines for flight are not included.



A Hobbly Company

ESTES INDUSTRIES
PENROSE, CO 81240 USA



#2017



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