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 1/16 inches and 2 1/2 inches from one end. Then cut 1/8 inch long slit at 2 1/2 inch mark.
2. Insert one end of engine hook into slit.
3. 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.
4. Apply glue to adapter ring edges as shown. Slide centering rings onto engine mount tube and against adapter ring.
5. Add glue reinforcements to centering rings as shown.

2. Separate the plastic nose cone and nozzle sections using a hobby saw. Discard the sections indicated.
B. Sand indicated nozzle edges smooth.
3.  
A. Mark inside long body tube 5/16 inch from one end.  
B. Smear a band of glue around the inside of the tube 1 1/2 inches from the marked end.  
C. Push engine mount into the tube stopping when rear centering ring is at mark.  
D. Apply glue reinforcement where ring touches tube. Allow glue to dry.  

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

5.  
A. Cut out tube marking guide from top of 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.  

6.  
A. Fine-sand both balsa die-cut sheets. Carefully remove parts by freeing edges with sharp knife. Sand all edges smooth and square.  
B. 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.  
C. 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. A. Cut the dowel into the lengths indicated and discard the remaining section. Sand each dowel end round as shown.
B. 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 1/2 inch long dowels to the edges of the stabs.
C. Glue wing tubes to wing tips.

8. A. Mark coupler tube 3/4 inch from end.
B. 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.
C. 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. A. Cut the launch lug in half to give two equal pieces, each 1 inch in length.
B. 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. A. Cut shock cord mount from top of page 2.
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.
D. 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. A. Cut out parachute on edge lines.
B. Cut three 35 inch lengths of shroud line.
C. Form small loops with shroud line ends and press onto sticky side of tape discs.
D. Attach tape discs with line ends to top of parachute as shown.
E. Firmly press tape discs into place until both tape discs and parachute material are molded around shroud line loops.
F. Pass shroud line loops through eyelet on nose cone. Pass parachute through loop ends and pull lines against the nose cone.
G. 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

PREPARE ENGINE
SEPARATE THE IGNITERS
ENGINE
INSERT IGNITER
FOLD OVER AND BEND LEADS

IGNITER TIP MUST TOUCH PROPELLANT DEEP INSIDE NOZZLE OPENING

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, [cooler 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.

*CNational Association of Rocketry-The Hobby Industry of America

COUNTDOWN AND LAUNCH

LAUNCH ROD
LAUNCH LUG
MAKE ROCKET SUPPORT WITH 1½ LENGTH OF MASKING TAPE
MICRO-CLIPS MUST NOT TOUCH BLAST DEFLECTOR OR EACH OTHER

BLAST DEFLECTOR

1. REMOVE SAFETY KEY to disarm the launch controller.
2. 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.
3. 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.
4. Move back from your rocket as far as launch wire will permit (at least 15 feet).
5. 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.

84000
S.W.A.T.
FLYING MODEL ROCKET
SKILL LEVEL 3

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

Length: 34 in (86.4 cm)
Diameter: 1.57 in (40.0 mm)
Weight: 4.06 oz (115 g)
Fin Spans: 7 in (17.8 cm)

Recommended Engines: C-6 (First Flight), or C-6-5

FLIGHTS OVER 400 FEET!

ESTES
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