

RAVENTM

FLYING MODEL ROCKET

- Scale-like kit
- Can fly over 1000 ft.
- Die-cut balsa fins
- Water-slide decals
- Plastic nose cone
- 12" parachute
- Quick release engine mount

U.S. AIR FORCE

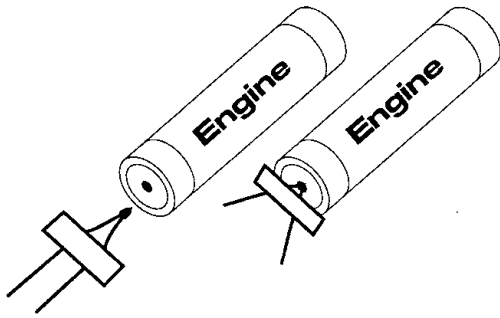
Skill 1

Length: 14.5" (36.83cm)
Dia.: 0.976" (24.8mm)
Weight: 0.94 oz (26.58g)
Engines: A8-3, B4-4
B6-4, C6-5, C6-7



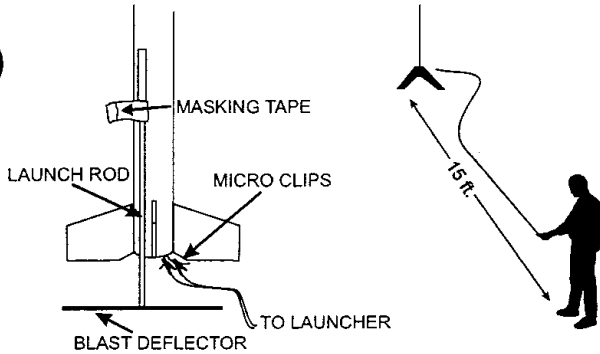
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Select an engine for your first launch. This kit uses the following types of engines: A8-3, B4-4, B6-4, B6-6, C6-5 or C6-7. For your first flight use a A8-3 engine. This will give you an approximate altitude of 350 feet (90 m). Carefully insert igniter into engine and bend igniter. Use an engine plug or masking tape to secure igniter in place. Insert engine into rocket until engine clip locks in place, making sure the igniter leads are not touching the engine clip.

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Adjust launch pad so rod is pointed into the direction of a breeze. (You should not attempt to launch in heavy winds.) The launch rod should not be tilted more than 30 degrees. Slide launch lug over launch rod. To keep igniter leads from touching the blast deflector, wrap a piece of masking tape to rod as shown above.

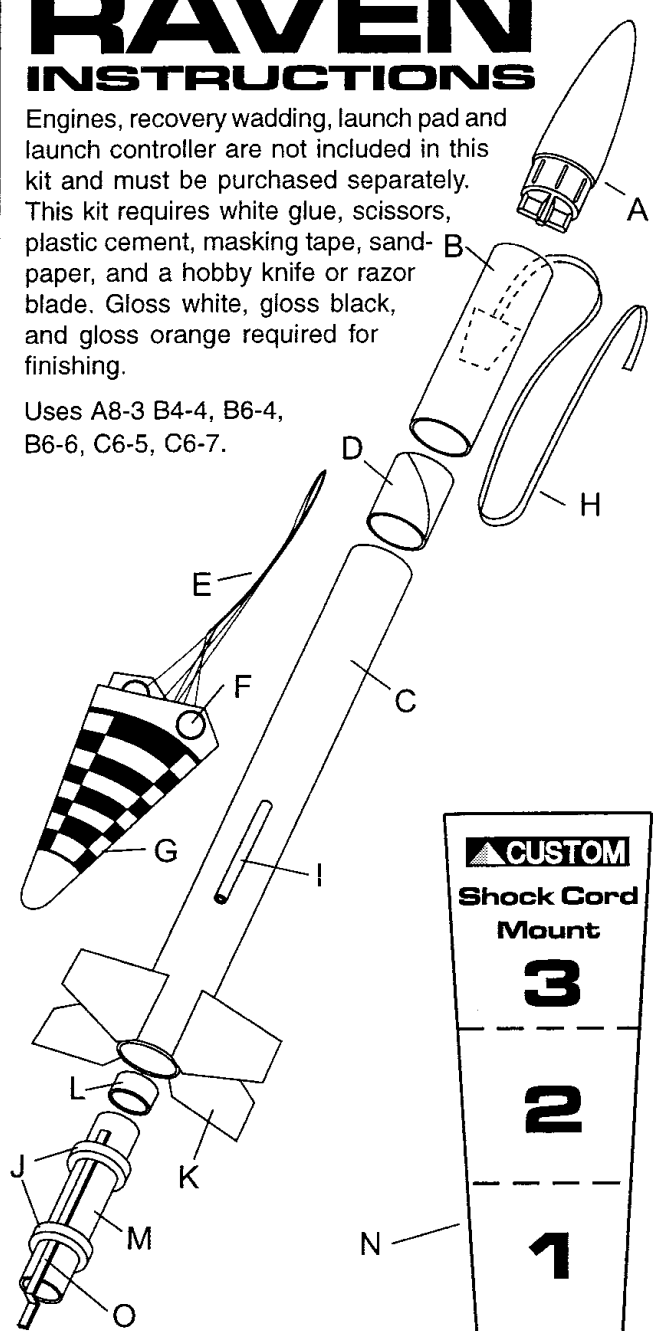
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Make sure safety key is out of launch controller and hook up microclips to igniter. Do not allow microclips to touch the engine clip, the launch rod, or each other. Stand back at least 15 feet (4.5 m) and look around to make sure everyone is aware of your launch. Insert safety key and hold button for 3 to 4 seconds. If rocket does not take off after 15 seconds you either have a misfire or low batteries. If this happens, remove safety key, wait an additional 15 seconds, then remove rocket and try a new igniter. Repeat launch procedure. After you have launched your rocket, remove launch key from launch controller. Repeat steps 18 through 20 for additional flights. To avoid eye injury, cap exposed tip of launch rod while not in use. This cap is included with your launch pad.

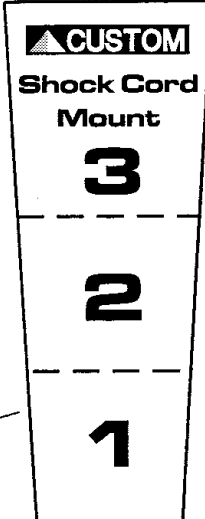
RAVENTM INSTRUCTIONS

Engines, recovery wadding, launch pad and launch controller are not included in this kit and must be purchased separately. This kit requires white glue, scissors, plastic cement, masking tape, sandpaper, and a hobby knife or razor blade. Gloss white, gloss black, and gloss orange required for finishing.

Uses A8-3 B4-4, B6-4, B6-6, C6-5, C6-7.



- | | | | |
|---|------------------|---|-------------------|
| A | NOSE CONE | J | CENTERING RINGS |
| B | SHORT UPPER TUBE | K | BALSA FINS |
| C | BODY TUBE | L | ENGINE BLOCK |
| D | TUBE COUPLER | M | ENGINE TUBE |
| E | SHROUD LINES | N | SHOCK CORD MOUNT |
| F | TAPE DISKS | O | ENGINE CLIP |
| G | PARACHUTE | P | DECAL (NOT SHOWN) |
| H | SHOCK CORD | | |
| I | LAUNCH LUG | | |

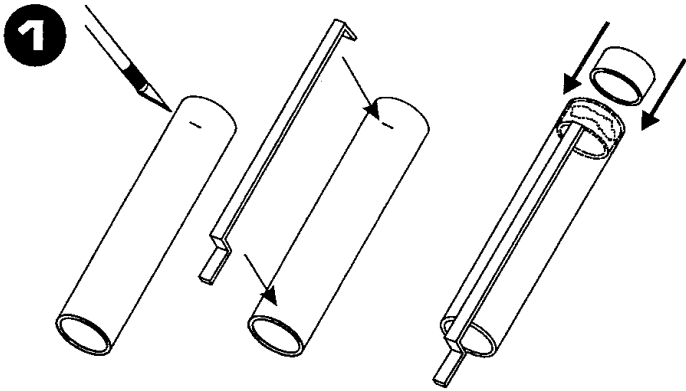


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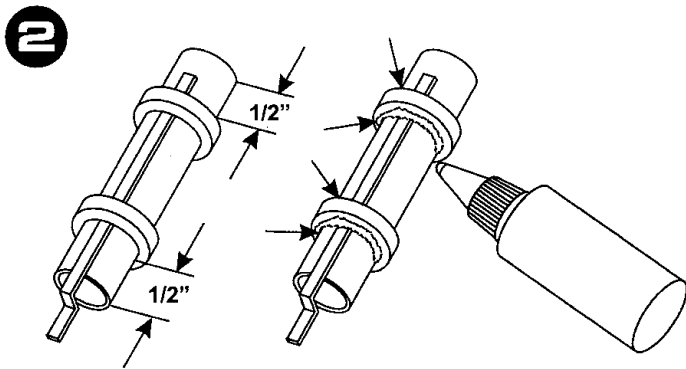
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KIT# 10040 **CUSTOMTM**

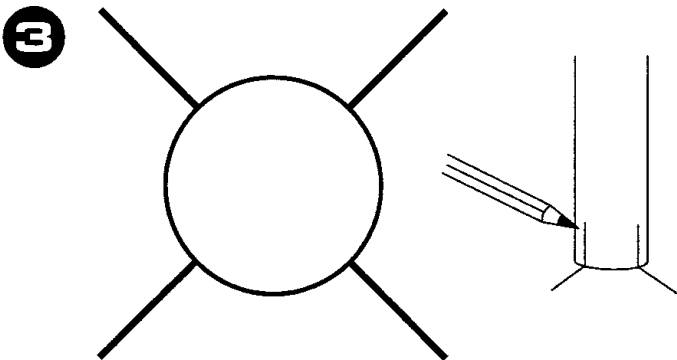
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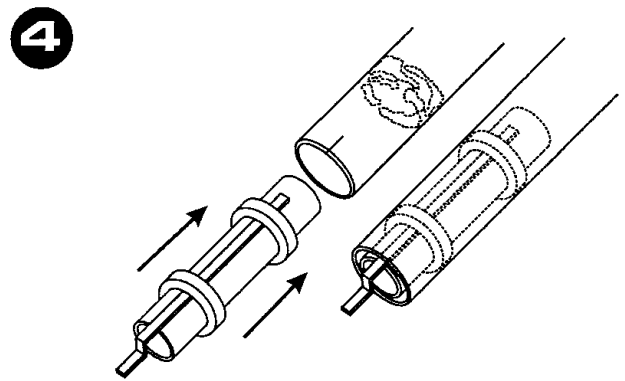
Measure 1/4" (6 mm) from end of engine tube (M) and cut a small slit 1/8" (3 mm) long. Insert end of engine clip (O) into slit. Spread glue inside end of engine tube and insert engine block (L) flush with engine tube.



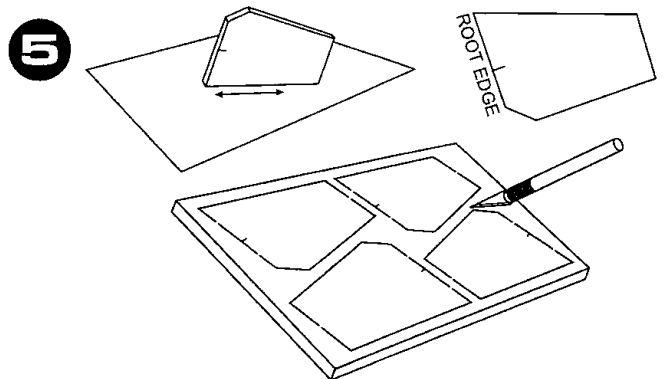
Slide both centering rings (J) onto tube. Rings should be 1/2" (1.3 cm) from each end. Add a small amount of glue where tube and ring meet and smooth with finger. This should be done on both sides of both rings. Set aside until dry.



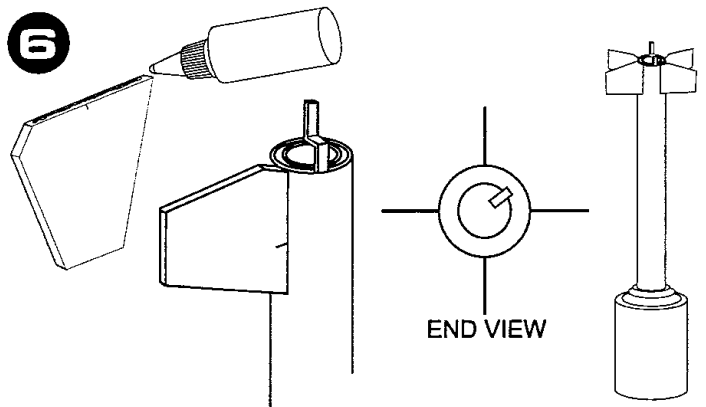
Locate long body tube (C) and place it on template above. With a pencil, carefully draw small one inch alignment marks. Don't use a pen because paint won't adhere well to ink causing it to show through the paint. When placing marks with your pencil, don't press down too hard because you don't want to leave impressions on tube.



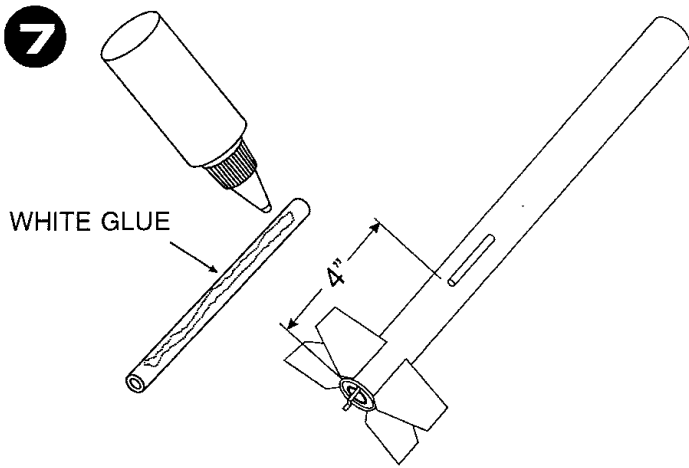
Glue on joints of rings should be completely dry before starting this step. Locate end of tube you just marked in last step, this is end that will receive the engine mount. Apply glue to inside of body tube. Glue should be about one inch inside tube. Insert engine mount into body tube with one swift and even motion. **DON'T STOP UNTIL BOTH TUBES ARE FLUSH!**



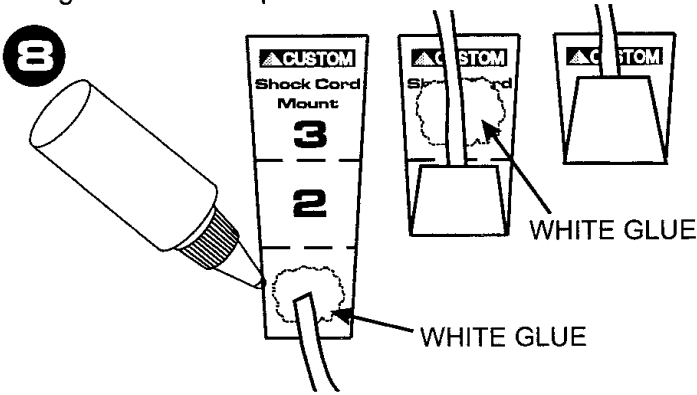
Separate balsa with a hobby knife or razor blade, (this will protect balsa from splitting). Locate small notch on each edge of each fin. This is the root edge, the edge you will glue to body tube. Place a sheet of fine sandpaper on a smooth surface. Lightly sand edges to smooth balsa.



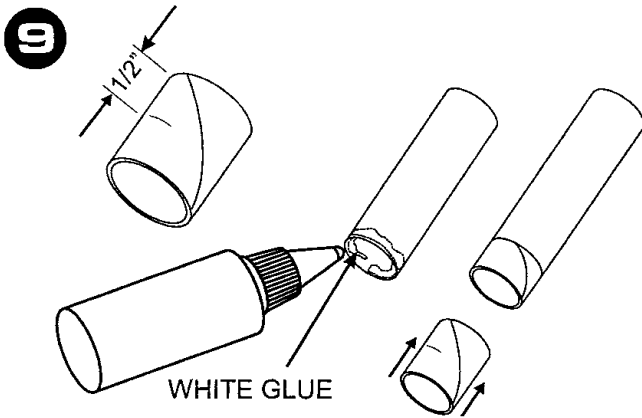
Starting with one fin at a time, apply a drop of glue and spread with index finger (glue should cover all of the root edge). Glue fin to fin mark on body tube as shown. Make sure edge of fin is flush with end of body tube. Hold fin until glue sets. Repeat each step until all 4 fins are in place. You may want to use a spray can to help support rocket while fins dry.



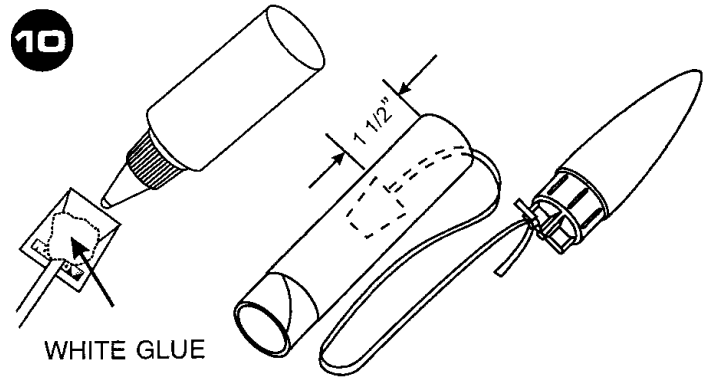
Apply glue to entire length of launch lug (I). Measure 4" (10.2 cm) from end of rocket and glue launch lug centered between two fins on body tube. Lug must be straight to ensure a perfect launch.



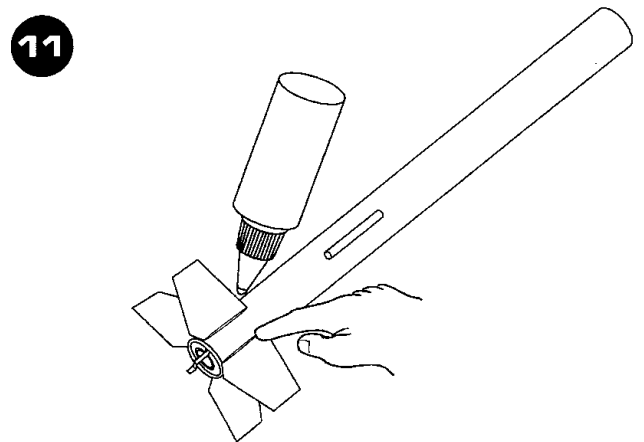
Cut out shock cord mount (N), from front page of instruction sheet. Locate shock cord (H) and apply a drop of glue to number one. Place end of shock cord into glue and fold along dotted line. Apply glue to number three and fold along this dotted line. Squeeze mount until glue sets.



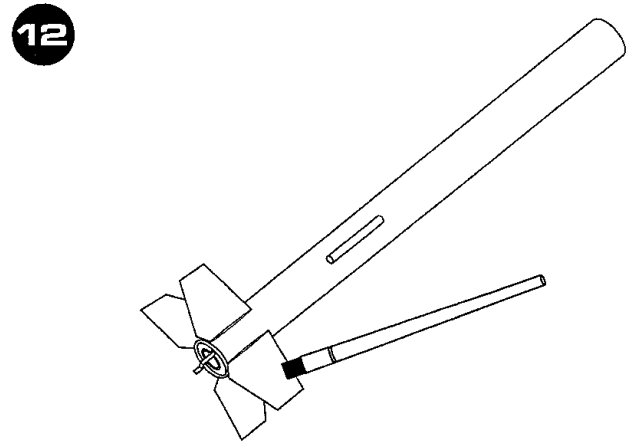
Locate short upper tube (B) and tube coupler (D). Measure 1/2" (1.3 cm) from end of tube coupler and mark with a pencil. Spread a thin layer of glue inside end of short tube as shown above. Insert tube coupler until it reaches 1/2" mark. Quickly wipe excess glue from tube and coupler.



Apply glue to shock cord mount and insert mount at least 1.5" (3.8 cm) inside tube. Press mount firmly against tube with your finger. Locate nose cone (A) and remove flash from eyelet with a pen. Using a double knot, tie end of shock cord to eyelet on cone. **DO NOT GLUE NOSE CONE INTO TUBE!**

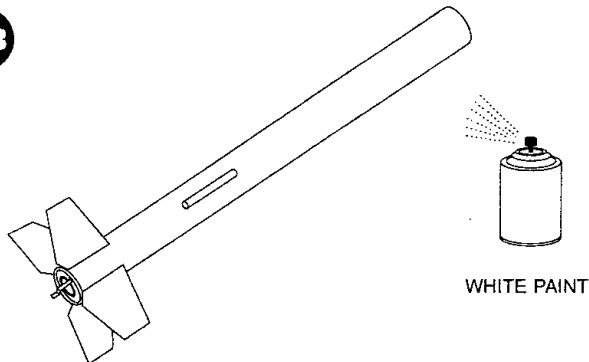


To create a strong bond between each fin and the tube, a fillet of glue is needed. Create a fillet by adding a drop of glue, spreading it along each joint between fin and tube. This should be done for each side of each fin.



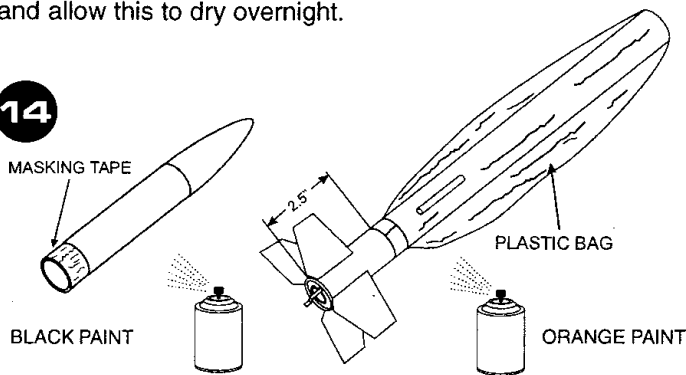
After glue has dried, seal balsa grain with sanding sealer. First, lightly sand balsa surface with fine sandpaper. Then, brush on a thin coat of sanding sealer to each side of each fin. After this coat has dried, sand balsa again. Apply a second and third coat, sanding between each application after it has dried.

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After fin sealer has dried, wipe model down with clean rag. This will remove any dust left over from sanding. Insert (do not glue) upper part of rocket into tube. Use a dowel, or newspaper to support model, then **lightly** spray model with gloss white enamel paint. Apply a thin, even coat over entire model. Put model aside and wait for paint to dry. A second light coat will fill in areas missed by first coat. Follow up with a third coat and allow this to dry overnight.

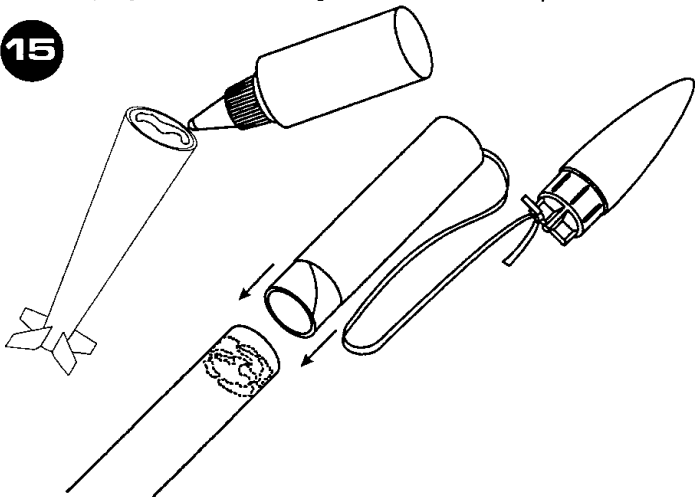
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Measure 2.5" (6.3 cm) from end of model. Wrap masking tape around tube at this mark. Cover model with a plastic bag and secure with masking tape as shown above. Spray model with three coats of gloss orange enamel paint.

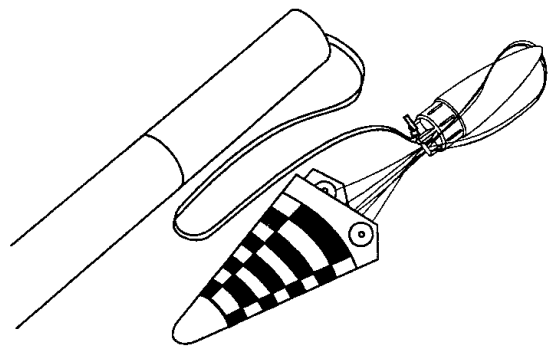
Locate short tube with attached nose cone, insert cone into tube. Wrap masking tape around tube coupler to protect from paint. Spray three coats of gloss black enamel paint.

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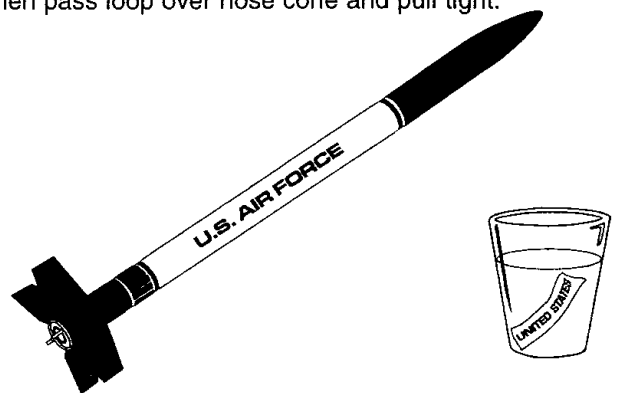
After paint has dried, preferably overnight, remove plastic bag and masking tape. Apply glue inside end of long tube. Insert upper portion of rocket so both tubes meet and are flush.

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Cut out parachute (G) along dotted lines. Then cut shroud line (E) into three equal parts. Attach shroud lines with tape disks (F). Pass ends of shroud line through eyelet on nose cone. Once the lines are through eyelet, separate lines into one large loop, then pass loop over nose cone and pull tight.

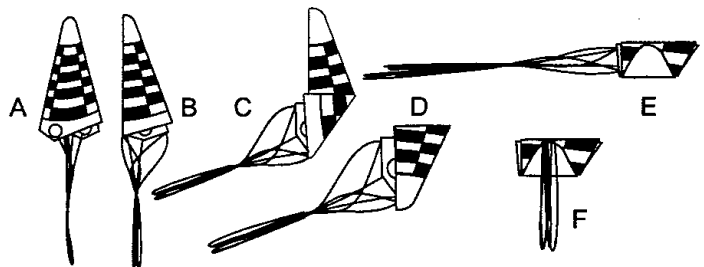
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Cut out decal with scissors. Immerse decals, one at a time, in warm water for 30-45 seconds. Decal should be totally submerged in water. Take decal out of water and place it on rocket by gently sliding decal away from paper backing. Position decal on rocket, then blot away any excess water with tissue. Remove any air bubbles or wrinkles by gently smoothing out decal with tissue. Repeat this step for each decal. Place model aside to let decals fully dry.

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ALL PARTS EXCEPT PARACHUTE OMITTED FROM DRAWING TO SHOW FOLDING



- A - Pull parachute to form a spike.
- B - Fold parachute in half.
- C - Fold bottom half over.
- D - Fold top part to bottom.
- E - Roll parachute
- F - Wrap shroud lines around chute.
- G - Insert 3 or 4 squares of recovery wadding into tube
- H - Insert parachute into tube.

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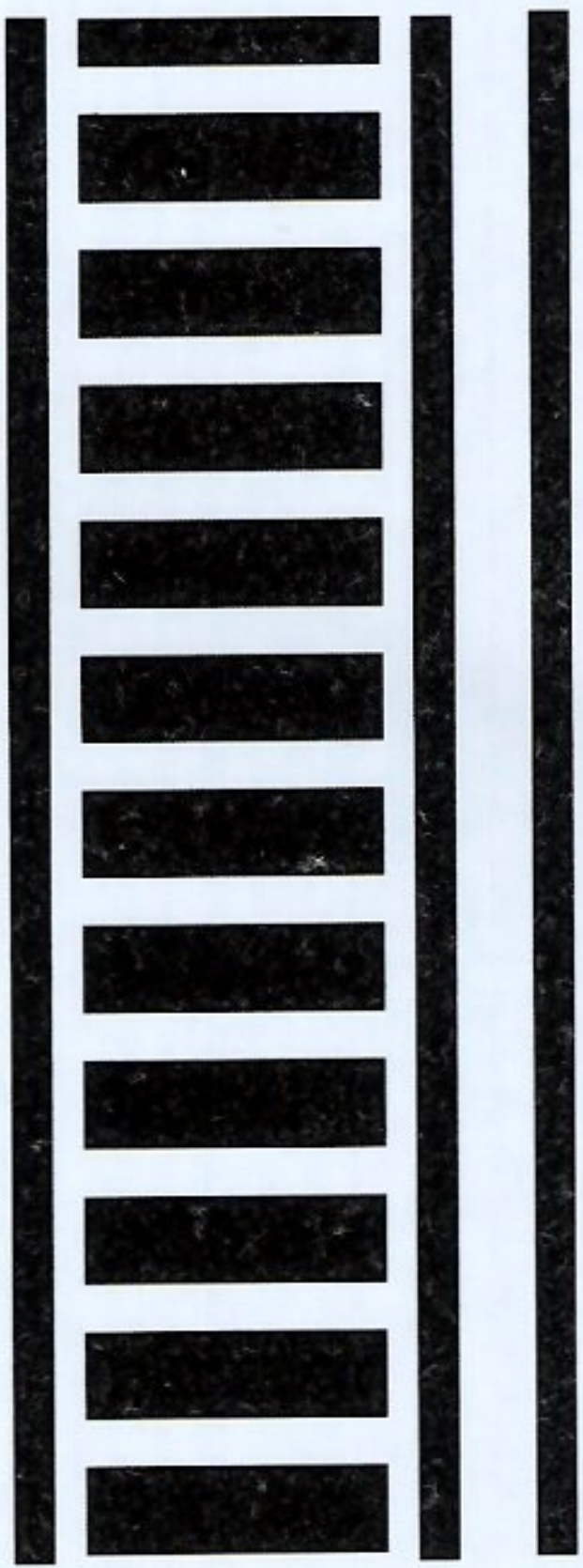
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Custom Raven Parts List

Refer to instructions for part identification.

- B. BT-50, 2.75" length
- C. BT-50, 9" length
- D. JT-50
- G. 12"
- I. 1/8" X 1.5"
- J. CR 20-50
- K. 3/32" thick
- L. EB-20
- M. BT-20, 2.75" length