In addition to the materials included in your kit you will also need the following tools and materials:

1) Modeling knife or single edge razor blade
2) Scissors
3) Extra-strong white glue
4) Ball point pen or pencil
5) Fine and extra fine grit sandpaper
6) Paint or dope

NOTE: Never apply dope over spray enamels as it will ruin the finish.

Read the entire assembly instructions carefully before beginning work on your model rocket. Start construction, following each step, in order, checking off each step as it is completed.
AND MOUNT
Preassemble the shock cord and its anchor. (Anchor is clipped from Pattern sheet SP-47.)

FOLD

SHOCK CORD

...then place the anchor so its forward edge is at least 1" down from the open end of the tube.

ATTACH RECOVERY PARTS

GLUE

has been glued dry, cut front as shown.

Tie on the shock cord.

ATTACH RECOVERY PARTS

Attach the screw eye to the base of the nose cone. Make a hole by inserting and removing the eye. Squirt glue into the hole and replace the eye.

9. PARACHUTE

Assemble the parachute as instructed on the parachute material. Tie the shroud lines to the screw eye.

A FILLET IS...

A smooth joint - built up between body and fin by applying a line of glue along the joint, then smooth out the glue with a finger.

APPLY DECALS

Both roll pattern decals are designed to be used together, or to be separated as shown...

Dotted lines on the reproduction of this kit decal sheet (above) show the maximum area to allow around each individual decal when cutting them from the sheet.

Drawing to the right shows positions of each of the decals used on the original model.

PAINTING

Apply sanding sealer to the fins and the nose cone. Sand each until smooth to the touch. Repeat as necessary to fill all grain marks.

Paint work consists of a white base coat over everything, then a finish coat of white over the body tube and fins. The nose cone is painted a solid red.

C/G MARKER

C/P MARKER

Cut away below shows location of rear launch lug. Apply 3 " 'louvers" from the decal sheet on each side of the Launch Lug.

FILLETS

Do this on both sides of each fin. Support the model horizontally until dry.

REAR VIEW
**ASSEMBLY INSTRUCTIONS**

1. **ENGINE MOUNT BASIC ASSEMBLY**
   - **ENGINE TUBE** BT-50J
   - APPLY GLUE TO TUBE AND SLIDE RING IN PLACE
   - **GLUE** 1/8" SLOT
   - 1/4"
   - **AR-2050 FITS AGAINST FRONT HOOK INSIDE OF TUBE.**
   - **AR-5055 FITS IN FRONT OF EH-2**

2. **INSTALL SPACING RINGS**
   - 3/16" SLOT
   - 3 wraps of masking tape
   - Fits with rear side even with rear edge of tube — EH-2 is centered in the slot.

3. **INSTALL MOUNT IN BODY TUBE**
   - Insert engine mount into the body tube until the rear edge of the slotted ring rests 1/16" inside the end of the body tube.
   - Apply a good fillet of glue around the ring/tube joint.

4. **SHOCK CORD AND MOUNT**
   - **FOLD**
   - **SPREAD GLUE**
   - Hold anchor with clamp or fingers until the glue sets.
   - Spread a film of glue on the inside of the tube wall in the area shown...

5. **FIN ATTACHMENT**
   - See the marking guide for setting fin guide lines relative to the engine hook.

   **NOTE:**
   - Sight through the rear lug to be sure front lug is properly aligned on body.

   Carefully remove the fin pieces from the stock.
   - Sand the leading, tip and trailing edges of each fin to a rounded shape. Sand flat the edges which are to glue to the body tube. Both sides of each fin are sanded smooth as a first preparation for step 9.

6. **GLUE ON LAUNCH LUGS**
   - Cut two 5/8" long pieces of launch lug. Glue them to the front and rear of body as shown.

   Apply glue to the base of one fin and place it on one of the guide lines. The rear edge of the fin is even with the rear end of the body tube. The fin sticks straight out from the body tube. Repeat this action with the other two fins.
COUNTDOWN CHECKLIST

☐ 14 Pack six or seven squares of crumpled recovery wadding loosely into body tube.

☐ 13 Fold the parachute into a triangular shape. Roll 'chute tightly as shown and wrap shroud lines around it. If 'chute is too large, unroll and repack until it slides easily into rocket. A very tight fit may prevent parachute from ejecting properly.

☐ 12 Pack shock cord neatly into rocket. NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in cold weather.

☐ 11 Select an engine and install an igniter as directed in the engine instructions. Engines recommended for use with this rocket are D13-5 and D13-7 or (with adapter EM-2050) B6-4 and C6-5.

☐ 10 Insert engine into rocket. Engine hook must latch securely over the end of the engine.

☐ 9 Disarm the launch panel—remove safety key.

☐ 8 Place rocket on launch pad making sure rocket slides freely on launch rod. Clean the micro-clips and attach them to the igniter.

☐ 7 Clear the launch area, alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

☐ 6 Arm the launch panel—insert safety key.

☐ 5 4 3 2 1 LAUNCH!

MISFIRE PROCEDURE:
Occasionally the igniter will heat and burn in two without igniting the engine. This is almost always caused by a failure to install it correctly. Disarm the launch panel, remove the model, clean the igniter residue from the nozzle, and install a new igniter. Follow the launching procedure again.
In addition to the parts included in this kit you will need scissors, white glue, a sharp model knife (or single edge razor blade), sandpaper, sanding sealer, and paint.

IMPORTANT: Check to be sure your kit is complete, then read the entire assembly instructions before beginning to build your rocket. Mark off each step as you complete it.
**ASSEMBLY INSTRUCTIONS**

**1.** Mark the engine mount tube (Part A) 1/4" from one end. Cut a 1/8" long slit in the tube at the mark as shown. Cut out the hold-down strap from the pattern sheet (Part B). Apply a 1" long line of glue to the tube as shown. Push one end of the engine hook (Part C) into the slit and press the main part of the hook into the glue. Apply glue to one side of the hold-down strap and wrap it tightly around the middle of the tube over the engine hook.

**2.** Cut a 3/16" gap in one adapter ring (Part D). Glue to the end of the engine mount tube from which the engine hook projects. Make sure the engine hook is centered in the gap and free to move up and down. Glue the other (uncut) adapter ring against the end of the engine hook at the other end of the tube (the front). Glue the engine block (Part E) inside the tube against the hook at the front.

**3.** Cut out the tube marking guide from the pattern sheet. Wrap it around the body tube (Part F) at one end. Mark at each of the arrow points. Remove the guide and draw a straight line connecting each matching pair of marks. Extend the launch lug line the entire length of the tube.

**4.** Smear glue around the inside of the body tube approximately 2-1/4" from the same end marked in the previous step. Insert the engine mount into this end of the body tube until the rear edge of the slotted ring is even with the end of the tube and the free end of the engine hook projects from the body as shown. Apply a thin line of glue around the ring/tube joint.

**5.** Fine-sand the balsa sheet (Part G), then carefully remove the die-cut fins from the sheet. Free the edges with a sharp knife. Sand the leading, trailing, and trailing edges of each fin to a rounded shape. Make sure the root edge remains square.

**6.** Rub a line of glue into the root edge of each fin and allow to dry. Apply another line of glue to each fin and glue the fins to the body on the alignment lines drawn in Step 3.
GLUE FINS IN THE CORRECT POSITION – ADJUST SO THEY ARE STRAIGHT

Refer to the illustration to be sure you mount the fins in the correct position. Adjust the fins so they project straight away from the body tube. Do not rest the rocket on its fins while the glue is wet.

FILLET SHOWN IS SLIGHTLY EXAGGERATED

A FILLET is a smooth joint, built up between body and fin by applying glue along the joint and smoothing the glue with a finger.

10 Apply a glue fillet to both sides of each fin joint. Holding the rocket horizontally, apply a line of glue to the joint and smooth it out with your finger. Support the rocket horizontally until the glue dries.

GLUE LAUNCH LUGS ON LINE

SIGHT ALONG LUGS TO BE SURE THEY ARE STRAIGHT

7 Cut the launch lug (Part H) into two equal lengths. Glue these lugs to the body on the launch lug line, one lug at the front and one lug at the rear. Sight through the lugs to be sure they are straight on the body.

SHOCK CORD

FOLD FORWARD

SPREAD GLUE HERE

PASS PARACHUTE THROUGH LOOP, PULL TIGHT

8 Cut out the shock cord mount from the pattern sheet. Pre-fold it on the dotted lines to crease and then flatten again. Apply glue to section 1 and lay the shock cord (Part I) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets.

SPREAD GLUE INSIDE BODY TUBE, PRESS MOUNT ONTO GLUE

SET BACK AT LEAST 1″ TO ALLOW FOR NOSE CONE

9 Apply glue to the inside of the body tube at the front over an area about 1″ to 2″ from the end. The glued area should be the same size as the shock cord mount. Press the mount into the glue as shown and hold in place until the glue sets.

TAPE DISC

SHROUD LINE

TIE SHOCK CORD TO NOSE CONE

11 Cut out the parachute (Part J) on its edge lines. Cut three 36″ lengths of shroud line cord (Part K). Attach the line ends to the top surface of the parachute with tape discs (Part L) as shown. Pass the shroud line loops through the ring on the nose cone (Part M). Pass the parachute through the loop ends and draw the lines tight against the ring. Set the knot with a drop of glue. Tie the free end of the shock cord to the nose cone.
PAINT SCHEME

☐ 12 Apply two or more coats of sanding sealer to all balsa surfaces. Sand lightly with extra-fine sandpaper between coats. Repeat until all surfaces look and feel smooth. Paint the nose cone with red enamel paint. Paint the rest of the model white.

☐ 13 When all paint is dry, apply decals (Part N). Cut out a decal section, dip it in lukewarm water for 10 seconds, and hold it until it uncurls. Slip the decal off the backing sheet and onto the model in the correct position. Blot away excess water. For best results, let the model dry overnight, then apply a coat of clear spray to protect the decals.

COUNTDOWN CHECKLIST

☐ 14 Pack six or seven squares of loosely crumpled recovery wadding into the body tube.

☐ 13 Fold the parachute into a triangular shape. Roll 'chute tightly as shown and wrap shroud lines loosely around it. If 'chute is too large, unroll it and repack until it slides easily into rocket. A fit that is too tight may prevent parachute from ejecting properly.

NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in cold weather.

☐ 12 Pack shock cord neatly into rocket.

Slide nose cone into place. Nose cone should separate easily from rocket body tube, but should not be extremely loose. If it is too tight, sand inside of body tube end and shoulder of nose cone with extra-fine sandpaper.

If nose cone is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.

☐ 11 Select an engine and install an igniter as directed in the engine instructions. Engines recommended for use with this rocket are D12-5 and D12-7 or (with adapter EM-2050, Cat. No. 3154) B6-4 and C6-5.

☐ 10 Insert engine into rocket. Engine hook must latch securely over the end of the engine.

☐ 9 Disarm the launch panel--remove safety key.

☐ 8 Place rocket on launch pad, making sure rocket slides freely on launch rod. Clean the micro-clips and attach them to the igniter.

☐ 7 Clear the launch area; alert recovery crew and trackers. Check for low flying aircraft and unauthorized persons in the recovery area.

☐ 6 Arm the launch panel--insert safety key.

5 4 3 2 1 LAUNCH!!

MISFIRE PROCEDURE

Occasionally the igniter will heat and burn in two without igniting the engine. This is almost always caused by a failure to install it correctly. Disarm the launch panel, remove the model, clean the igniter residue from the nozzle, and install a new igniter. Follow the launching procedure again.