

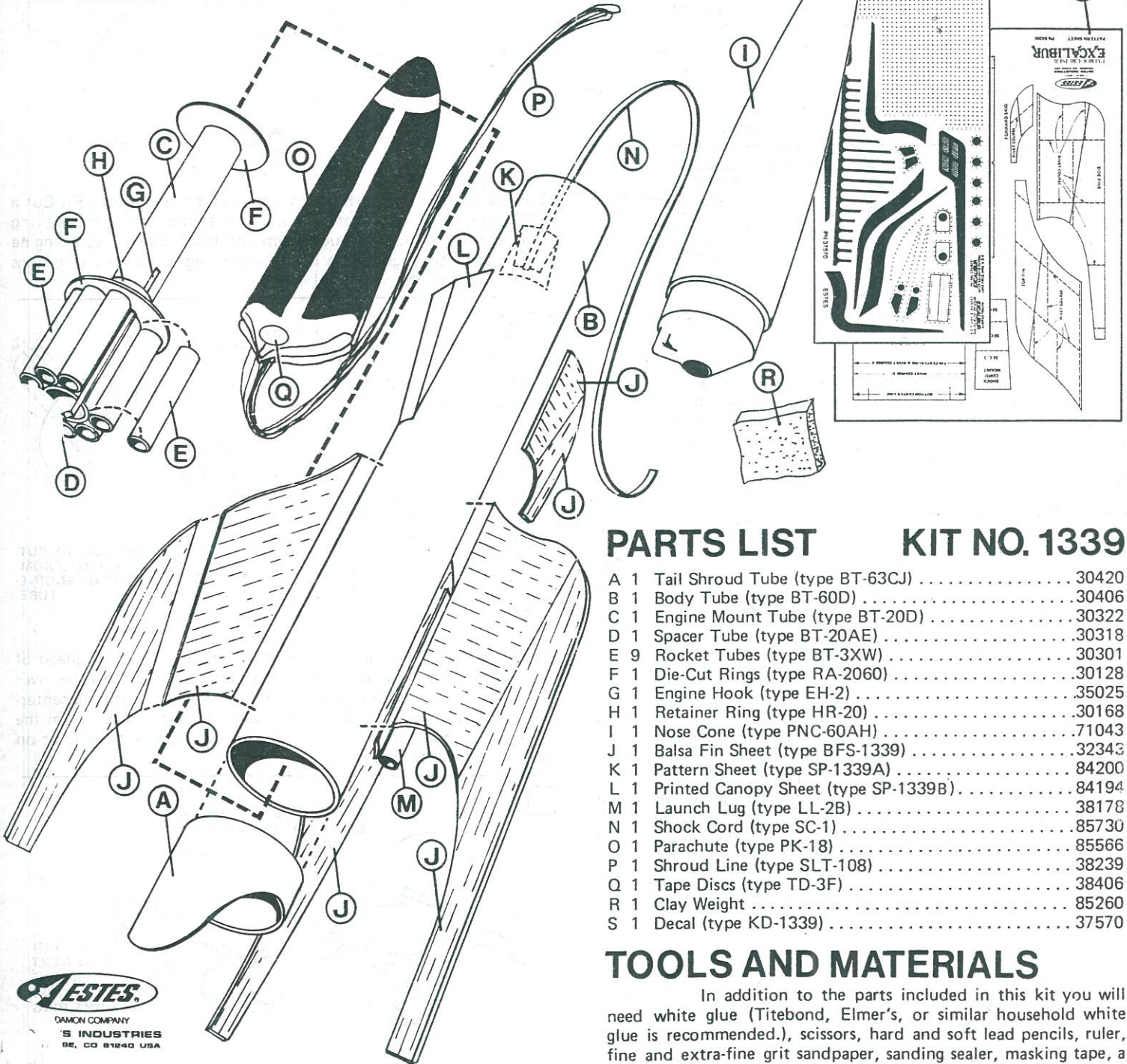
GALACTIC PIRATES™

CONTROL CRUISER EXCALIBUR

SKILL LEVEL 3 – Recommended for Craftsman Rocketeer.

BEFORE YOU START

Read all instructions before beginning work on your model. Make sure you have all parts and materials. When you are thoroughly familiar with the assembly procedure, begin construction. Check off each step as you complete it. In each step, test-fit the parts together before applying any glue. If some part doesn't fit properly, sand lightly or build up as required for precision assembly.



PARTS LIST KIT NO. 1339

A	1	Tail Shroud Tube (type BT-63CJ)	30420
B	1	Body Tube (type BT-60D)	30406
C	1	Engine Mount Tube (type BT-20D)	30322
D	1	Spacer Tube (type BT-20AE)	30318
E	9	Rocket Tubes (type BT-3XW)	30301
F	1	Die-Cut Rings (type RA-2060)	30128
G	1	Engine Hook (type EH-2)	35025
H	1	Retainer Ring (type HR-20)	30168
I	1	Nose Cone (type PNC-60AH)	71043
J	1	Balsa Fin Sheet (type BFS-1339)	32343
K	1	Pattern Sheet (type SP-1339A)	84200
L	1	Printed Canopy Sheet (type SP-1339B)	84194
M	1	Launch Lug (type LL-2B)	38178
N	1	Shock Cord (type SC-1)	85730
O	1	Parachute (type PK-18)	85566
P	1	Shroud Line (type SLT-108)	38239
Q	1	Tape Discs (type TD-3F)	38406
R	1	Clay Weight	85260
S	1	Decal (type KD-1339)	37570

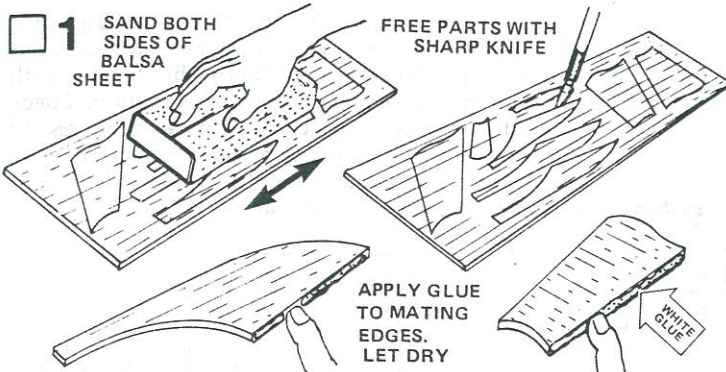
TOOLS AND MATERIALS

In addition to the parts included in this kit you will need white glue (Titebond, Elmer's, or similar household white glue is recommended.), scissors, hard and soft lead pencils, ruler, fine and extra-fine grit sandpaper, sanding sealer, masking tape, a medium-size modeling paint brush, modeling knife with a sharp blade, tweezers, wax paper, dowel or stick, orange enamel spray paint, a bottle of chrome silver enamel paint, and clear flat spray paint (Testor's "Dull-Cote" is preferred).

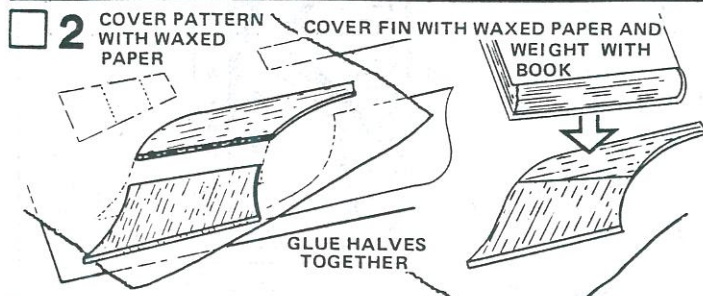


RECOMMENDED ENGINES:
A8-3 B4-4 B6-4 C5-3 C6-3

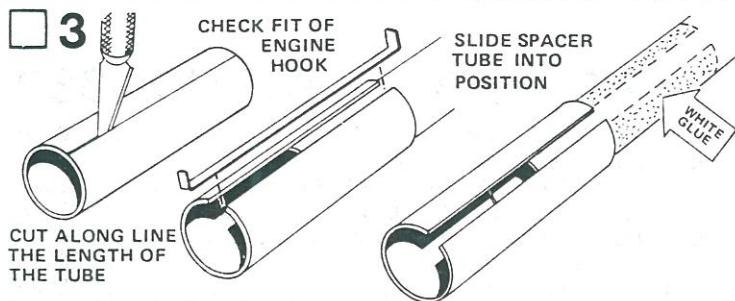
ASSEMBLY INSTRUCTIONS



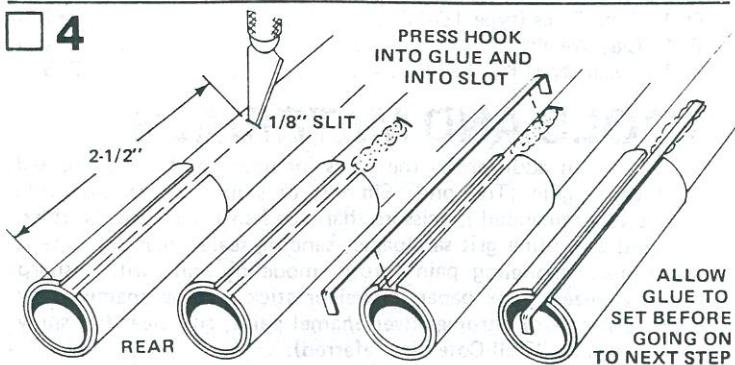
Fine-sand both sides of balsa sheet (part J), then carefully remove the fin parts using a sharp knife to free the edges. Sand the edges of the parts slightly to remove any rough edges -- but be careful to leave the edges square and sharp-cornered. Using the fin assembly patterns from the pattern sheet (part K) identify parts and make sure all mating edges match. Rub a line of glue into the mating edges of all the fin parts as shown and allow the glue to dry.



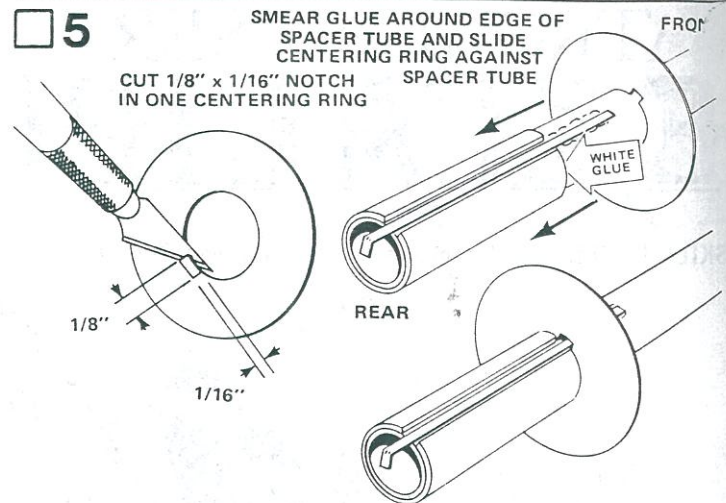
Cover fin assembly patterns with waxed paper and apply a second bead of glue to mating edges and press fin parts together, positioning them on the waxed paper over the patterns. Cover with wax paper, weight them down and set them aside to dry on a flat surface. Make three fins and forward skid.



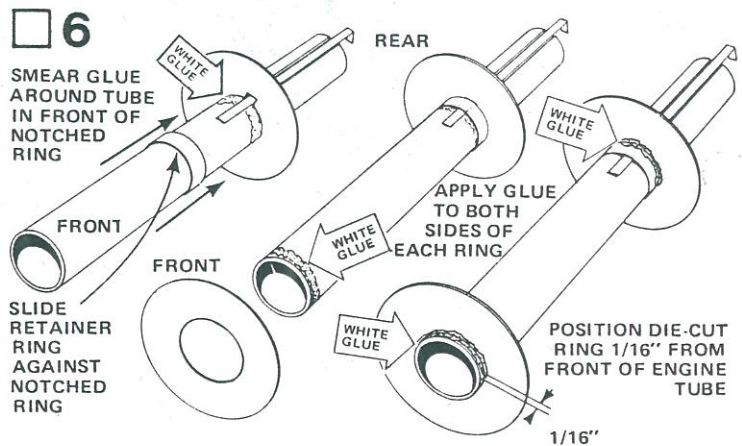
Draw a line the length of the spacer tube (part D). Using a sharp knife cut along the line the full length of the tube. Slide the spacer tube over the engine mount tube (part C) and check to see if the engine hook (part G) fits in the space made by the two edges of split spacer tube. If not, slide spacer tube off the engine mount tube and trim one edge of the spacer tube with a pair of scissors until hook fits. Smear glue around engine mount tube where spacer tube goes and slide spacer tube into place. Wipe away excess glue.



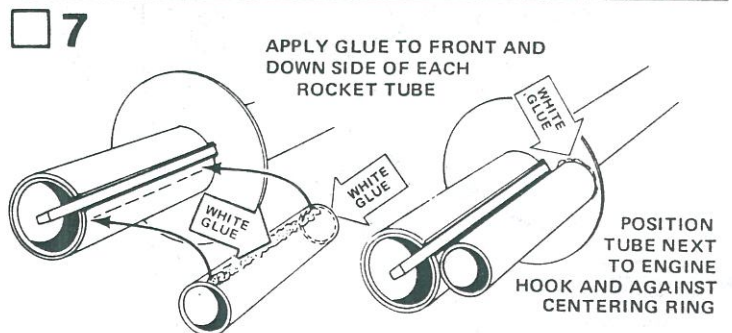
Cut a slit in the engine mount tube 2-1/2" from the rear of the tube and in line with the slot created by the spacer tube in the previous step. Apply a line of glue between the slit and the edge of the spacer tube as shown. Push one end of the engine hook into the slit and press the main part of the hook into the glue and into the slot as shown.



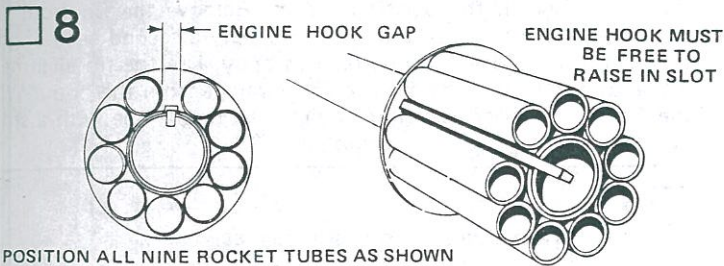
Remove the centering rings from die-cut ring set (part F). Cut a 1/8" wide, 1/16" deep notch in one of the rings. Slide notched ring onto the engine mount tube from the front making sure engine hook passes through notch in centering ring. Glue centering rings securely against the spacer tube.



Apply a line of glue around the engine mount tube just ahead of the notched ring. Slide retainer ring (part H) onto the tube, over the glue and against the centering ring. Slide the remaining centering ring onto the front of the engine mount tube 1/16" from the edge of the tube. Apply a line of glue at the ring/tube joint on both sides of each ring.

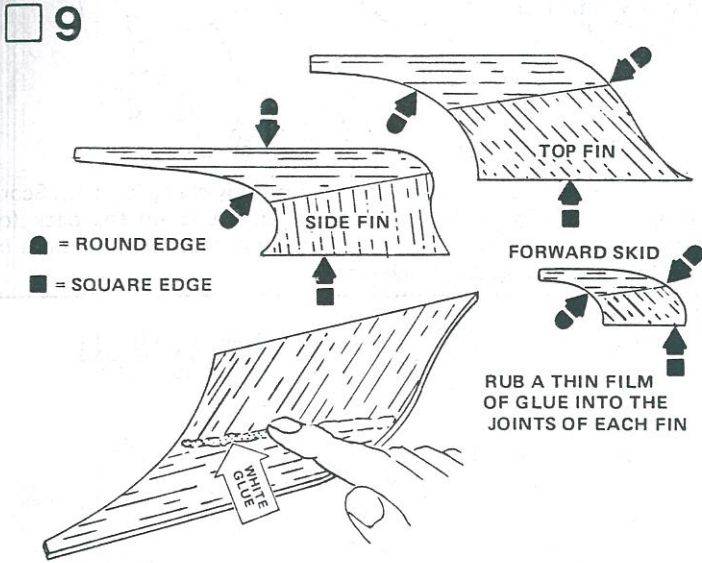


Locate nine rocket tubes (part E). Apply glue to the front and down the side of one of the rocket tubes as shown. Position the tube, as shown above, adjacent to the engine hook and against centering ring. Allow glue to set before proceeding with Step 8.



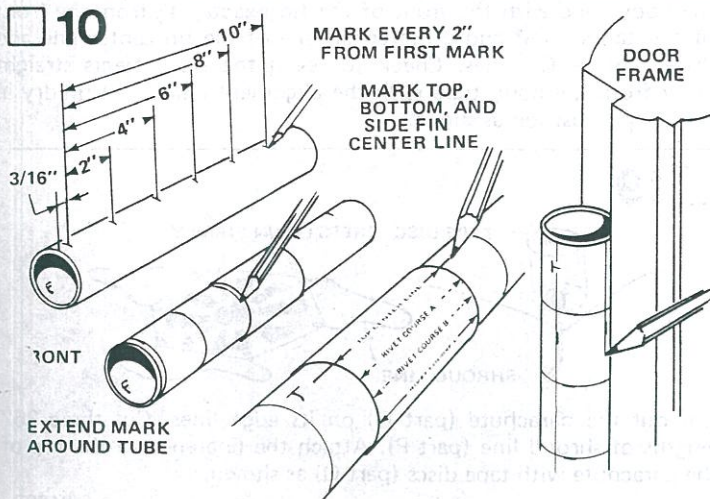
POSITION ALL NINE ROCKET TUBES AS SHOWN

Attach the remaining rocket tubes. Apply glue to one end and down the side of one of the tubes. Position the tube against the previously attached rocket tube. Make sure glue contacts the surface of the engine mount tube and that the rocket tube is located against the centering ring. Position each of the remaining rocket tubes as shown. Set engine assembly aside to dry.

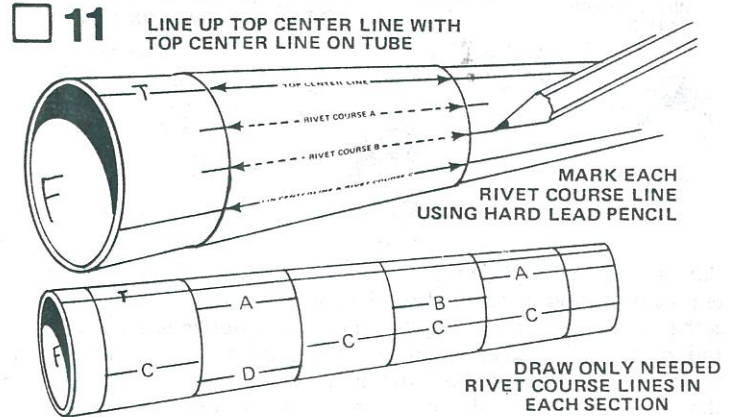


ne-sand all the fins and sand round the edges indicated. The root edge (edge that glues to the body tube) of each fin must be square. Rub a thin film of glue into the joints where the fin parts were glued together. Do this to both sides of the fins and set aside to dry.

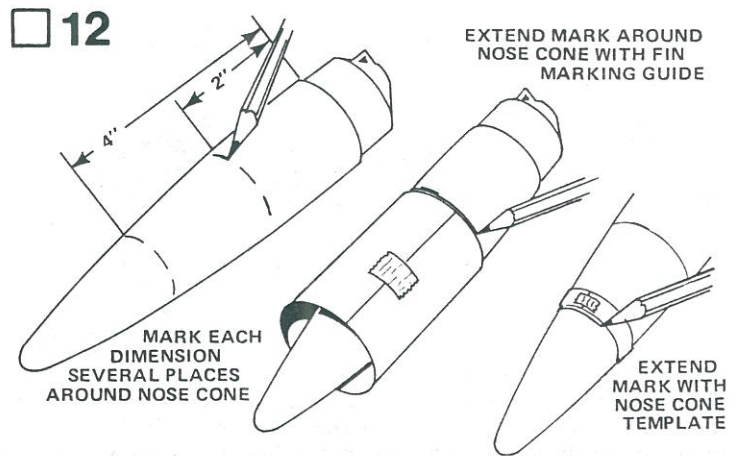
NOTE: In normal model rocket construction, lines are drawn on the body tube to locate fins and other external details. These lines are drawn with a soft lead pencil since the fins, etc. will be glued to the tube prior to painting. In the case of this rocket, additional lines are needed to locate the rivet courses. The rivets will be cut from the decal sheet and applied after painting. The rivet course lines should therefore be drawn with a sharp hard lead pencil. This will produce a slight depression in the body tube surface which will still be visible after painting. Do not use a ballpoint pen to draw any of the lines. The ink will "bleed" through the paint and spoil the finished appearance.



Mark an "F" inside one end of the body tube (part B). This indicates the front of the body. Measure 3/16" from this end of the tube and place a mark on the outside of the tube. From this mark, place a mark at 2", 4", 6", 8" and 10". Cut out the marking guide from the pattern sheet (part K). Wrap the marking guide around the body and tape the ends together. Slide the guide along the tube until one end is even with the first mark. Using a hard lead pencil, draw a line around the body tube. Repeat at each mark, to establish the circular rivet course lines. Place a mark at each end of the guide for the location of the top, bottom and fin center lines. Place a letter "T" next to the mark for the top center line. Remove the guide from the body tube. Draw a line along the tube using a door jamb as a guide. Draw a light line the entire length of the tube for all the center lines.



Slide the marking guide back onto the body tube. Line up the top center line on the guide with the top center line on the tube. Place a mark on the tube at each end of the guide for all the rivet course lines. Using a hard pencil draw the lines onto the body tube in the areas shown in the illustration for both sides of the body tube.

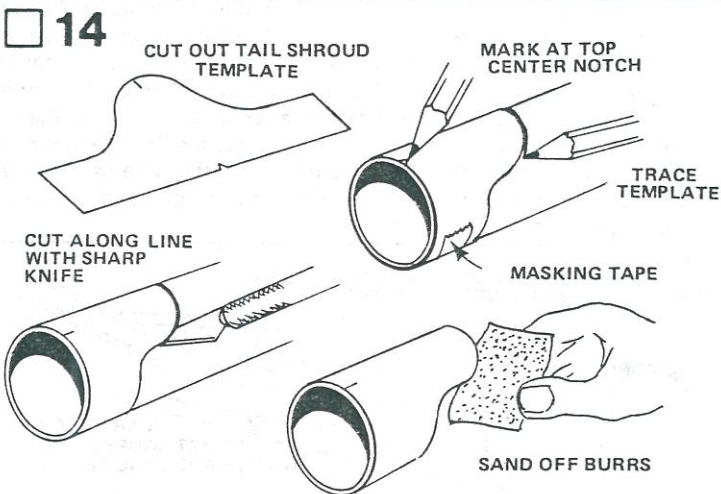


Make several marks around the nose cone at a point 2" forward from where the nose cone sockets into the body tube. Wrap the marking guide around the nose, lined up on the marks. Scribe a line around the nose cone with a hard lead pencil. Mark the nose cone 4" forward of the body tube socket. Cut the nose cone template from the pattern sheet, wrap around the nose cone on the pencil mark, and scribe a line around the nose. This establishes the forward rivet courses.

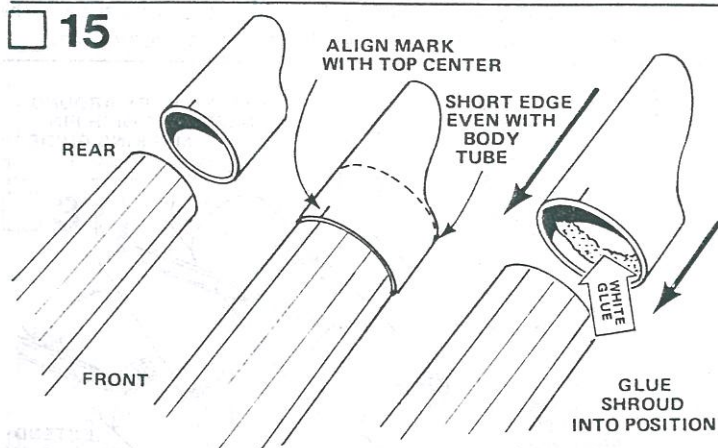


Lightly sand the fins where the glue had been applied to the joints. Apply a coat of sanding sealer to one side of each fin. When dry,

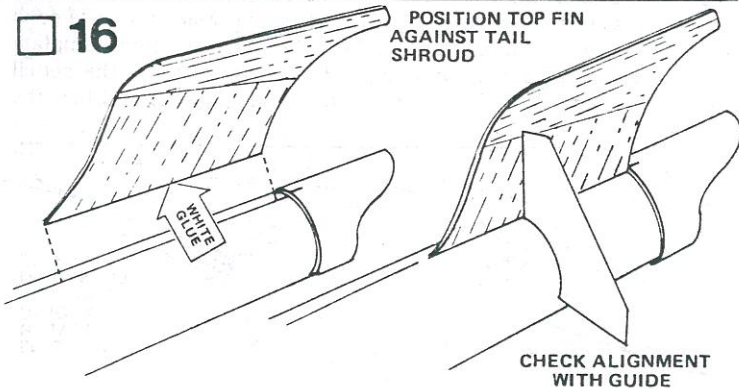
turn fin over and apply sealer to the other side. Apply sealer to all edges except the root edge. When the sealer is dry, lightly sand all surfaces. Repeat sealing and sanding process a second time. If balsa grain still shows, a third coat of sealer (and sanding) may be necessary.



Cut the tail shroud template from the pattern sheet. Wrap the template around the tail shroud tube (part A) and tape ends together. Make sure the straight end of the template is even with one end of the tube. Draw a line on the tube along the rear of the template. Be sure to mark the tube where shown to provide an alignment mark for gluing to the body. Remove template and carefully cut out the tail shroud. Lightly sand the edges to remove any burrs or uneven cut marks. Set aside left-over portion of tail shroud tube for later use.

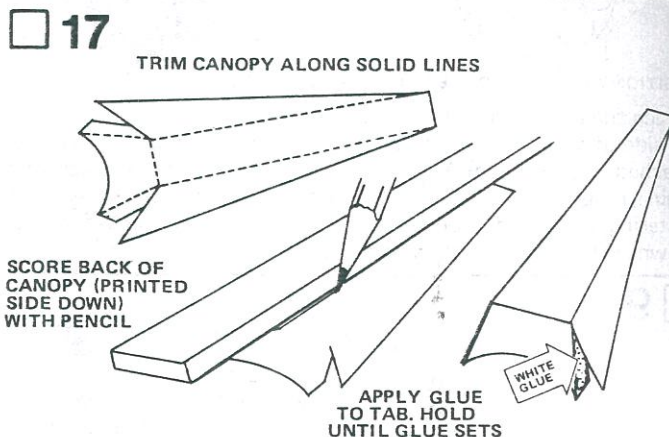


Glue the tail shroud onto the rear of the body tube (remember, the front of the body tube is marked with an "F"). Line up the mark on the shroud with the top center line on the body tube and the bottom rear edge of the shroud even with the rear of the body tube. Wipe away excess glue.

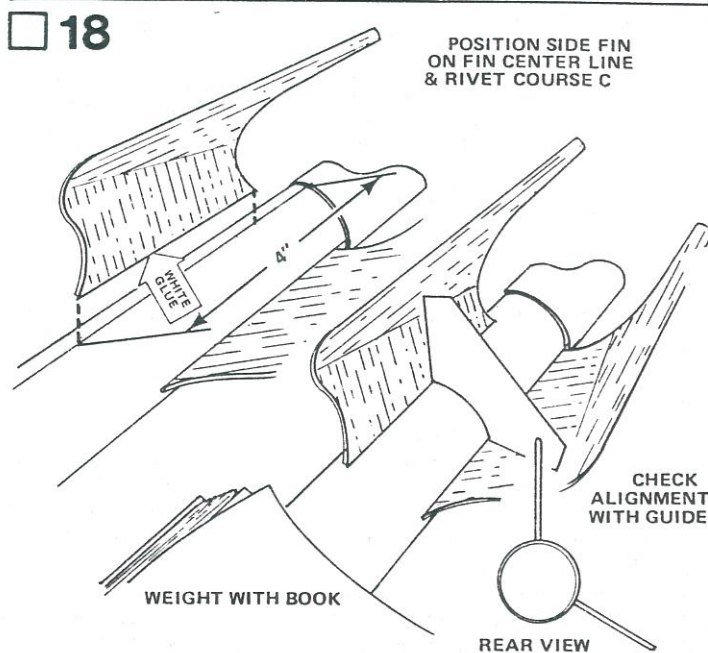


Cut the fin alignment guide from the pattern sheet. Apply a bead of glue to the root edge of the fin and press onto

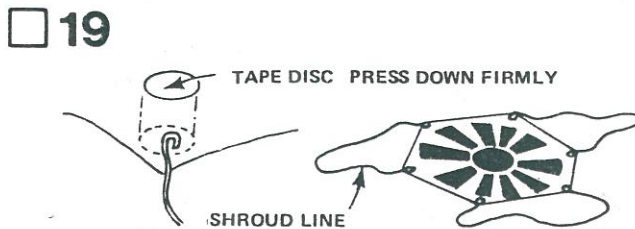
the body tube in the position shown. Remove the fin from the body and allow glue to partially dry. Apply a second bead of glue to the fin root edge and re-attach to body. Use the fin alignment guide to make sure the fin projects straight from the body. With the fin in an upright position, weight the body tube with a small book and allow glue to dry completely.



Cut out the canopy from the printed canopy sheet (part L). Score canopy, using sharp hard lead pencil and ruler on the back (or non-printed) side. Fold and glue the front tabs to the insides of canopy sides and hold until glue sets.

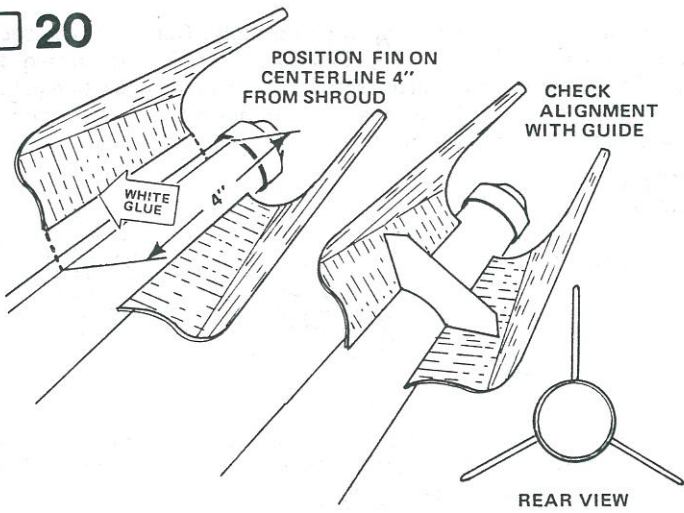


Using the procedure outlined in Step 16, glue one lower fin onto the body tube with the front of the fin exactly 4" from the front of the tail shroud and centered on one of the fin center line and "rivet course C" lines. Check to see if the fin projects straight away from the body tube with the alignment guide. Let fin dry in an upright position as shown.



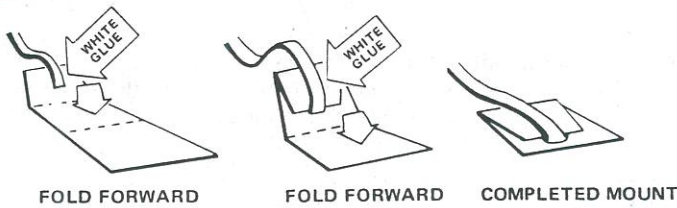
Cut out the parachute (part O) on its edge lines. Cut three 36" lengths of shroud line (part P). Attach the line ends to the top of the parachute with tape discs (part Q) as shown.

20



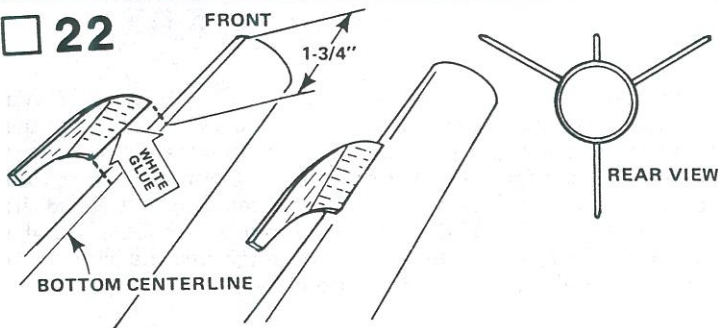
Glue the remaining lower fin onto the body tube with the front of the fin exactly 4" from the front of the tail shroud and centered on its fin center line and rivet course line. Check to see if the fin projects straight away from the body tube with the alignment guide. Let fin dry in an upright position as shown in Step 18.

21



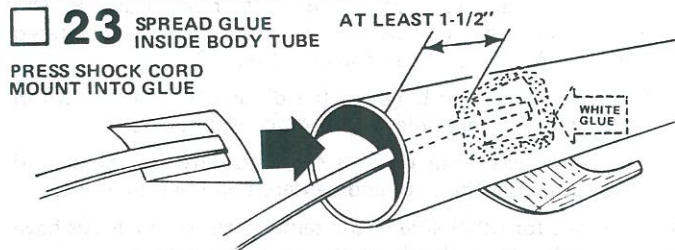
Cut out the shock cord mount from the pattern sheet. Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part N) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord as shown and fold over again. Clamp the unit together with your fingers until the glue sets.

22



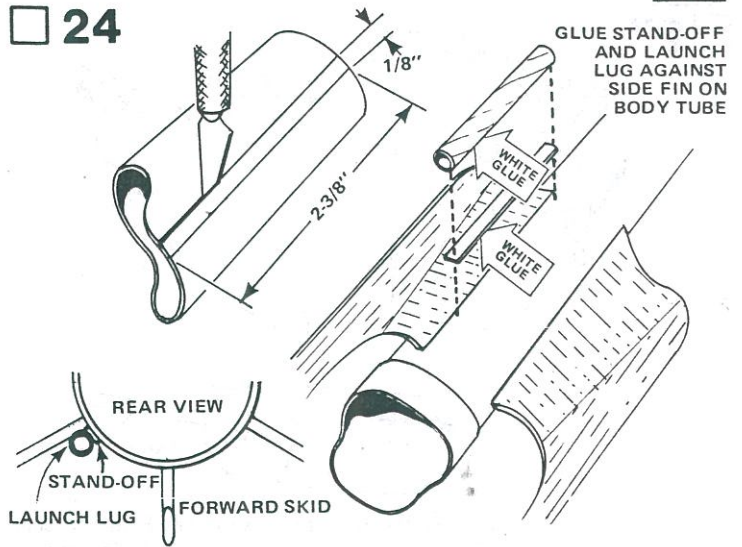
Glue forward skid to the body tube's bottom center line exactly 1-3/4" from the front of the body tube. Again check to be sure that the skid projects straight away from the tube with the alignment guide.

23



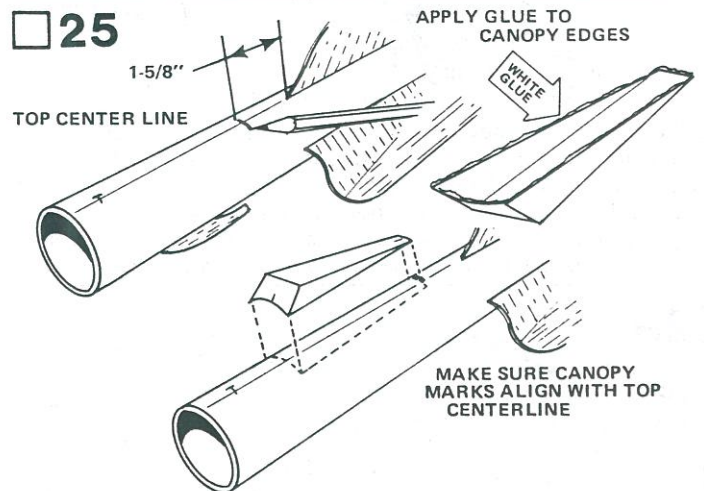
Apply glue to the inside front of the body tube over an area about 1-1/2" to 2" from the front. The glued area should be about the same size as the shock cord mount. Press the mount into the glue as shown and hold it until the glue sets.

24



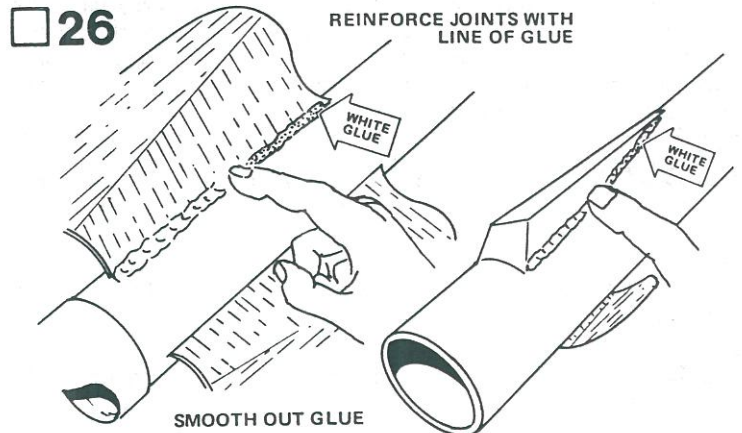
Cut out a launch lug stand-off from the piece of tail shroud tube left over from Step 14. As shown, smear glue on the back side of the stand-off and glue to the underside of the body tube so the front of the stand-off is flush with the front of one of the lower fins. Glue the launch lug (part M) to it. Make sure the side of the launch lug is against the underside of the fin as shown.

25



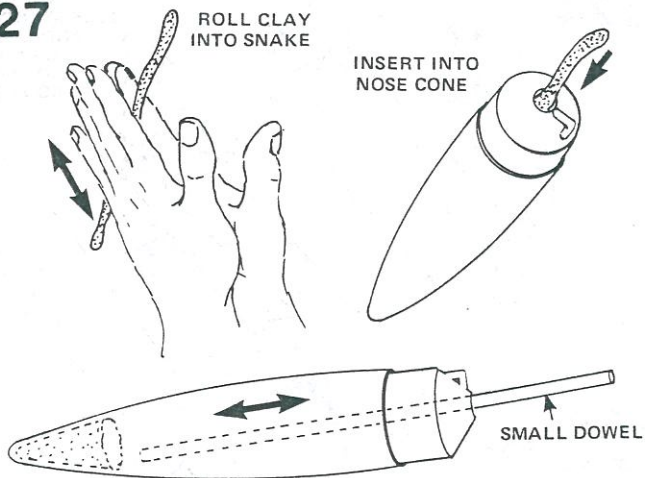
Make a mark 1-5/8" in front of the top fin. Smear glue on the inside edges of the canopy and center the canopy on the top center line with the rear of the canopy on the 1-5/8" mark. Hold canopy in place until glue sets.

26



When the fin joints have dried, apply glue reinforcements to each joint. Holding the model level, apply a narrow line of glue to both sides of each fin joint. Smooth out the glue with your finger. Keep the model level until the glue dries. Apply glue reinforcements around canopy/body tube joint in the same manner, again keeping the model level until the glue dries.

27



Install the clay weight (part R) into the nose cone. Roll the clay into a thin "snake". Push clay "snake" through hole in rear of nose cone. Pack clay firmly into the nose using a small dowel or stick.

28



Pass the shroud line loops through the loop on the nose cone. Pass the parachute through the loop-ends and pull the lines tight against the nose cone. "Set" the knot with a drop of glue. Tie the free end of the shock cord firmly to the nose cone loop. A square knot or strong double knot should be used. Pack the parachute and shock cord into the body tube and slide the nose cone into place.

29



When all glue on the outside of the body is dry, paint the entire rocket light orange. If any other color is used, it should be light so decals will show. Apply at least two light coats of spray paint. Be especially careful not to get paint inside the rear end of the rocket. Paint only the exposed rear portion of the engine mount/rocket tube assembly, metallic silver as shown. Allow paint to dry thoroughly before proceeding to Step 30.

30 When the paint is completely dry, apply decals (part S) by the following procedure. Read all of Step 30 before beginning.

A Wash hands with soap and water to remove excess skin oil.

B Wipe model with a clean, damp cloth to remove oily fingerprints.

C



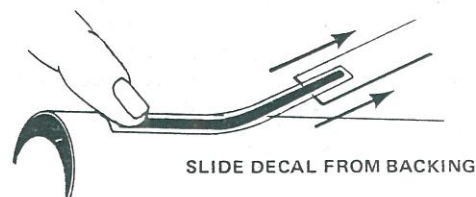
Select the particular decal you wish to apply. Cut only that decal from the sheet, trimming as closely as possible to the printed design. For designs with straight sides, use a ruler as a cutting guide. Place the remainder of the decal sheet to one side so water will not be accidentally dripped onto it.

D



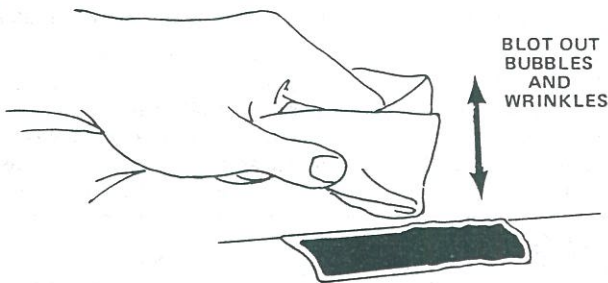
Submerge the decal completely in a pan of lukewarm water until it will just slide on the backing material. This may take 20-30 seconds or longer for larger decals.

E



Slide the decal from backing material onto model. With tweezers, move the decal until it is in the desired position. If the decal "grabs" and will not move, do not force it. Use the paint brush to apply a little water to the decal surface. The water will run under the decal so you can move it easily.

F



Let the decal set for a couple of minutes, then blot gently with a clean cloth to remove excess water and air bubbles. Do not rub the cloth back and forth or you may move or wrinkle the decal. After the decal has set for another 3 or 4 minutes, you may gently rub the cloth over it to remove any remaining moisture or trapped air. If you encounter a stubborn air bubble, prick the bubble with the point of the knife, place a drop of water on the area and press down with the cloth to smooth the film into place.

G

When applying subsequent decals, be careful that you do not disturb those previously applied.

Side decals: Body stripe is located 6-1/2" from the front edge of the tail shroud and top edge is even with rivet course B. The three port holes are centered on rivet course B and centered between the 4" and 6" lines drawn in Step 10.

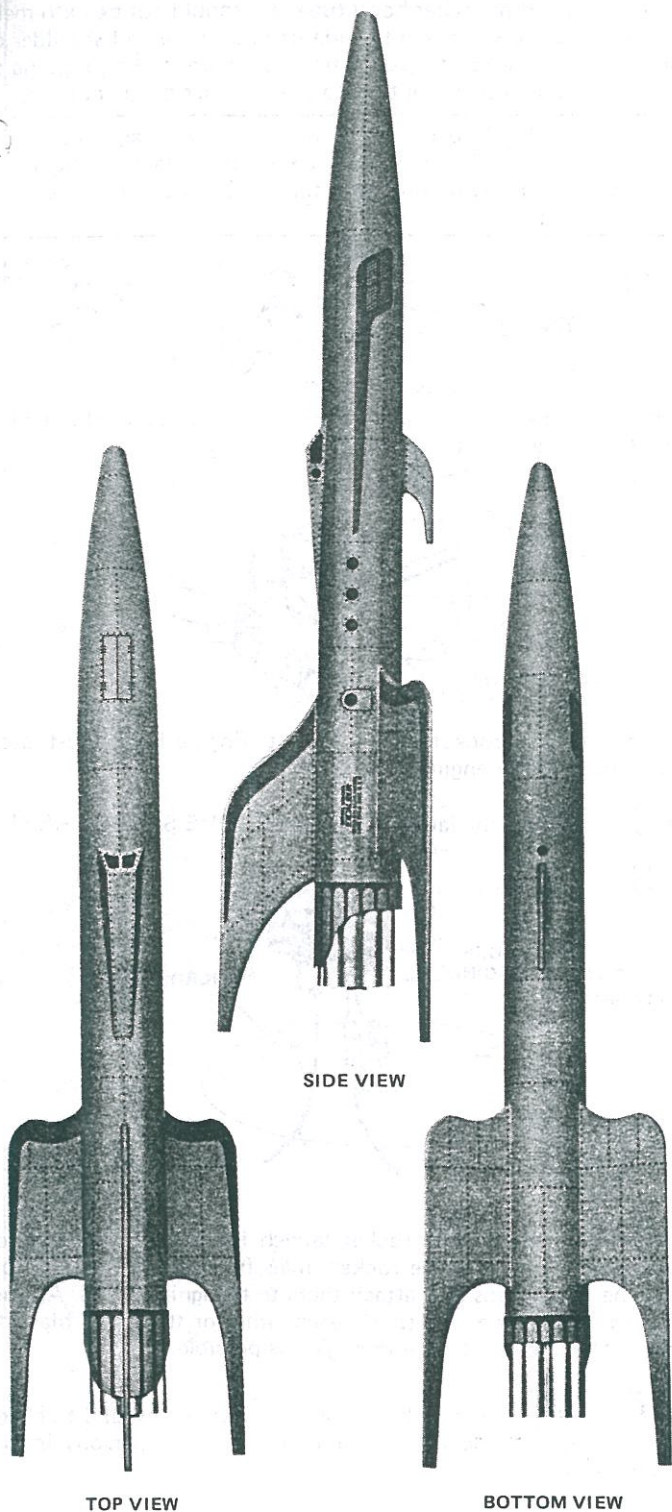
Door decal is centered between the 6" and 8" lines drawn in Step 10, with the port hole centered on rivet course B.

Patrol Cruiser Excalibur decal is centered between the 8" and 10" lines drawn in Step 10, and centered on rivet course C.

Apply decals for other side in the same order. When decals have set, slit body stripe decals at the body tube/nose cone joint with a sharp knife.

Fin decals: Apply as shown in decal placement photos. Make sure decals for lower fins are positioned on top of fin only.

DECAL PLACEMENT



Cock pit decal: Trim clear from around decals with a sharp knife, close to each rivet pattern. Center all three decals in their positions as shown.

Cannon cover decal: Center this decal on the top center line approximately 1-1/4" from the nose cone/body tube.

Full extension decal: Trim decal with a sharp knife. Apply decal so longest line on the decal is centered with the top center line/top fin. After the decal has thoroughly dried, trim away excess clear material that extends beyond the rear of the tube.

Rivet courses around rocket body and nose cone: Cut rivet courses into strips by placing ruler on small tick marks and between rivet courses. Cut along the ruler with a sharp knife. Cut out only what you need at the time so none of the decals will be lost.

NOTE: If any of the rivet course lines drawn in Step 10 are too faint to be seen, re-draw them with a light pencil line prior to decal application.

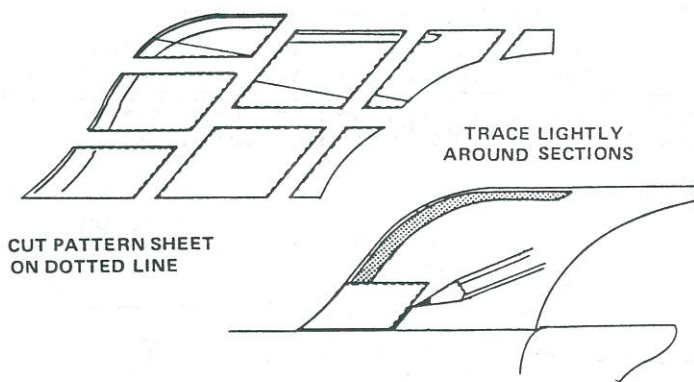
Locate the small curved rivet course on the decal sheet. Mark the nose cone 6" from the body tube/nose cone joint. Apply this decal to the nose cone and center rivets on the mark.

Cut out eight medium size rivet courses as detailed above. Take one of the rivet courses and wrap it around the second course line from the front of the nose cone. Place a mark on the decal where the one end meets it. Cut decal at this point, save excess decal to be used later. Soak in water and apply this decal in its proper position. Follow this procedure for each of the seven circular rivet course lines, breaking for fins, canopy, and cannon doors.

Rivet courses along nose cone: Cut out two medium size courses. Measure between first course around nose cone and third course. Cut to size and apply to both sides down the side rivet course line of the nose cone.

Cut four small size courses from decal sheet. Locate top center line and measure between second course around nose cone and cannon doors. Cut one course to size and apply in this location. Locate rivet course "A" on nose cone and measure, cut, and apply decals as per previous instructions. Locate bottom rivet course line on nose cone, measure the final course, cut and apply as per previous instructions. Remember to save all excess rivet course decals to be used later.

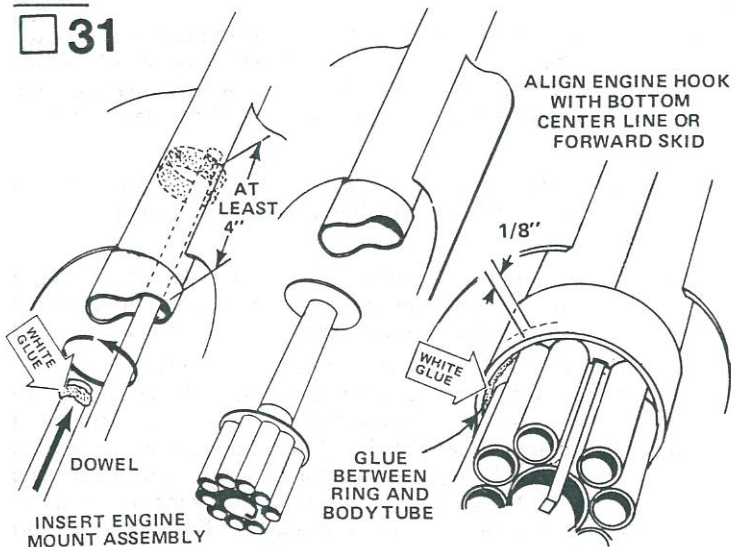
Rivet courses A, B, C, and D along rocket body: Cut the remaining small size rivet courses from decal sheet. Locate the top center line on rocket body, measure one rivet course to fit between the first body course around the tube and the canopy. Cut rivet course to size and apply. Cut course lines to size and apply around top edges of canopy. Use any excess decal from previous steps if it can be used instead of cutting larger pieces. Cut course line to fit between rear of canopy and top fin. Cut and apply the rest of courses noting where course lines break, begin, and end.



Fin rivet course; Cut out the fin assembly patterns from the pattern sheet, lay the pattern on its appropriate fin to see how the fin rivet courses run. Cut top fin pattern as shown. Then lay the front piece on the top fin and with pencil draw a faint line using the piece for a pattern as shown. Repeat on opposite side. Do this for all the rivet course lines designated by dotted lines on the patterns.

After all rivet courses are copied on fins, cut remaining rivet courses from decal sheet. Locate where each rivet course runs on the fin, cut to size and soak in water, and apply as per previous instructions. Don't forget to use the excess decal rivet courses whenever possible.

31



Allow decals to dry overnight. Smear glue 4" to 5" inside rear of rocket body with the aid of a stick or dowel as shown. Push engine mount assembly in right away . . . but be sure the mount is turned so the hook is located between the two lower fins and centered on the bottom center line. Slide engine mount assembly in so the rear engine mount ring is 1/8" inside body tube as shown. Using a small stick, apply glue to the joint between the rear centering ring and body tube (between the rocket tubes). Let glue dry completely.

32 Apply a final light coat of flat clear spray enamel (Testor's "Dull-Cote" is preferred) over entire model to protect the decals. The flat spray also makes the rivets stand out better on the painted surface.

LAUNCHING COMPONENTS

To launch your rocket you will need the following items:

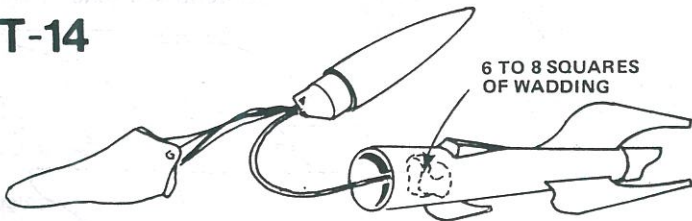
- An Estes model rocket launch system
- Parachute recovery wadding (Estes Cat. No. 2274)
- Estes A8-3, B4-4, B6-4, C5-3, or C6-3 model rocket engines. Use a B4-4 engine for your first flight.

Be sure to follow the HIAA-NAR* Model Rocketry Safety Code when carrying out your model rocketry activities.

*HIAA -- Hobby Industry Association of America
 NAR -- National Association of Rocketry

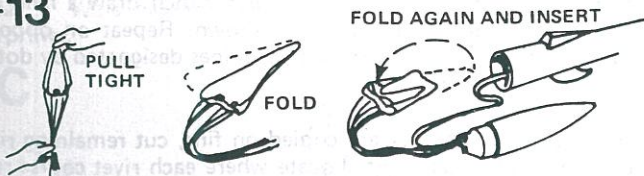
COUNTDOWN CHECKLIST

T-14



Pack 6 or 8 squares of loosely crumpled recovery wadding into the rocket body.

T-13



Gather the parachute as shown, then fold into a triangular shape. Fold again and insert into rocket body.

T-12 Pack parachute, shroud lines, and shock cord neatly into rocket body. Slide nose cone into place. Nose cone should separate easily from rocket body tube, but should not be extremely loose. If fit is too tight, sand inside of body tube and shoulder of nose cone with fine sandpaper. If fit is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.

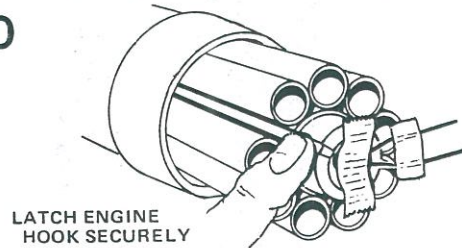
NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in cold weather.

T-11



Select an engine and install an igniter as directed in the engine instructions. Use a B4-4 engine for your first flight.

T-10

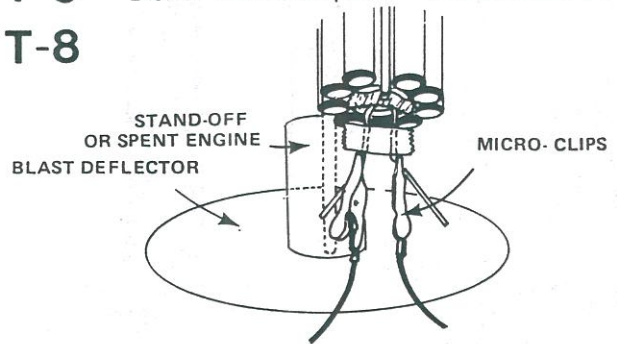


Insert engine into rocket engine mount. Engine hook must latch securely over end of engine.

T-9

Disarm the launch panel -- REMOVE SAFETY KEY!

T-8



Slide launch rod through rocket launch lug and place rocket on launch pad. Make sure the rocket slides freely on the launch rod. Clean the micro-clips and attach them to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to engine as possible.

T-7

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

T-6

Arm the launch panel -- INSERT SAFETY KEY!

-5-4-3-2-1-LAUNCH!!

Repeat Countdown Checklist for each flight.

MISFIRE PROCEDURE

Occasionally the igniter will heat and burn into pieces without igniting the engine. This is almost always caused by a failure to install it correctly. REMOVE SAFETY KEY, launch panel, remove the model, clean the igniter residue from the engine nozzle, and install a new igniter. Repeat the Countdown Checklist.

Kit 1339