

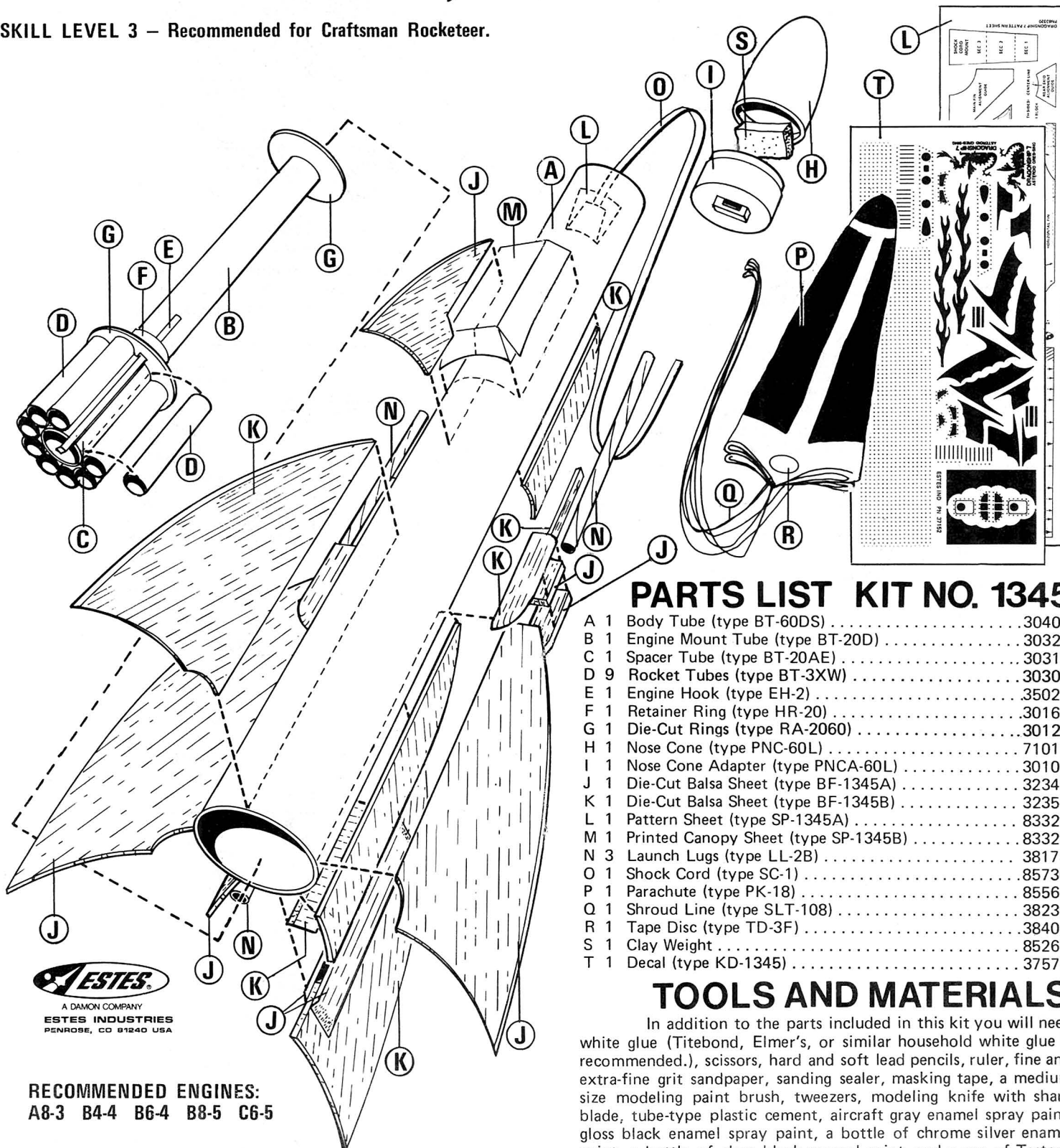
BEFORE YOU START

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.

GALACTIC PIRATES™

DRAGON SHIP 7

SKILL LEVEL 3 – Recommended for Craftsman Rocketeer.



PARTS LIST KIT NO. 1345

A	1	Body Tube (type BT-60DS)	30407
B	1	Engine Mount Tube (type BT-20D)	30322
C	1	Spacer Tube (type BT-20AE)	30318
D	9	Rocket Tubes (type BT-3XW)	30301
E	1	Engine Hook (type EH-2)	35025
F	1	Retainer Ring (type HR-20)	30168
G	1	Die-Cut Rings (type RA-2060)	30128
H	1	Nose Cone (type PNC-60L)	71019
I	1	Nose Cone Adapter (type PNCA-60L)	30103
J	1	Die-Cut Balsa Sheet (type BF-1345A)	32349
K	1	Die-Cut Balsa Sheet (type BF-1345B)	32350
L	1	Pattern Sheet (type SP-1345A)	83320
M	1	Printed Canopy Sheet (type SP-1345B)	83325
N	3	Launch Lugs (type LL-2B)	38178
O	1	Shock Cord (type SC-1)	85730
P	1	Parachute (type PK-18)	85566
Q	1	Shroud Line (type SLT-108)	38239
R	1	Tape Disc (type TD-3F)	38406
S	1	Clay Weight	85260
T	1	Decal (type KD-1345)	37577

TOOLS AND MATERIALS

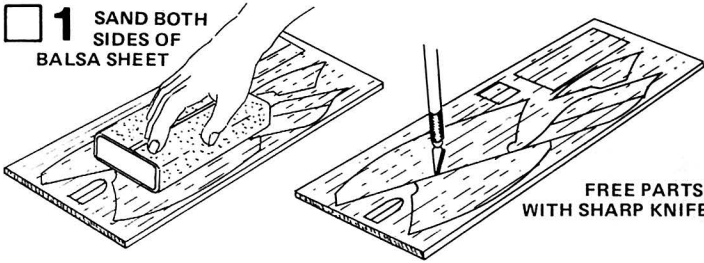
In addition to the parts included in this kit you will need white glue (Titebond, Elmer's, or similar household white glue is recommended.), scissors, hard and soft lead pencils, ruler, fine and extra-fine grit sandpaper, sanding sealer, masking tape, a medium size modeling paint brush, tweezers, modeling knife with sharp blade, tube-type plastic cement, aircraft gray enamel spray paint, gloss black enamel spray paint, a bottle of chrome silver enamel paint, a bottle of gloss black enamel paint, and a can of Testor's spray "dull-cote".



RECOMMENDED ENGINES:
A8-3 B4-4 B6-4 B8-5 C6-5

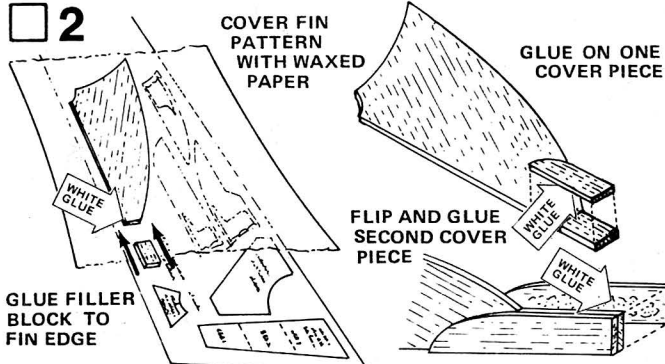
ASSEMBLY INSTRUCTIONS

1 SAND BOTH SIDES OF Balsa SHEET



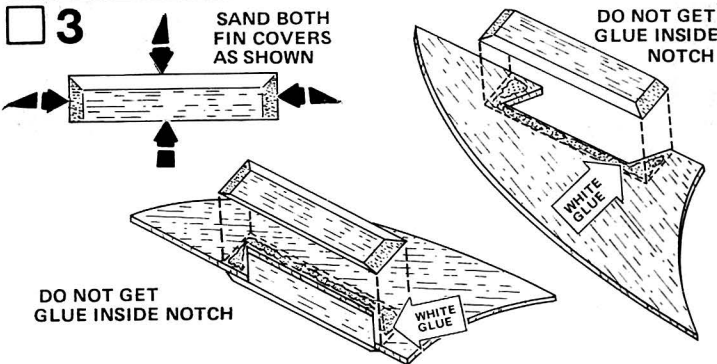
Fine-sand both sides of balsa sheets (part J and part K), then carefully remove the fin parts, using a sharp knife to free the edges. Sand the edges of the parts slightly to remove any rough spots . . . but be careful to leave the edges square and sharp cornered. Using the fin assembly patterns from the pattern sheet (part L) identify parts.

2



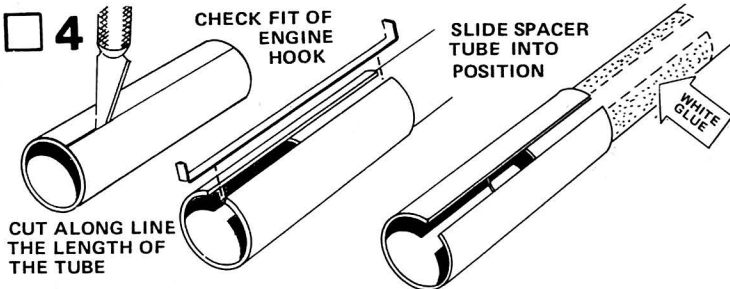
Cover horizontal fin pattern with waxed paper and apply a bead of glue to the mating edge of the filler block and press it and fin together. Apply a second coat of glue to one cover piece and glue it into position. After glue has "set" turn the fin over and apply glue to the second cover piece and glue into position. Make two horizontal fin units. Set them aside to dry on a flat surface.

3



Locate the parts for the auxiliary fin unit. Sand auxiliary fin cover pieces to shape leaving one side square as shown. Apply glue to the mating side of the fin cover and glue into position shown. After glue sets turn auxiliary fin over and glue other fin cover into position. Make sure square edge of both covers are square with the root edge of the auxiliary fin. Set aside to dry on a flat surface.

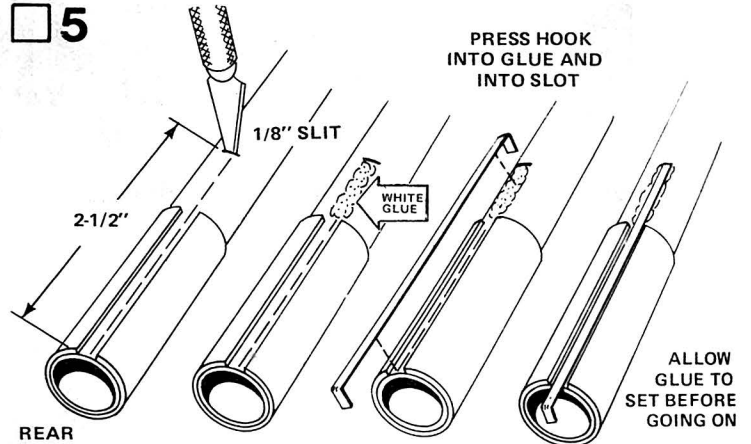
4



Draw a line the length of the spacer tube (part C). Using a sharp knife, cut along the line the full length of the tube. Slide the

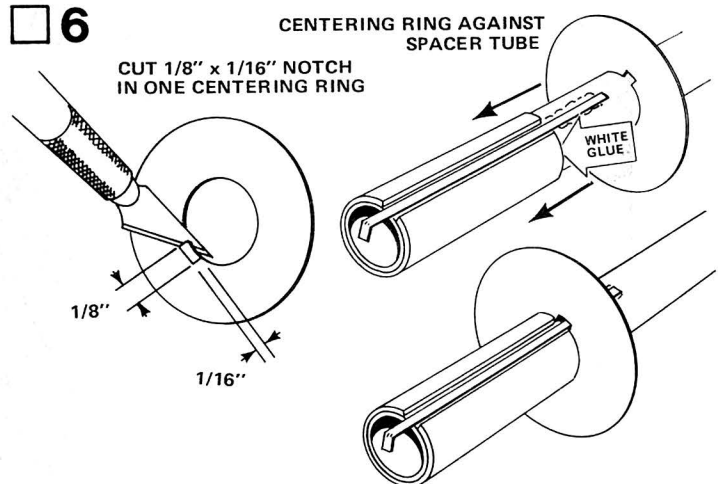
spacer tube over the engine mount tube (part B) and check to see if the engine hook (part E) fits in the space made by the two edges of split spacer tube. If not, slide spacer tube off the engine mount tube and trim one edge of the spacer tube with a pair of scissors until hook fits. Smear glue around engine mount tube where spacer tube goes and slide spacer tube into place.

5



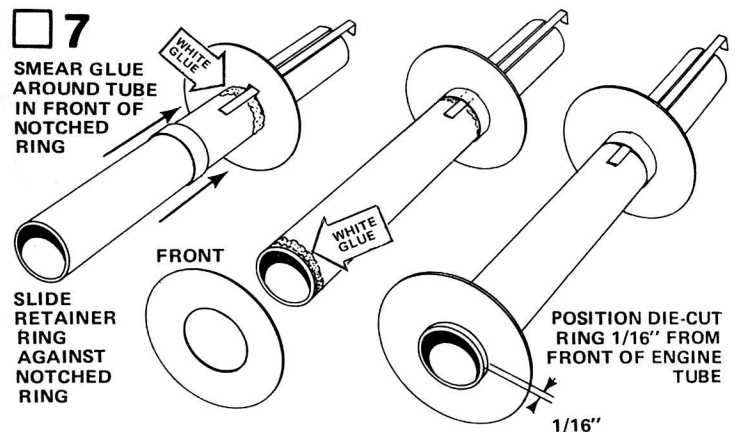
Cut a slit in the engine mount tube 2-1/2" from the rear of the tube and in line with the slot created by the spacer tube in the previous step. Apply a line of glue between the slit and the edge of the spacer tube as shown. Push one end of the engine hook into the slit and press the main part of the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

6



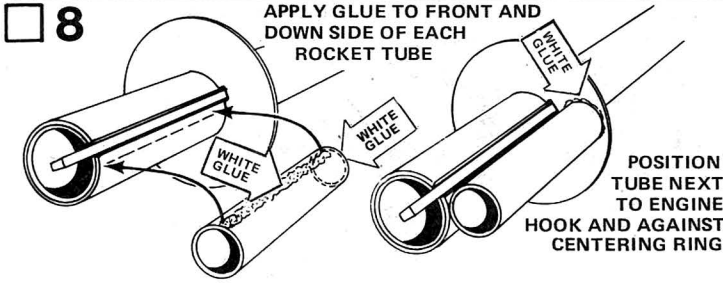
Remove the centering rings from die-cut ring set (part G). Cut a 1/8" wide, 1/16" deep notch in one of the rings. Slide notched ring onto the engine mount tube from the front making sure engine hook passes through notch in centering ring. Glue centering ring securely against the spacer tube.

7

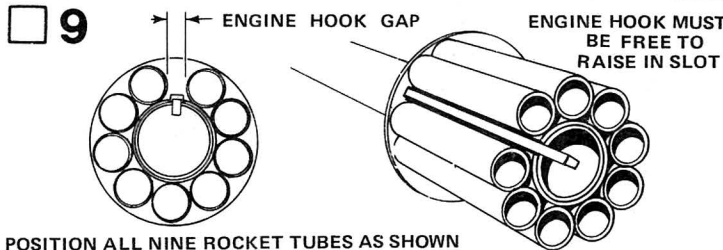


Apply a line of glue around the engine mount tube just ahead of the centering ring. Slide retainer ring (part F) onto the tube, over

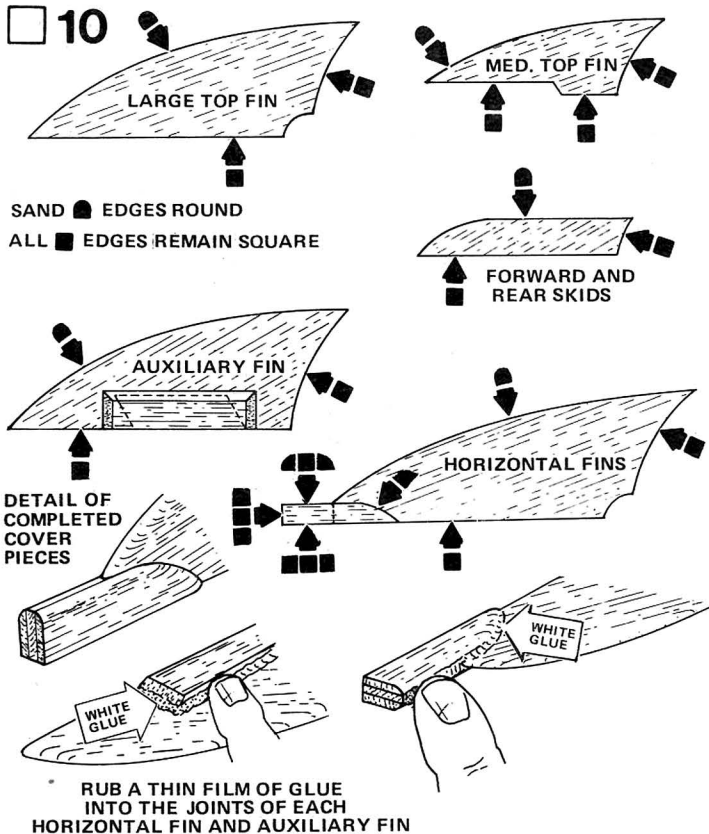
the glue and against the centering ring. Slide the remaining centering ring onto the front of the engine mount tube 1/16" from the edge of the tube. Apply a line of glue at the ring/tube joint on both sides of each ring.



Locate nine rocket tubes (part D). Apply glue to the front and down the side of one of the rocket tubes as shown. Position the tube as shown adjacent to the engine hook and against centering ring. Allow glue to set before proceeding with Step 9.

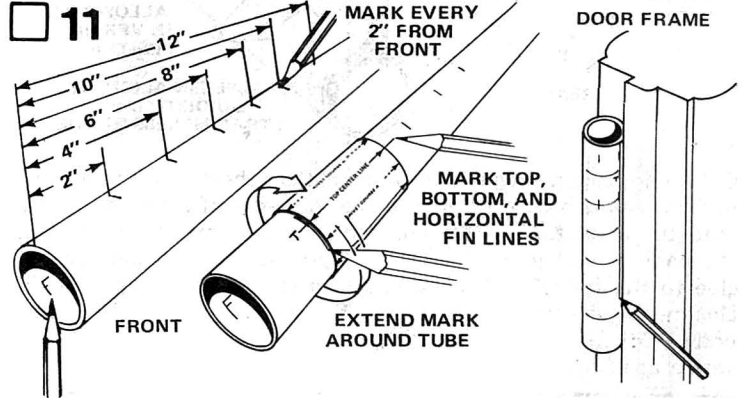


Attach the remaining rocket tubes. Apply glue to one end and down the side of one of the tubes. Position the tube against the previously attached rocket tube. Make sure glue contacts the surface of the engine mount tube and that the rocket tube is located against the centering rings. Position each of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

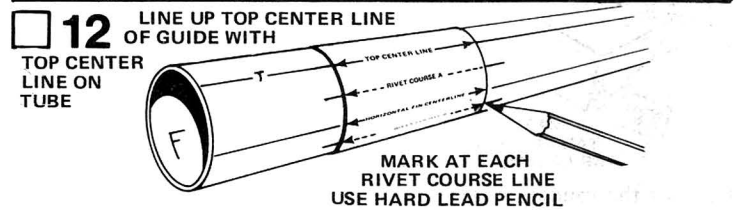


Fine-sand all the fins and sand round the edges indicated. The root edge (edge that glues to the body tube and trailing edge) of each fin must be square. Rub a thin film of glue into the joints where the fin parts were glued together. Do this to both sides of the fins and set aside to dry.

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 A). This indicates the front of the body. Measuring from this end of the tube, place marks at 2", 4", 6", 8", 10" and 12". Cut out the marking guide from the pattern sheet. 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 and bottom center lines, and all the fin alignment lines. Mark the top center line with a letter "T" to indicate its position. Remove the guide from the body tube. Lay a straight edge on the body tube even with the marks (A door frame could be used to connect the marks as shown.), draw a light line with a soft lead pencil the entire length of the tube for all center lines.

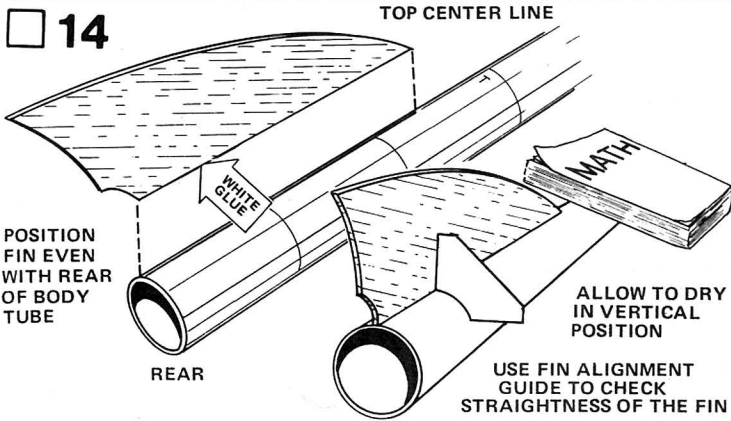


Slide the marking guide back onto the body tube. Line up the top center line on the guide with the top center line on the tube. Place a mark on the tube at each end of the guide for all the rivet course lines. Using a hard lead pencil, draw the lines onto the body tube with a straight edge (or door frame).

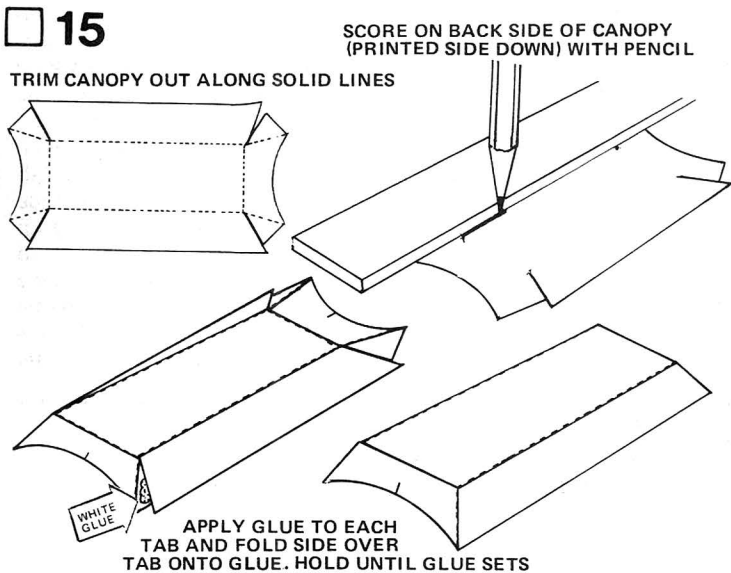


Lightly sand the fins where the glue had been applied to the joints. Apply a coat of sanding sealer to one side of each fin. When dry, turn fin over and apply sealer to the other side. Apply sealer to all

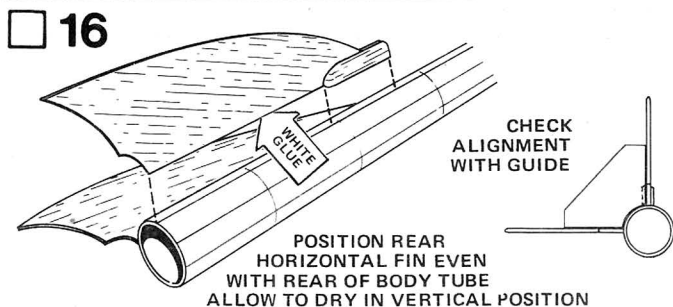
edges except the root edge. When the sealer is dry, lightly sand all surfaces. Repeat sealing and sanding process a second time. If balsa grain still shows, a third coat of sealer (and sanding) may be necessary.



Cut the fin alignment guide from the pattern sheet. Locate the large top fin. 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 tube. 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.

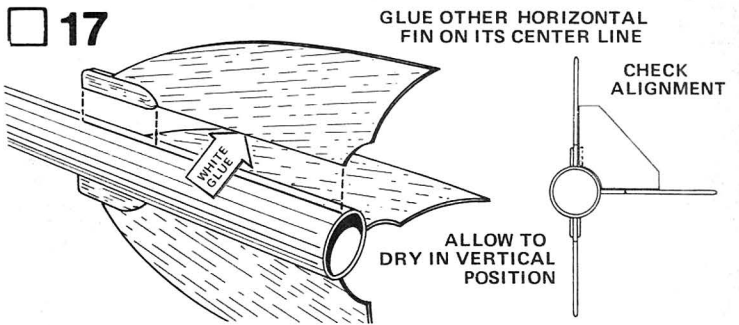


Cut out the canopy from the printed canopy sheet (part M). Score canopy using sharp hard lead pencil and ruler along the dotted lines. Fold and glue the front tabs to the insides of canopy sides and hold until glue sets. Then fold and glue the rear tabs to the insides of canopy sides and hold until glue sets.

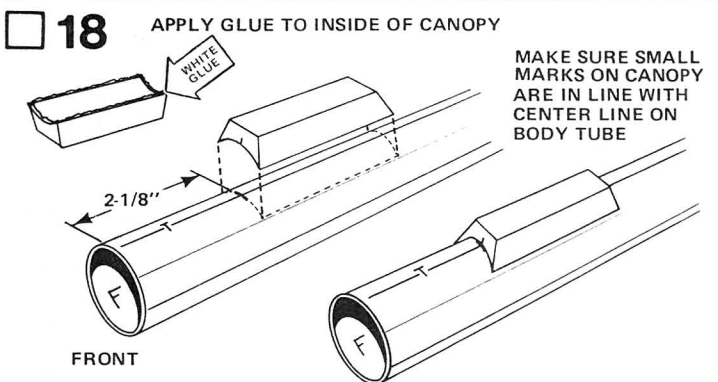


Using the procedure outlined in Step 14, glue one horizontal fin onto the body tube with the rear of fin flush with the rear edge of

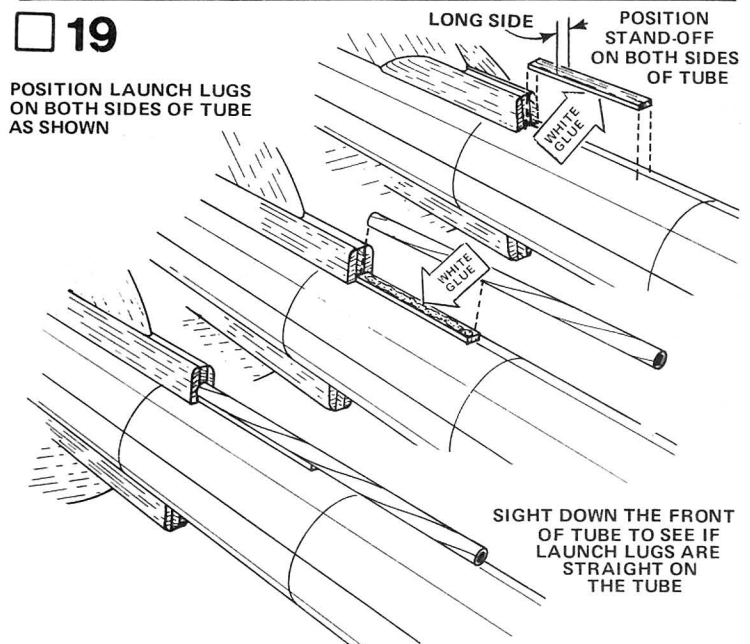
the body tube and centered on one of the horizontal fin center lines. Check to make sure the fin projects straight away from the body tube with the alignment guide. Let fin dry in an upright position as shown.



Glue the last horizontal fin onto the body tube with the rear of the fin even with rear of body tube. Check to be sure that the fin projects straight away from the body tube with the alignment guide. Let fin dry in an upright position as shown in Step 16.

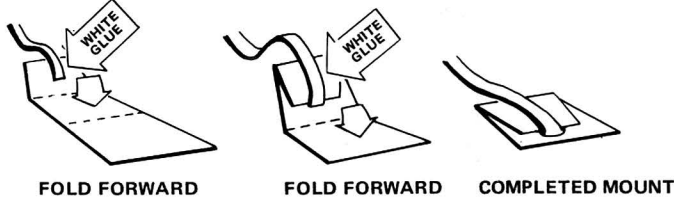


Make a mark on the top center line 2-1/8" from the front of the tube. Smear glue on the inside edges of the canopy and center the canopy on the top center line with the front of the canopy on the 2-1/8" mark. Hold canopy in place until glue sets.



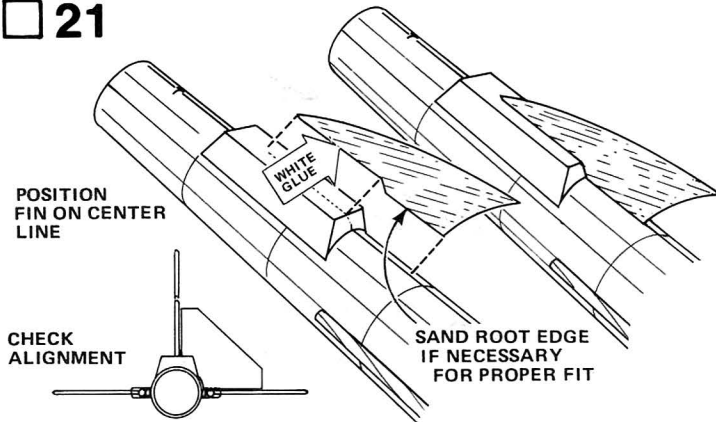
Locate the two stand-off strips from the die-cut balsa sheet (part J). Check the illustration to determine on which edge to apply glue. Smear glue on one side and one end of each stand-off. Place one in front of and centered on each horizontal fin center line as shown. Then glue one of the launch lugs (part N) on top of each stand-off and against each horizontal fin. Make sure these are in line with the fins by sighting down the front of the tube as shown.

20



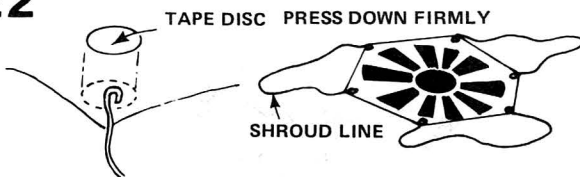
Cut out the shock cord mount from the pattern sheet. Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part O) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord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

21



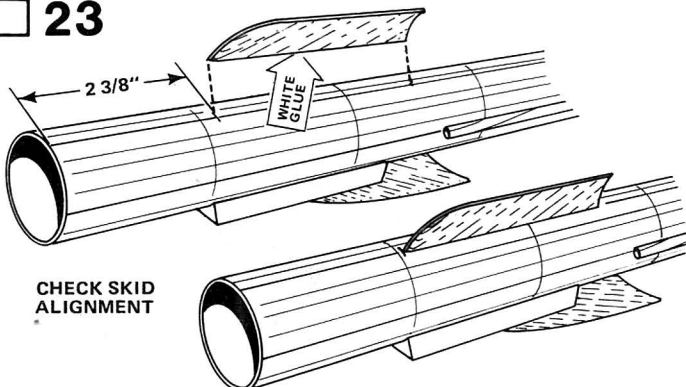
Fit the medium-size top fin in position. Check to see if fins root edge makes contact with the top of the canopy and body tube. If not, carefully sand the root edge until it fits. Smear glue along root edge of fin and position fin on center line of body tube and top of canopy. Check the fin with the alignment guide to see if it projects straight away from the body tube. Sight down from the top of the model to make sure fin is aligned with the rear vertical fin.

22



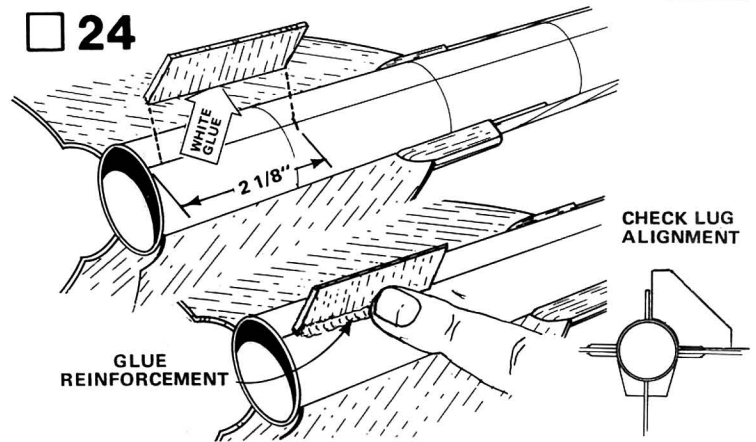
Cut out the parachute (part P) on its edge lines. Cut three 36" lengths of shroud line (part Q). Attach the line ends to the top of the parachute with tape discs (part R) as shown.

23



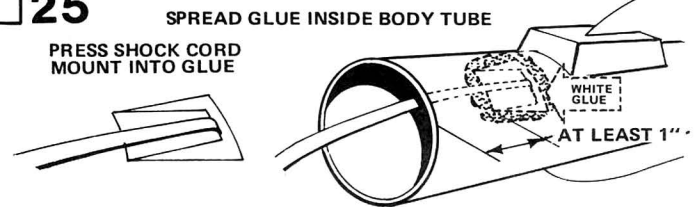
Glue forward skid to the body tube's bottom center line exactly 2-3/8" from the front of the body tube. Again check that the skid is straight with the alignment guide and aligned on the long axis of the tube.

24



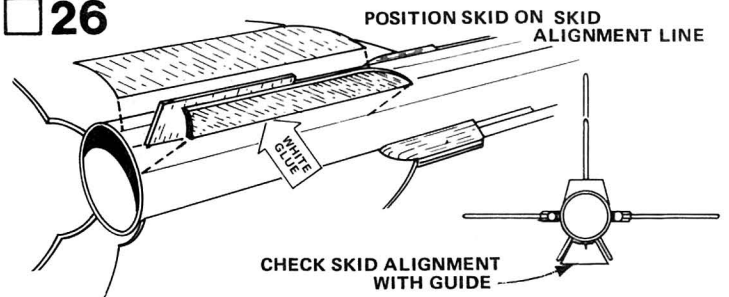
Make a mark 2-1/8" from the rear of the body tube on the bottom center line. Glue the auxiliary fin attachment lug centered on the center line and with the front of the lug on the 2-1/8" mark as shown. Note the direction of the grain and make sure the lug points forward as shown. This is very important for fin location. Check straightness with the alignment guide. Let glue set then apply a glue reinforcement to each side of the lug. After glue reinforcement is dry, place auxiliary fin onto lug as shown in Step 35. If fin will not go on smoothly sand edges and sides so fin fits smoothly on and off. When removing fin, push forward while pulling slightly downward on the rear of the fin. Do not force or pull fin from the top of the fin. This could cause breakage of the fin or lug.

25



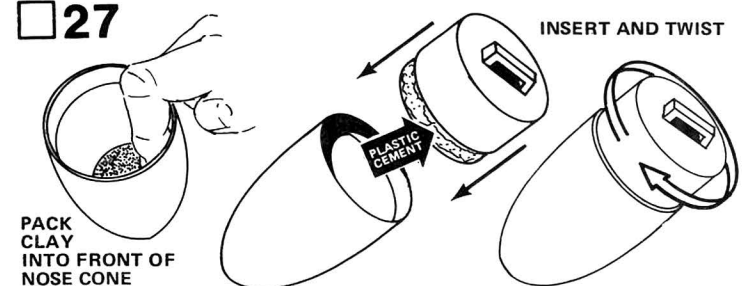
Apply glue to the inside front of the body tube over an area about 1" to 2" from the front. The glued area should be about the same size as the shock cord mount. Press the mount into the glue as shown and hold it until the glue sets.

26



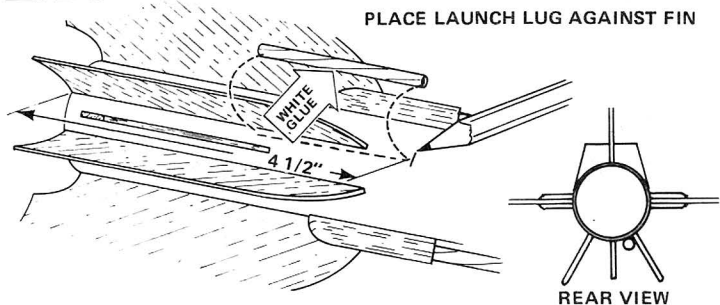
Locate the two rear skids and glue them to the body tube on their respective center lines as shown. Cut out their alignment guide from the pattern sheet and check their alignment as shown.

27



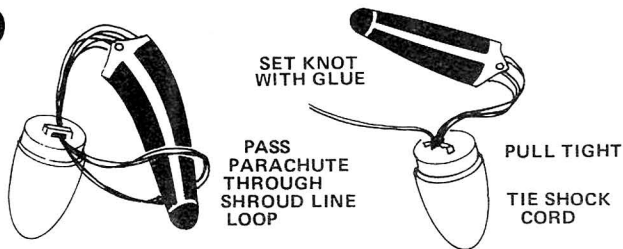
Push clay weight (part S) into the tip of the nose cone (part H). Make sure the clay is packed tightly into the nose. Apply tube-type plastic cement around the inside edge of nose cone and push the nose cone adapter (part I) into nose cone and twist to secure it.

28



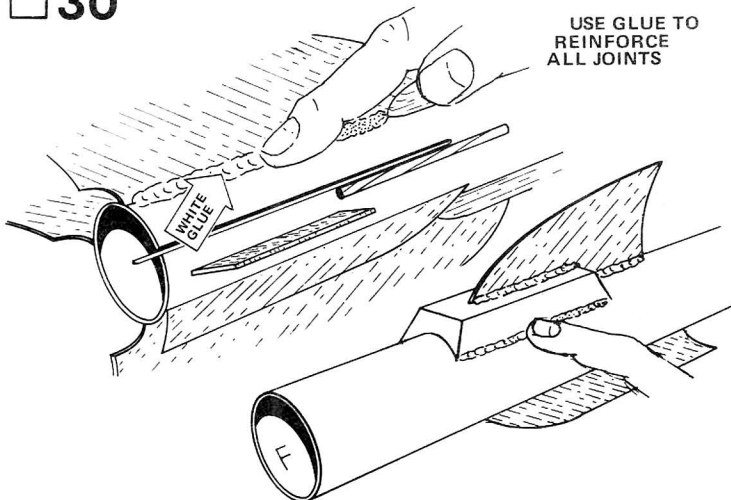
Make a mark 4-1/2" from the rear of the body tube next to one of the rear skid center lines. Apply glue to the third launch lug and position the lug so the front of the lug is at the mark and the side of the lug is against the rear skid as shown.

29



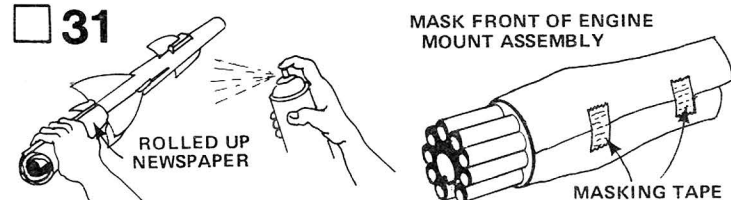
Pass the shroud line loops through the loop on the nose cone. Pass the parachute through the loop ends and pull the lines tight against the nose cone. "Set" the knot with a drop of glue. Tie the free end of the shock cord firmly to the nose cone loop. A square knot or strong double knot should be used.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

30



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. Keep the model level until the glue dries.

31



When all glue on the outside of the body is dry, spray paint the entire rocket aircraft gray. Paint the auxiliary fin separate. Apply two light coats of spray paint. Be especially careful not to get

paint into the rear end of the rocket by rolling up a newspaper and inserting it into the rear of the rocket as shown. This also serves as a handle to support the rocket while painting it. Mask off the forward section of the engine mount/rocket tube assembly as shown. Paint only the exposed rear portion of the engine mount/rocket tube assembly metallic silver. Spray paint the nose cone gloss black. Brush paint the cannon barrels gloss black.

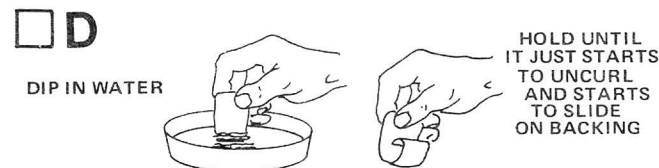
32 When the paint is completely dry, apply decals (part T) by the following procedure. Read all of Step 32 before beginning.

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

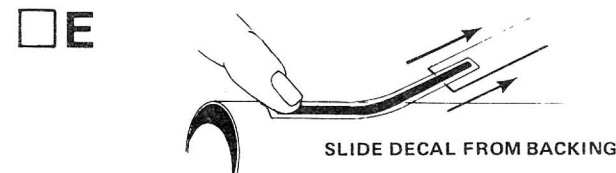
B Wipe model with a clean, damp cloth to remove oily fingerprints.



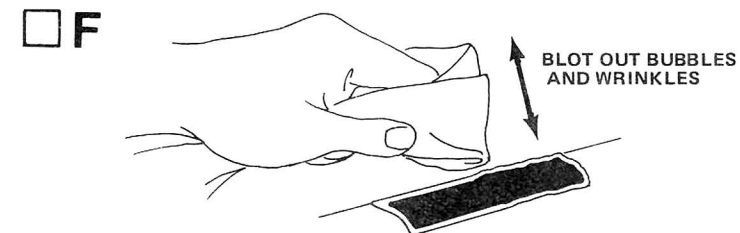
Select the particular decal you wish to apply. Cut only that decal from the sheet, trimming as closely as possible to the printed design. For designs with straight sides, use a ruler as a cutting guide. Place the remainder of the decal sheet to one side so water will not be accidentally dripped onto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



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



Slide decal from backing material onto model. With tweezers, gently 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.

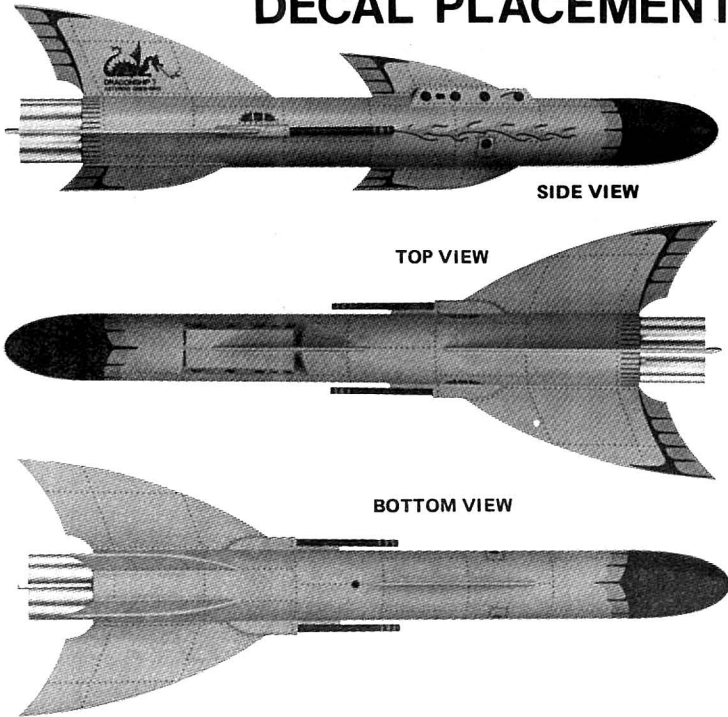


Let the decal set for a couple of minutes, then blot gently with a clean cloth to remove excess water and air bubbles. Do not rub the cloth back and forth or you may move or wrinkle the decal. After the decal has set for another 3 or 4 minutes, you may gently rub the cloth over it to remove any remaining 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.

H For specific application of decals to this model, follow this sequence:

DECAL PLACEMENT



Side decals: Cannon flame is located so the rear of the decal is in line with cannon and just slightly to the rear of cannon barrel opening. Door decal should be just below flame decal and located between first and second circular rivet course lines drawn in Step 11. Window decal is located just above cannon cover pieces and 1/8" to the rear of the fourth circular rivet course line. Apply decals for other side in same order.

Canopy decals: Trim clear from around decals with a sharp knife, close to rivet course patterns. Center all five decals in their positions as shown.

Cannon barrel stripes: Position decal around barrel approximately 1/8" from the front of the barrel.

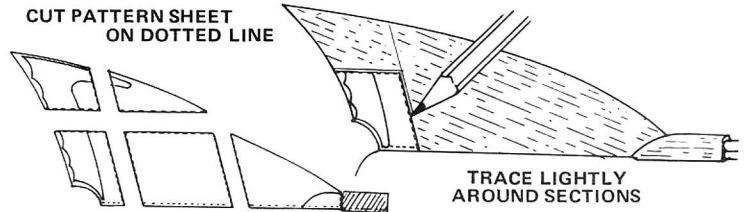
Fin tail decals: Trim excess clear from around each decal. Refer to illustration and panel for size and placement of decals. Apply two large tail decals, one on each side, to the top rear fin. Apply other two large decals to the top rear surfaces of the horizontal fins. Locate two medium size tail decals on each side of the top front fin. Apply two small tail decals to outside rear of each rear skid and two smaller tail decals to each side of the front skid.

Rocket body shroud decals: Apply two large rivet and shroud line decals between top rear fin and horizontal fins. Let clear of the decal extend past the rear of the body tube. Apply two smaller rivet and shroud line decals between horizontal fins and rear skids letting the clear of the decal extend past the rear of the body tube. After decal has set, trim excess clear from the rear of the body tube with sharp knife.

Rocket body front wrap decals: Remove nose cone from rocket. Apply one side of the wrap-around decal to the front of the rocket. Let excess clear extend past the front of the rocket body and one side of the decal should touch the top center line as shown. Apply other side of the front wrap-around in same order. After decal has set, trim excess clear from the front of the tube and slide nose cone into place. If any gray color shows at the body tube/nose cone joint, remove nose cone and touch up with black paint.

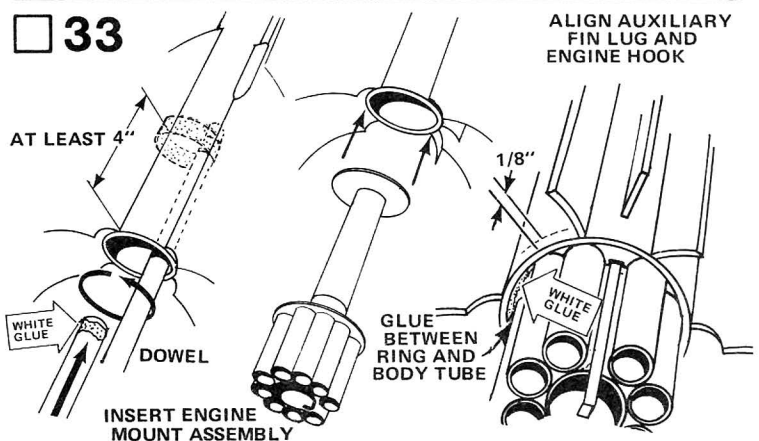
Rivet courses around rocket body: Cut rivet courses into strips by placing ruler on small tick marks and between rivet courses. Cut along the ruler with a sharp knife. Cut out only what you need at the time so none of the decals will be lost. **NOTE:** If any of the rivet course lines from Step 11 & 12 are too faint to be seen, re-draw them with a light pencil line prior to decal application. Take a rivet course decal, wrap it around the body tube in its proper location. Note where course starts and ends. Place a mark on the decal where it ends or where it meets the other end of the decal. Cut decal at this point. Save excess decal to be used later. Soak decal in water and apply decal in its proper location. Follow this procedure for all the rivet course lines breaking for fins and canopy. **NOTE:** Use excess rivet courses from previous steps if they can be used instead of cutting larger pieces.

Top and bottom rivet courses A, B, C: Cut a rivet course to fit between large top fin and small top fin and apply it centered between the fins. Cut and apply rivet courses along all fin and body tube joints as shown. Cut and apply a rivet course on top of canopy between front of canopy and front of small top fin. Locate where each horizontal rivet course line runs noting where they break, begin, and end. Cut rivet course lines to size and apply.



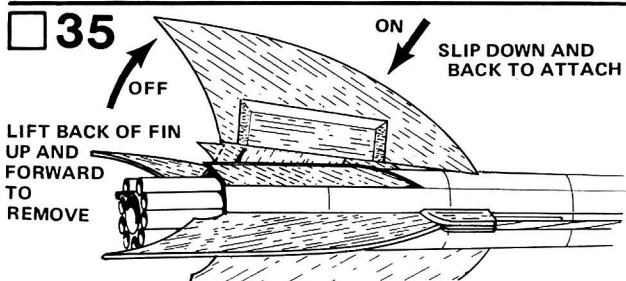
Fin rivet course lines: Cut out each fin assembly and rivet course pattern from the pattern sheet. Lay the pattern on its appropriate fin to see how the fin rivet courses run. Use horizontal fin rivet courses for top fin, also. Cut each section of fin pattern on course lines and lay the pieces on the fin. With a pencil draw a faint line using the pieces as patterns as shown. Do this for all the fins. After all the rivet courses are copied onto the fins, cut remaining rivet courses from decal sheet. Locate where each rivet course runs on the fin, cut to size, soak in water, and apply following previous instructions.

When all decals are dry, apply dragon decals to each side of the top large fin.



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 immediately . . . but be sure the mount is turned so the hook is located between the two rear skids and centered on the bottom center line. Slide engine mount assembly in so that 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).

34 Allow decaled model to dry overnight. Apply a final light coat of Testor's "dull-cote" or other clear matte spray over entire model to protect the decals. Spray auxiliary fin separately. This clear coat will also make the rivets stand out more clearly on the gray surface.



When flying the Dragonship 7, you must use the auxiliary fin from Step 3. Slip auxiliary fin in place and prepare for launch. Do not fly Dragonship 7 without this fin. When displaying your rocket, this auxiliary fin can be removed by pushing up and forward on the rear of the fin.

LAUNCHING COMPONENTS

To launch your rocket you will need the following items:

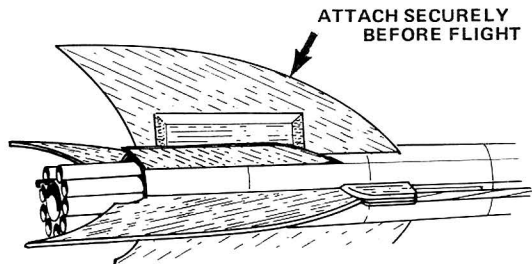
- An Estes model rocket launch system.
- Parachute recovery wadding (Estes Cat. No. 2274)
- Estes A8-3, B4-4, B6-4, B8-5, or C6-5 model rocket engines. Use a B6-4 engine for your first flight.

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

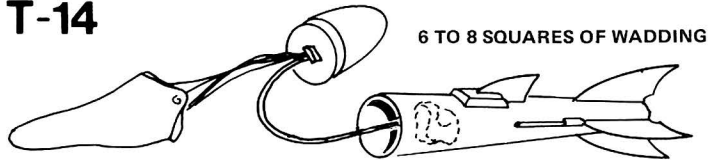
COUNTDOWN CHECKLIST

T-15



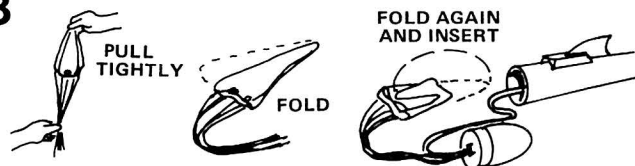
Slip auxiliary fin over fin attachment lug and make sure fin is secure. **DO NOT FLY WITHOUT AUXILIARY FIN IN PLACE.**

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.

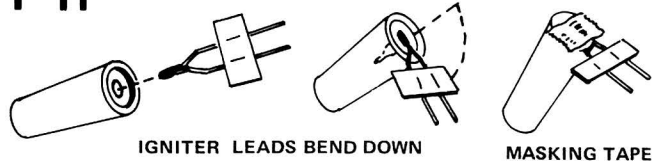
T-12

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.

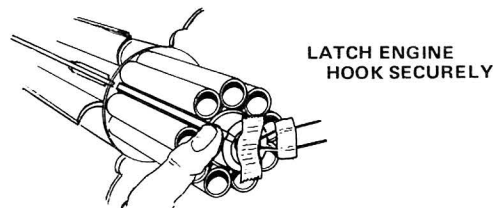
NOTE: DO NOT pack parachute until you are actually ready to launch. For maximum parachute reliability, lightly dust the 'chute with ordinary talcum powder before each flight, especially in cold weather.

T-11



Select an engine and install an igniter as directed in the engine instructions. Use a B6-4 engine for your first flight.

T-10

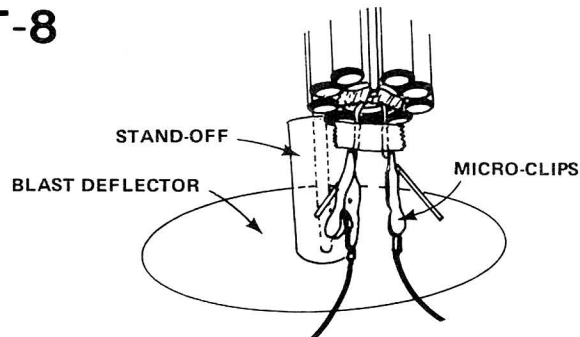


Insert engine into rocket engine mount. Engine hook must latch securely over end of engine.

T-9

Disarm 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.

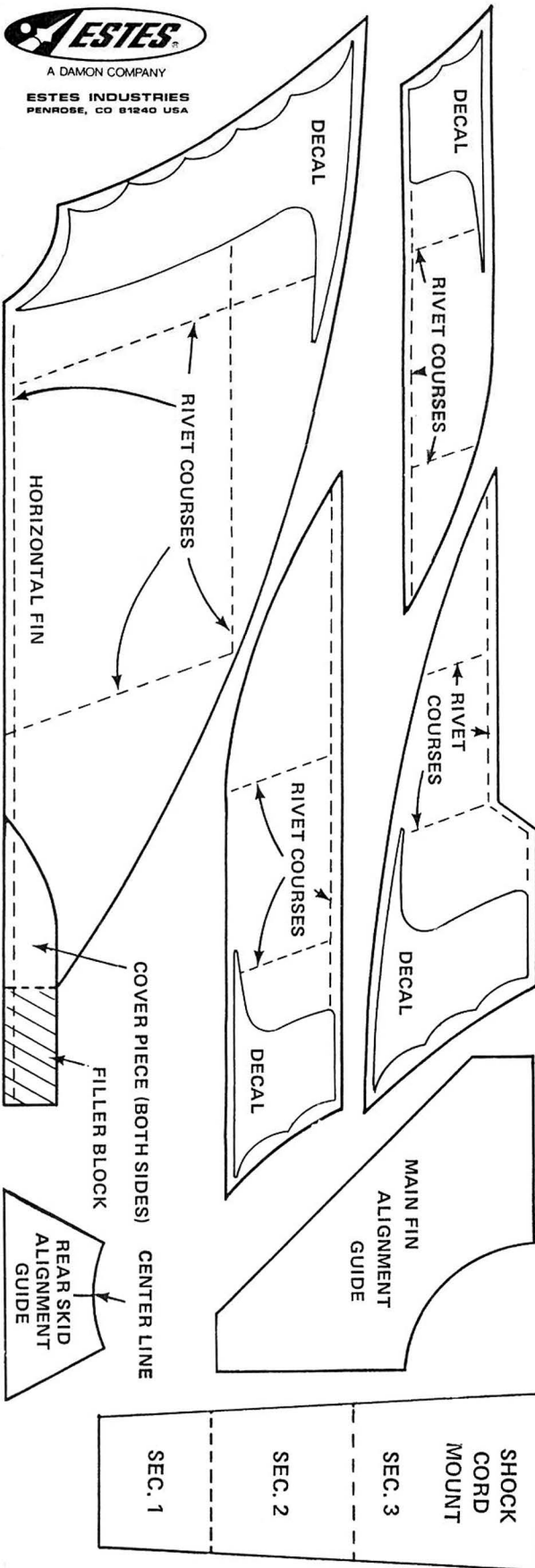
MISFIRE PROCEDURE

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

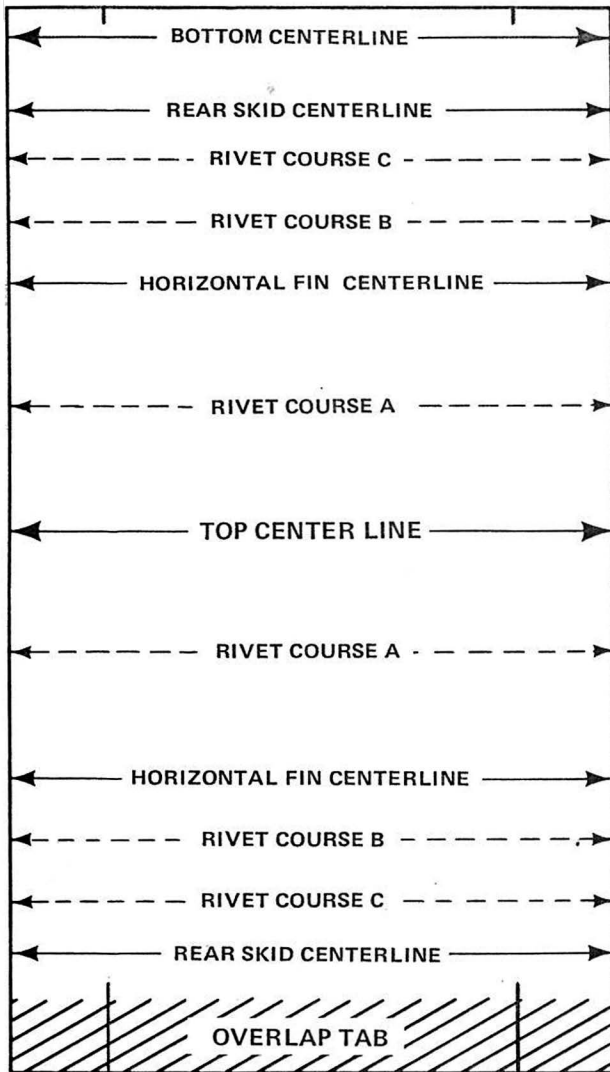


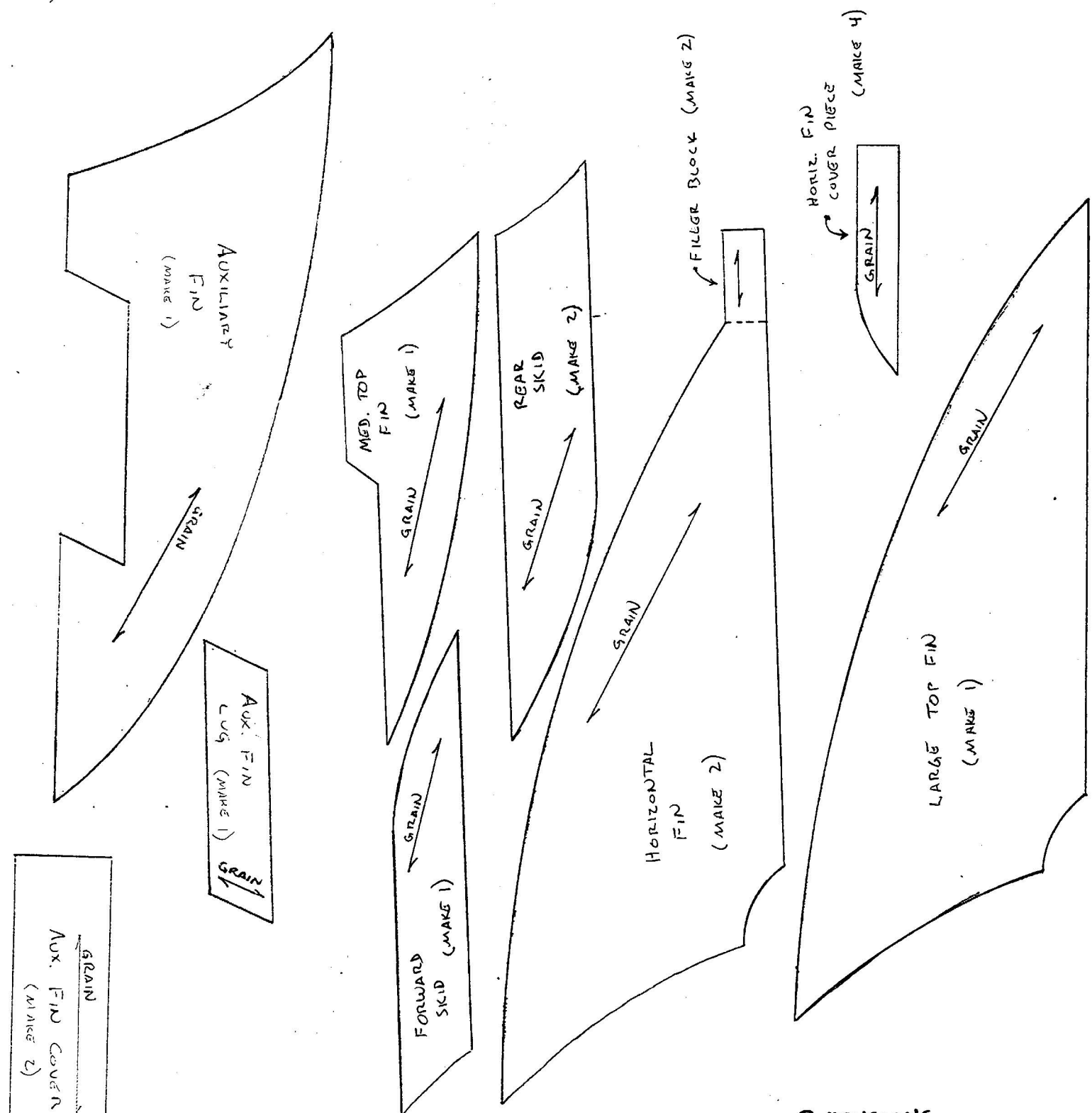
A DAMON COMPANY

ESTES INDUSTRIES
PENROSE, CO 81240 USA



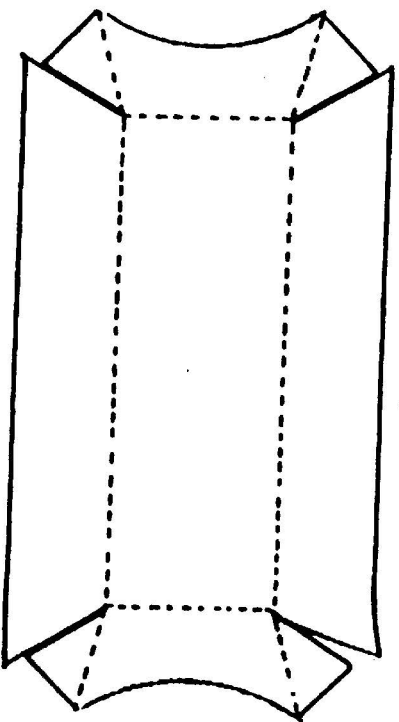
DRAGONSHIP 7 PATTERN SHEET
PN83320





DIMENSIONS
 A-BT-60 12 1/2"
 B-BT-20 6 1/2"
 C-BT-20 1 1/2"
 D-BT-3 3/8" O.D. x 1 1/2"
 LAUNCH LUGS 2 3/8"
 ALL BALSA
 3/32" THICK

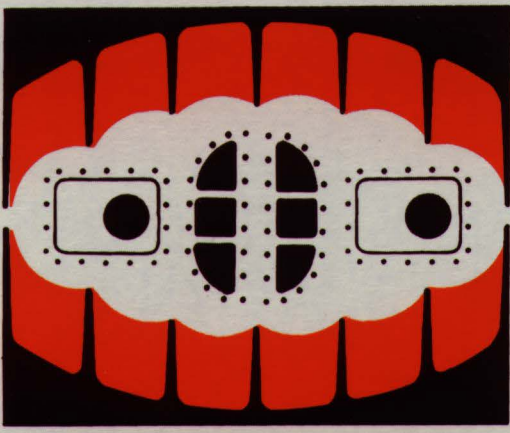
TRIM CANOPY OUT ALONG SOLID LINES



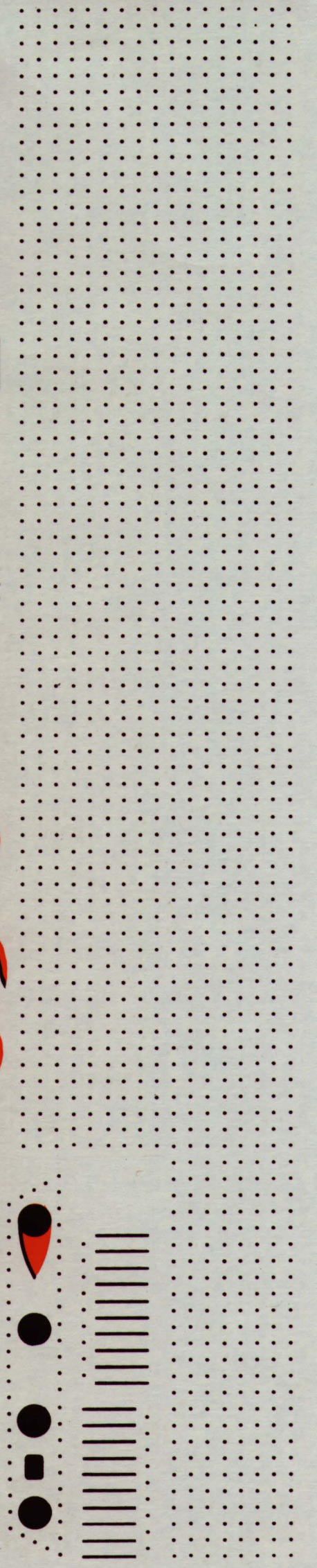


DRAGONSHIP 7
ASTEROID GREB-SING

DRAGONSHIP 7
ASTEROID GREB-SING



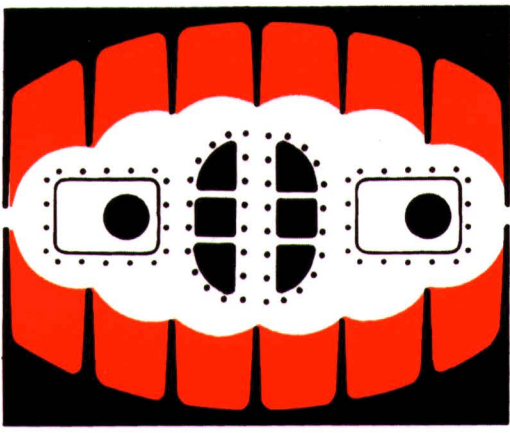
ESTES IND PN 37577





DRAGONSHIP 7
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