

# SPACE TRANSPORTER AMERICA

SKILL LEVEL 3

1-Beginner 2-Intermediate 3-Craftsman  
4-Advanced 5-Expert

## FLYING MODEL ROCKET

Scale-like model suggests America's future "single-stage-to-orbit" (SSTO) concept. Gigantic space booster will carry huge payloads into Earth orbit and then return like an airplane. Kit includes plastic injection molded nose cone and display tail unit with scale engine nozzles, die-cut balsa fins and quick-release engine mount. Big, three-color kit decal has official space shuttle markings. Really impressive flights with 18" recovery parachute.

### Specifications:

Length 21.75"  
(55.3 cm)  
Wing Span 7.0"  
(17.8 cm)  
Diameter 1.637"  
(41.6 mm)  
Weight 2.5 oz.  
(70 g)

### Recommended Engines:

B4-2 B6-4 (First Flight) C6-5

This is a hobby kit requiring assembly. Recommended for ages 10 to adult. Engines, launch system, glue and finishing supplies are not included. Adult supervision is suggested for those under 12 years of age when flying model rockets.



A DAMON COMPANY

ESTES INDUSTRIES  
PENROSE, CO 81240 USA



# 1338

# SPACE TRANSPORTER AMERICA

SKILL LEVEL 3

Recommended for Craftsman Rocketeers.

RECOMMENDED ENGINES:  
B4-2 B6-4 C6-5

## 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.



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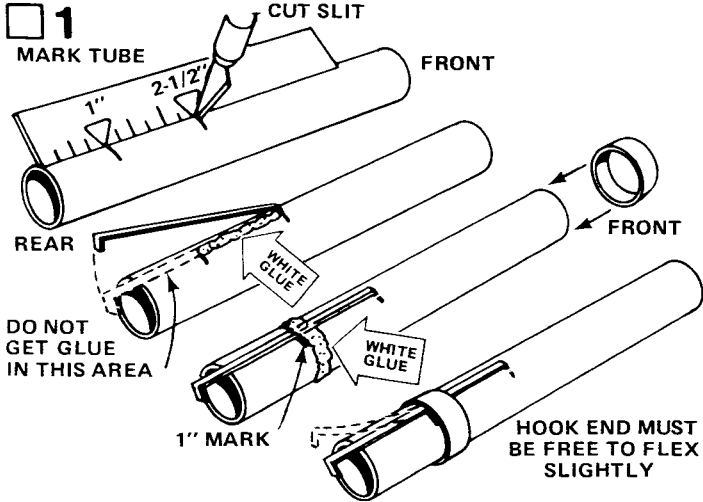
## TOOLS AND MATERIALS

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, pencil, ruler, fine and extra-fine grit sandpaper, sanding sealer, masking tape, modeling knife with a sharp blade, medium size modeling paint brush, plastic model cement, camouflage gray spray paint, flat black spray paint, a bottle of flat black enamel paint, and a bottle of silver enamel paint. (See Step 20.)

## PARTS LIST KIT NO. 1338

A	1	Engine Mount Tube (type BT-20D)	30322
B	1	Engine Hook (type EH-2)	35025
C	1	Hook Retainer Ring (type HR-20)	30168
D	1	Die-Cut Card (type RA-2060)	30128
E	1	Pattern Sheet (type SP-1338)	84195
F	1	Body Tube (type BT-60)	30396
G	1	Balsa Sheet (type BF-1338B) 1/8" x 3" x 12"	32342
H	1	Balsa Sheet (type BF-1338A) 1/16" x 3" x 4"	32341
I	1	Spruce Strip 1/8" x 1/8" x 18"	85921
J	1	Plastic Bulkhead	33143
K	7	Plastic Nozzles	33144
L	1	Plastic Nose Cone	33141
M	1	Plastic Nose Cone Insert	33142
N	1	Shock Cord (type SC-2MJ)	85738
O	1	Parachute (type PK-18A)	85566
P	1	Shroud Line (type SLT-108)	38239
Q	1	Tape Discs (type TD-3F)	38406
R	1	Launch Lug (type LL-2B)	38178
S	1	Embossed Wrapper Sheet (type EW-1338)	37699
T	1	Decal (type KD-1338)	37569

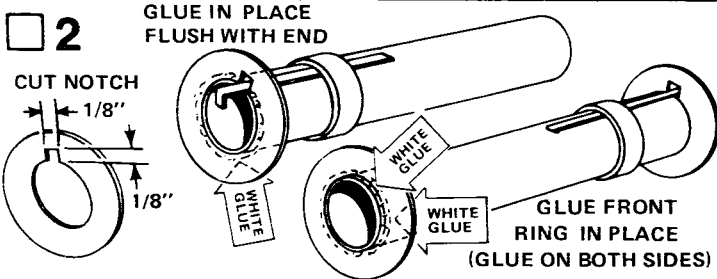
# ASSEMBLY INSTRUCTIONS



**1** MARK TUBE  
CUT SLIT  
FRONT  
REAR  
DO NOT GET GLUE IN THIS AREA  
WHITE GLUE  
1" MARK  
HOOK END MUST BE FREE TO FLEX SLIGHTLY

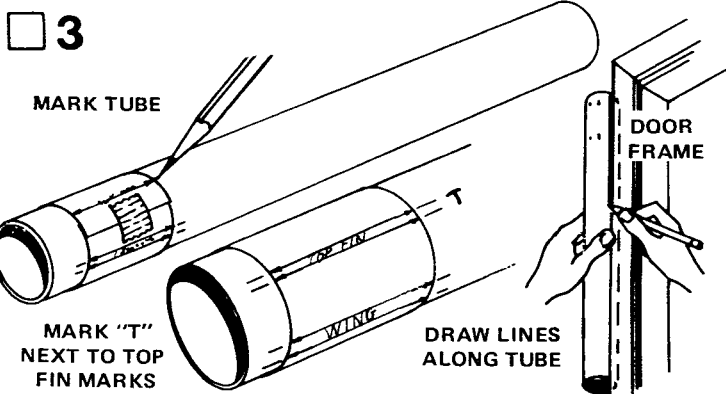
Mark engine mount tube (part A) at 1" and 2-1/2" from one end. Cut a 1/8" long slit at the 2-1/2" mark. Apply a dab of white glue to the slit. Apply a line of glue between the slit and 1" mark as shown. Push engine hook end (part B) into slit. Press main part of hook into the glue. Align hook so that it runs STRAIGHT along the tube. Apply a line of glue around the engine mount tube just FORWARD of the 1" mark. Slip hook retainer ring (part C) onto front end of tube. Slide ring rearward, over engine hook and UP TO the 1" mark.

The overhanging engine hook end must be free to flex slightly as shown. Be sure that hook runs STRAIGHT along tube.



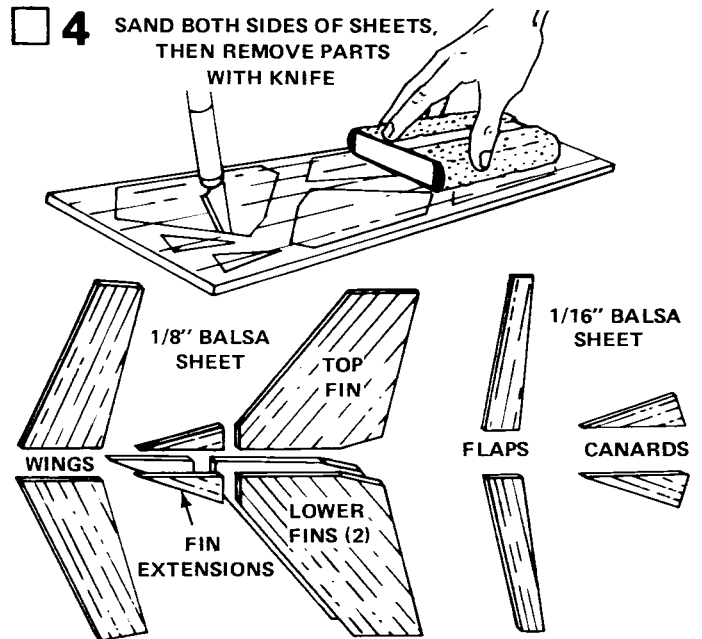
**2** GLUE IN PLACE FLUSH WITH END  
CUT NOTCH 1/8"  
1/8"  
WHITE GLUE  
GLUE FRONT RING IN PLACE (GLUE ON BOTH SIDES)

Remove the die-cut centering rings from the die-cut card (part D). Cut a 1/8" x 1/8" notch in one ring as shown. Slip this ring over the rear of the engine tube with the hook centered in the notch. Position the ring flush with the end of the tube, and apply a bead of glue around the ring/tube joint. Don't get any glue on the engine hook. Slip the remaining ring over the front of the tube and glue in place 1/16" from end of tube. After glue has dried, apply second bead of glue to both centering rings to insure strength.



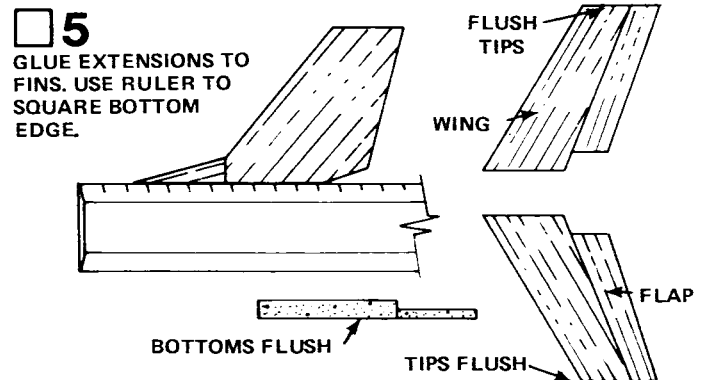
**3** MARK TUBE  
MARK "T" NEXT TO TOP FIN MARKS  
DRAW LINES ALONG TUBE  
DOOR FRAME

Cut the marking guide from the pattern sheet (part E). Wrap guide around body tube (part F) and tape ends together. Mark the locations of the fins, wings, and launch lug. Write the letter T next to the marks for the top fin. This will help orient the tube later. Remove the guide, place the tube against a door frame, and draw lines the length of the tube on each mark.



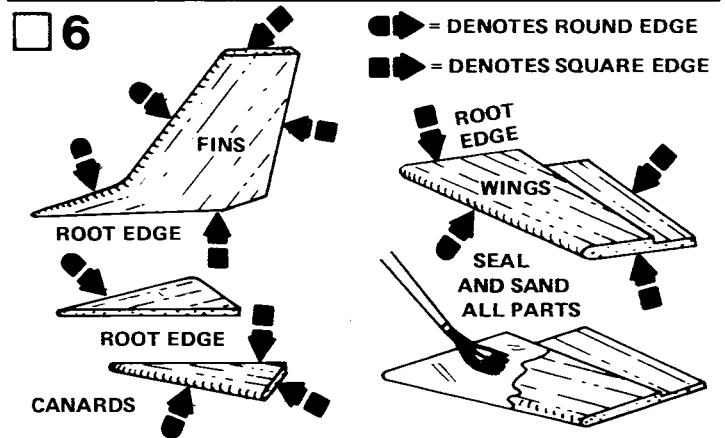
**4** SAND BOTH SIDES OF SHEETS, THEN REMOVE PARTS WITH KNIFE  
1/8" BALSA SHEET  
TOP FIN  
1/16" BALSA SHEET  
FLAPS  
CANARDS  
WINGS  
FIN EXTENSIONS  
LOWER FINS (2)

Lightly sand both sides of the die-cut balsa sheets (parts G & H). Using a modeling knife to free edges, carefully remove the parts from the sheets. Sand all edges square. Sort and identify parts as shown.



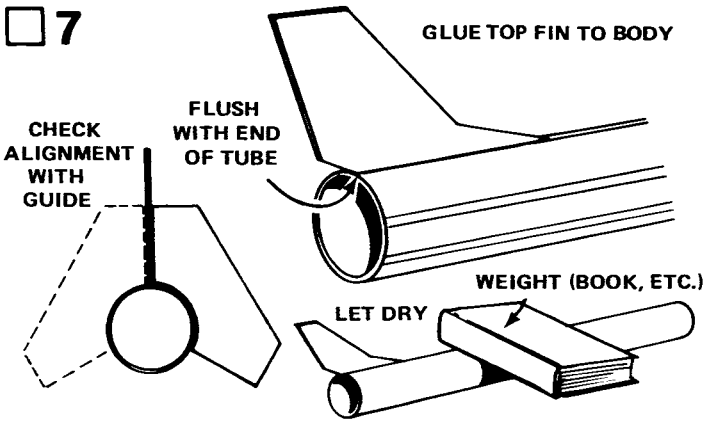
**5** GLUE EXTENSIONS TO FINS. USE RULER TO SQUARE BOTTOM EDGE.  
FLUSH TIPS  
WING  
FLAP  
BOTTOMS FLUSH  
TIPS FLUSH

Glue the extensions to all three fins. Apply glue to both edges to be joined. Let glue partially dry. Apply second bead of glue to one edge and press parts together. Set bottom edge of parts against a ruler to make sure they are straight. Wipe away excess glue and set fins aside to dry. Glue the flaps to the wings using the same techniques. The tip edges of the wings and flaps are flush, and the bottoms of wings and flaps are flush. Refer to illustrations.

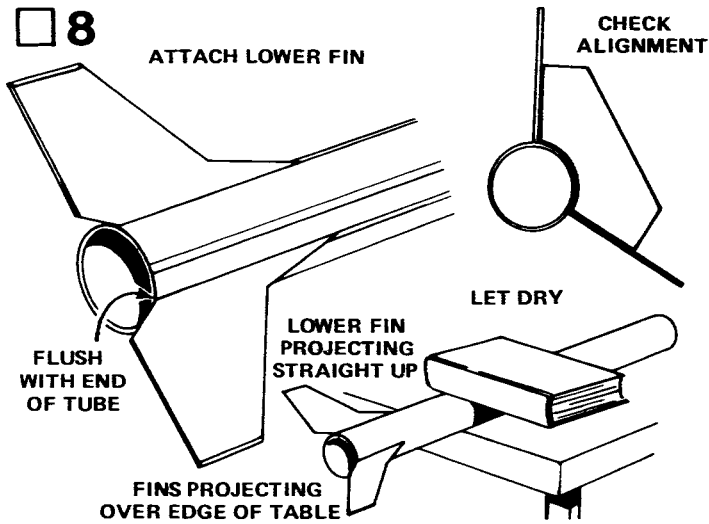


**6** = DENOTES ROUND EDGE  
= DENOTES SQUARE EDGE  
ROOT EDGE  
WINGS  
SEAL AND SAND ALL PARTS  
CANARDS

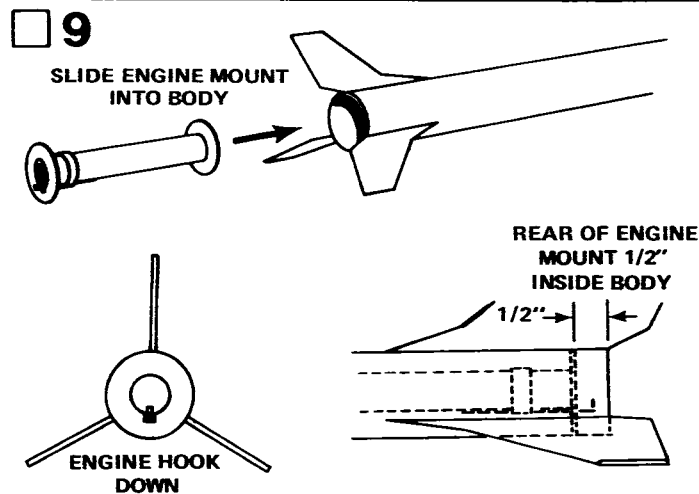
When glue has thoroughly dried, lightly sand parts. Sand round the edges indicated. Leave all other edges square. Apply a coat of sanding sealer to all surfaces of parts except root edges (edge that glues to body). Allow sealer to dry, then lightly sand parts. Repeat sealing and sanding steps a second time. If you can still see any grain showing through, repeat process a third time.



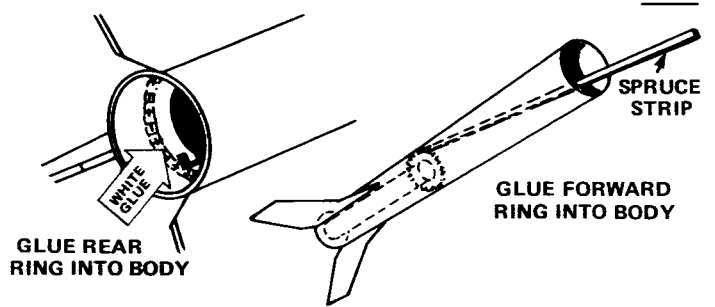
Cut fin and wing alignment guides from pattern sheet. Locate the top fin. (It is larger than the other two.) This fin is glued onto the tube as shown. Remove the fin and let glue partially dry. Apply a second bead of glue to the fin and attach to body tube. Place the fin alignment guide on either side of fin to make sure it extends straight from body. Lay the assembly on a flat surface with the fin projecting straight up. Place a weight on the body so it will not roll. Let the assembly set until the glue is completely dry.



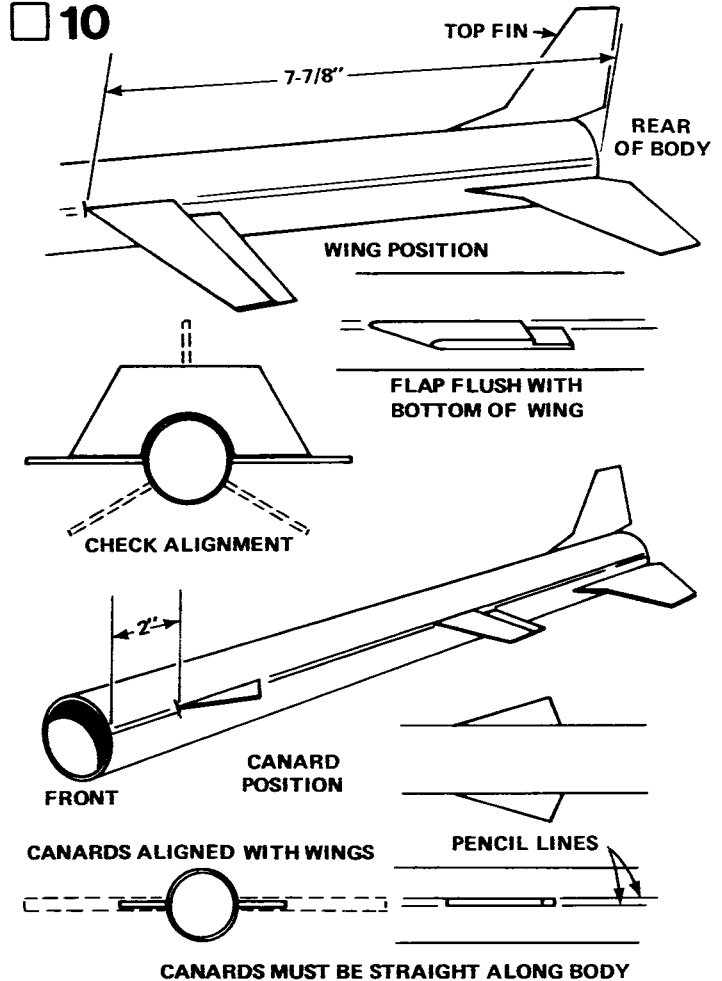
Attach one of the lower fins to body in same manner. Be sure to check alignment with the guide. Position the assembly as shown and allow glue to dry. Repeat with remaining fin.



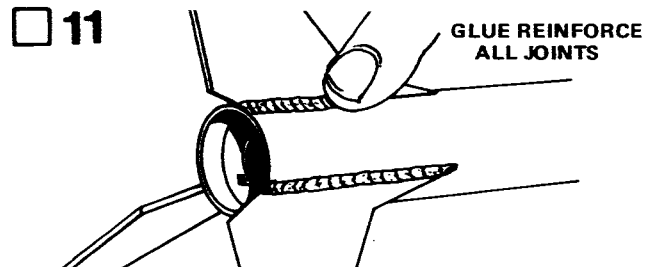
Make a mark 1/2" inside rear of body tube. Slide the engine mount into the rear of the body with the engine hook pointing down (between lower fins). Slide the mount in until the rear of the engine tube is even with the mark. Apply a bead of glue around the joint between the ring and body tube. Using the spruce strip (part I) as a glue applicator, glue the front ring in place. Apply a generous



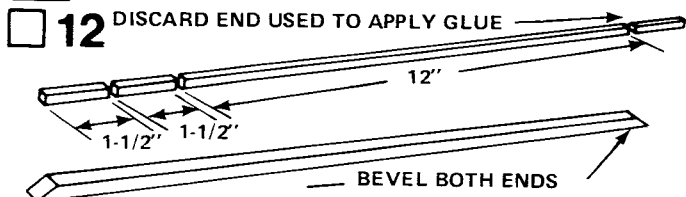
amount of glue to the end of the strip. Insert the strip into the front of the body and deposit glue on the forward ring/body tube joint. Use enough glue to get a good strong joint. Wipe glue from end of spruce strip.



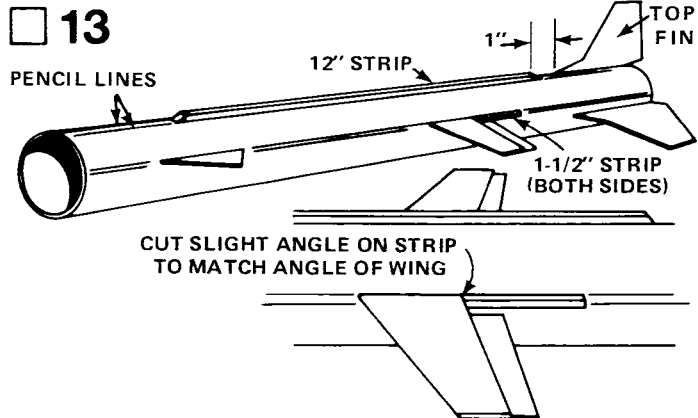
Mark body tube on wing alignment lines at 2" from front as shown. Mark body tube on wing alignment lines at 7-7/8" from rear. Attach the wings to the body in position shown. Use the same gluing method as used for the fins. Check alignment with the wing alignment guide. Next attach the canards in the positions indicated. Make sure the canards are aligned straight along body tube.



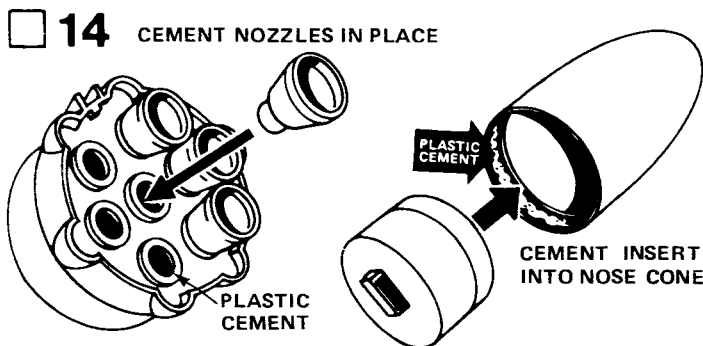
Apply a bead of glue to all fin, wing, and canard/body tube joints. Smooth the glue into an even layer with your finger.



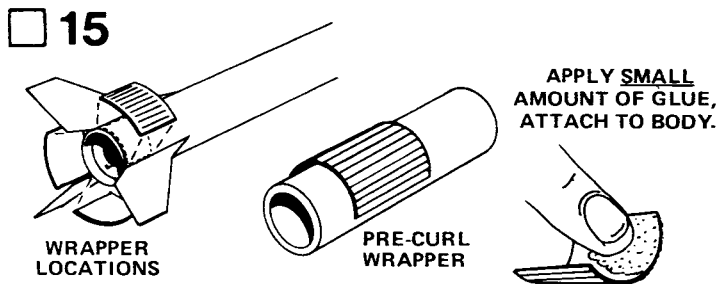
Lightly sand spruce strip. Cut two 1-1/2" pieces and one 12" piece from the strip. Bevel the ends of the 12" piece as shown. Apply sanding sealer to each part. Let dry and lightly sand. One coat should be enough for these parts.



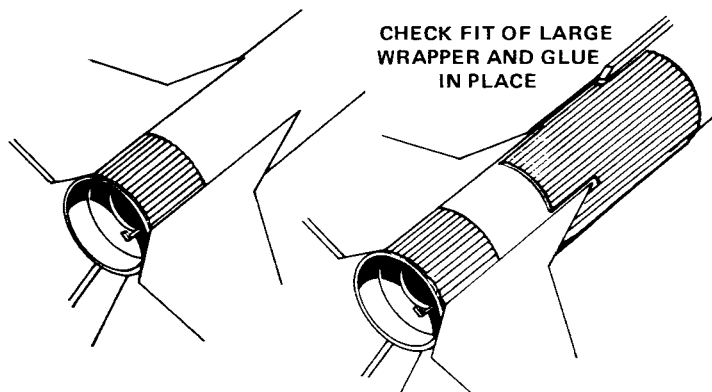
Glue the 12" strip to the body in the position shown. The two 1-1/2" strips are glued to the body behind the wings. The front edge of these strips must be cut at a slight angle to match the rear of the wing.



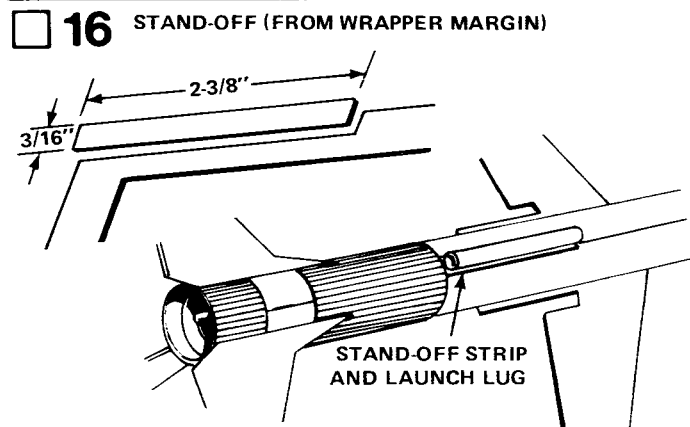
Locate plastic parts J, K, L, and M. Assemble the plastic components using liquid or tube-type plastic cement. Before gluing, carefully trim away the small projections where the parts were connected to the molding sprue. Place a small amount of glue inside the seven circular sockets in the back of the bulkhead and press nozzles in place. Apply a bead of glue inside the rear of the nose cone and fit insert into place. Set aside to dry.



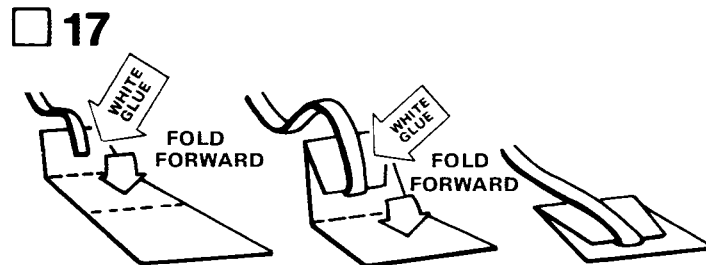
Remove the four wrappers from the embossed sheet (part S). The three smaller wrappers are glued in place even with the rear of the body and between the fins. Pre-curl the wrappers around a circular object that is slightly smaller than the body tube. Check the fit of one wrapper between two of the fins. If necessary, trim away a little wrapper material so it will fit between the fins. Smear a small amount of glue over the back of the wrapper and attach to body. Smooth the wrapper down and hold in place until glue begins to set. Repeat with remaining two wrappers. Check pre-



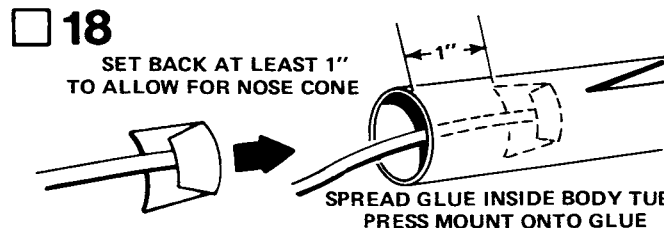
viously applied wraps occasionally to make sure edges have not lifted. Pre-curl the large wrapper and wrap around body with slots extending around fins and wood strip. If necessary, trim one or more of the openings to obtain a good fit. Glue this wrapper in place. Remember to check every few minutes to make sure no edges have lifted. Save remainder of embossed wrapper sheet.



Cut a piece 3/16" wide by 2-3/8" long from the margin of the die-cut, embossed wrapper sheet. This will serve as a stand-off for the launch lug (part R). Glue the card strip to the bottom center of the body directly in front of the large embossed wrapper. Glue the launch lug centered on top of the strip.

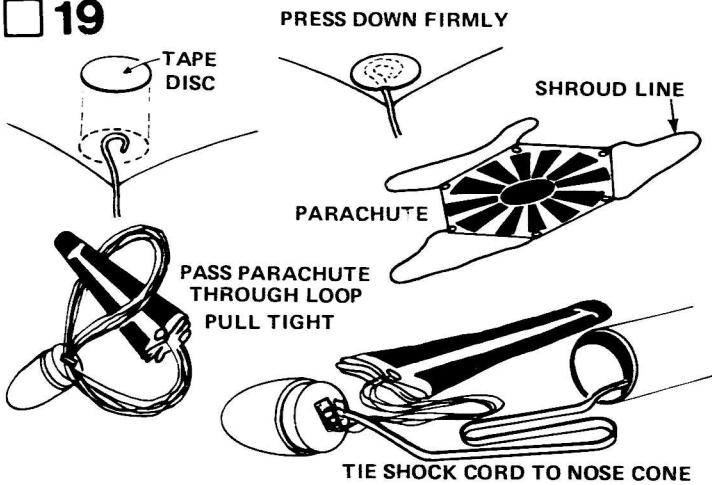


Cut out the shock cord mount from the pattern sheet. Crease it on the dotted lines by folding. Spread glue on the first section (1) and lay the end of the shock cord (part N) into the glue. Fold over and apply glue to the back of the first section and the exposed part of section 2. Lay the shock cord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



Apply glue to the inside of the front of the body tube 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 it until the glue sets.

# 19



Cut out the parachute (part O) from 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. Pass the shroud line loops through the ring on the nose cone. 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. Fold the 'chute and pack into body. Insert the nose cone into place.

## PAINTING AND DETAILING

### 20

Before painting, clean the rocket with a slightly damp cloth to remove oily fingerprints. See photographs and panel for color break lines. Paint required is as follows:

**Basic Body** - Pactra camouflage gray spray paint. (This is a very light gray, almost an egg-shell white. White paint may be substituted if you prefer.)

**Underbody** - Flat black spray paint. (This is optional. You may wish to leave the underbody white. If you do this, extra decals are included for the underside of wings and fins.)

**Large Body Wrap** - Silver

**Nozzle Bulkhead** - Outside silver, inside flat black.

**Rocket Nozzles** - Outside flat black, inside silver.

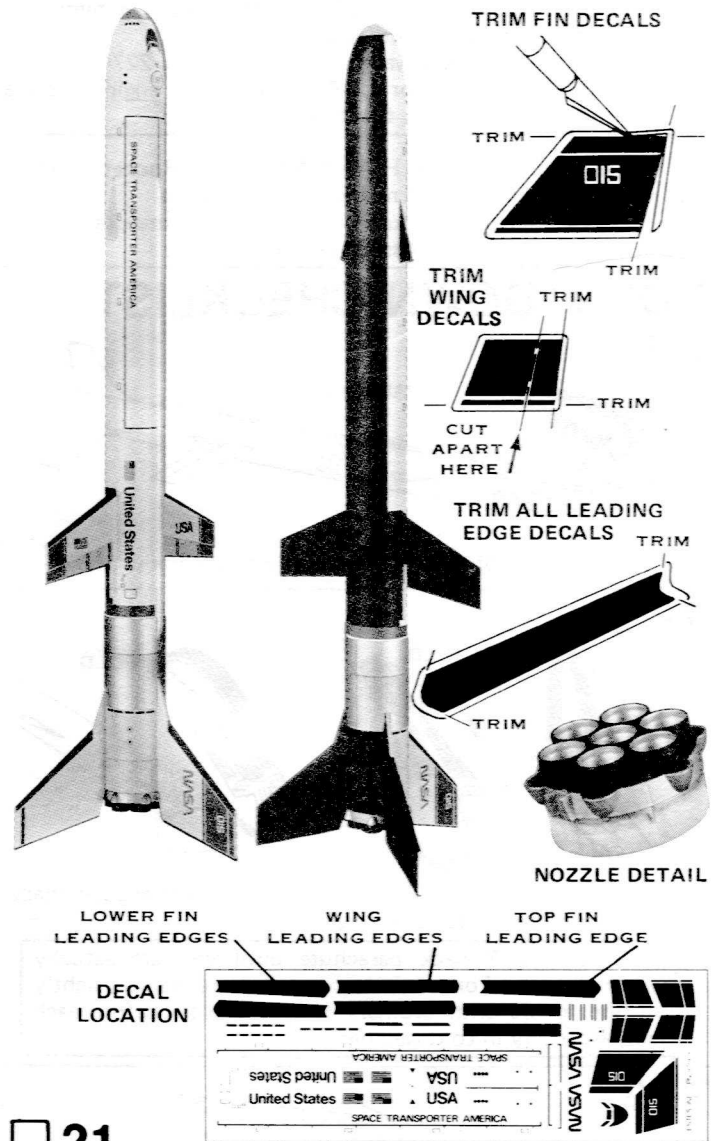
#### IF YOU PAINT THE UNDERBODY BLACK:

1. Allow basic color to dry overnight before masking.
2. Determine the area to be masked from photographs. The basic black area is the bottom 1/3 of body, between the lower fins. In the wing area, the black color steps up to the underside of the wings.
3. Mask off the body wrap and the area where the red stripe decal appears. No black should be sprayed in this area.
4. Press the masking tape onto a glass window to remove some of the "tack" before applying to rocket.
5. Once the color-break lines have been masked, cover the remainder of the body with paper held in place with masking tape all around the edges. Make sure there are no openings where overspray can leak in and spoil the basic color.
6. Once the black has been sprayed on, let dry for at least an hour, then carefully remove masking tape.

The body wrap may be brush painted or masked and spray painted.

The nozzle unit should have the black area painted first. If you have black spray paint, you may spray the entire unit black. The silver on the outside of the bulkhead and the insides of the nozzles may then be brush painted.

## DECAL PLACEMENT



### 21

After the paint has thoroughly dried, apply the decals (part T). Refer to photographs/panel for decal position. Cut a decal from the sheet. Dip in water for 20-30 seconds (or until the decal slides on the backing paper). Carefully slide decal off backing paper and onto the model. Position decal and gently blot with a soft cloth. Smooth out the decal to eliminate any air bubbles that may be trapped beneath the film. When cutting out the decals, cut around the outside of the clear flim. Some of the individual decals contain more than one component. For instance, the decal that goes on the body above the wing contains a flag, the word "United States" and several small hatches, all on one decal. Some decals must have the clear trimmed away before being applied to the rocket. See illustrations for these.

**NOTE:** If you did not paint the rocket underbody black, there are extra decals on the sheet that may be applied to the underside of the wings, fins, and lower body.

After the decals are completely dry (2 - 3 hours), you may wish to spray the model with a clear protective coating. We recommend Testor's "Dull-Cote" for this.

### 22

The nozzle unit is for display only. It simply slides into the rear of the body. The two flanges that project from the outside of the bulkhead fit on either side of the top fin. This provides proper orientation for the nozzles. Naturally, this unit must be removed prior to launching the rocket.

# LAUNCHING COMPONENTS

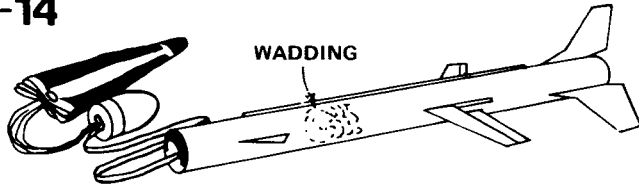
To launch your rocket you will need the following items:  
 An Estes model rocket launch system  
 Parachute recovery wadding (Estes Cat. No. 2274)  
 Estes B4-2, B6-4, or C6-5 model rocket engines. Use a B6-4 engine for your first flight.

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

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

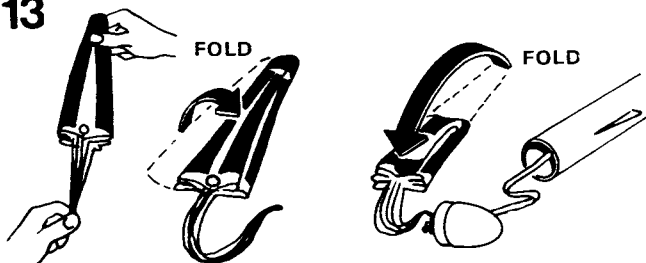
## COUNTDOWN CHECKLIST

### T-14



Pack 5 or 6 squares of recovery wadding into the body tube.

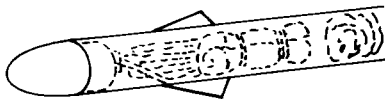
### T-13



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

**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.

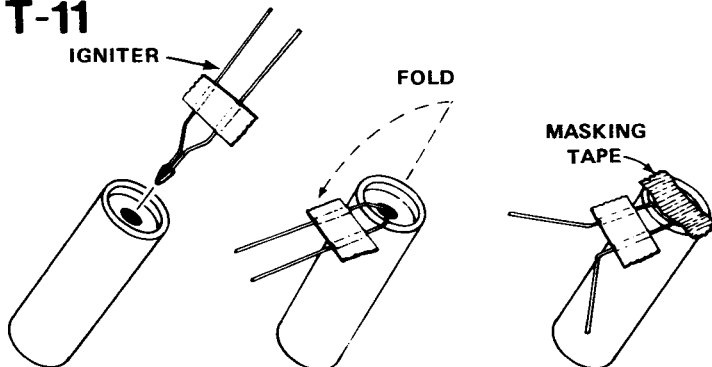
### T-12



Pack parachute, shroud lines, and shock cord neatly into rocket body.

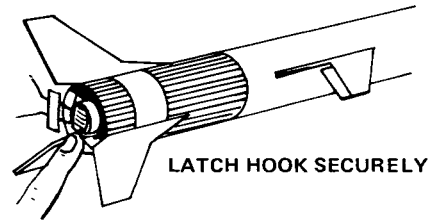
**NOTE:** Nose cone should separate easily from rocket body tube, but should not be extremely loose. If fit is too tight, sand inside of body tube and shoulder of nose cone with fine sandpaper. If fit is too loose, add a wrapping of transparent tape or masking tape to the shoulder of the nose cone.

### 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

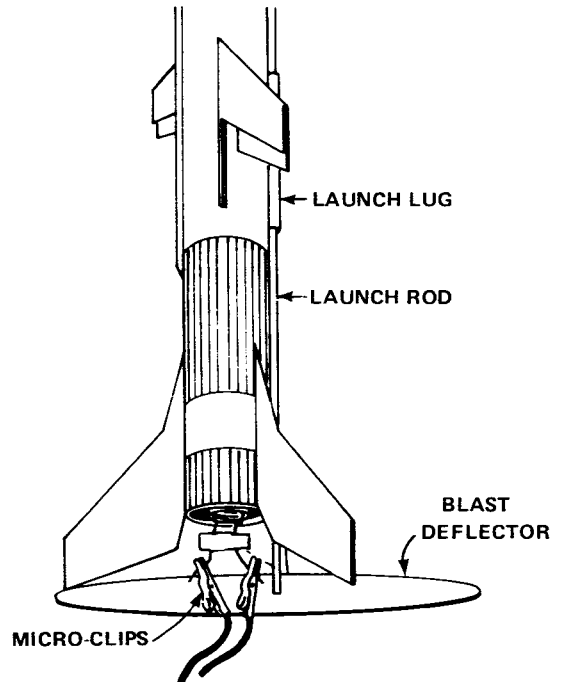


Insert engine into rocket engine mount. Engine hook must latch securely over end of the engine.

### 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!

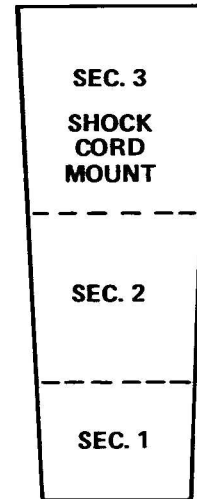
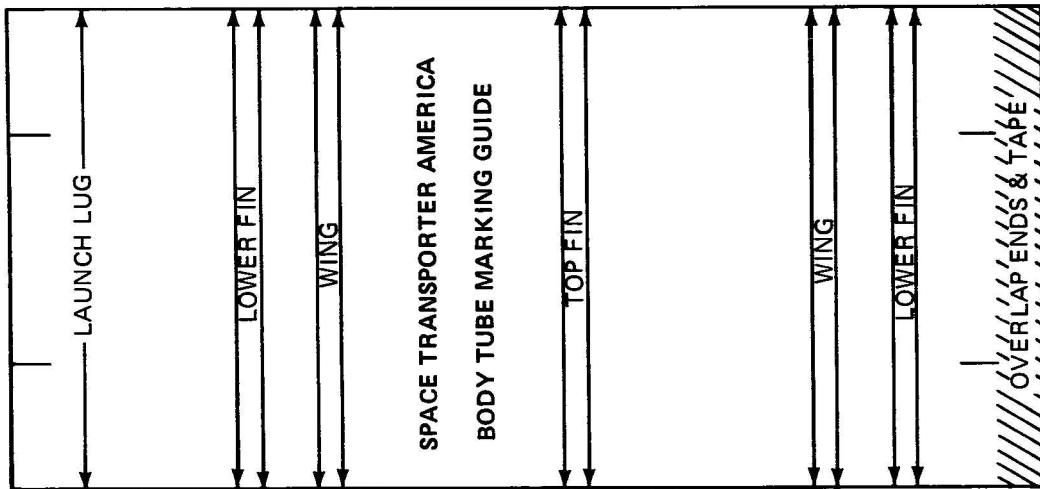
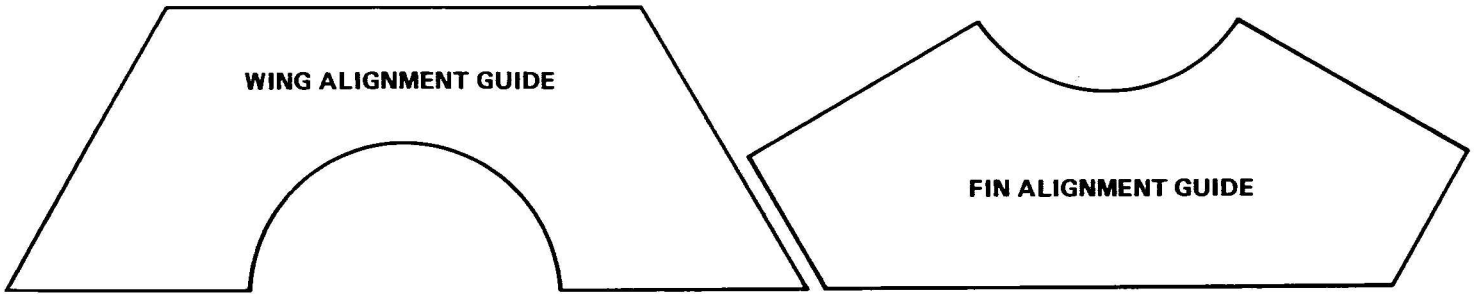
## -5-4-3-2-1-LAUNCH!!

Repeat Countdown Checklist for each flight.

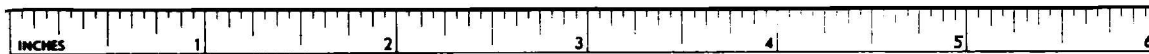
## MISFIRE PROCEDURE

Occasionally the igniter will heat and burn into 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.

**ESTES INDUSTRIES**  
**PENROSE, CO 81240 USA**



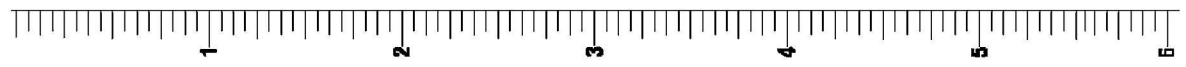
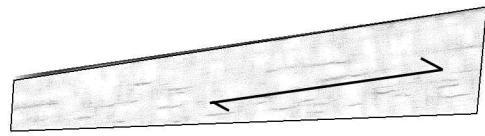
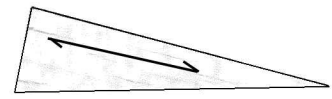
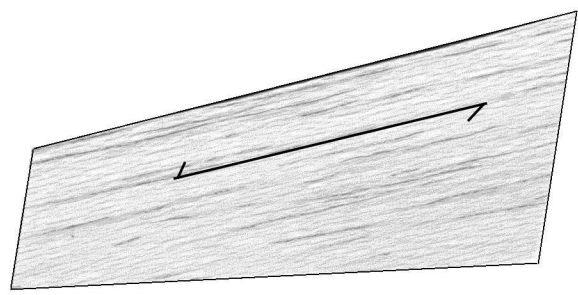
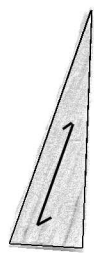
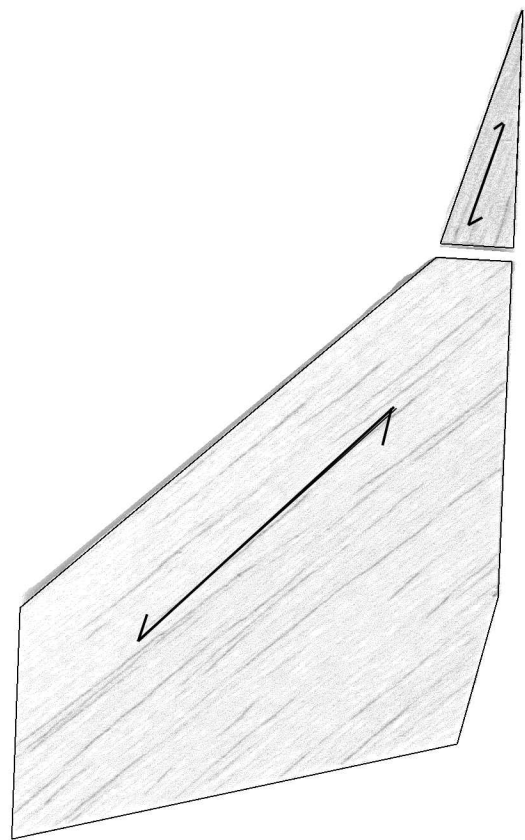
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PATTERN SHEET  
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 **THE INSTITUTE OF ELECTRICAL AND  
ELECTRONICS ENGINEERS, INC.**





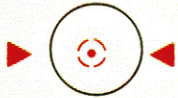
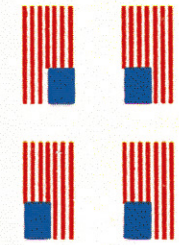


**NASA VSVN**

SPACE TRANSPORTER AMERICA

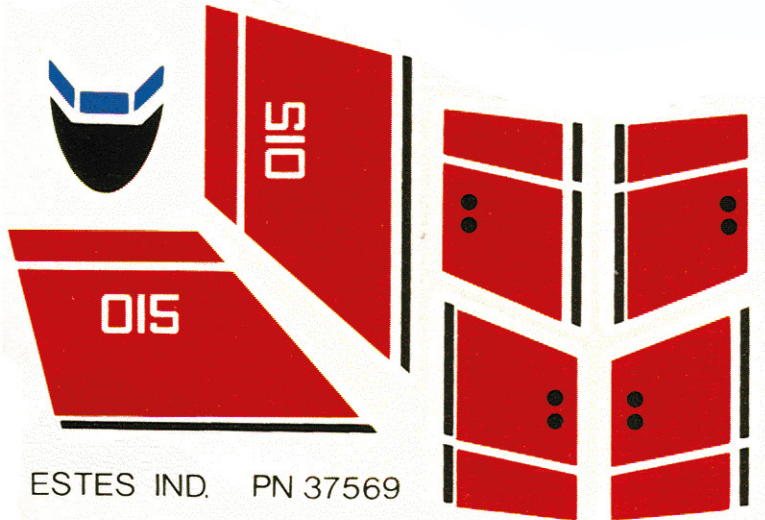
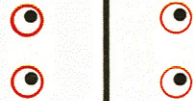
SPACE TRANSPORTER AMERICA

United States  
United States

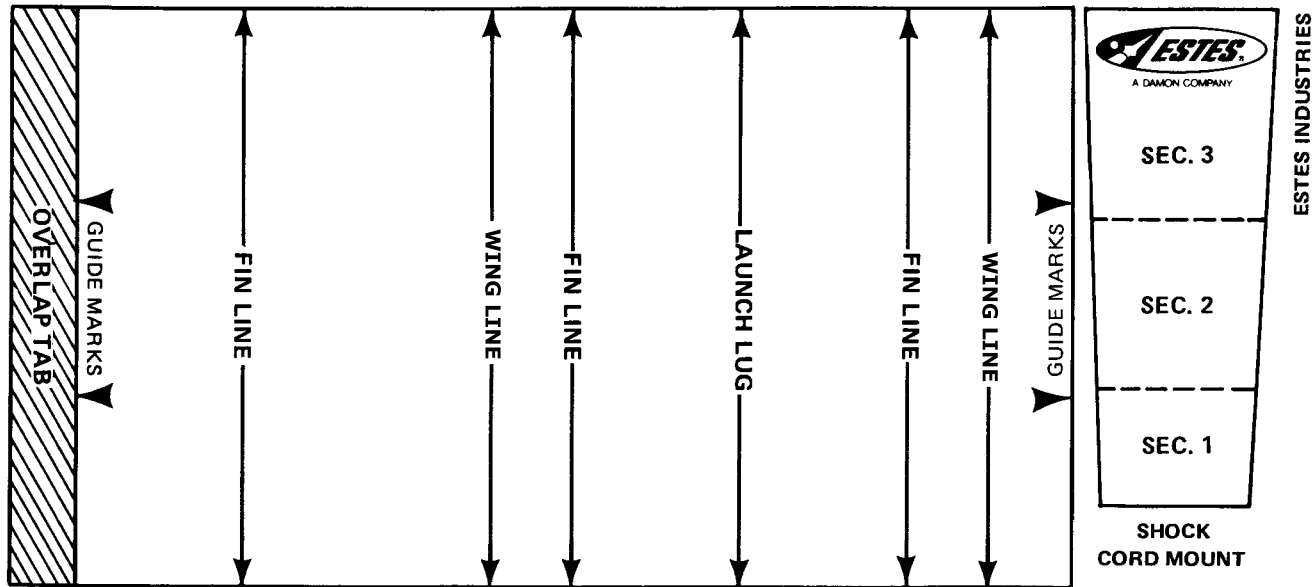


USA  
USA

...  
...



ESTES IND. PN 37569



# LARGE BODY WRAP PATTERN

## REAR BODY WRAP PATTERN (MAKE 3)

ONE INCH

## **Estes Space Transporter America - Kit #1338**

### **Notes concerning the Embossed Wrapper Sheet, P/N 37699**

The Embossed Wrapper Sheet is very difficult to scan in a way that would reveal the embossed corrugations in the wrapper. Accordingly, provided below are the dimensions of the simulated corrugations. These could be easily replicated in 0.010" or 0.015" sheet styrene (take your pick - the embossed sheet measures 0.013" thick).

Main wrapper - 5-1/8"L x 2-5/16"H. The long dimension wraps around the airframe. Corrugations are 1/16" wide and have a 1/16" space between them.

Small wrappers (Qty 3 - these fit between the fins, as per Instructions step #15) - each are 1-1/2"L x 27/32"H. The long dimension wraps around the airframe. Corrugations are 1/16" wide and have a 1/16" space between them.