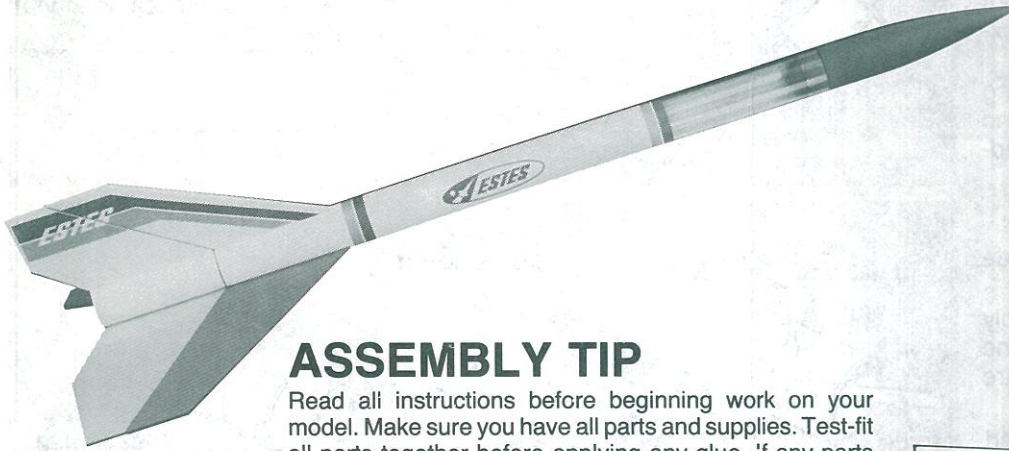




ESTES INDUSTRIES  
1295 H STREET  
PENROSE, CO 81240 USA

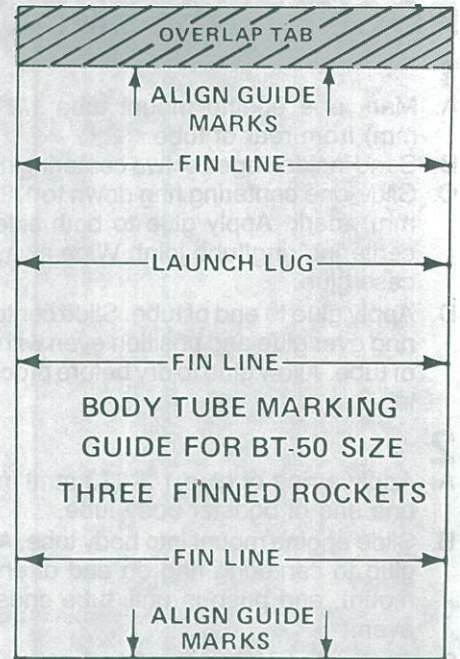
# HERCULES™

Flying Model Rocket Kit #1377



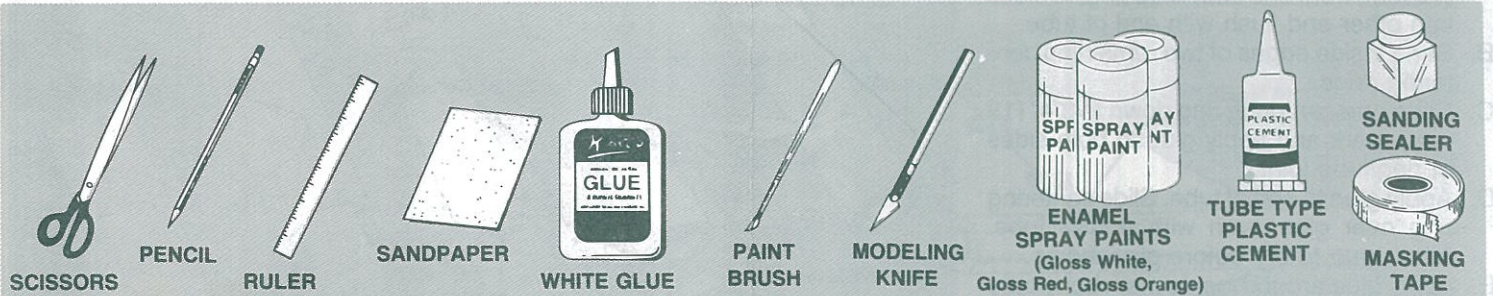
## ASSEMBLY TIP

Read all instructions before beginning work on your model. Make sure you have all parts and supplies. Test-fit all parts together before applying any glue. If any parts don't fit properly, sand as required for precision assembly.



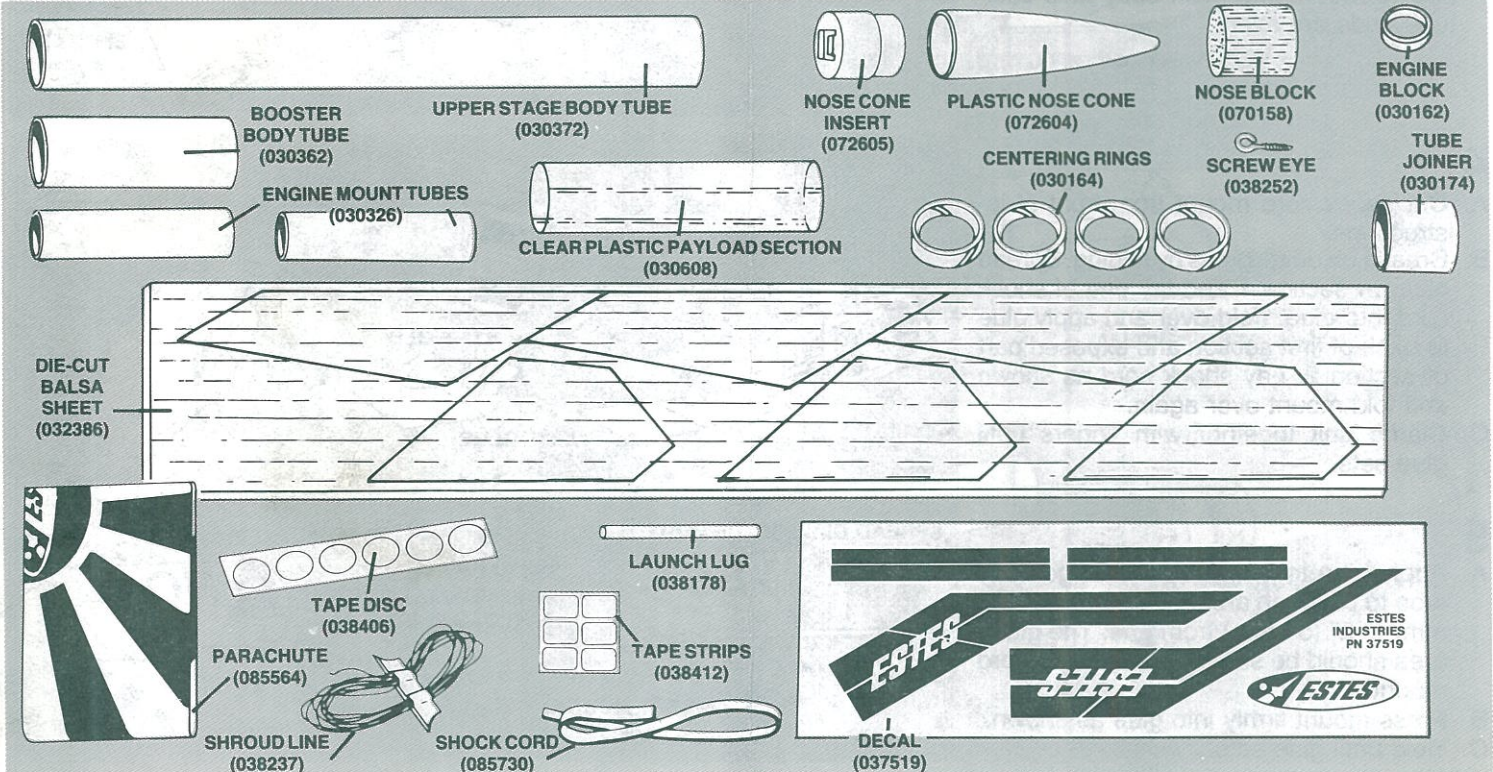
## SUPPLIES

In addition to the parts included in the kit you will also need:



## PARTS

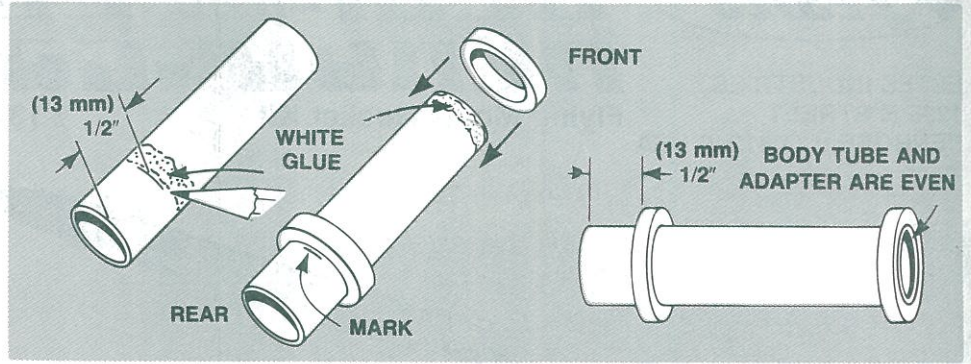
Locate the parts shown below and lay them out on the table in front of you.



# ROCKET ASSEMBLY

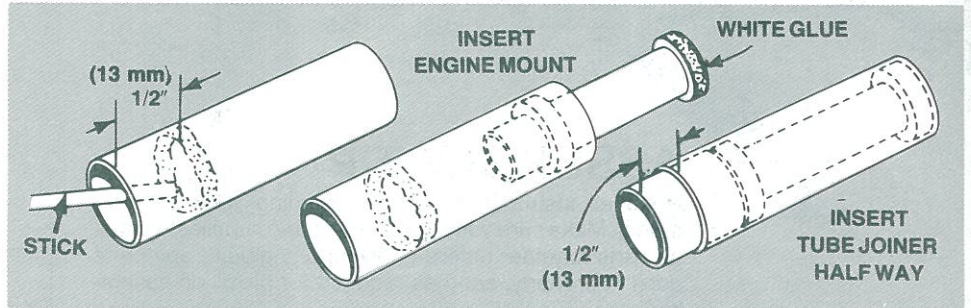
**1**

- Mark one engine mount tube 1/2" (13 mm) from rear of tube.
- Sand inside edges of two centering rings.
- Slide one centering ring down to 1/2" (13 mm) mark. Apply glue to both sides of centering ring/tube joint. Wipe away excess glue.
- Apply glue to end of tube. Slide centering ring over glue and position even with end of tube. Allow glue to dry before proceeding.



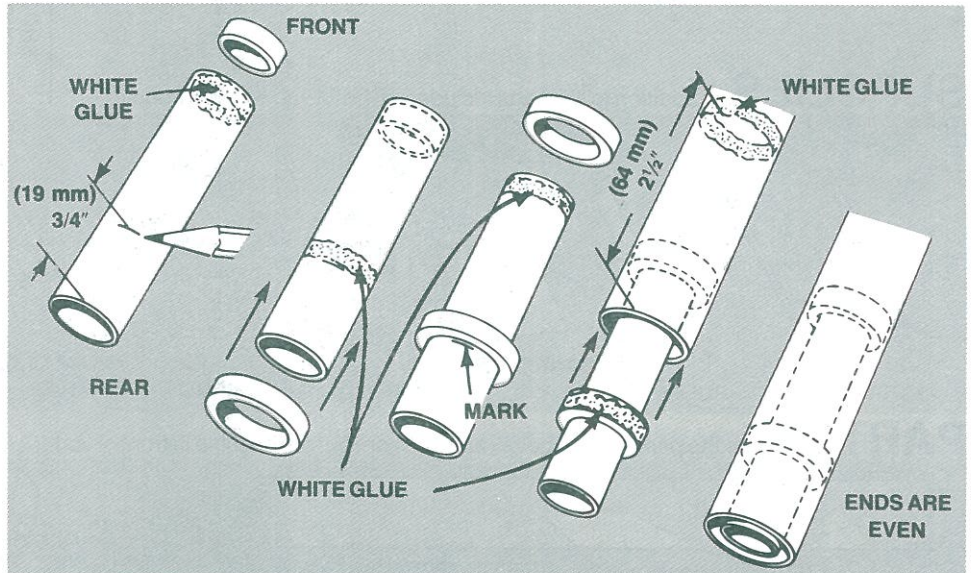
**2**

- Apply a ring of glue 1/2" (13 mm) inside one end of booster body tube.
- Slide engine mount into body tube. Apply glue to centering ring on end of engine mount, and push in until tube ends are even.
- Apply glue to inside of body tube and push tube joiner in until 1/2" (13 mm) of joiner extends from tube.



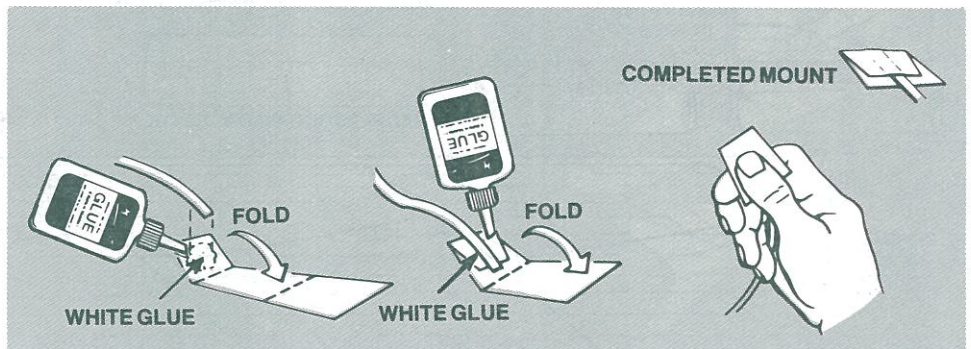
**3**

- Mark remaining engine mount tube 3/4" (19 mm) from one end. Glue engine block into other end flush with end of tube.
- Sand inside edges of two remaining centering rings.
- Slide one centering ring down to 3/4" (19 mm) mark and apply glue to both sides of ring/tube joint.
- Apply glue to end of tube. Slide centering ring over glue even with end of tube. Allow glue to dry before proceeding.
- Apply glue around inside main body tube about 2 1/2" (64 mm) from one end. Slide engine mount into main body tube until tube ends are even.



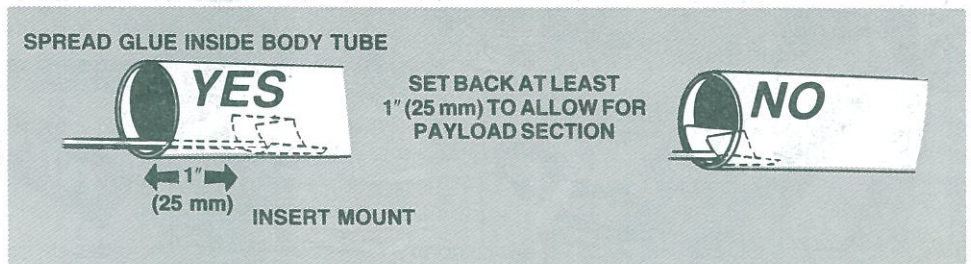
**4**

- Cut shock cord mount from front of instructions.
- Crease on dotted lines by folding. Spread glue on section 1 and lay end of shock cord into glue. Fold over and apply glue to back of first section and exposed part of section 2. Lay shock cord as shown and fold mount over again.
- Clamp unit together with fingers until glue sets.



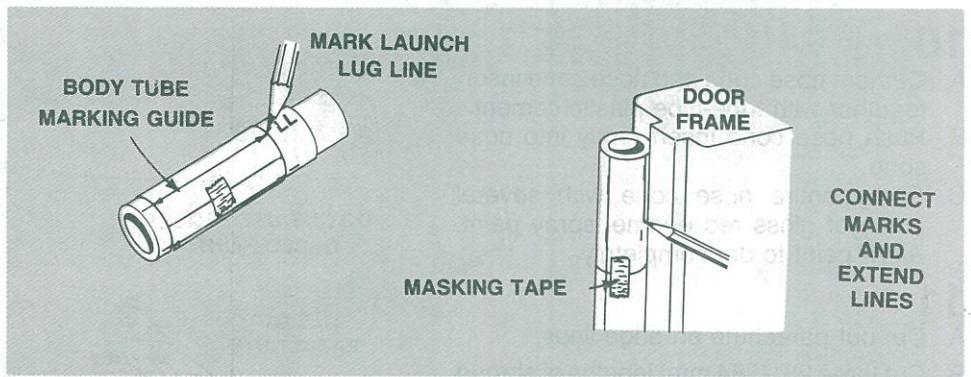
**5**

- Apply glue to inside front of large body tube to cover an area no less than 1" (25 mm) to 2" (51 mm) from end. The glued area should be same size as shock cord mount.
- Press mount firmly into glue as shown.
- Hold until glue sets.



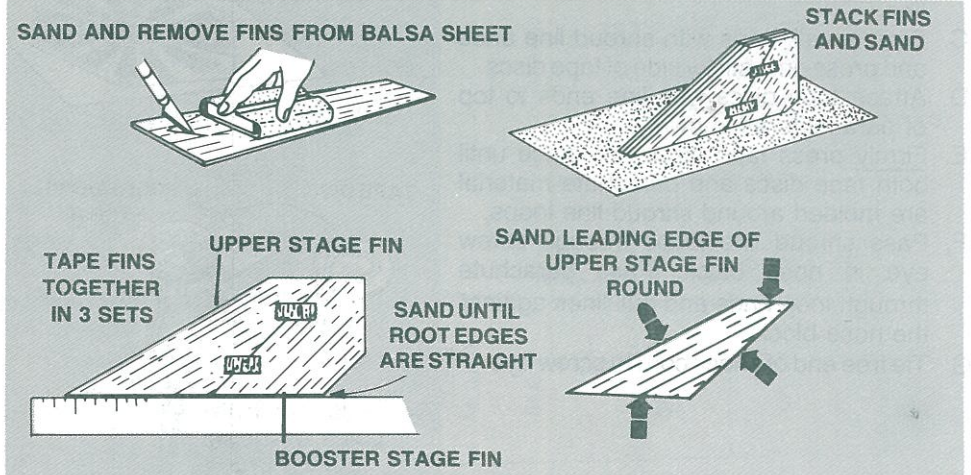
## 6

- Cut out body tube marking guide from front of instructions.
- Wrap guide around booster and tape. Mark tube at arrows. Remove guide.
- Slide stage coupler of booster tube into rear of main body tube. Tape tubes together.
- Draw straight lines connecting each pair of marks.
- Extend lines the length of tubes.



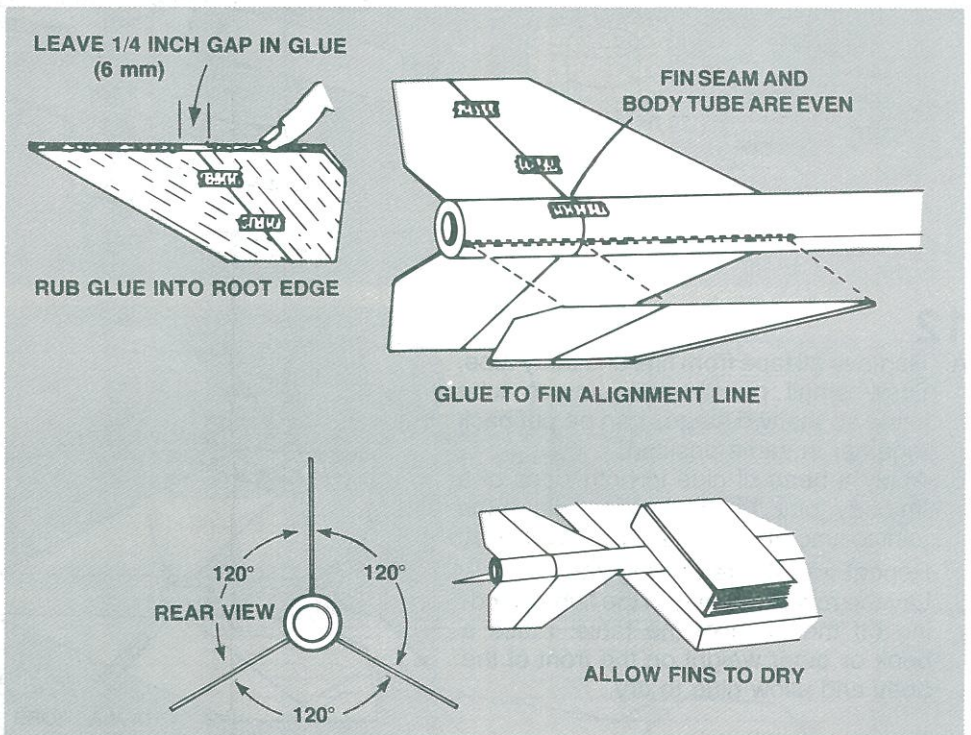
## 7

- Fine sand balsa die-cut sheet. Carefully remove fins by freeing edges with sharp knife.
- Stack alike fins together. Sand all edges smooth.
- Unstack fins and tape upper stage fins and booster fins together tightly in three sets.
- Carefully sand root edges if necessary to obtain proper alignment.



## 8

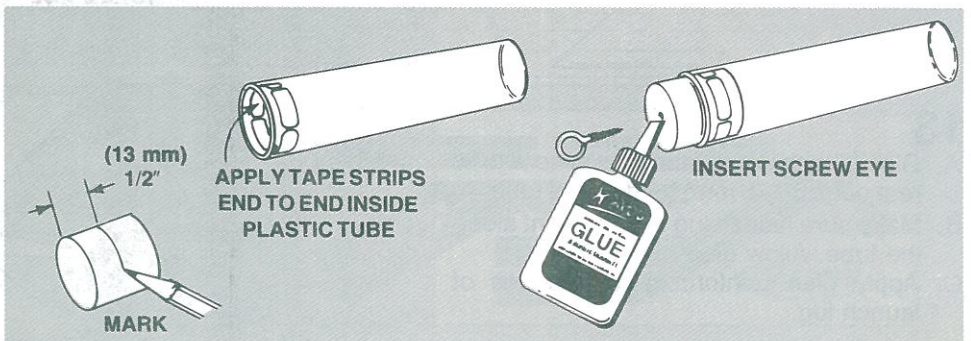
- Apply a bead of glue to root edge of each fin set, leaving a 1/8" (3 mm) gap on each side of fin joint as shown.
- Attach fin sets to body tubes with fins centered on pencil line and fin joint even with booster and main body tube joint. Repeat for each of other two fin sets.
- Adjust fins to project straight out from tube.
- Do not set rocket on fins while glue is wet.



**FINS MUST BE ATTACHED CORRECTLY FOR STABLE FLIGHT**

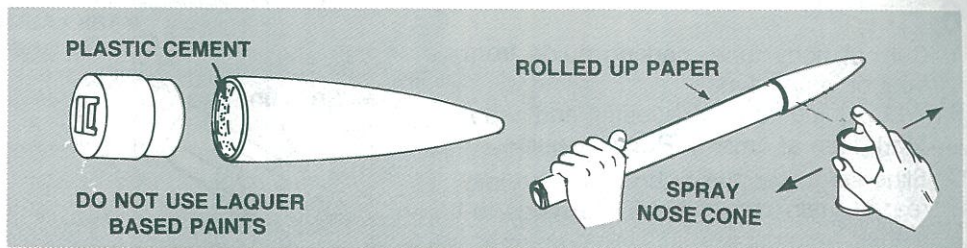
## 9

- Apply four tape strips to inside of clear plastic payload section.
- Mark nose block 1/2" (13 mm) from one end. Smear glue onto 1/2" (13 mm) section of nose block all the way around.
- Push nose block into clear payload section until mark is even with edge of tube.
- Insert screw eye into nose block. Remove and squirt glue into hole. Re-insert screw eye.



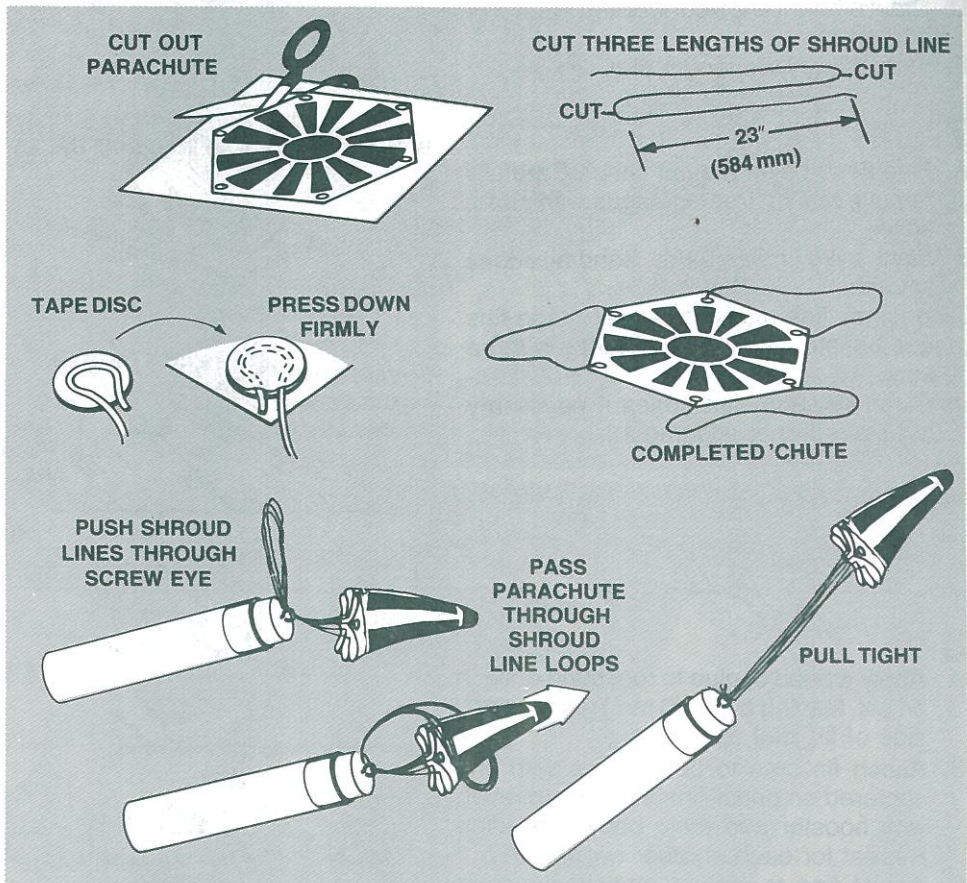
## 10

- Cement nose cone and nose cone insert together with tube-type plastic cement.
- Push nose cone insert firmly into nose cone.
- Spray entire nose cone with several coats of gloss red enamel spray paint. Allow paint to dry completely.



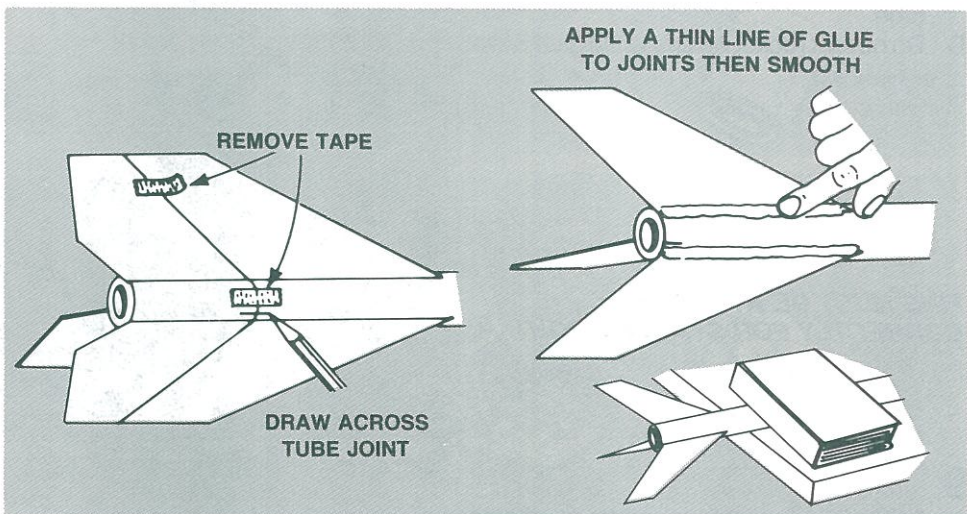
## 11

- Cut out parachute on edge lines.
- Cut three 23" (584 mm) lengths of shroud line.
- Form small loops with shroud line ends and press onto sticky side of tape discs.
- Attach tape discs with line ends to top of parachute as shown.
- Firmly press tape discs into place until both tape discs and parachute material are molded around shroud line loops.
- Pass shroud line loops through screw eye in nose block. Pass parachute through loop ends and pull lines against the nose block.
- Tie free end of shock cord to screw eye.



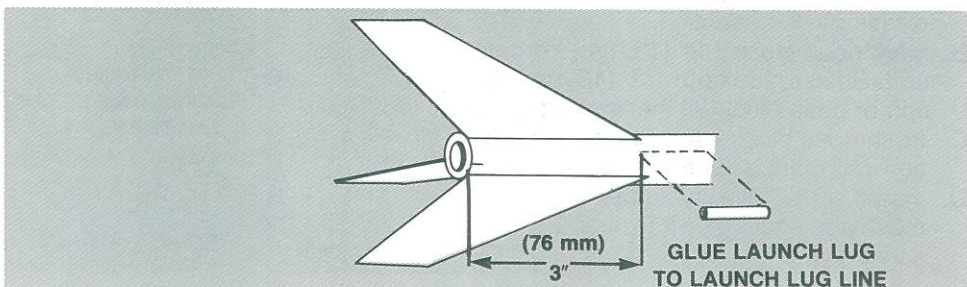
## 12

- Remove all tape from fins and body tube. Draw small pencil mark across tube joints so the two stages can be put back together in same position.
- Apply a bead of glue to both sides of a fin/body joint. Pull your finger along the joint to smooth the glue into an even fillet. Repeat with the remaining fins.
- Lay the rocket down with the fins extending off the edge of the table. Place a book or other weight on the front of the body and allow glue to dry.



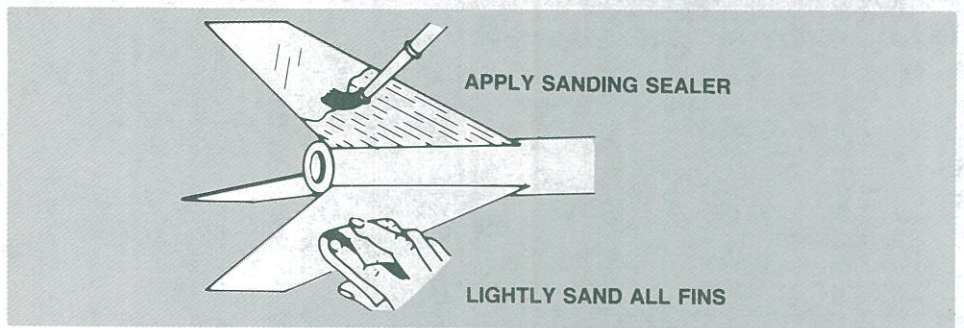
## 13

- Glue launch lug on launch lug line with its rear edge 3" (76 mm) from rear of tube.
- Make sure launch lug runs straight along the tube. Allow glue to dry.
- Apply glue reinforcement to sides of launch lug.



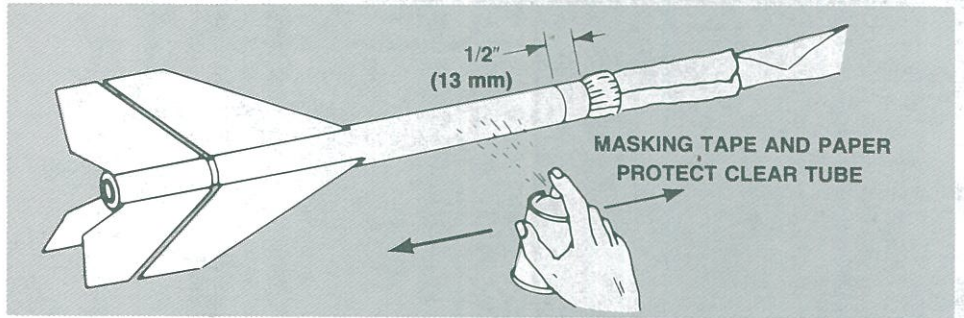
## 14

- After glue reinforcement on fins has thoroughly dried, apply sanding sealer to fins.
- When sealer is dry, lightly sand balsa parts. Repeat sealing and sanding until balsa grain lines are filled.



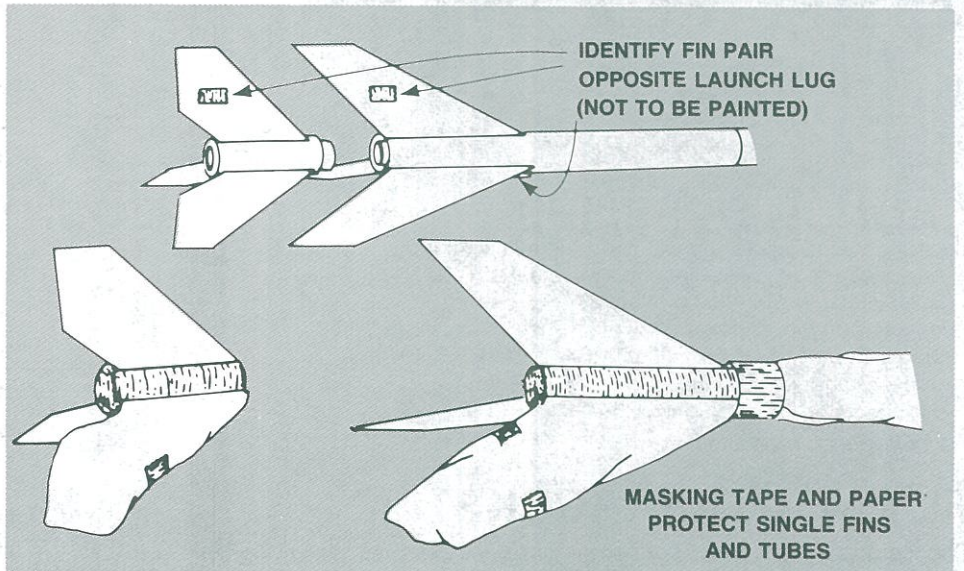
## 15

- Install booster stage and clear payload section to main body as shown. Align marks on upper stage and booster.
- Mask off clear payload section 1/2" (13 mm) from section joint. Paint entire rocket gloss white. Allow paint to dry for a couple of hours before removing mask.



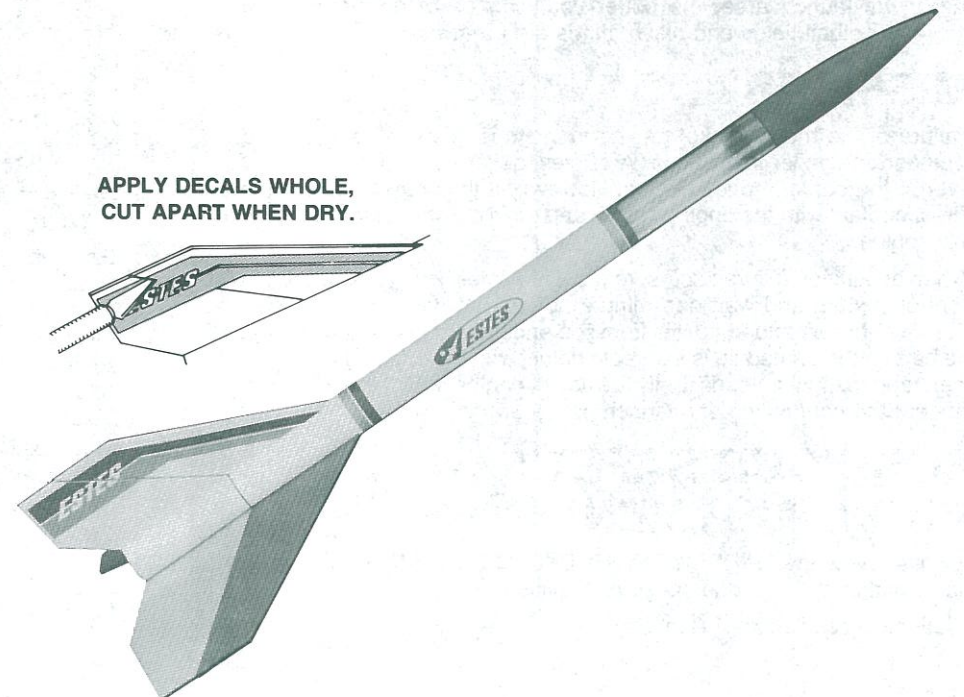
## 16

- Place a small piece of masking tape onto booster and upper stage fins opposite launch lug. These fins will remain white.
- Separate the two stages. Apply masking tape and paper to body tube and fin not to be painted on each stage as shown.
- Spray paint upper stage fins gloss red. Spray paint booster stage fins gloss orange. Allow both units to dry before removing masking.

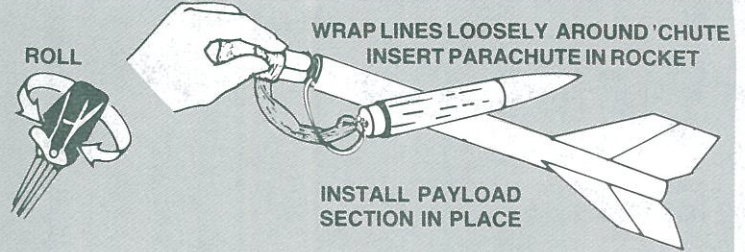
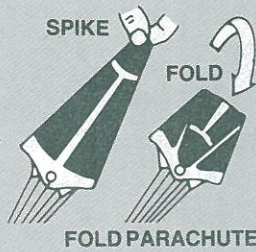
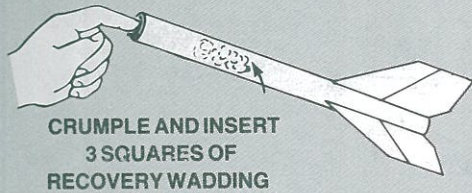


## 17

- When all paint is dry, apply decals in positions shown.
- Refer to photo on instructions and photo on panel for decal placement. To apply decals, cut out each decal, dip in lukewarm water for 20 seconds, and hold until it uncurls. Slip decal off backing sheet and onto model. Blot away excess water.

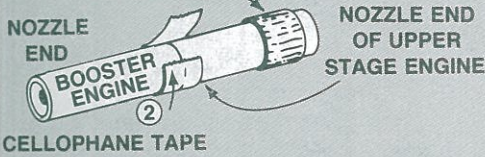


## ROCKET PREFLIGHT



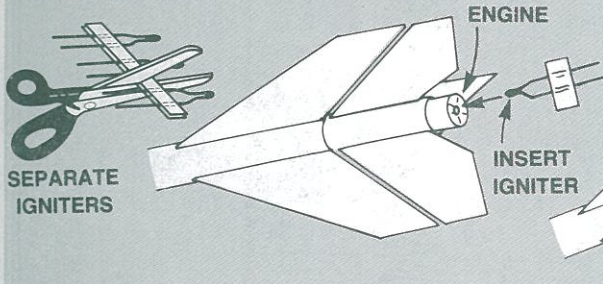
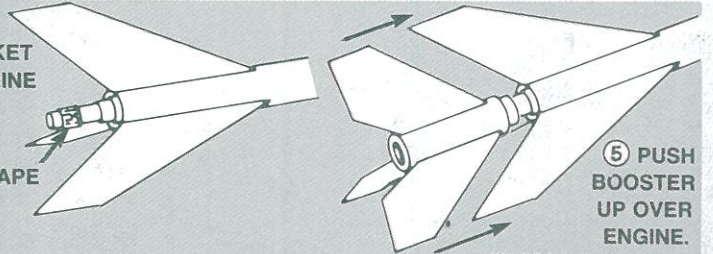
## PREPARE ENGINE

- ① WRAP MASKING TAPE FOR TIGHT FIT



- ③ PUSH ENGINE INTO ROCKET UNTIL IT IS AGAINST ENGINE BLOCK

- ④ WRAP MASKING TAPE FOR TIGHT FIT IN BOOSTER



IGNITER TIP MUST TOUCH PROPELLANT DEEP INSIDE NOZZLE OPENING

APPLY AND FIRMLY PRESS TAPE DISC OR MASKING TAPE IN PLACE

## LAUNCH SUPPLIES

To launch your rocket you will need the following items:

- An Estes model rocket launching system
- Estes Recovery Wadding (No. 2274)
- Recommended Engines:
  - Single Stage: A8-3 (First Flight), B4-4, B6-4, B8-5, C6-5
  - Upper Stage: A8-5 (First Flight), B6-6, B8-5, C6-7
  - Booster: B6-0 (First Flight), C6-0

Use with Estes products only.

## FLYING YOUR ROCKET

Choose a large field away from power lines, tall trees, and low flying aircraft. Try to find a field at least 250 feet (76 meters) square. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great.

## MISFIRES

Failure of the model rocket engine to ignite is nearly always caused by incorrect igniter installation. An Estes igniter will function properly even if the coated tip is chipped. However, if the coated tip is not in direct contact with the engine propellant, it will only heat and not ignite the engine.

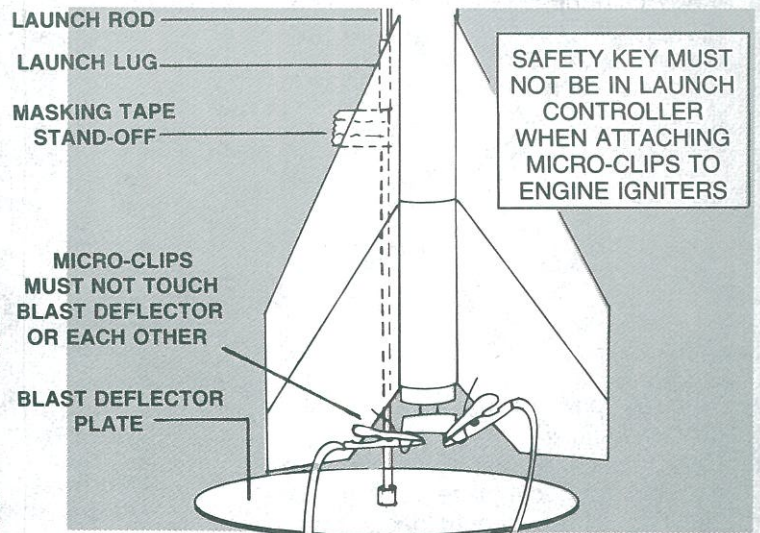
When an ignition failure occurs, remove the safety key from the launch control system and wait one minute before approaching the rocket. Remove the expended igniter from the engine and install a new one. Be certain the coated tip is in direct contact with the engine propellant, then tape the igniter leads firmly to base of engine as illustrated above. Repeat the countdown and launch procedure.

## FOR YOUR SAFETY AND ENJOYMENT

Always follow the NAR\* MODEL ROCKETRY SAFETY CODE while participating in any model rocketry activities.

\*National Association of Rocketry

## COUNTDOWN AND LAUNCH



SAFETY KEY MUST NOT BE IN LAUNCH CONTROLLER WHEN ATTACHING MICRO-CLIPS TO ENGINE IGNITERS

- ⑩ BE CERTAIN SAFETY KEY IS NOT IN LAUNCH CONTROLLER.
- ⑨ Remove safety cap and slide launch lug over launch rod to place rocket on launch pad. Make sure the rocket slides freely on the launch rod.
- ⑧ Attach micro-clips to the igniter wires. Arrange the clips so they do not touch each other or the metal blast deflector. Attach clips as close to protective tape on igniter as possible.
- ⑦ Move back from your rocket as far as launch wire will permit (at least 15 feet - 5 meters).
- ⑥ INSERT SAFETY KEY to arm the launch controller.

**LAUNCH!!** PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES  
REMOVE SAFETY KEY FROM LAUNCH CONTROLLER. REPLACE SAFETY KEY AND SAFETY CAP ON LAUNCH ROD.