

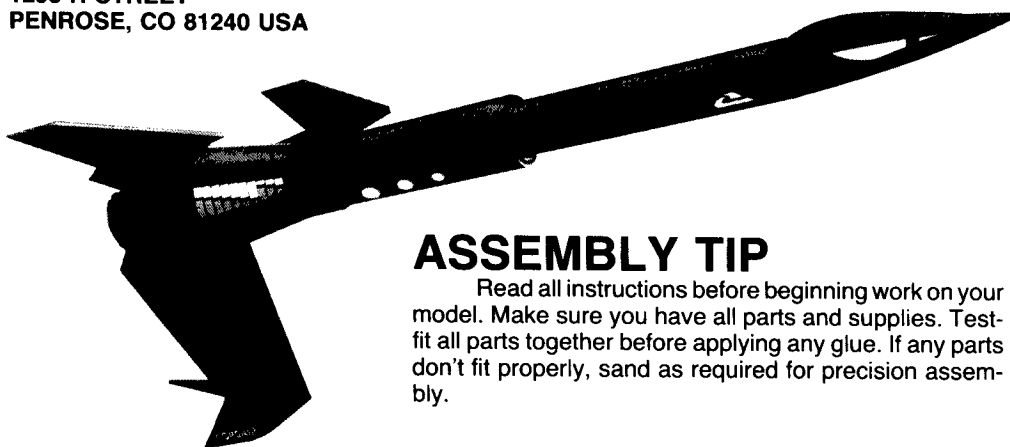




CORSAIR™

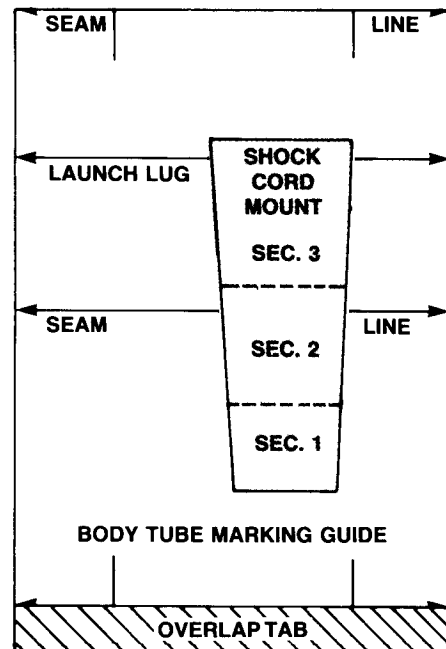
FLYING MODEL ROCKET #1999

ESTES INDUSTRIES
1295 H STREET
PENROSE, CO 81240 USA



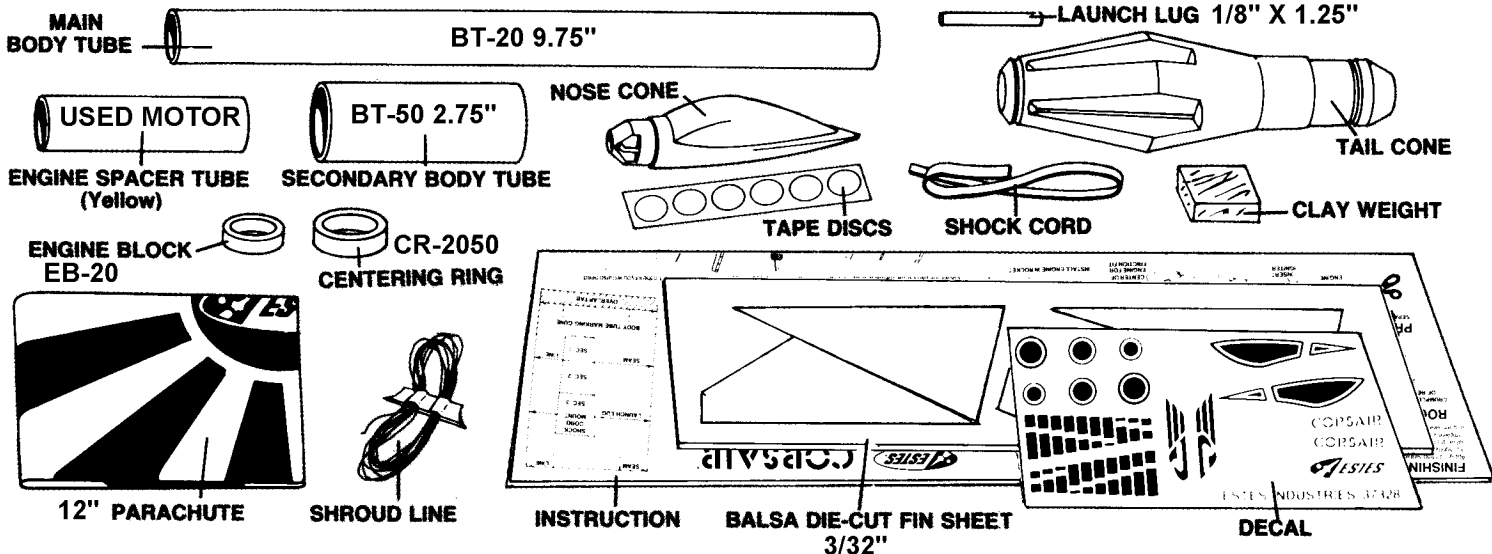
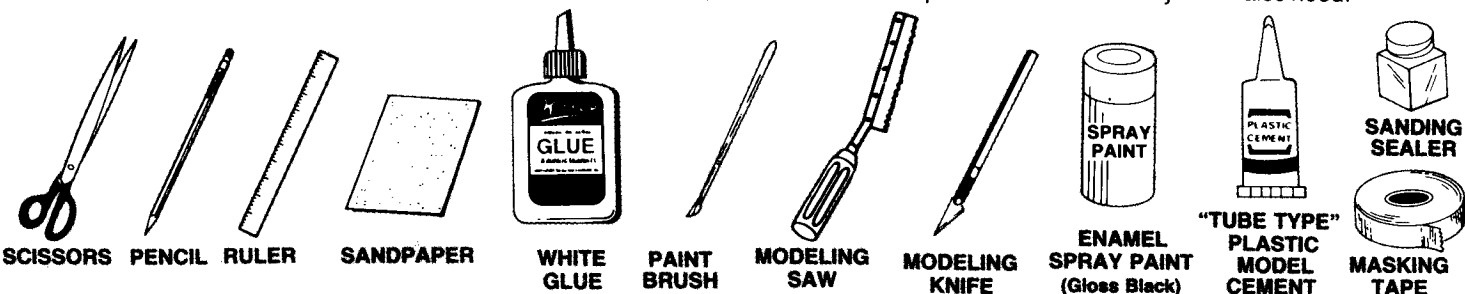
ASSEMBLY TIP

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.



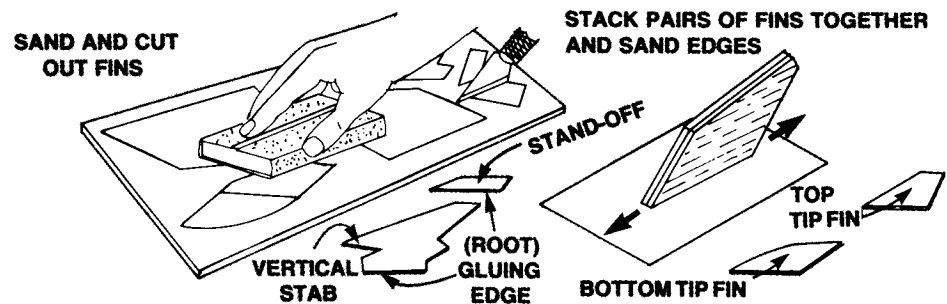
PARTS AND SUPPLIES

Locate the parts shown below and lay them out on the table in front of you. In addition to the parts included in the kit you will also need:



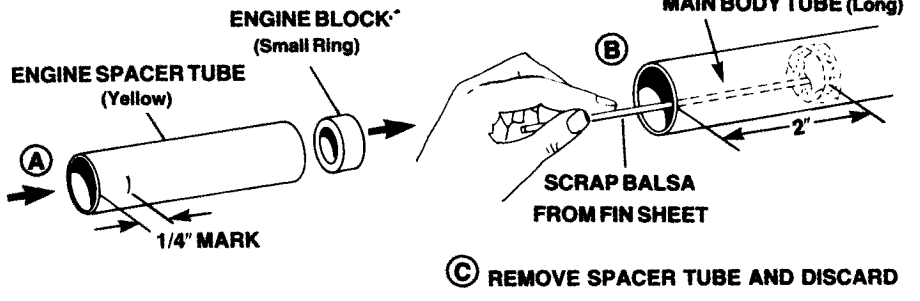
ROCKET ASSEMBLY

1. Fine sand die-cut sheet. Carefully remove fins and wings by freeing edges with sharp knife.
2. Stack like pairs of fins and wings. Sand all edges smooth.



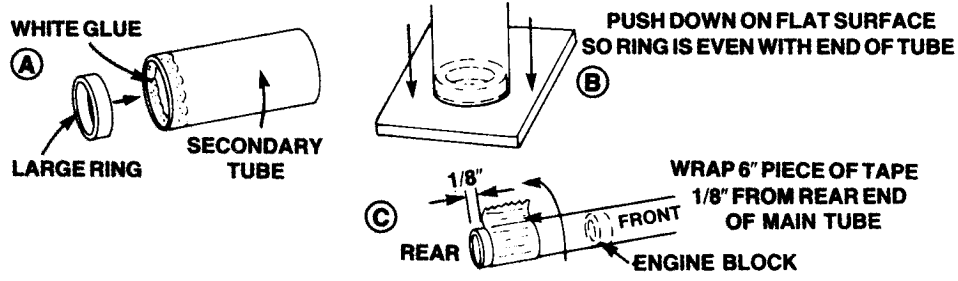
2

- A. Mark engine spacer tube 1/4 inch from one end.
- B. Apply white glue to inside of one end of main body tube (long tube) with scrap balsa stick from balsa fin sheet.
- C. Put engine block (small ring) into tube end and push it up into tube with engine spacer until 1/4 inch mark is even with end of tube. Remove engine spacer immediately.



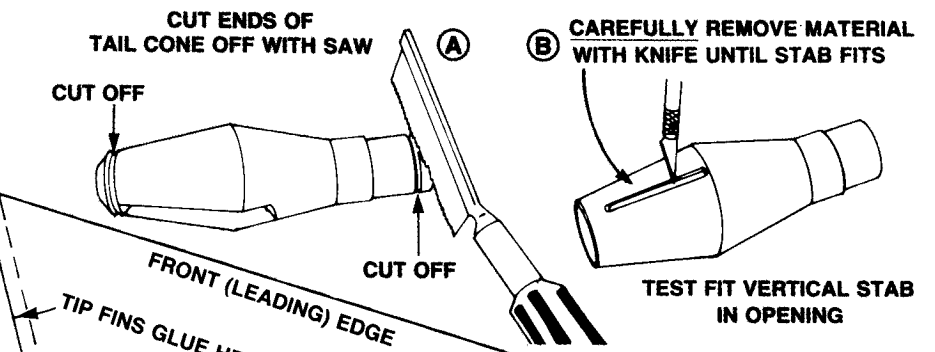
3

- A. Apply white glue in one end of "secondary" body tube (short tube).
- B. Put large centering ring in end of tube with glue and on a flat surface push ring into tube until ring end and tube end are even.
- C. Cut a 6 inch piece of masking tape. Mark main body tube 1/8 inch from the end that the engine block is in. Wrap tape around tube in front of 1/8 inch mark.



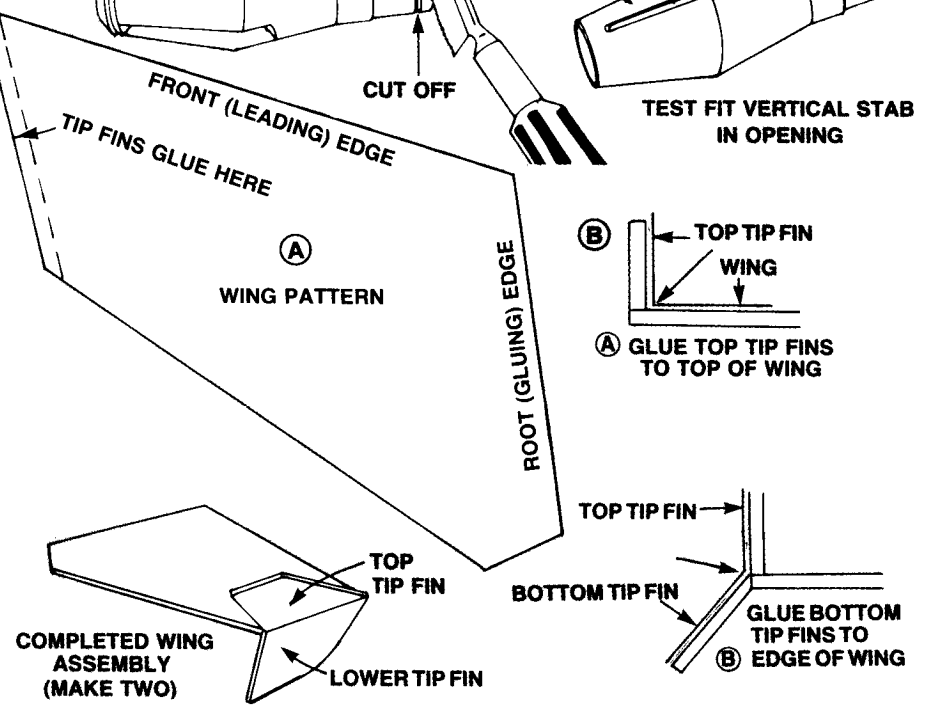
4

- A. With modeling saw cut both ends of tail cone off at "V" notches.
- B. Use knife to cut out slot for vertical stab carefully. Use stab to test fit into hole until it fits perfectly. Look at Step 8 to see correct stab orientation.



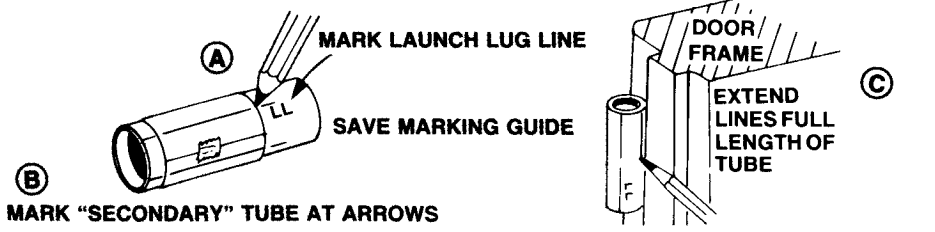
5

- A. Place wings on wing pattern to determine front (leading) edges and gluing (root) edges.
- B. Cut out both tip fin alignment guides from back of panel. Refer to illustrations and glue top fins to wing tips. Make one for each side of model. Carefully sand bevel into proper edge (see illustration) of each bottom tip fin. Glue tip fins in place.



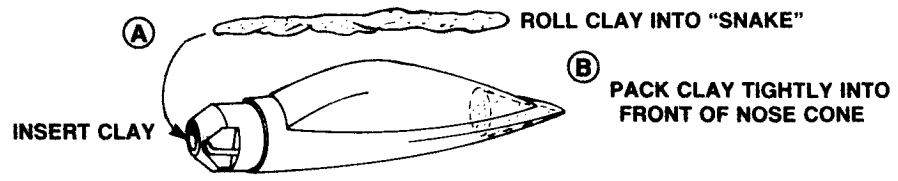
6

- A. Cut out marking guide from front page of instructions.
- B. Wrap guide around "secondary" body tube and make marks at all arrows. Remove guide and save for Step 10. Label launch lug line.
- C. Draw straight lines full length of tube as shown to connect each pair of marks.



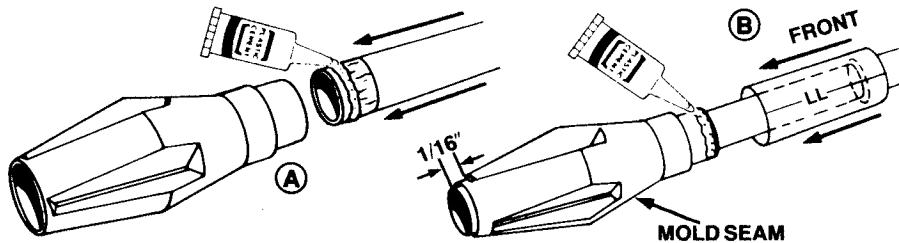
7

- A. Roll clay weight into a "snake" and insert through hole in end of nose cone.
- B. Using a pencil or dowel, tightly pack clay into front end of nose cone.
- C. Clear "flash" from eyelet with modeling knife.



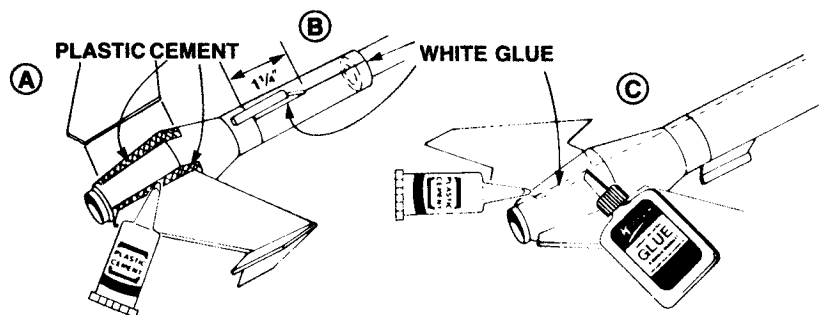
8

A. Apply "tube-type" plastic cement to rear end of masking tape on main body tube. Push tube through tail cone as shown until it stops inside rear end of tail cone. 1/16 inch of main tube should extend beyond end of tail cone.

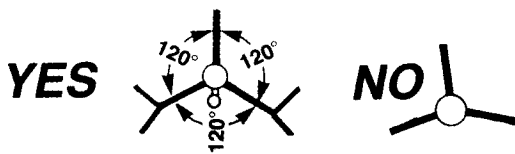


B. Run a bead of "tube-type" plastic cement around front edge of tail cone shoulder. Slide "secondary" tube over end of main body tube (with ring in "secondary" tube to the front) and slide down over shoulder as shown. Align "seam" lines on "secondary" tube with seam lines on tail cone. Be sure launch lug line is between wing slots as shown (bottom of tail cone).

C. Wipe away excess plastic cement at "secondary" tube/tail cone joint.

**9**

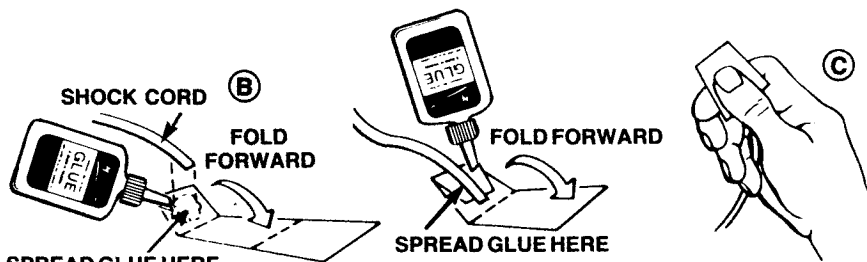
A. Apply "tube-type" plastic cement to wing slots as shown. Press wings into glue and hold in place until glue sets.



B. Mark launch lug line (LL) 1 1/4 inches forward of tail cone tube joint. Glue launch lug to launch lug stand-off with white glue. Glue launch lug assembly to launch lug line with white glue.

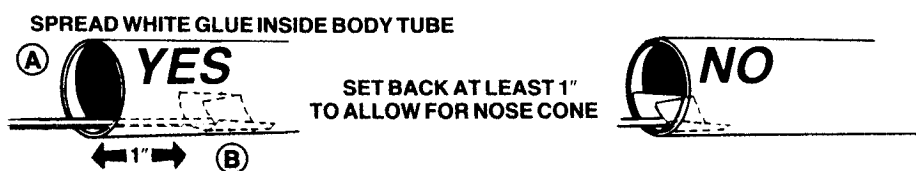
APPLY A REINFORCEMENT TO ALL JOINTS. PLASTIC CEMENT FOR WOOD TO PLASTIC AND WHITE GLUE FOR WOOD TO PAPER JOINTS.

C. Run white glue along bottom edge of vertical stab, slide stab into slot, and hold in place until glue sets. Edge of stab should attach to main tube inside tail cone. Straighten stab so fins look like illustration.

**10**

A. Cut shock cord mount from tube marking guide.

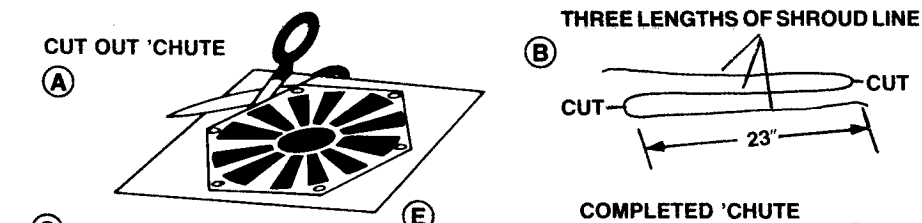
B. Crease on dotted lines by folding. Spread glue on section 1 and lay end of shock cord into glue. Fold over and apply glue to back of first section and exposed part of section 2. Lay shock cord as shown with fingers and fold mount over again.



C. Clamp unit together with fingers until glue sets.

11

A. Apply glue to inside front of body tube to cover an area no less than 1 inch to 2 inches from end. The glued area should be same size as shock cord mount.



B. Press mount firmly into glue as shown.

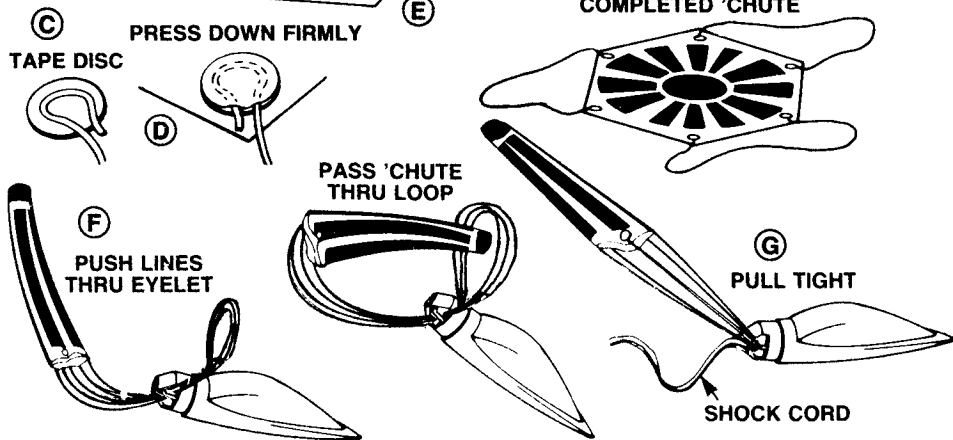
12

A. Cut out parachute on edge lines.

B. Cut three 23 inch lengths of shroud line.

C. Form small loops with shroud line ends and press onto sticky side of tape discs.

D. Attach tape discs with line ends to top of parachute as shown.



E. Firmly press tape discs into place until both tape discs and parachute material are molded around shroud line loops.

F. Pass shroud line loops through loop on nose cone. Pass parachute through loop ends and pull lines tight against the nose cone loop.

G. Tie free end of shock cord to nose cone loop.

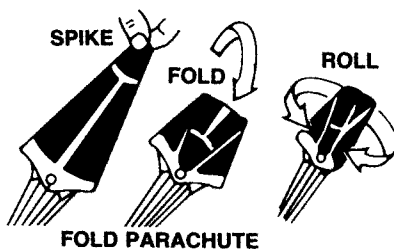
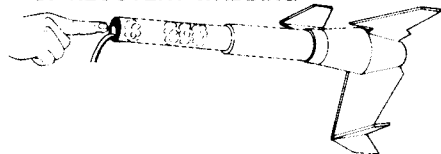
FINISHING YOUR ROCKET

Apply sanding sealer to wood parts with small brush. When sealer is dry, lightly sand all sealed surfaces. Repeat sealing and sanding until balsa grain is filled and smooth. When sanding sealer and glue are completely dry, paint model with gloss black spray enamel. Avoid lacquer based paints! Follow instructions on spray can for best results.

Allow all paint to dry overnight before applying decals. To apply decals, cut each out, dip in lukewarm water for 20 seconds, and hold until it uncurls. Refer to photograph on front page and/or on front of panel for decal placement. Slip decal off backing sheet and onto model. Blot away excess water. For best results, let decals dry overnight.

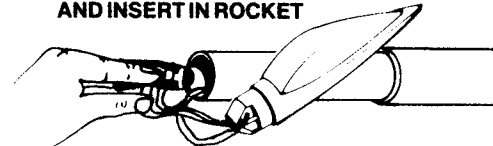
ROCKET PREFLIGHT

CRUMPLE AND INSERT 4 SQUARES OF RECOVERY WADDING



FOLD PARACHUTE

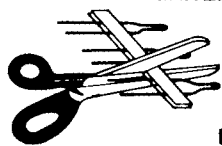
WRAP LINES LOOSELY AROUND 'CHUTE AND INSERT IN ROCKET



INSTALL NOSE CONE IN PLACE.

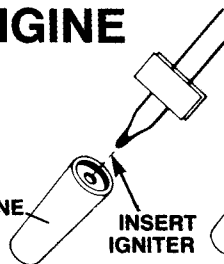
PREPARE ENGINE

SEPARATE THE IGNITERS

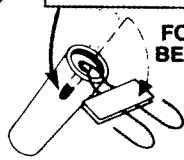


ENGINE

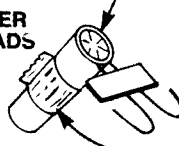
INSERT IGNITER



IGNITER TIP MUST TOUCH PROPELLANT DEEP INSIDE NOZZLE OPENING



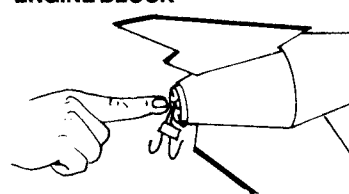
FOLD OVER BEND LEADS



APPLY AND FIRMLY PRESS TAPE DISC OR MASKING TAPE IN PLACE

WRAP TAPE AROUND CENTER OF ENGINE FOR FRICTION FIT

PUSH ENGINE UP TO ENGINE BLOCK



LAUNCH SUPPLIES

To launch your rocket you will need the following items:

- An Estes Electrical Launch System and Launch Pad
 - Estes Recovery Wadding (No. 2274)
 - Recommended Estes Engines: A8-3, A8-5, B4-4, B6-4, B8-5, or C6-5
- Use A8-3 engine for your first flight to become familiar with your rocket's flight pattern.

Use only Estes products to launch this rocket.

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 square. The larger the launch area, the better your chance of recovering your rocket. Football fields and playgrounds are great.

Launch area must be free of dry weeds and brown grass.

Launch only during calm weather with little or no wind and good visibility.

Don't leave parachute packed more than a minute or so before launch during cold weather [colder than 40° Fahrenheit (4° Celsius)].

Parachute may be dusted with talcum powder to avoid sticking.

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.

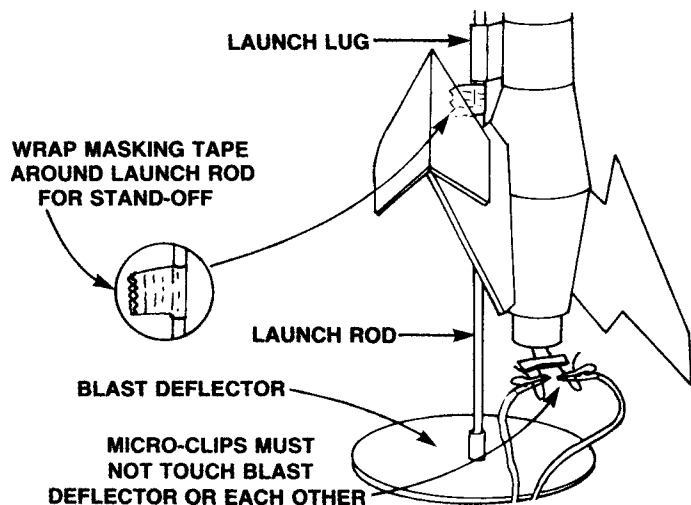
FOR YOUR SAFETY AND ENJOYMENT

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

*National Association of Rocketry-The Hobby Industry of America

83944
page 4

COUNTDOWN AND LAUNCH



- 10 REMOVE SAFETY KEY to disarm the 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. You will need to use a rocket stand-off. One may have come with your launcher. If you do not have one, you can make a stand-off by wrapping masking tape around the rod as shown.
 - 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).
 - 6 INSERT SAFETY KEY to arm the launch controller.
- Give audible countdown. . . 5 . . . 4 . . . 3 . . . 2 . . . 1 . . .

LAUNCH!!! PUSH AND HOLD LAUNCH BUTTON UNTIL ENGINE IGNITES

Remove safety key—Replace cap on launch rod.



A DAMON COMPANY

NAR/HIA Model Rocketry Safety Code

(Eff. 1-1-87)

1. Construction—My model rockets will be made of lightweight materials such as paper, wood, rubber, and plastic, without any metal as structural parts.

2. Engines—I will use only pre-loaded factory-made NAR Certified model rocket engines in the manner recommended by the manufacturer. I will not alter or dismantle model rocket engines or their ingredients in any way or attempt to reload these engines.

3. Recovery—I will always use a recovery system in my rockets that will return them safely to the ground so that they may be flown again. I will use only flame-resistant recovery wadding in my rockets.

4. Weight Limits—My model rocket will weigh no more than 1500 grams (53 oz.) at lift-off, and the engines will contain a total of no more than 125 grams (4.4 oz.) of propellant. My model rockets will weigh no more than the engine manufacturer's recommended maximum lift-off weight for the engines used or will use the engines recommended by the manufacturer for my rocket.

5. Stability—I will check the stability of my model rockets before their first flight, except when launching models of already proven stability.

6. Payloads—My model rockets will never carry live animals or payloads that are intended to be flammable or explosive.

7. Launch Area—I will launch my model rockets outdoors in a cleared area, free of tall trees, power lines, and buildings. I will ensure that people in the vicinity are aware of the pending rocket launch and are in a position to see the rocket's lift-off before I begin my audible 5-second countdown.

8. Launcher—I will launch my model rockets from a rod or other device which provides rigid guidance until the rocket has reached a speed adequate to ensure a safe flight path. To prevent accidental eye injury, I will always place the launcher so that the end of the rod is above eye level or will cap the end of the launch rod when approaching it. I will cap or disassemble my launch rod when not in use and will never store it in an upright position. The launch device will have a jet deflector to prevent the engine exhaust from hitting the ground directly. I will always clear the area around my launch device of brown grass, dry weeds, and other easy-to-burn materials.

9. Ignition System—The system I use to launch my model rockets will be remotely controlled and electrically operated and will contain a launching switch that will return to "off" when released. The system will contain a removable safety interlock in series with this firing switch. When launching, all persons will remain at least 15 feet away from any model rocket when igniting engines totalling 30 N-sec of total impulse or less and at least 30 feet when igniting engines totalling more than 30 N-sec total impulse. I will use only electrical igniters which will ignite my rocket engine within one second of actuation of the launching switch.

10. Launch Safety—I will not let anyone approach a model rocket on a launcher until I have made sure that the safety interlock has been removed or the battery has been disconnected from the launcher. In the event of a misfire, I will wait one minute before allowing anyone to approach the launcher.

11. Flying Conditions—I will launch my model rocket only when the wind is less than 20 miles per hour, and under conditions where the model will not fly into clouds, fly near aircraft in flight, or be hazardous to people or property.

12. Pre-Launch Test—When conducting research activities with unproven designs or methods I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

13. Launch Angle—I will not launch rockets so their flight path will carry them against targets. My launch device will be pointed within 30 degrees of vertical. I will never use model rocket engines to propel any device horizontally.

14. Recovery Hazards—If a model rocket becomes entangled in a power line or other dangerous place, I will not attempt to retrieve it.

As a member of the Estes Model Rocketry Program, I promise to faithfully follow all rules of safe conduct as established in the above code.

Signature _____

This Model Rocketry Safety Code is Approved by the National Association of Rocketry and the Hobby Industry of America.

IMPORTANT!

PLEASE READ AND BECOME FAMILIAR WITH THE MODEL ROCKETRY SAFETY CODE ON THIS CARD. PLEASE SIGN WHERE INDICATED AND KEEP THIS CODE WITH YOU DURING ALL YOUR MODEL ROCKET ACTIVITIES.

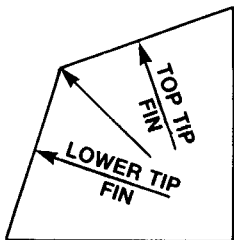
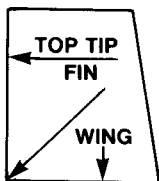
FULL ONE YEAR WARRANTY

Your Estes product is warranted against defects in materials or workmanship for one year from the date of the original purchase. Any Estes product, except computer software, which, because of a manufacturing mistake, malfunctions or proves to be defective within the one-year warranty period will be repaired or replaced, at Estes' option and at no charge to you, provided it is returned to Estes with proof of purchase.

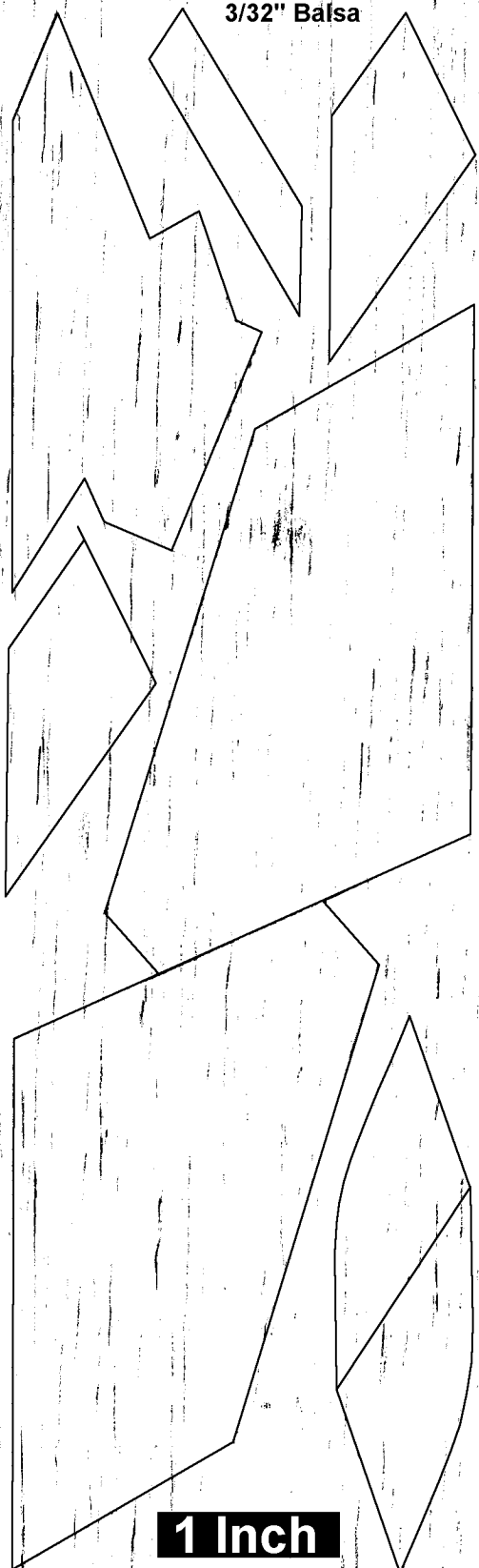
This warranty does not cover incidental or consequential damage to persons or property caused by the use, abuse, misuse, failure to comply with operating instructions or improper storage of the warranted product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

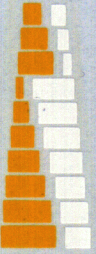
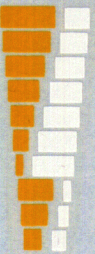
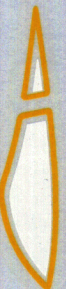
For repair or replacement under this warranty, please return the defective part of your Estes product with proof of purchase to: Estes Industries, Customer Service Department, Penrose, Colorado 81240.



3/32" Balsa



1 Inch

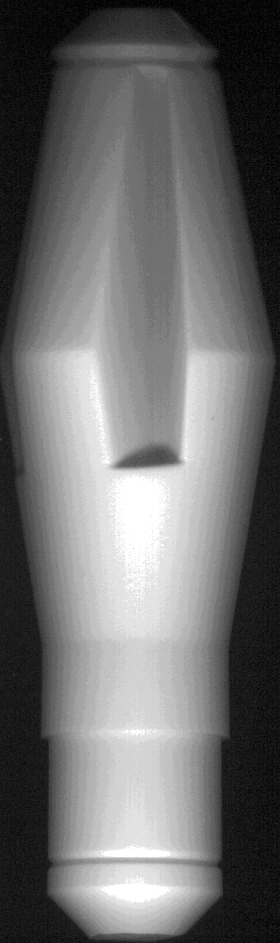
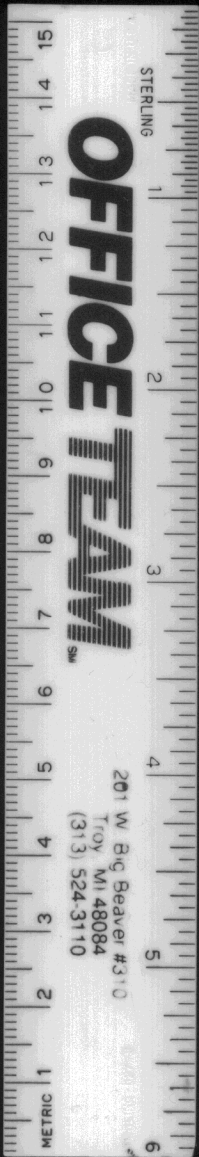
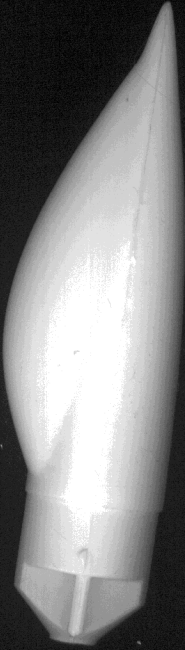


CORSAIR

CORSAIR



ESTES INDUSTRIES 37328



CORSAIR™

SKILL LEVEL 3 Exiled to distant outlying planets, the galaxy's privateers fly their spaceships throughout the star systems, preying on slower freightliners. Dark and sleek, Corsair's design has evolved from the necessity to outmaneuver vengeful victims. The model features swept-wing design, flights to 700 feet, and descent via 12 inch parachute.

Length: 12.35" Dia. 0.976" Wt. 1.59 oz.

ENGINES: A8-3 (1st Flt.), A8-5, B4-4, B6-4, B8-5, C6-5.

No.1999

CORSAIR™

FLYING MODEL ROCKET

SKILL LEVEL 3

Recommended for the Advanced Student

■ SPEEDSHIP OF THE GALAXY'S PRIVATEERS

- Swept-Wing Balsa Fins
- Parachute Recovery
- Plastic Nose and Tail Cone

**700⁺
FLIGHTS**

Length: 12.35 in. (31.4 cm)

Dia: .976 in. (24.8 mm)

Weight: 1.59 oz. (45.1 g)

Recommended Engines:

A6-3 (First Flight), A6-5,

B4-4, B6-4, B8-5, or C6-5

#1999

This is a model kit requiring assembly. Glue and finishing supplies, launch system and engines for flight are not included.



A CORNING COMPANY



ESTES INDUSTRIES
PERMID, CO. #1999 USA



MADE IN USA