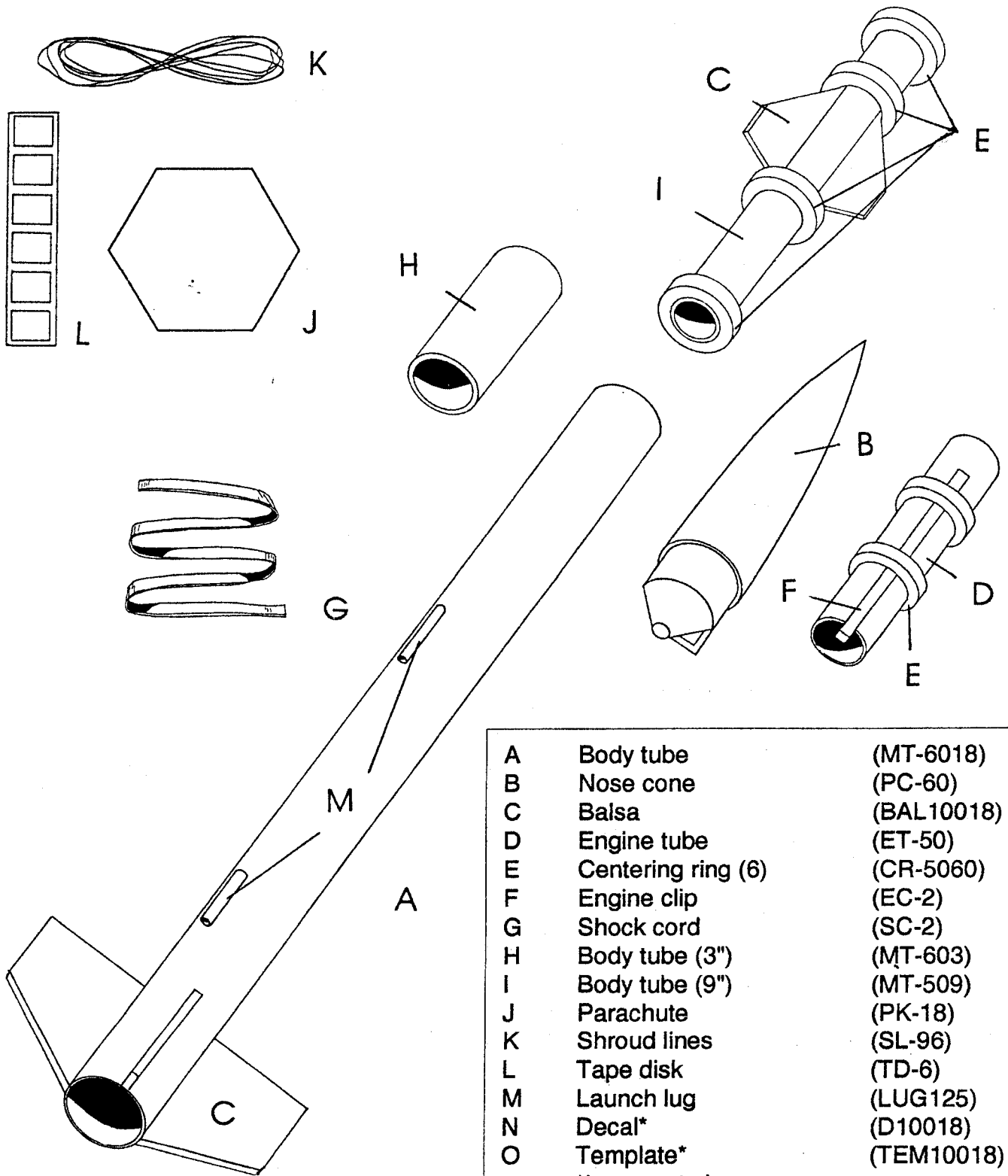


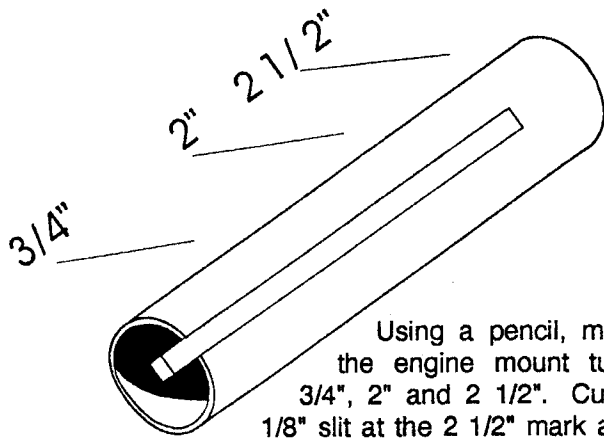
Matra^{T.M.}

I N S T R U C T I O N S



| | | |
|---|--------------------|------------|
| A | Body tube | (MT-6018) |
| B | Nose cone | (PC-60) |
| C | Balsa | (BAL10018) |
| D | Engine tube | (ET-50) |
| E | Centering ring (6) | (CR-5060) |
| F | Engine clip | (EC-2) |
| G | Shock cord | (SC-2) |
| H | Body tube (3") | (MT-603) |
| I | Body tube (9") | (MT-509) |
| J | Parachute | (PK-18) |
| K | Shroud lines | (SL-96) |
| L | Tape disk | (TD-6) |
| M | Launch lug | (LUG125) |
| N | Decal* | (D10018) |
| O | Template* | (TEM10018) |
| | *Items not shown | |

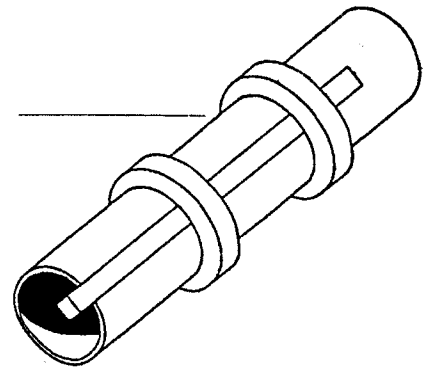
1



Using a pencil, mark the engine mount tube 3/4", 2" and 2 1/2". Cut a 1/8" slit at the 2 1/2" mark and insert the engine clip into the slot. Take the centering rings and slide them onto the tube at the 3/4" and 2" marks.

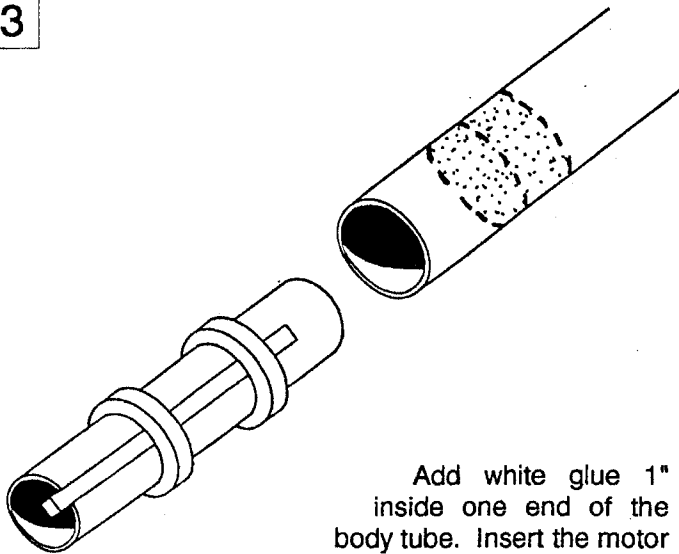
2

GLUE



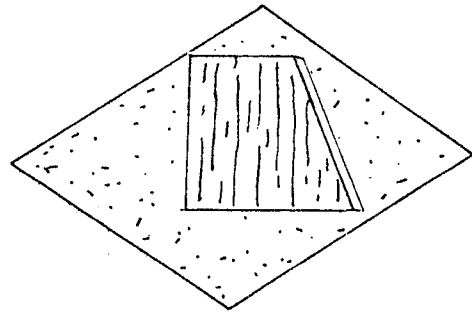
Apply white glue to the joints on all of the rings. Let this motor mount completely dry before going to the next step. It's very important not to rush this step!

3



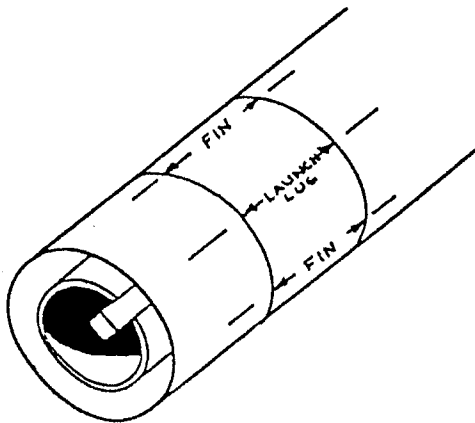
Add white glue 1" inside one end of the body tube. Insert the motor mount until both tube ends are flush.

4



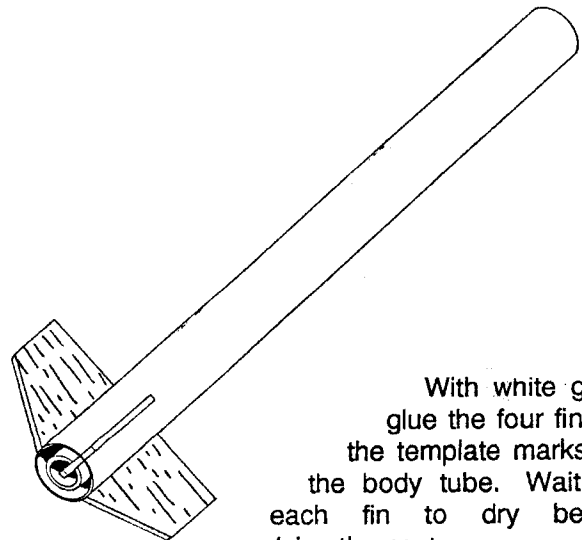
Cut and sand the balsa with fine sandpaper.

5



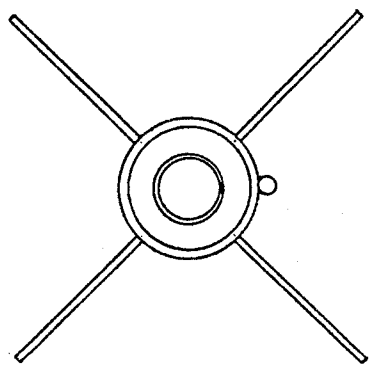
Cut and wrap the fin placement guide around the tube. Mark the fin locations.

6



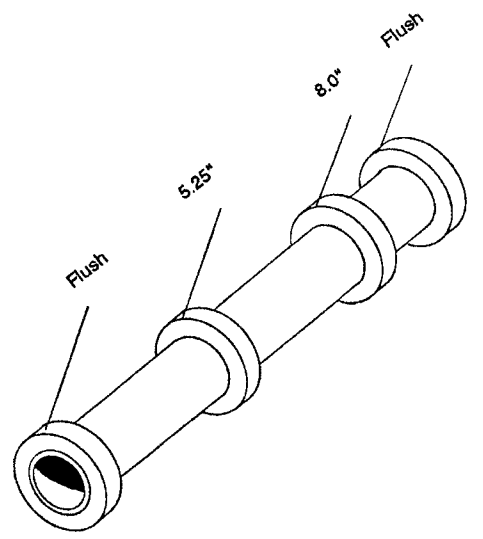
With white glue, glue the four fins to the template marks on the body tube. Wait for each fin to dry before applying the next.

7



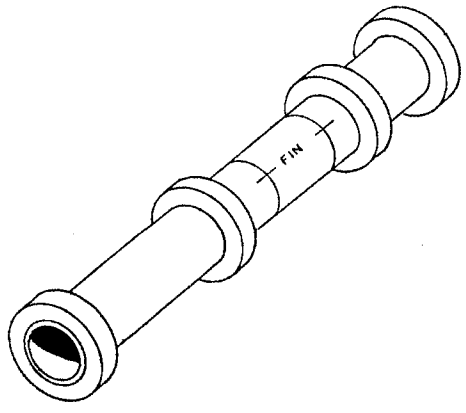
This is how the end view should look.

8



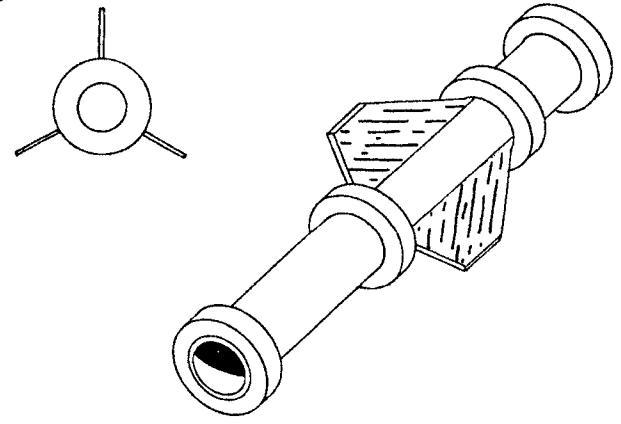
Glue the four rings onto the 9" body tube as shown above.

9



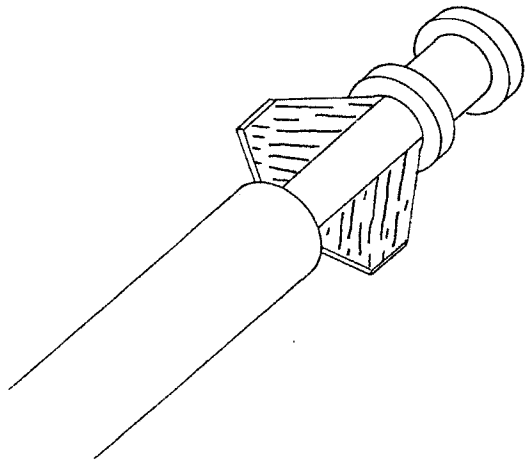
Cut and wrap the fin placement guide around the tube. Mark the fin locations.

10



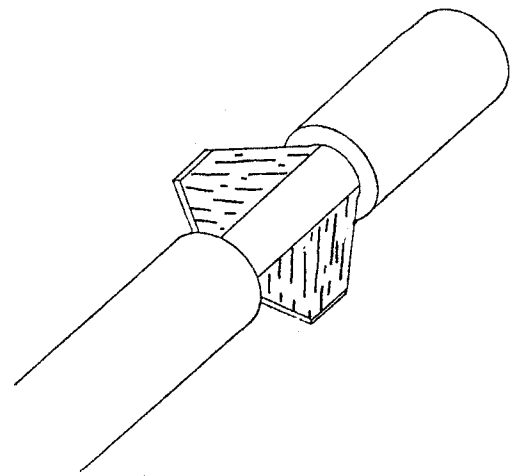
Glue the three fins onto the marks on the tube. Glue each fin on one at a time. Notice the end view in the drawing.

11



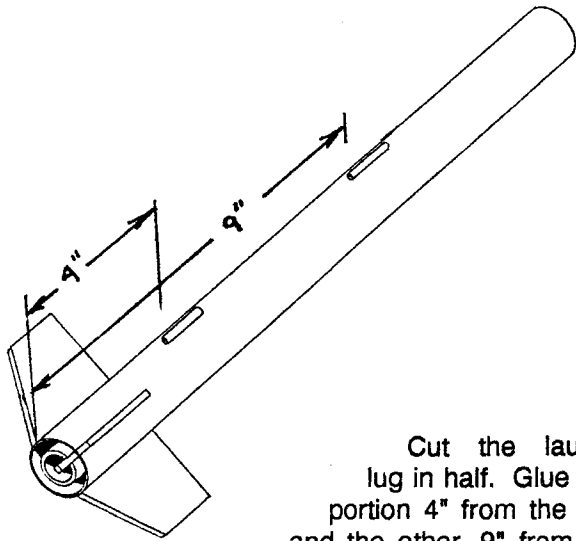
Apply glue to the inside of the main rocket and insert the fake upper stage so the bottom of the fins are flush with the top of the tube.

12



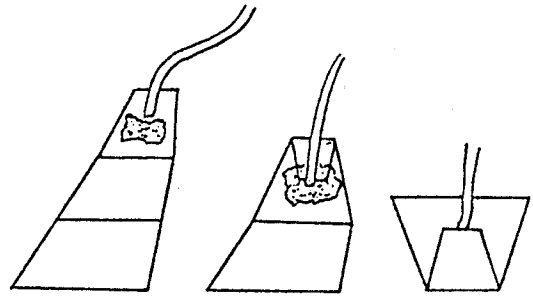
Apply glue inside one end of the 3" body tube and glue the fake upper stage assembly so the second ring is flush with the end of the body tube.

13



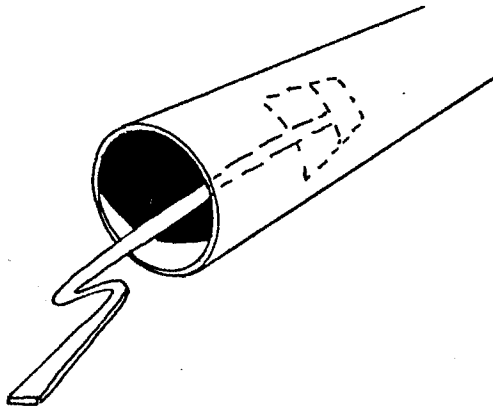
Cut the launch lug in half. Glue one portion 4" from the end and the other, 9" from the end.

14



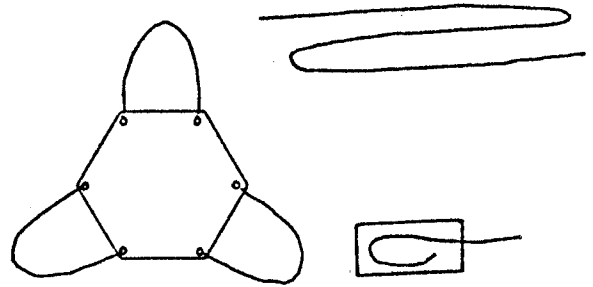
A. Cut out the shock cord mount and apply glue to section 1. Lay the end of the shock cord into the glue.
 B. Fold section 1 at the fold line and squeeze with your fingers.
 C. Apply glue to the back of section 1 and fold to section 3. Put complete assembly under a heavy object.

15



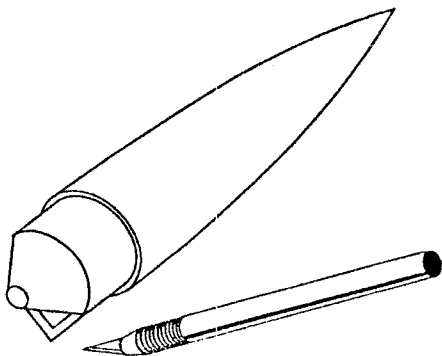
Glue the shock cord mount inside the front of the body tube 1" from the end. Hold the mount until it dries.

16



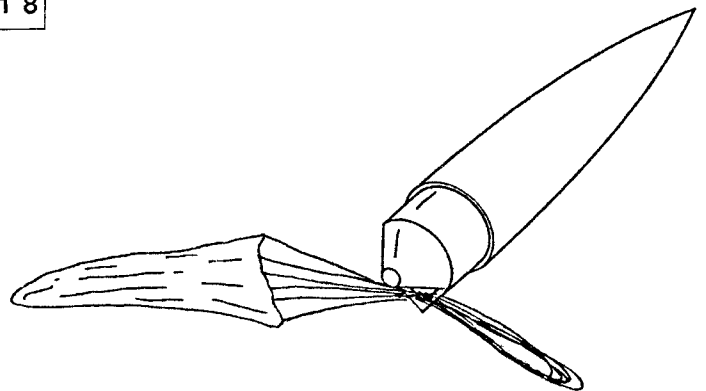
A. Cut the shroud line into three equal parts.
 B. Attach the end of the shrouds to the tape disks
 C. Tape the disks to the parachute as shown.

17



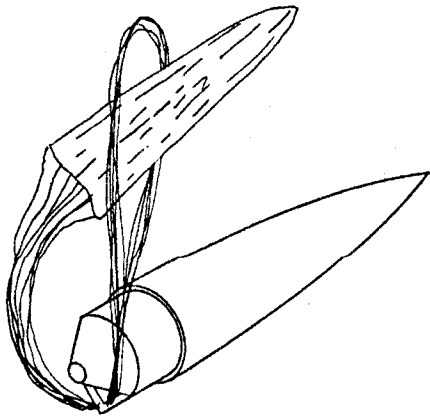
With a razor blade or hobby knife, clear the excess plastic from the screw eye.

18



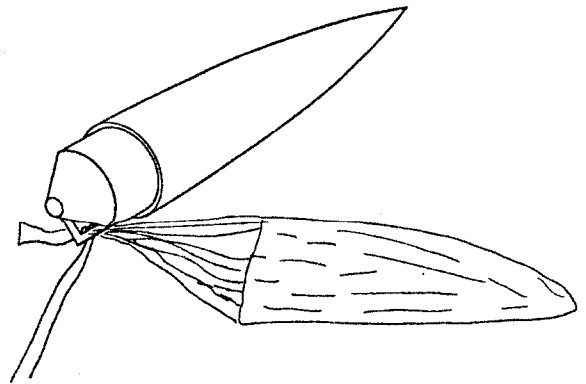
Thread the shroud line loops through the screw eye.

19



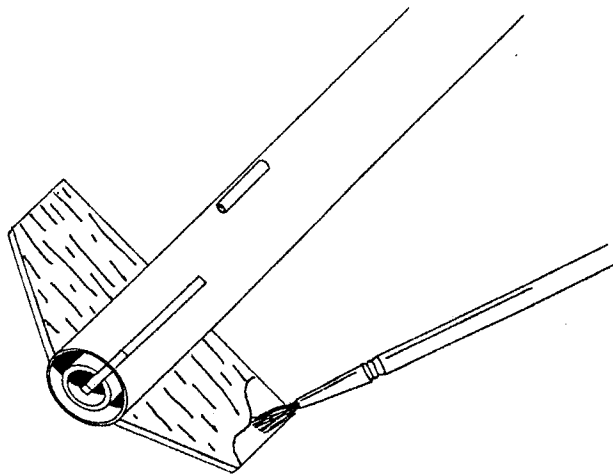
Take the loop ends and pass the parachute through.
Pull the parachute tight.

20



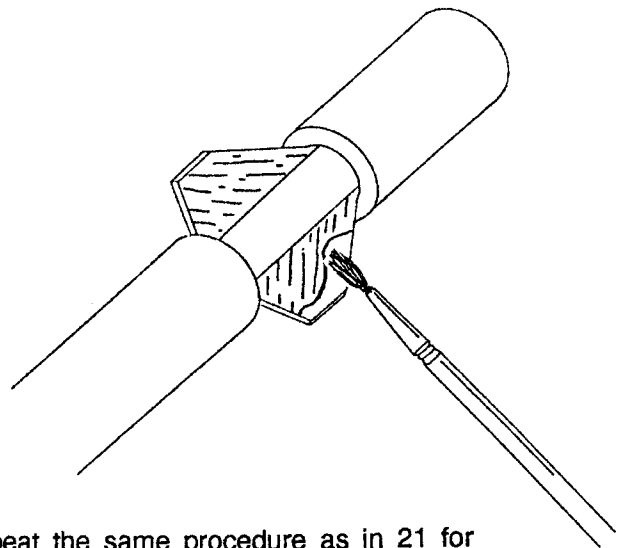
Tie the end of the shock cord to the screw eye.

21



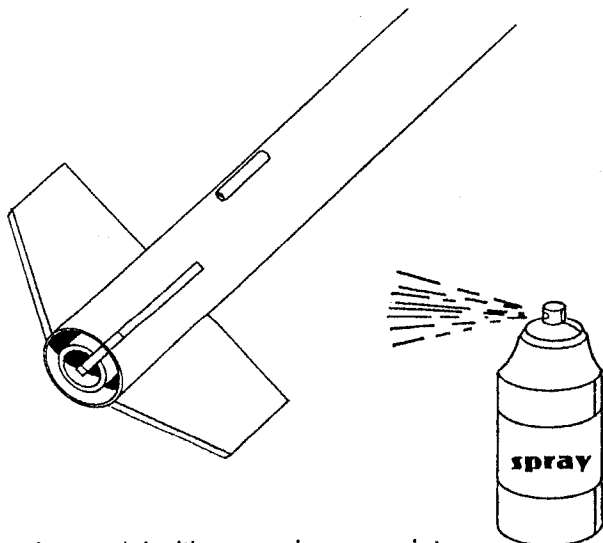
Apply sanding sealer to all four fins. When the sealer dries, sand with fine sandpaper. Do this three times or until the grain is filled.

22



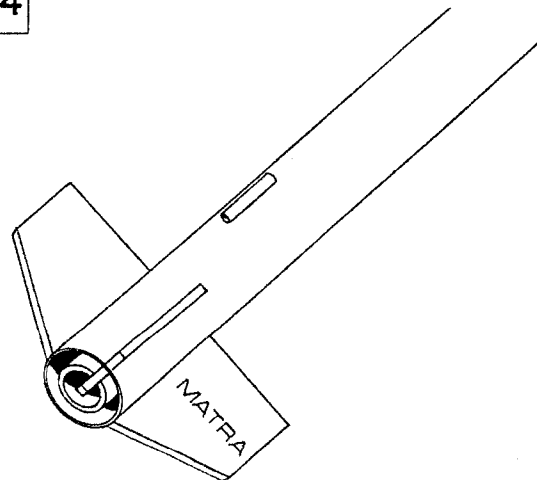
Repeat the same procedure as in 21 for the fake upper stage fins.

23



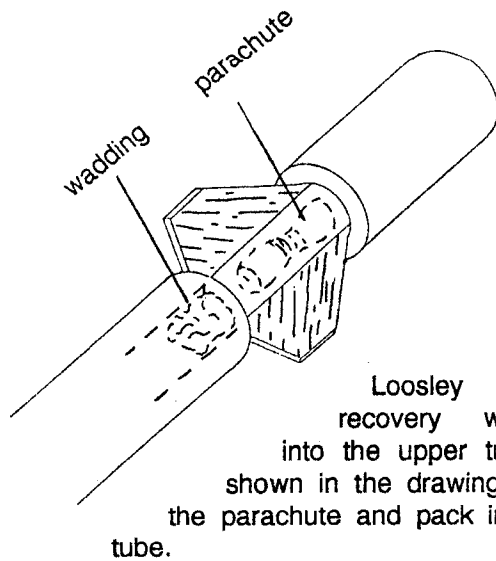
Spray the model with enamel spray paint.

24



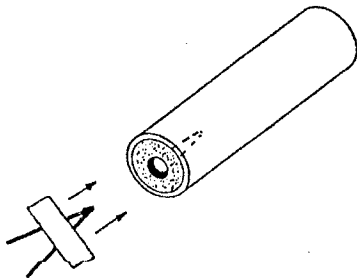
Dip the decals in water for 30 seconds and slide them onto the model.

25



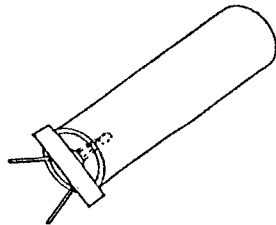
Loosley pack recovery wadding into the upper tube as shown in the drawing. Fold the parachute and pack into the tube.

26



Insert the igniter into a D12-5 model rocket engine.

27



1. Tape the igniter into place or use one of the newer igniter plugs.
2. Insert the engine into the motor mount; the clip should securely hold the engine in place.
3. Place the model on the launcher and hook up your launch equipment (not included). Keep at least 15 feet when launching.

Matra^{T.M.}

INSTRUCTIONS

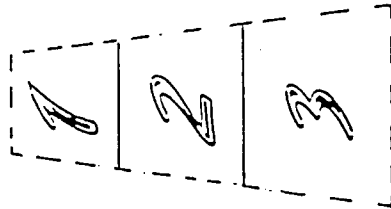
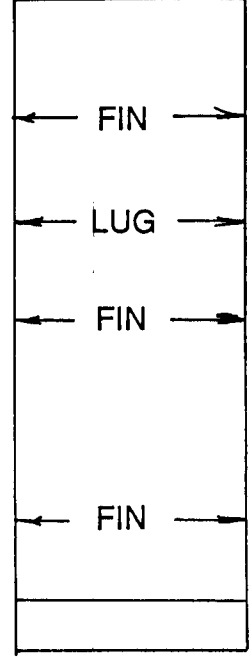
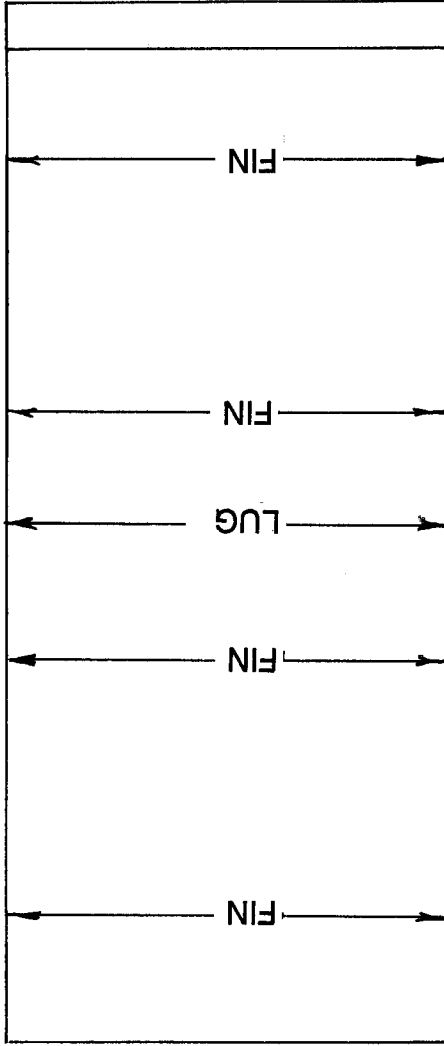
N.A.R. MODEL ROCKET SAFETY CODE

1. **MATERIALS**-My model rocket will be made of lightweight materials such as paper, wood, rubber and plastic suitable for the power used and the performance of my model rocket. I will not use any metal for the nose cone, body or fins of a rocket.
2. **MOTORS**-I will use only commercially-made, NAR-certified model rocket motors in the manner recommended by the manufacturer. I will not alter the model rocket motor (engine), its parts or its ingredients in any way.
3. **RECOVERY**-I will always use a recovery system in my model rocket that will return it safely to the ground so it may be flown again. I will use only flame-resistant recovery wadding if wadding is required by the design of my model rocket.
4. **WEIGHT AND POWER LIMITS**-My model rocket will weigh no more than 1,500 grams (53 ounces) at liftoff and its rocket motor(s) will produce no more than 320 Newton-seconds (4.45 Newtons equals 1.0 pound) of total impulse. My model rocket will weigh no more than the motor manufacturer's recommended maximum liftoff weight for the motors used or I will use motors recommended by the manufacturer for my model rocket.
5. **STABILITY**-I will check the stability of my model rocket before its first flight, except when launching a model rocket of already proven stability.
6. **PAYLOADS**-Except insects, my model rocket will never carry live animals or a payload that is intended to be flammable, explosive or harmful.
7. **LAUNCH SITE**-I will launch my model rocket outdoors in a cleared area, free of tall trees, power lines, buildings, and dry brush and grass.
8. **LAUNCHER**-I will launch my model rocket from a stable launch device that provides rigid guidance until the model rocket has reached speed adequate to ensure a safe flight path. To prevent accidental eye injury, I will always place the launcher so the end of the rod is above eye level or I will cap the end of the rod when approaching it. I will cap or disassemble my launch rod when not in use and I will never store it in an upright position. My launcher will have a jet deflector device to prevent the motor exhaust from hitting the ground directly. I will always clear the area around my launch device of brown grass, dry weeds, or other easy-to-burn materials.
9. **IGNITION SYSTEM**-The system I use to launch my model rocket will be remotely controlled and electrically operated. It will contain a launching switch that will return to "off" when released. This system will contain a removable safety interlock in series with the launch switch. All persons will remain at least 15 feet from the model rocket when I am igniting model rocket motors totalling 30 Newton-seconds or less of total impulse. I will use only electrical igniters recommended by the motor manufacturer that will ignite model rocket motor(s) within one second of actuation of the launching switch.
10. **LAUNCH SAFETY**-I will ensure that people in the launch area are aware of the pending model rocket launch and can see the model rocket's liftoff before I begin my audible 5-second count down. I will not launch a model rocket so its flight path will carry it against a target. If my model rocket suffers a misfire, I will not allow anyone to approach it or the launcher until I have made certain that the safety interlock has been removed or that the battery has been disconnected from the ignition system. I will wait one minute after a misfire before allowing anyone to approach the launcher.
11. **FLYING CONDITIONS**-I will launch my model rocket only when the wind is no more than 20 miles per hour. I will not launch my model rocket so it flies into clouds, near aircraft in flight, or in a manner that is hazardous to people or property.
12. **PRE-LAUNCH TEST**-When conducting research activities with unproven model rocket designs or methods, I will, when possible, determine the reliability of my model rocket by pre-launch tests. I will conduct the launching of an unproven design in complete isolation from persons not participating in the actual launching.
13. **LAUNCH ANGLE**-My launch device will be pointed within 30 degrees of vertical. I will never use model rocket motors 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.

I pledge to follow the N.A.R. Safety Code in all of my model rocket activities.

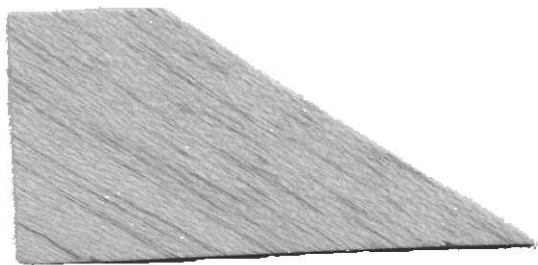
Rocketeer's Signature _____

Matra Template Sheet

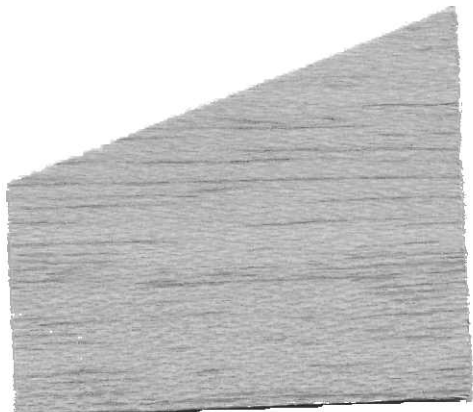


1
2
3
4
5
6
7

3 EA



4 ea



ALL $\frac{3}{32}$ " Balsa



DANGER
NITROGEN FILL

DANGER
NITROGEN FILL

MATRA
MATRA
MATRA
MATRA

SERIAL NO. 073-5981
USE ONLY 8270 FUEL
CLASS: MATRA

U S U S

N T N T

SERIAL NO. 073-5981
USE ONLY 8270 FUEL
CLASS: MATRA

I A I A

T T T T

SERIAL NO. 073-5981
USE ONLY 8270 FUEL
CLASS: MATRA

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D S D S

