

**MRC**

# TIME TRAVELER

**High flying  
Model Rocket  
Kit flies over  
1,000 feet high**

- Computer aided transition design
- Futuristic Decals
- Pre-Cut Balsa Fins
- Durable, Plastic Nose Cone

**Great for  
beginners**



**Model Rectifier  
Corporation**

2500 Woodbridge Ave.  
Edison, New Jersey 08817

Length: 20.56 in (522.2 mm)  
Body Diameter: .976 in (24.8 mm)  
to .736 in (18.7 mm)  
Weight: 1.02 oz. (28.92 gms)

**Recommended Engine  
Sizes:** A6-2, A8-3 (first flight)  
B4-4, B6-4, C6-3, C6-5

Recommended for ages 10 to adult.  
Adult supervision recommended  
for ages 12 years and under. Keep  
out of reach of small children.



# TIME TRAVELER

KIT NO. TR 111

SKILL LEVEL: IDEAL FOR BEGINNERS

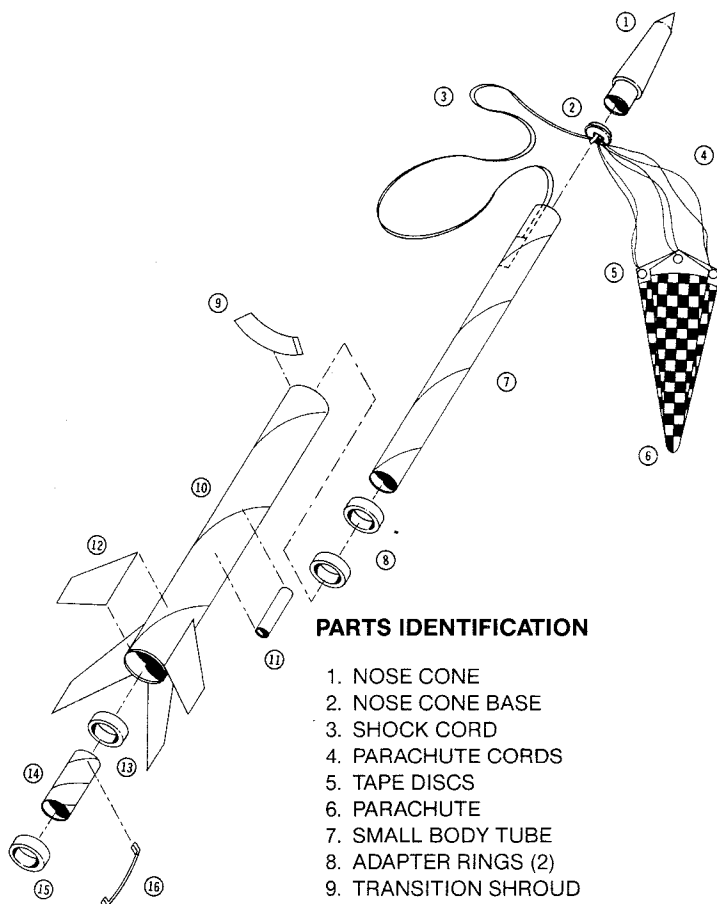


MODEL RECTIFIER CORPORATION

2500 WOODBRIDGE AVENUE

EDISON, NJ 08817

Tel No. (201) 985-7800



## PARTS IDENTIFICATION

1. NOSE CONE
2. NOSE CONE BASE
3. SHOCK CORD
4. PARACHUTE CORDS
5. TAPE DISCS
6. PARACHUTE
7. SMALL BODY TUBE
8. ADAPTER RINGS (2)
9. TRANSITION SHROUD
10. LARGE BODY TUBE
11. LAUNCH LUG
12. FINS
13. ADAPTER RING
14. ENGINE MOUNT TUBE
15. ADAPTER RING
16. ENGINE HOOK

## SAFETY INSTRUCTIONS

For the safe and reliable performance of your model rocket  
PLEASE NOTE:

1. That model rockets are not "toys" - that they are capable of causing personal injury to you and to others as well as property damage.
2. That you and you alone are responsible for the safe operation of your rocket.
3. That you must properly build and operate your model with a clear sense of that responsibility; that means taking no chances or risks which might endanger yourself or others.
4. That you read and observe the rules of the Model Rocketry Safety Code printed on the back of the cardboard insert included in your kit.

Remember, the thrill of rocketry lies in the safe construction of the rocket and in its careful operation. Make each launch a success and you will be proud of yourself and will really enjoy your hobby.

## HELPFUL HINTS

Before building this kit gather the necessary tools and materials and read all instructions thoroughly. In addition, keep the following points in mind.

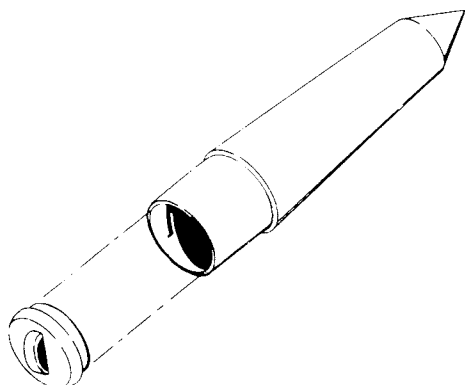
1. Read and understand each step and study the drawings before beginning any part in that step.
2. Always test fit the parts before assembling them. If they do not fit because they are too tight, sand them slightly. If they are too loose, build them up as described in the instructions.
3. Proper glue joints are vital for the safe operation of your model rocket. Use the recommended glues in the manner outlined by these instructions and by the glue manufacturer.

## ITEMS REQUIRED FOR ASSEMBLY OF YOUR TIME TRAVELER

- |                                       |   |
|---------------------------------------|---|
| 1. Cotton swab on stick (like Q-tip™) | 7. Modeling Knife   |
| 2. Pencil                             | 8. Sanding Sealer   |
| 3. 400 grit sandpaper                 | 9. White Glue or Aliphatic Resin Glue (such as Titebond™) |
| 4. Scissors                           | 10. Instant Glue (Crazy Glue™) or Plastic Glue            |
| 5. Ruler                              | 11. Enamel Paint  |
| 6. Modelers Paint Brush               |   |

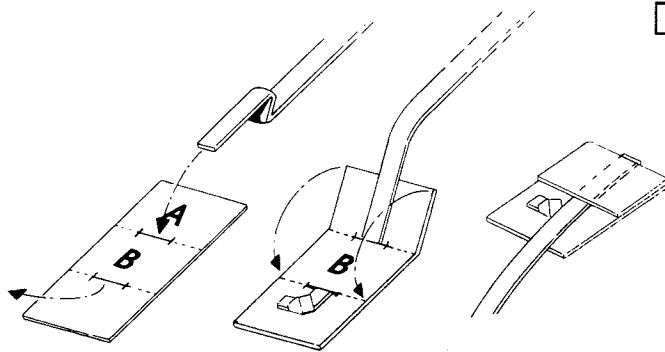
## ASSEMBLY INSTRUCTIONS

### Step 1

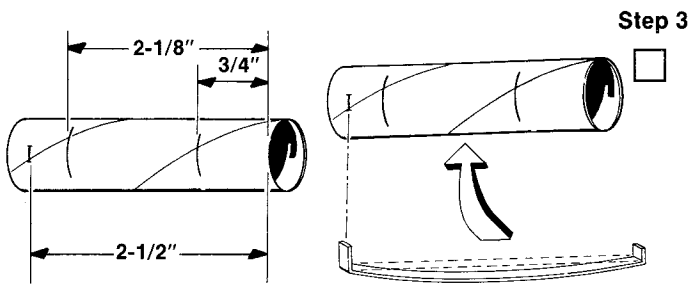


Using plastic cement or instant glue, glue the nose cone base to the nose cone. Wipe off excess glue and put aside to dry.

### Step 2

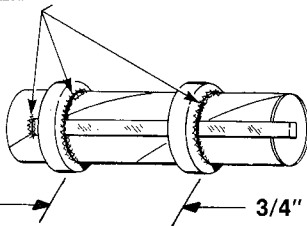


Cut out the shock cord holder on page 4 of the instructions. After it has been cut out make two slits with your modelers knife on two dotted lines. Do not make slits any wider than is marked by the dotted lines. Feed the shock cord through the two slits as indicated in the drawing and put a small knot at the end of the shock cord. Apply white glue to Section B and fold A onto B along the large dotted line. Allow to dry.



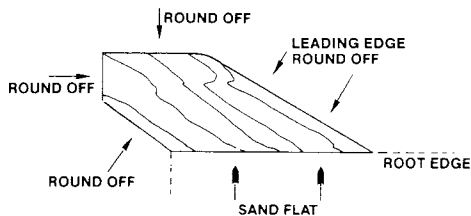
Step 3

Make two marks on engine mounting tube at  $3/4"$  and at  $2-1/8"$  from the rear of the tube. Cut a  $1/8"$  slit in the tube at  $2-1/2"$  from the rear of the tube. Put a slight bend into the engine hook. Make a note that the engine hook has one end larger than the other. Insert the larger sized end of the hook into the slit as shown.



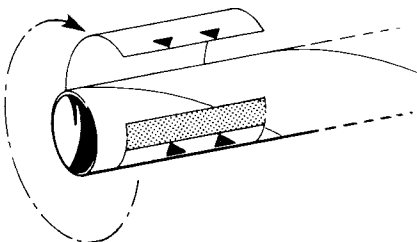
Step 4

Sand the inside of the rings for a proper fit. Push one ring onto the engine tube mount from the front and make it line up with the  $3/4"$  mark on the tube so that the ring itself is no more than  $3/4"$  from the rear of the tube. Slide the second ring onto the engine tube mount until it matches up with the  $2-1/8"$  inch mark. Apply a ring of white glue on both sides of each ring at the joint where the rings meet the engine mount tube. Do not get glue on the outer surface of the rings. Apply a small dab of glue over the slit where the engine hook is inserted. Set this assembly aside to dry with the engine mount resting upright so the glue can dry evenly.



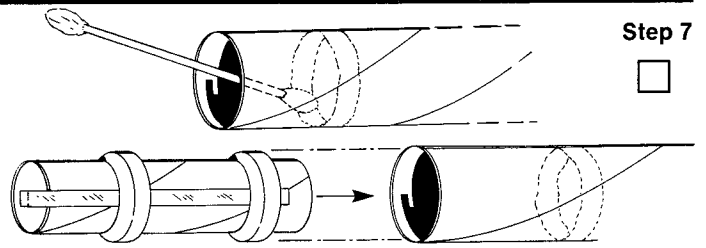
Step 5

Locate the die-cut fin sheet. Gently sand top and bottom sides of the sheet, and remove the fins by cutting along the die-cut marks using your modeling knife. Sand all edges so that the fins are identical. Refer to the diagram to identify the root edge. Sand the root edge flat. All other edges including the leading edge are to be rounded evenly.



Step 6

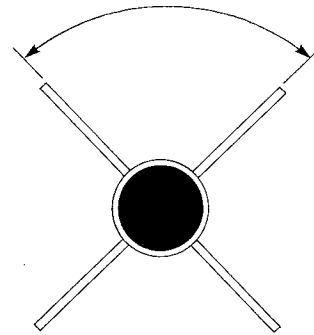
Cut out the paper tube marking guide on page 4. Roll ends of the guide in the direction of the large arrows around the outside of the large body tube. Line up the alignment arrows and tape the ends as shown in the diagram. "TAPE ONLY THE GUIDE; DO NOT PUT TAPE ON THE BODY TUBE." Position bottom of the guide at  $1/4"$  from the end of the tube and put a small mark on the body tube by each vertical arrow. You should have ten marks on the tube when done. Mark each line if it is for a fin or the launching lug. Slide the marking guide off the body tube and gently clamp the tube between two solid objects. Using a ruler join each pair of marks in a vertical direction as straight as possible. The launch lug line should extend for  $6"$  from the end of the body tube.



Step 7

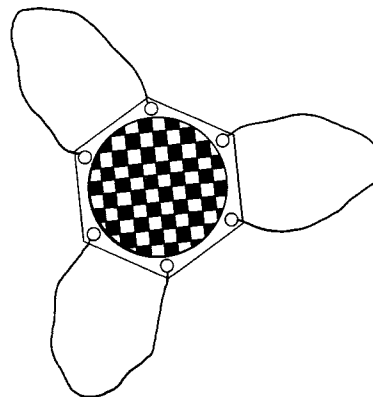
Test fit the engine mount unit into the large body tube with the engine hook facing outwards. Turning the engine mount as you insert it will make it easier to fit the tube. If engine mount inserts with great difficulty, you may sand the adapter rings to achieve a snug fit inside the body tube.

Apply a ring of glue inside the body tube approximately  $1"$  from the tube edge. Insert the engine mount tube as you did before in one motion. Do not stop while inserting the tube since the glue might "grab" the mount while in the wrong position. The rear ends of the body tube and the engine mount tube should line up evenly. For best results we suggest that the engine hook should be located directly underneath the mark for the launch lug line.



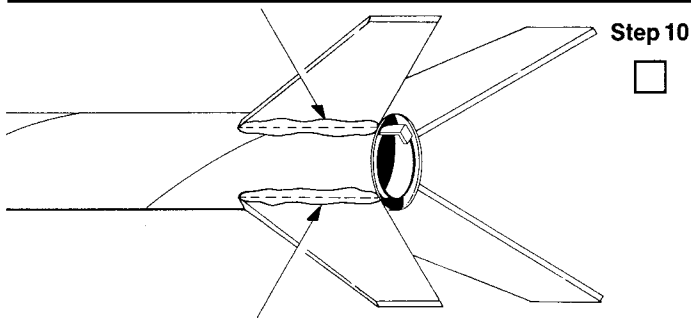
Step 8

Using a cotton swab apply a small application of white glue to the root edge of each fin. When doing this, rub the glue thoroughly into the wood to assure a better bond. Next, apply a small bead of glue to one fin and let it dry for about two minutes, then attach the fin to one of the marked fin lines on the tube as per diagram. Be sure the fin extends vertically away from the body tube and is straight along the pencil line. The bottom of the root edge should be even with the bottom of the tube. After each fin has dried, apply the next fin in the same manner. Erase any leftover pencil marks after the glue has dried.



Step 9

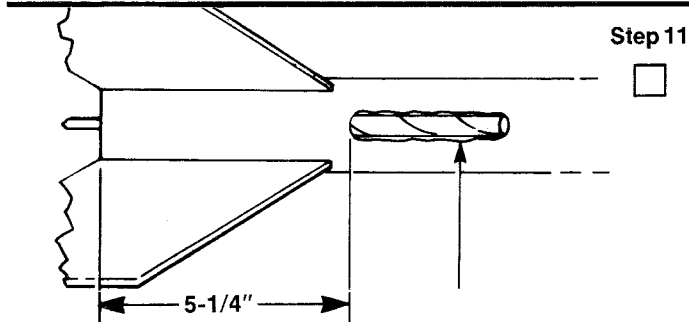
Cut the parachute out along the dotted lines printed on the sheet. Take the bundle of parachute cord and cut it into 3 pieces of equal length, of about 24 inches each. Take one end of the parachute cords and bend it over for about  $1/8"$  of an inch. Place this bent end on one of the circles drawn on the corner of the parachute and firmly press a self-adhesive tape disc over the end of the cord to hold the cord in place. Bend the other end of the parachute cord and tape it down to an adjacent corner of the parachute. Repeat this for the remaining two parachute cords.



Step 10



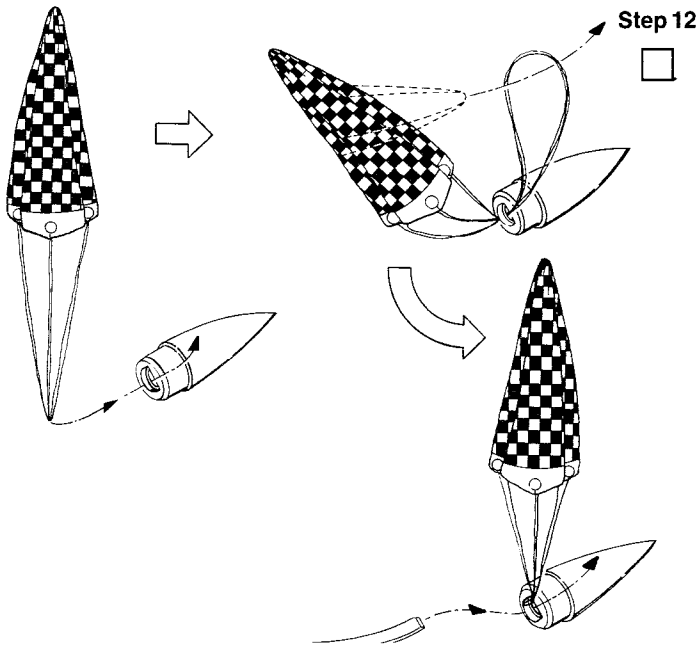
Apply a line of white glue to each side of the four fins for reinforcement.



Step 11



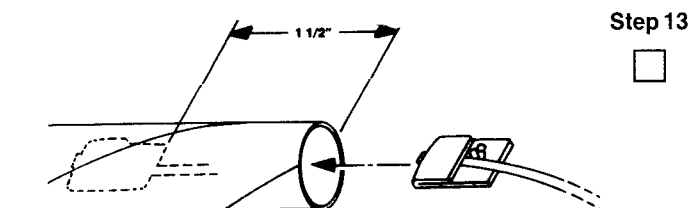
Now glue the launch lug onto the body tube. The rear of the lug should be 5-1/4" from end point of the body tube. See diagram. After the glue has dried, add an additional bead of glue to each side of the launch lug as a reinforcement bond.



Step 12



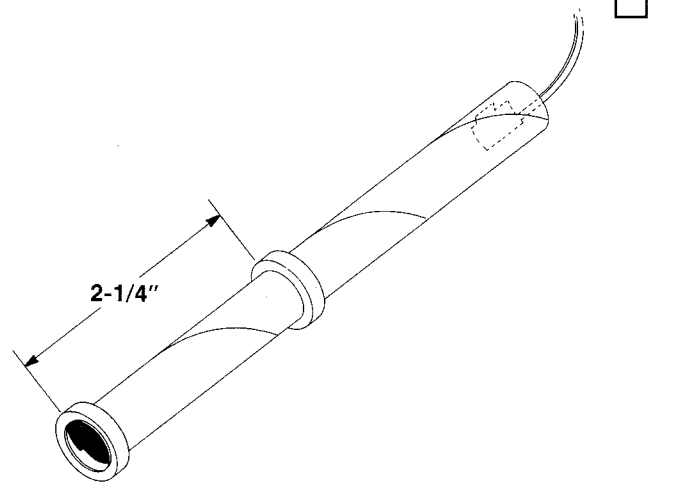
Hold the parachute by its center and pull the cords together evenly. Pass the cords through the eye of the nose cone base and loop the cords around the nose cone so that the parachute is firmly attached to the nose cone as shown in the diagram. Tie the free end of the shock cord to the nose cone base with a double knot and put a drop of glue on the knot.



Step 13



Apply glue to a spot 1-1/2" inside the top of the small body tube using a cotton swab. Press the shock cord mount onto the glue and hold it in place for a minute. Do not let the mount slide away from this position.



Step 14



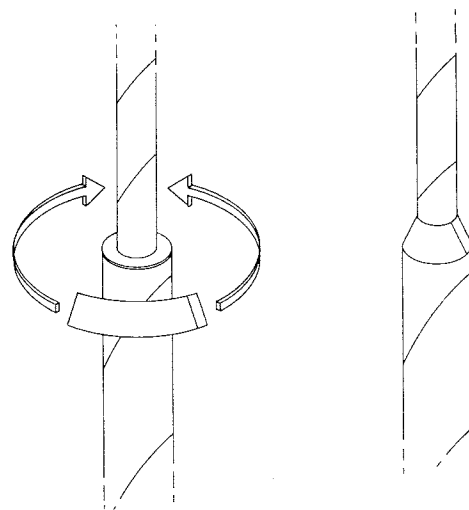
Make a pencil mark at 2-1/4" from the bottom end of the small body tube at the opposite end of the tube from the shock cord mount. Slide one adapter ring onto the body tube and glue it with one edge lined up with the pencil mark as shown in the diagram. Glue the remaining adapter ring with the edge of the ring lined up with the end of the body tube. Let the assembly dry before proceeding.

Step 15



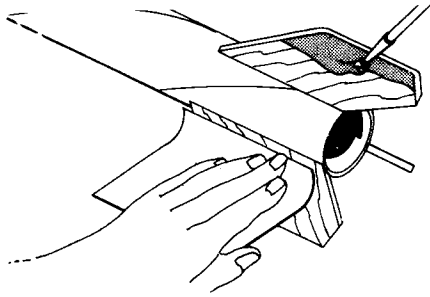
Apply a ring of glue to the upper adapter ring on the small body tube and a ring of glue to the inside of the top of the large body tube approximately 2-1/4" from the tube edge. Insert the small body tube with adapters into the large body tube. The top edge of the uppermost adapter ring and the top edge of the large body tube should line up evenly.

Step 16



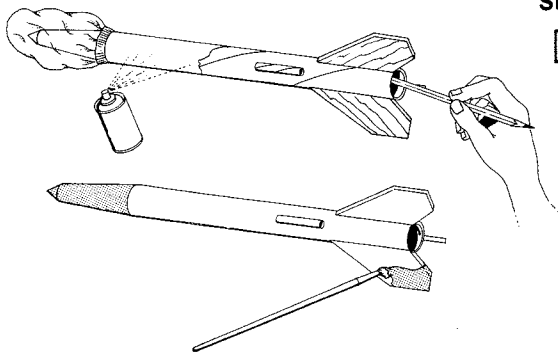
Cut out the transition shroud from the enclosed paper sheet. Apply glue to the curved edges of the shroud and to the shaded overlap tab. Lay the shroud over the joint of the large and small body tubes with the large arc end of the shroud resting on top of the large body tube. Wrap the shroud around the joint of the tubes so that there are no gaps between the shroud and the body tubes. For appearance's sake it is best to locate the overlap tab on the same side as the launch lug.

### Step 17



Sand the fins using the 400 grit sandpaper so that the fins are smooth before painting the rocket. As an option you can seal the balsa fins using sanding sealer (available at your hobby shop). If you use sealer, sand the fins after the application of sealer has dried to get the smoothest finish.

### Step 18



To prepare for painting, the shock cord, parachute and nose cone should be protected from paint overspray. You may paint the rocket as shown on the enclosed cardboard insert.

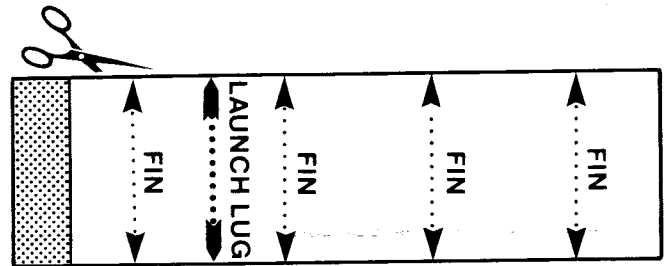
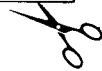
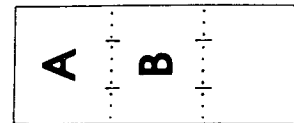
**FOR SAFE LAUNCHES, YOU MUST FOLLOW THE ACCOMPANYING CHECKLIST EVERY TIME YOU USE YOUR MODEL ROCKET.**

### Step 19



The special MRC self-adhesive decals included in this kit can be instantly applied to the body tube after the paint has dried. Take your time in applying the decals because the glue on them is very strong and decals cannot be removed once applied.

To apply decals, remove individual decals from the sheet. Position the decal on the rocket lightly and carefully. Press the decal firmly onto the rocket, making sure the decal surface is evenly applied, with no bubbles or loose edges, by rubbing the surface with your fingernail. You may have to cut decals to fit around the launch lugs. Use the cardboard insert within polybag for decal location.



**READ AND FOLLOW THE SAFETY WARNINGS ON THE CARDBOARD INSERT EACH TIME YOU USE YOUR MODEL ROCKET.**

### LAUNCH CHECKLIST

1. Disarm the launch system by removing the safety key.
2. Loosely pack two squares of flameproof wadding into the body tube from the forward end where the shock cord mount is located. The wadding should slide smoothly into the center of the small tube for maximum effect.
3. Stretch the parachute out by holding all parachute cords at the end where they are tied together and at the center of the parachute itself. Roll the parachute to fit the body tube easily. A light application of talcum powder to the parachute as it is folded will help deployment of the parachute. Be sure the wadding has been inserted before inserting the parachute. It is best not to pack the parachute until you are ready for a launch.
4. Install the nose cone over the recovery device. The nose cone should fit snugly; not too tight or too loose. If the fit is too tight, you can sand the inside edge of the body tube or the nose cone shoulder lightly until you achieve a snug fit. If the nose cone is too loose you can add masking tape to its shoulder to get a snug fit, or you can build up the inside edge of the body tube with a light application of glue. Be sure the glue is dry before test fitting the nose cone!
5. Carefully select the engine for launch. For a first flight, use the A8-3 engine as recommended. Insert the igniter as per engine instructions.
6. Engine Installation — Insert the engine into the engine tube mount until it stops against the top portion of the engine hook. The rear hook must latch over the rear of the engine. The igniter leads should be positioned between two fins and away from the launch lug side of the rocket. "DOUBLE CHECK THAT THE LAUNCH SYSTEM HAS BEEN DISARMED AS PER STEP 1 ABOVE."
7. Fit the launch rod through the launch lug of the rocket. The nose of the rocket should be pointing upwards. Be sure the rocket slides freely on the launch rod. Attach the launch system clips to the igniter leads.
8. Clear the launch area and follow all range and safety procedures.
9. Arm the launch system.
10. Countdown to launch!

IF A MISFIRE OCCURS, DISARM THE LAUNCH SYSTEM AND **WAIT ONE MINUTE** BEFORE APPROACHING THE ROCKET TO DETERMINE THE CAUSE OF MISFIRE. REMOVE THE SAFETY KEY FROM THE LAUNCH SYSTEM BEFORE YOU APPROACH THE LAUNCHER. **DO NOT** PUT YOUR HANDS AND FACE NEAR THE TOP OF THE ROCKET...

When you are ready to leave the launch site, we suggest you pick up and properly dispose of all debris such as used igniters, flameproof wadding or engine packages. A clean launch site is a safe launch site!

ODAY  
1993

W T F S  
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OCTOBER 7  
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NOVEMBER 8  
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18 19 20 21 22 23 24  
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DECEMBER 9  
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TRANSITION SHROUD





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