

# FIREFIGHTER

KIT NO. TR 101

SKILL LEVEL: IDEAL FOR BEGINNERS



MODEL RECTIFIER CORPORATION  
2500 WOODBRIDGE AVENUE  
EDISON, NJ 08817  
Tel No. (201) 985-7800

## 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.

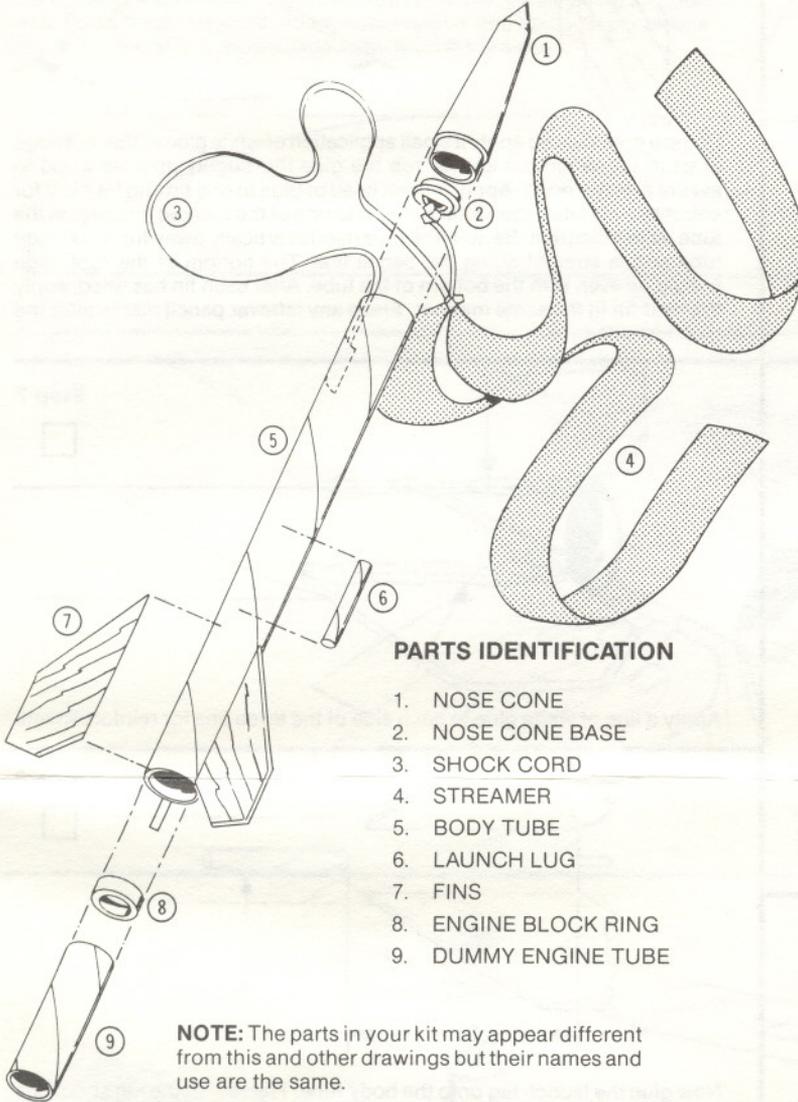
## HELPFUL HINTS

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 FIREFIGHTER

- |                                       |   |
|---------------------------------------|---|
| 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               |   |



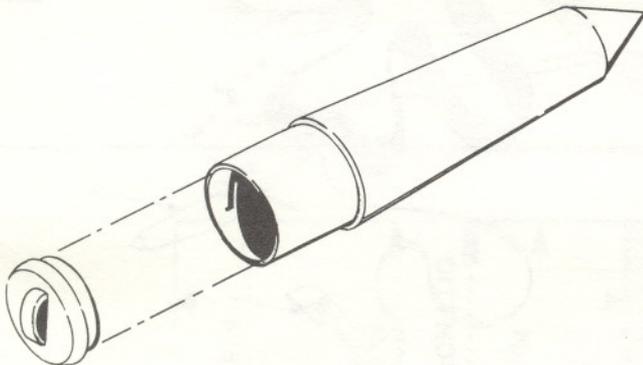
### PARTS IDENTIFICATION

1. NOSE CONE
2. NOSE CONE BASE
3. SHOCK CORD
4. STREAMER
5. BODY TUBE
6. LAUNCH LUG
7. FINS
8. ENGINE BLOCK RING
9. DUMMY ENGINE TUBE

**NOTE:** The parts in your kit may appear different from this and other drawings but their names and use are the same.

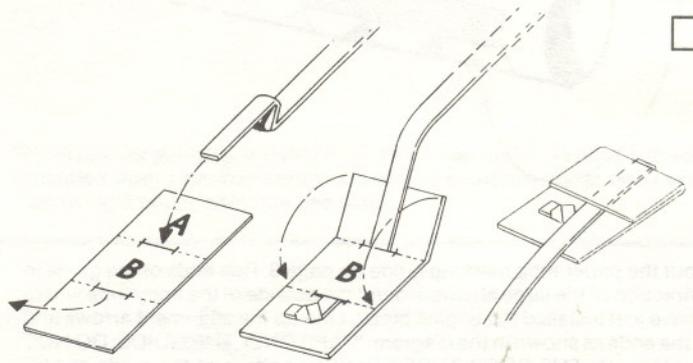
## ASSEMBLY INSTRUCTIONS

Step 1

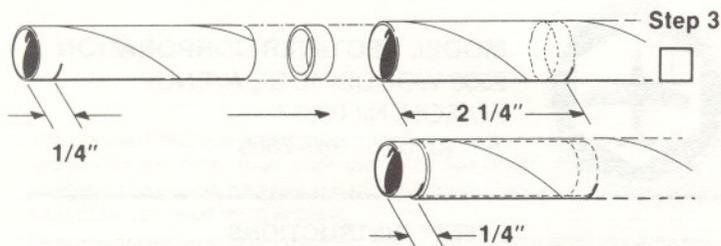


Using plastic cement or instant glue, glue the nose cone base to the nose cone. Wipe off excess glue and put aside to dry.

Step 2

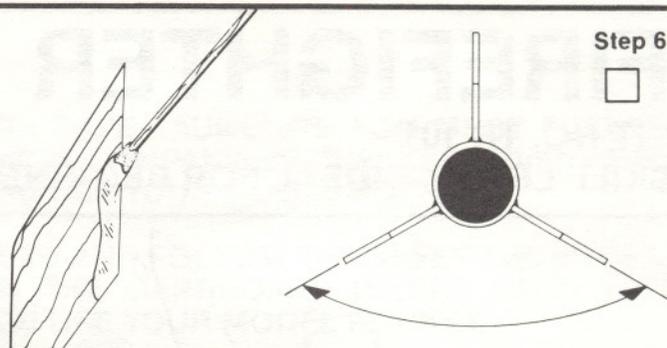


Cut out the shock cord holder on this page 3 of the instructions. After it has been cut out make two slits with your modelers knife on two dotted lines. Do not make slits any wider than is marked by the dotted lines. Feed the shock cord through the two slits as indicated in the drawing and put a small 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.



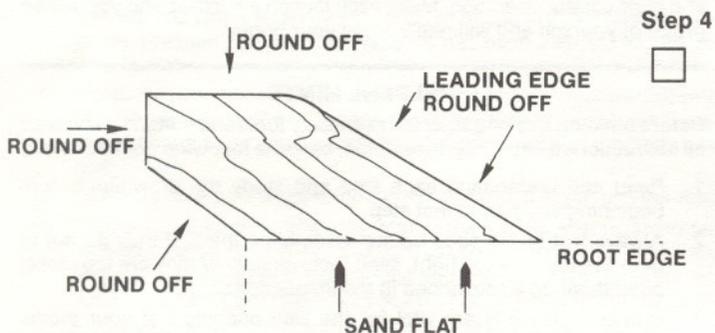
**Step 3**

Locate the body tube and measure 2-1/4" from the end of the tube. Lightly mark this point with a pencil. Locate the dummy engine tube. Now taking pencil and ruler mark the tube 1/4" from one end. Using a cotton swab apply a ring of white glue to the inside of body 2-1/4" from end as you have marked and as shown on the diagram. Hold one finger on the mark on the body tube so you can judge where to put the ring of glue. Now insert the engine block into the body tube and continue pushing the block into the tube using the dummy engine. The dummy engine should be inserted up to the 1/4" mark you made on the dummy engine. **DO NOT STOP WHILE INSERTING. REMOVE THE DUMMY ENGINE IMMEDIATELY.** Be sure the engine block ring has made contact with the glue ring.



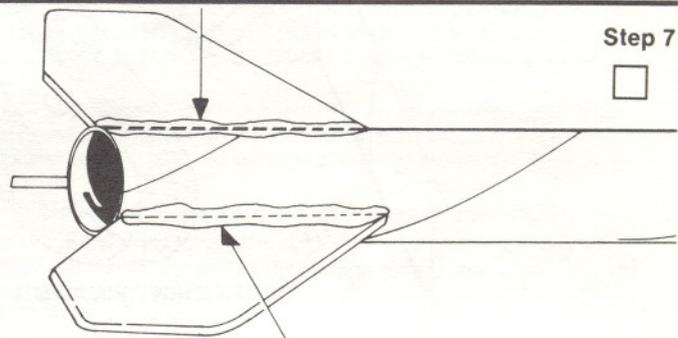
**Step 6**

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. 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.



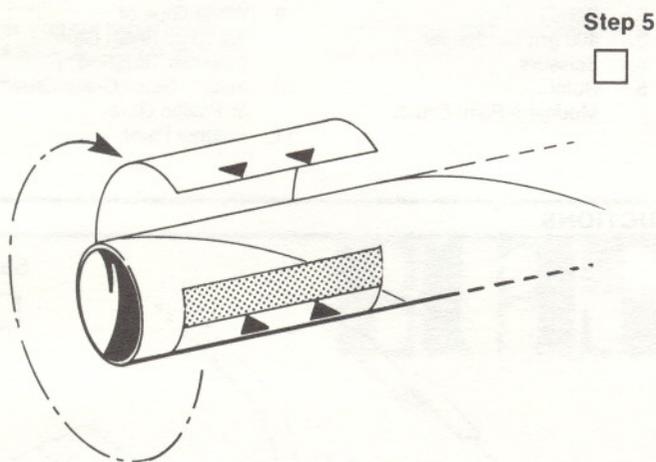
**Step 4**

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.



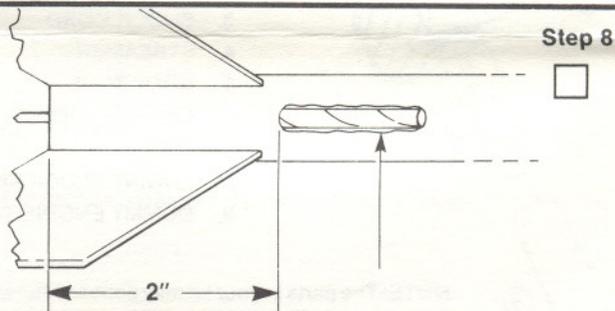
**Step 7**

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



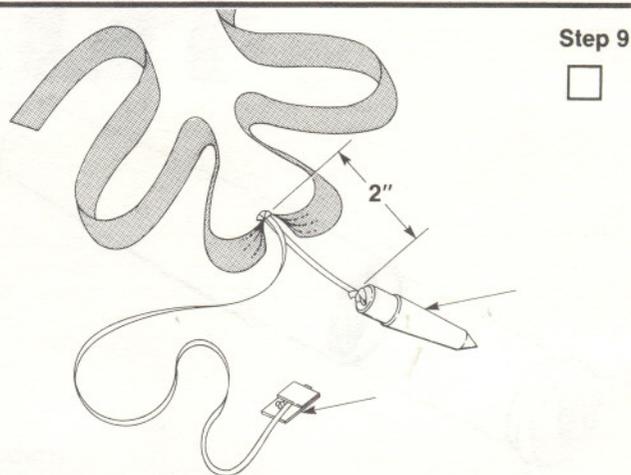
**Step 5**

Cut out the paper tube marking guide on page 3. Roll ends of the guide in the direction of the large arrows around the outside of the body tube where you have just installed the engine block. 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 eight marks on the tube when done. Mark each line if it is for a fin or the launch 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 5" from the end of the body tube.



**Step 8**

Now glue the launch lug onto the body tube. The rear of the lug should be 2" 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.



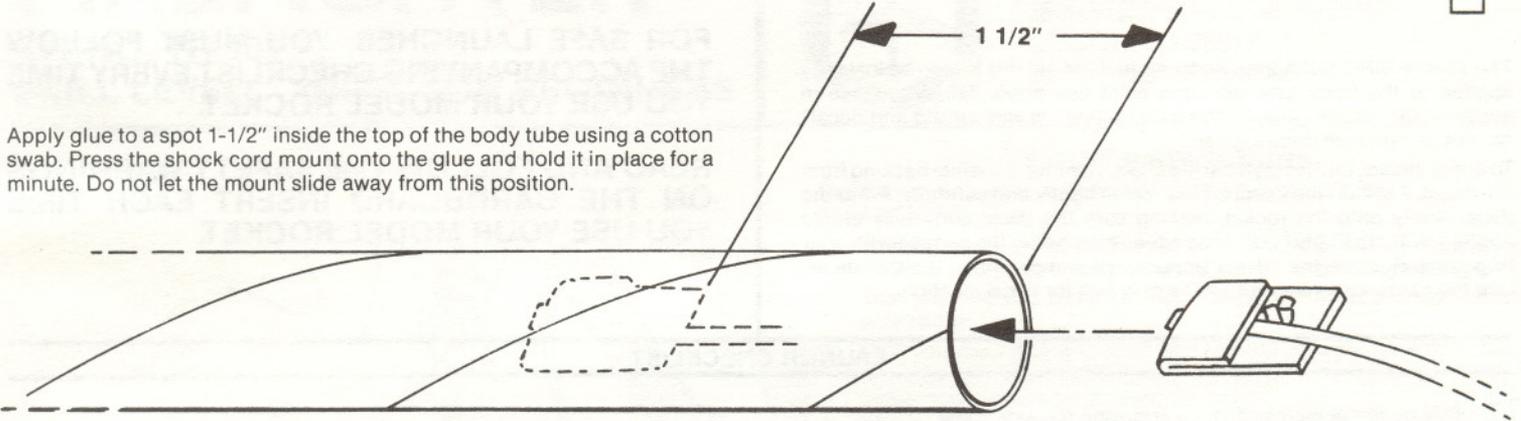
**Step 9**

Tie the shock cord around the middle of the streamer with a double knot. Leave 2" free from the knot then tie the nose cone to the shock cord with a double knot. Put a drop of white glue on the nose cone knot.

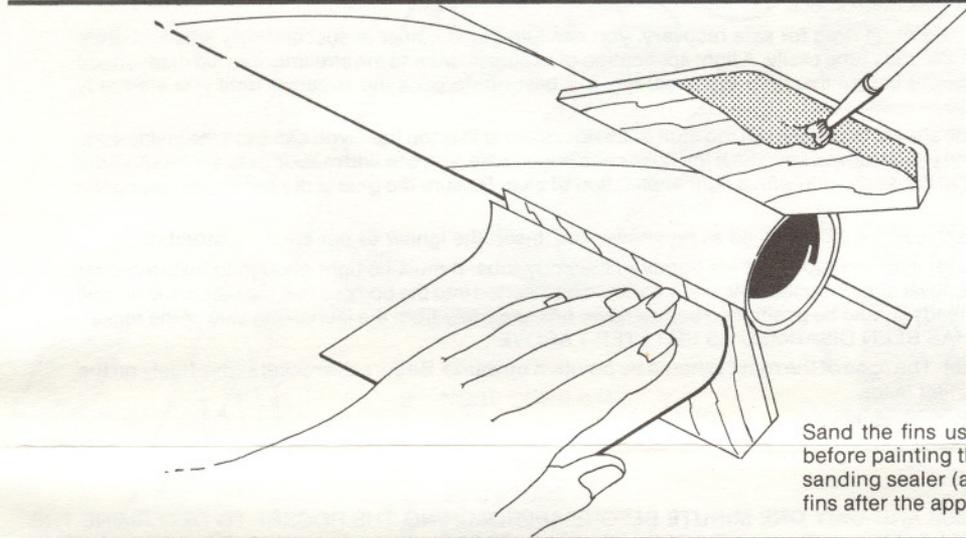
Step 10



Apply glue to a spot 1-1/2" inside the top of the 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.

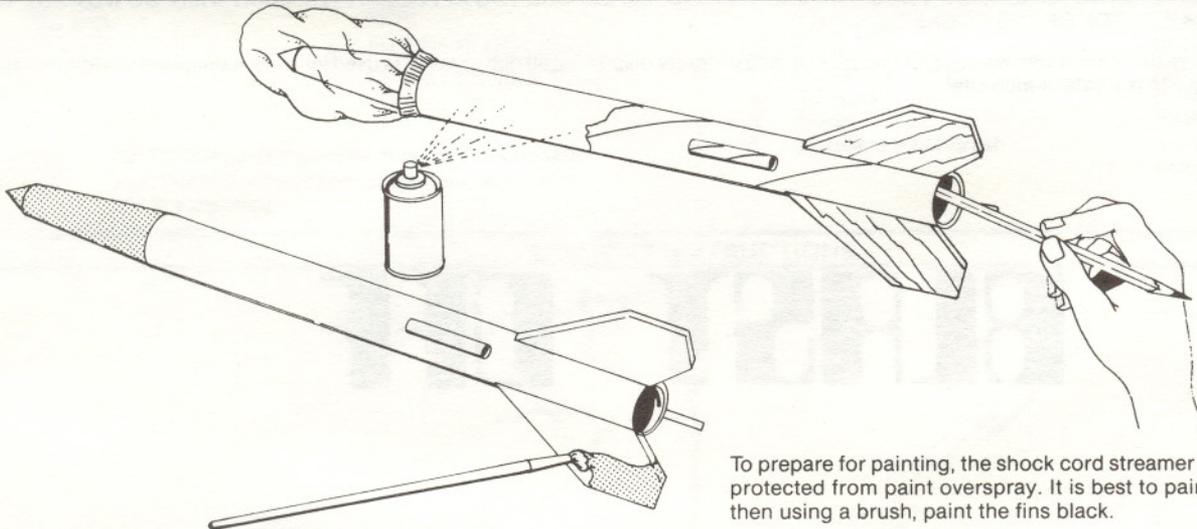


Step 11

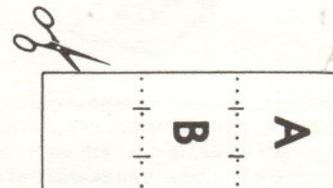
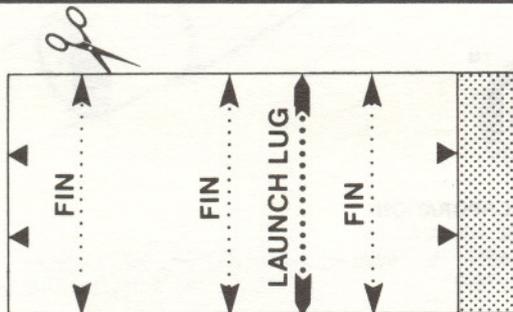


Sand the fins using the 400 grit sandpaper so that the fins are smooth before painting the rocket. As an option you can seal the balsa fins using sanding sealer (available at your hobby shop). If you use sealer, sand the fins after the application of sealer has dried to get the smoothest finish.

Step 12



To prepare for painting, the shock cord streamer and nose cone should be protected from paint overspray. It is best to paint the rocket body white, then using a brush, paint the fins black.



### Step 13



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, cut decals from the sheet. Remove the white backing from the decal. 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. Remove the thicker upper sheet without lifting the thin decal. Use the cardboard insert within the poly bag for decal location.

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

**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 tube for maximum effect.
3. Fold the streamer in half then roll it up tightly. For maximum drag for safe recovery, you can fold the streamer in succeeding smaller halves instead. The streamer should be rolled or folded to fit the body tube easily. A light application of talcum powder to the streamer can aid deployment of the streamer. Be sure the wadding has been inserted before inserting the streamer. It is best not to pack the streamer until you are ready for a launch.
4. Install the nose cone over the streamer. 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 — Wrap the rear of the engine with masking tape so it fits tightly in the body tube. It must be tight enough to insure proper recovery deployment, but not so tight as to prevent removal after it is used. The engine should be inserted into the body so that the rear of the engine projects 1/4" out from the body tube and 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!

# BLAST OFF



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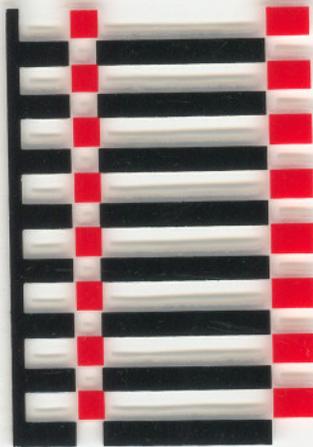
TODAY



Quick Page Finder

UNITED

STATES



# MRC **FIREFIGHTER**

## High flying Model Rocket Kit stands over one foot high

- Quick simple assembly
- All parts pre-cut
- Aerodynamically advanced design
- High impact nose cone for long life

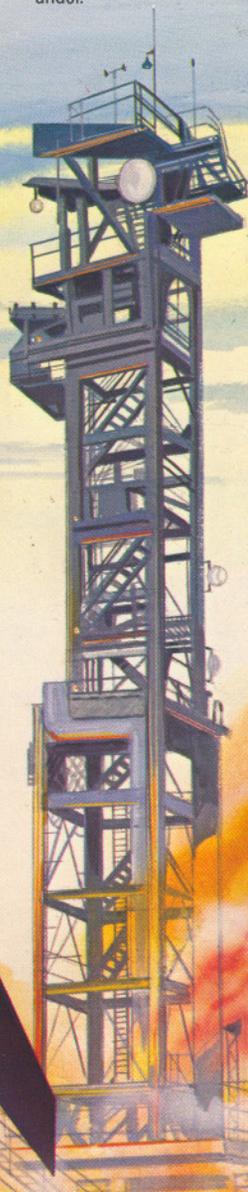
**Great for beginners**



**Model Rectifier Corporation**  
2500 Woodbridge Ave.  
Edison, New Jersey 08817

Length: 13.56 in. (344.5mm)  
Body Diameter: .736 in. (18.7mm)  
Weight: .55 oz. (15.6 grams)  
**Recommended Engine**  
Sizes: 1/2A6-2, A8-3  
(first flight) B4-4, B6-4,  
C6-5, C6-7

Recommended for ages 10 to adult. Adult supervision recommended for ages 12 years and under.



# MRC **FIREFIGHTER**

## **NAR/HIAA MODEL ROCKETRY SAFETY CODE**

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

**2. ENGINES** — I will use only pre-loaded factory made NAR safety certified model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.

**3. RECOVERY** — I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.

**4. WEIGHT LIMITS** — My model rocket will weigh no more than 453 grams (16 ozs.) at lift-off, and the engines will contain no more than 113 grams (4 ozs.) of propellant.

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

**6. LAUNCHING SYSTEM** — The system I use to launch my model rockets must be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 15 feet away from any rocket that is being launched.

**7. LAUNCH SAFETY** — I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.

**8. FLYING CONDITIONS** — I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft, or under any conditions which might be dangerous to people or property.

**9. LAUNCH AREA** — My model rockets will always be launched from a cleared area, free of any easy to burn materials, and I will only use flame resistant recovery wadding in my rockets.

**10. JET DEFLECTOR** — My launcher will have a jet deflector device to prevent the engine exhaust from hitting the ground directly.

**11. LAUNCH ROD** — To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap

the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.

**12. POWER LINES** — I will never attempt to recover my rocket from a power line or other dangerous place.

**13. LAUNCH TARGETS & ANGLES** — I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.

**14. 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.

### **Specifications**

Length: 13.56 in. (344.5mm)

Body Diameter: .736 in. (18.7mm)

Weight: .55 oz. (15.6 grams)

30" Streamer Recovery System included

### **Recommended Engine Sizes:**

1/2A6-2, A8-3 (first flight), B4-4,

B6-4, C6-5, C6-7

Paint and glue required for assembly.

Launch system and rocket engines required for flight.

## **IMPORTANT**

You must read and understand the model rocketry safety code on this card. Keep this code with you and adhere to its guidelines during all of your model rocketry activities without exception.

## **WARNING**

For Safety Purposes, **DO NOT** modify, disassemble, or in any way tamper with model rocket engines or their contents. Soak engines in water to destroy.



**Model Rectifier Corporation**  
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