

MRC HORNET

High flying Model Rocket Kit flies up to 1,000 feet high

- Quick simple assembly
- Pre-molded hi-impact nose cone and fins for long life
- Colorful decals
- Recovery parachute included

Great for beginners



**Model Rectifier
Corporation**

2500 Woodbridge Ave.
Edison, New Jersey 08817

Length: 12.91 in. (327.9mm)
Body Diameter: .976 in. (24.8mm)
Weight: 1.29 oz. (36.6 grams)
Recommended Engine
Sizes: 1/2A6-2, A8-3
(first flight) B4-4, B6-1,
C6-5, C6-7

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



HORNET

KIT NO. TR 104

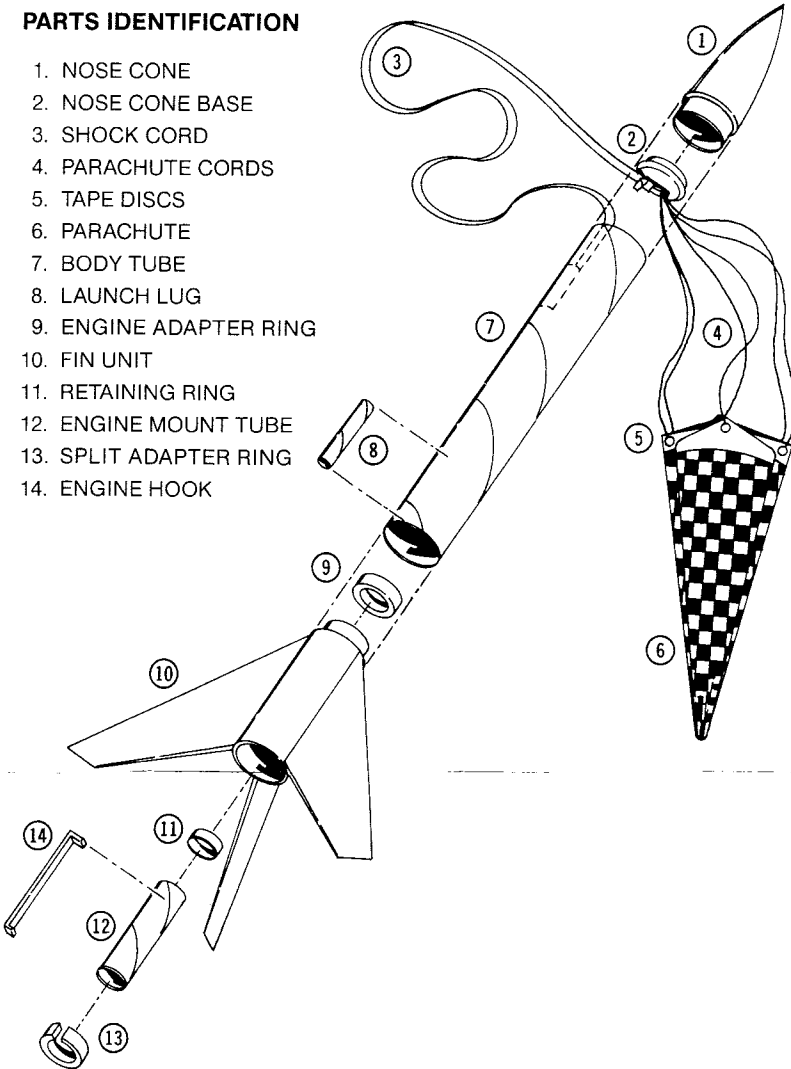
SKILL LEVEL: IDEAL FOR BEGINNERS



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. BODY TUBE
8. LAUNCH LUG
9. ENGINE ADAPTER RING
10. FIN UNIT
11. RETAINING RING
12. ENGINE MOUNT TUBE
13. SPLIT ADAPTER RING
14. 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.

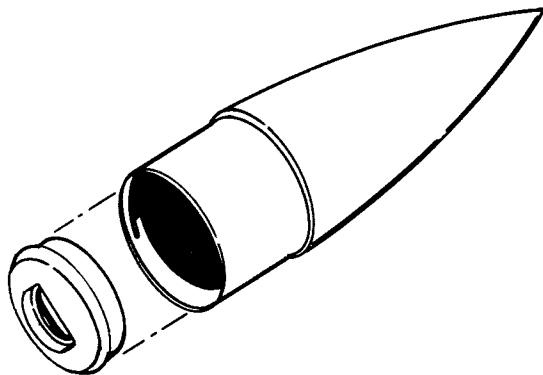
1. Read and understand each step and study the drawings before beginning any part in that step.
2. Always test fit the parts before assembling them. If they do not fit because they are too tight, sand them slightly. If they are too loose, build them up as described in the instructions.
3. Proper glue 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 HORNET

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

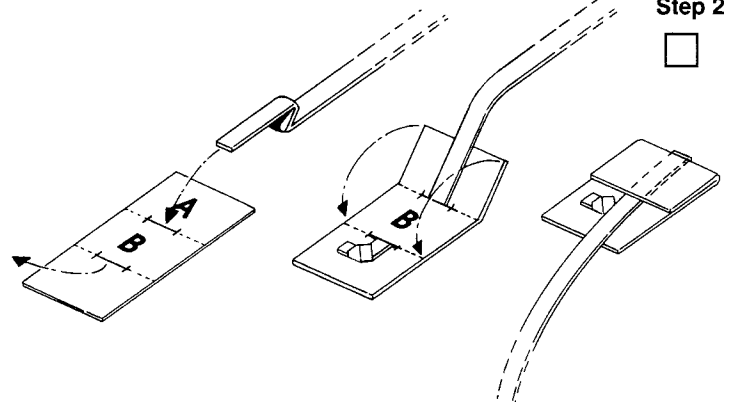
ASSEMBLY INSTRUCTIONS

Step 1

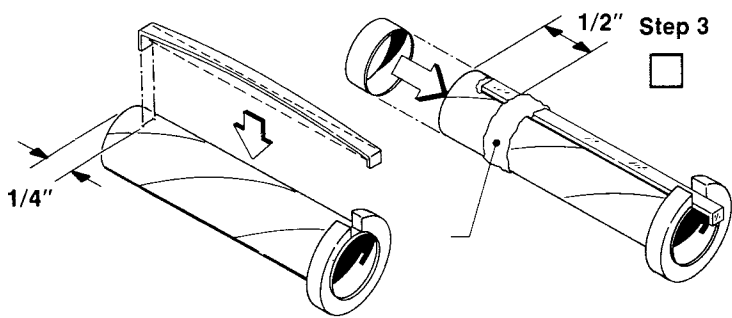


Using plastic cement or instant glue, glue the nose cone base to the nose cone. Wipe off excess glue and put aside to dry.

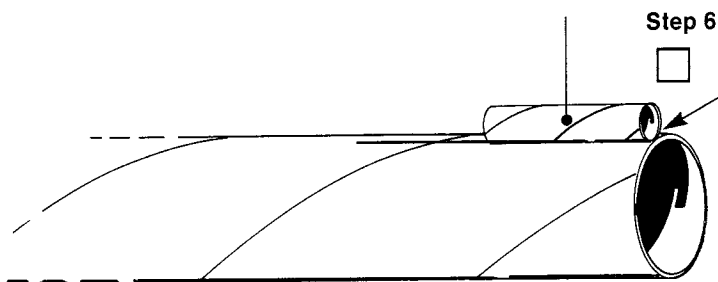
Step 2



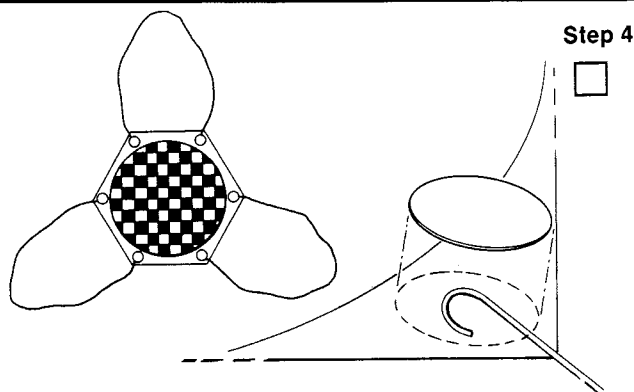
Cut out the shock cord holder on page 3 of the instructions. After it has been cut out, make two slits with your modelers knife on two dotted lines. Do not make slits any wider than is marked by the dotted lines. Feed the shock cord through the two slits as indicated in the drawing and put a small knot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



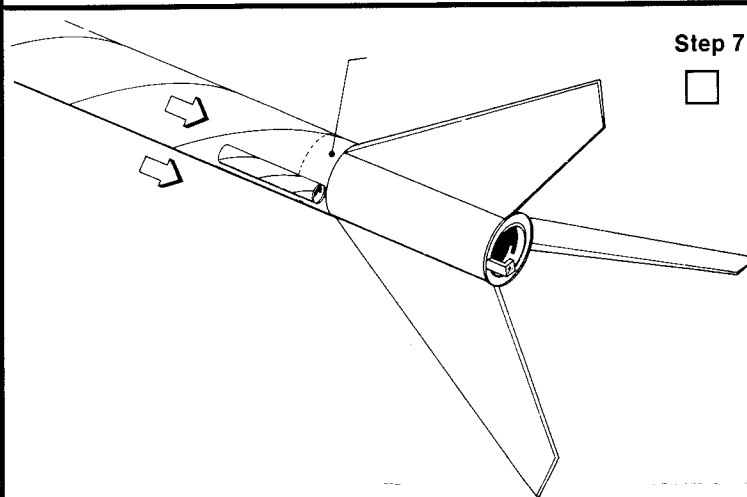
Take the split ring and glue it flush with one end of the engine mount tube with white glue. Cut a 1/8 of an inch slit in the tube at 1/4 of an inch away from the other end of the tube and directly in line with the gap in the split ring. Pick up the engine hook and note that the hook has one end larger than the other. Put a slight bend in the hook and insert the larger end of the hook into the slit as shown. Put a small amount of glue over the engine hook and slit and put a small ring of glue around the tube as well at 1/2 of an inch away from the end. Slide the retaining ring over the tube and the hook until the ring is 1/2 of an inch away from the end of the tube. Set this assembly aside to dry.



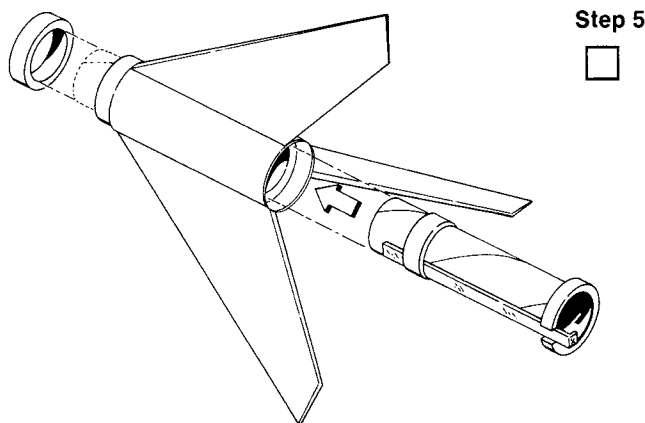
Make a short straight line down the length of the body tube about 2 inches from one end of the body tube. Gently clamp the body tube between two solid objects and use a ruler to make this line as straight as possible. Glue the launch lug to the line with the rear of the launch lug even with the end of the body tube. After one hour, apply a line of glue to each side of the launch lug. Erase any left over pencil marks and set the assembly aside to dry.



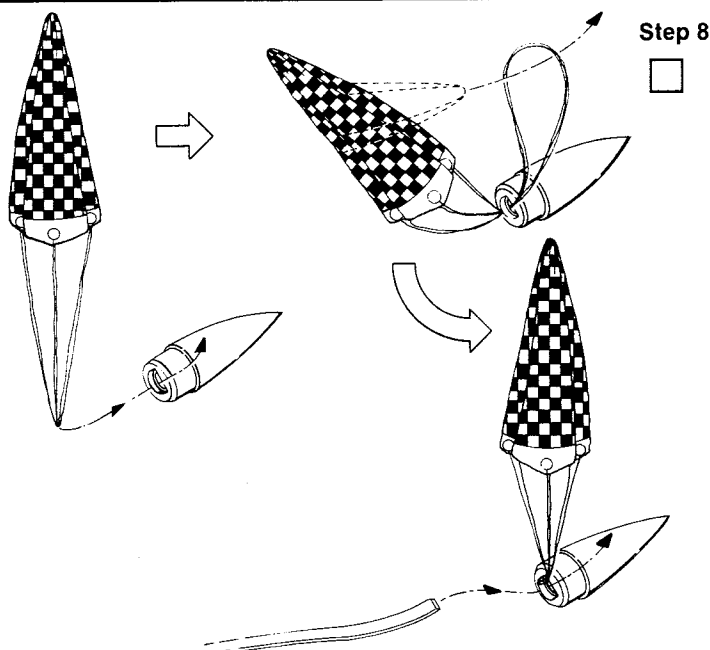
Cut the parachute out along the dotted lines printed on the sheet. Take the bundle of parachute cord and cut it into 3 pieces of equal length, of about 24 inches each. Take one end of the parachute cord and bend it over for about 1/8 of an inch. Place this bent end on one of the circles drawn on the 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.



Apply a ring of glue to the inside of the body tube at the end where the launch lug was mounted. Insert the completed fin and engine mount assembly into the body tube. The launch lug and the engine hook should be on the same side for best results. Set the assembly aside to dry.



Add glue to the sides of the split adapter ring. Do not get glue on the engine hook. Slide the engine mount assembly into the fin assembly from the rear, position it so the engine hook is directly between two fins. Apply glue to the exposed front part of the engine mount and slide the engine adapter ring onto the engine mount tube. You may have to sand the inside of the ring to fit the engine mount tube. The ring should sit flush against the top of the fin unit and keep the engine mount unit from moving forwards or backwards. The outer edge of the engine adapter ring should be even with the outer edge of the fin unit.

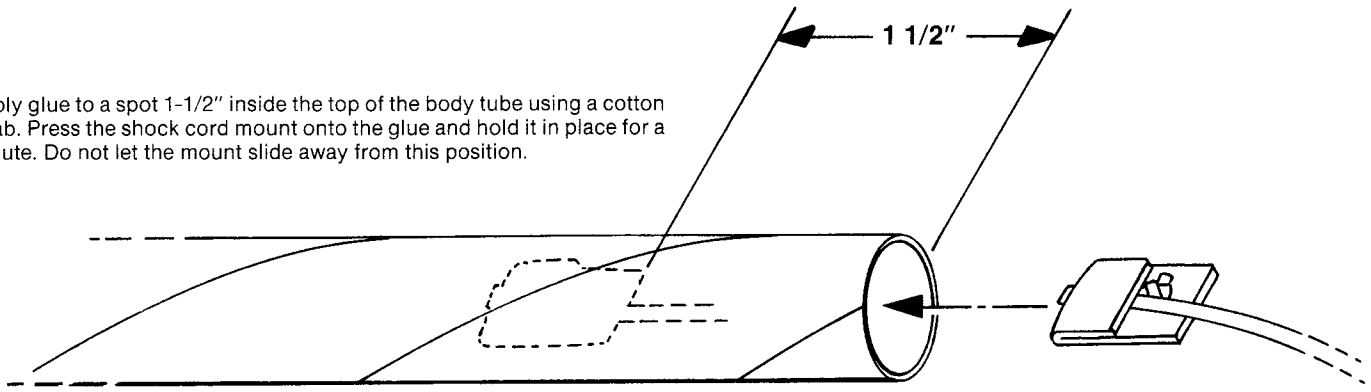


Hold the parachute by its center and pull the cords together evenly. Pass the cords through the eye of the nose cone base and loop the cords around the nose cone so that the parachute is firmly attached to the nose cone as shown in the diagram. Tie the free end of the shock cord to the nose cone base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

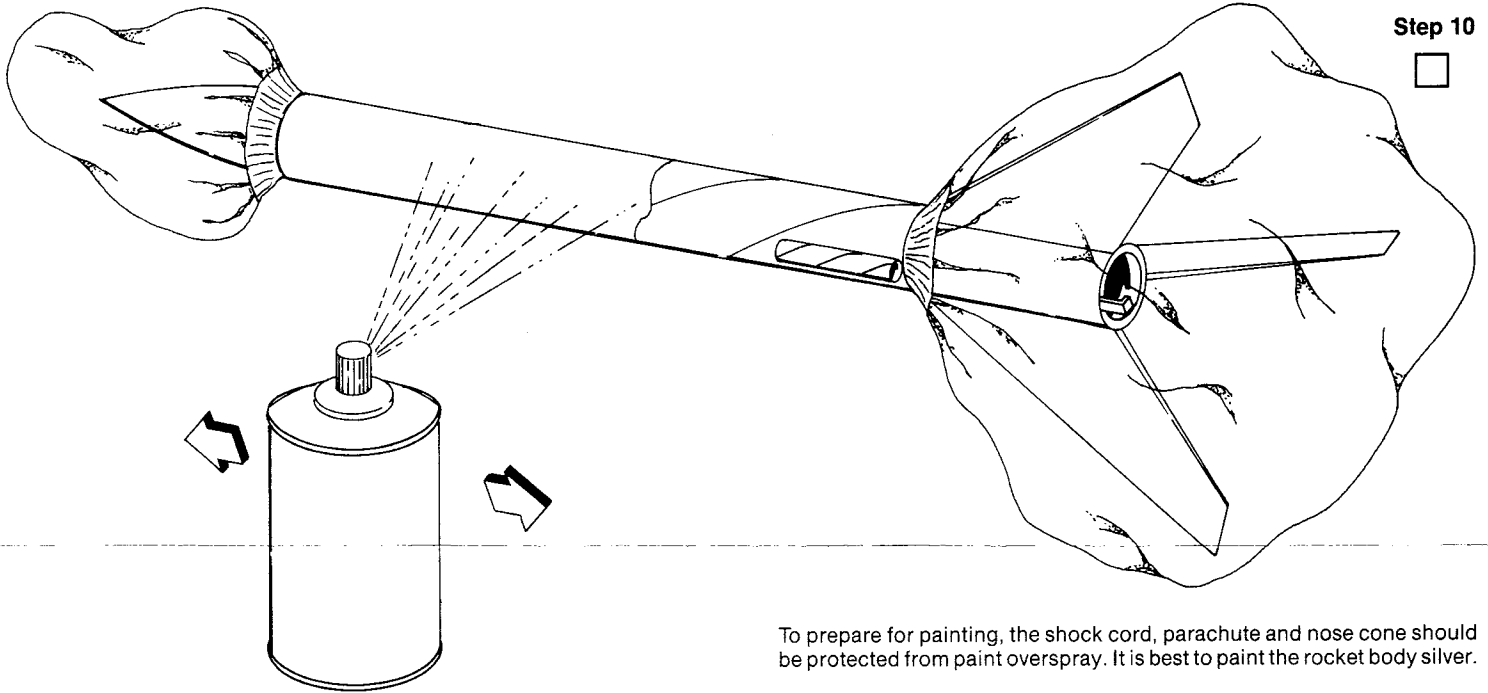
Step 9



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 10



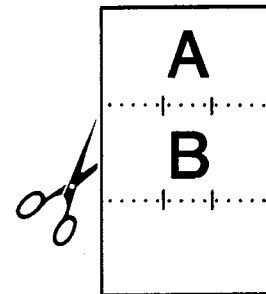
To prepare for painting, the shock cord, parachute and nose cone should be protected from paint overspray. It is best to paint the rocket body silver.

Step 11



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 thick upper sheet without lifting the thin decal. Use the cardboard insert within polybag 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 three 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. 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.
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 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!

BLAST OFF



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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 liftoff, 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: 12.91 in. (327.9mm)
Body Diameter: .976 in. (24.8mm)
Weight: 1.29 oz. (36.6 grams)

Recommended Engine Sizes:

1/2A6-2, A8-3 (first flight), B4-4,
B6-4, C6-5, C6-7

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.



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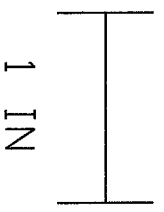
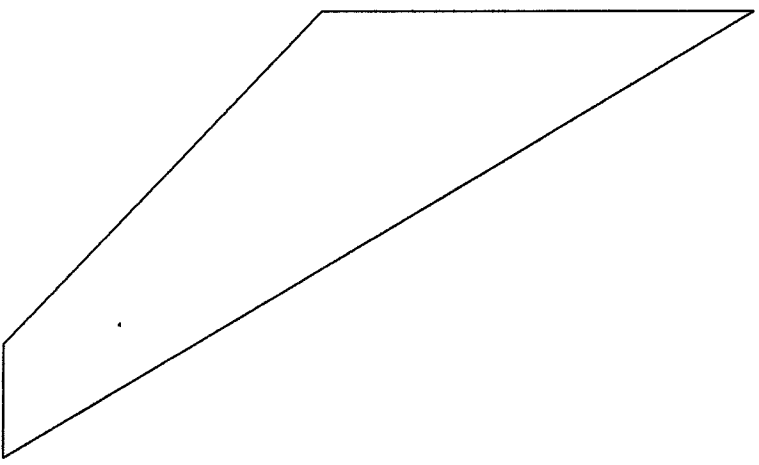
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PLASTIC FIN UNIT SAME LENGTH AS ROOT EDGE OF FIN.
PLASTIC FIN 1/32" THICK
MAKE 3 EACH

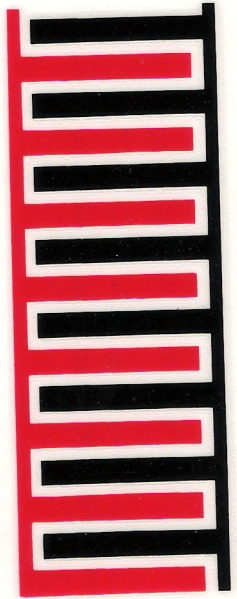
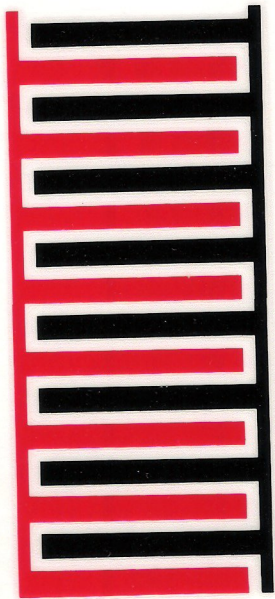


MRC HORNET	FIN PATTERN	1 IN = 1 IN
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