

Reach for the clouds with **MRC**  
**MODEL ROCKET KIT**  
High-Performance - High-Altitude Flight

Model Rocket Corporation 

# MRC **BIG BEN**

**Stands over four feet high**

- Durable plastic nose cone and fins
- Bright, easy to apply decals
- Sleek, aerodynamic design
- Complete directions included

**Great for beginners**

 Model Rocket Corporation  
2506 Woodbridge Ave  
Edison, New Jersey 08817

Length: 48.25 in (1225 mm)  
Nose Diameter: .625 in (15.88 mm)  
Weight: 1.75 oz (49.63 g)  
Recommended Engines:  
MOTOR: A6.5, Star 16mm, S4C,  
S4-D, S6-A, S6-B, S6-C  
Recommended for ages 12 to adult.  
Read instructions thoroughly.  
Do not use near water, trees,  
or if wind is strong.



# BIG BEN

KIT NO. TR 110

KILL LEVEL: IDEAL FOR BEGINNERS



MODEL RECTIFIER CORPORATION

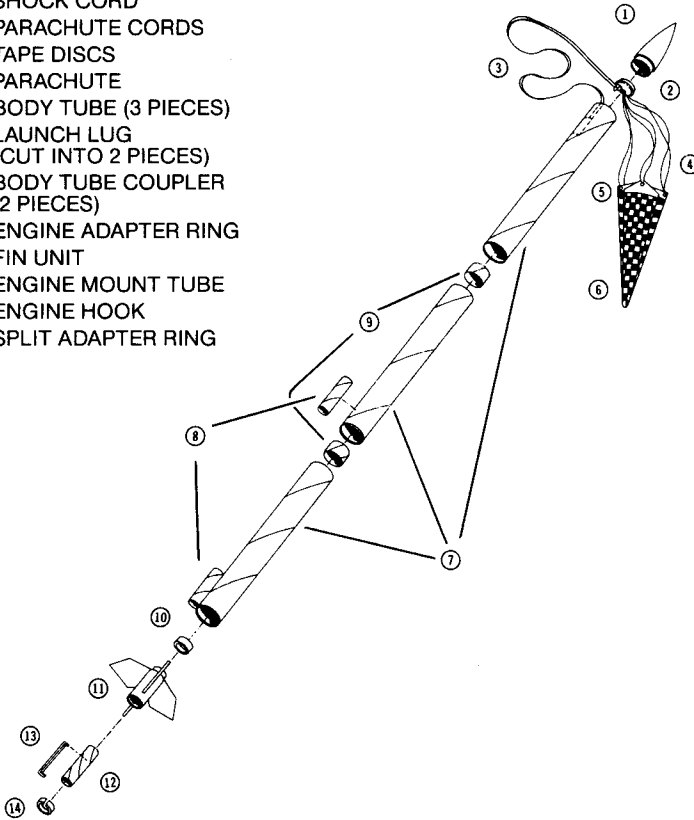
2500 WOODBRIDGE AVENUE

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 (3 PIECES)
8. LAUNCH LUG  
(CUT INTO 2 PIECES)
9. BODY TUBE COUPLER  
(2 PIECES)
10. ENGINE ADAPTER RING
11. FIN UNIT
12. ENGINE MOUNT TUBE
13. ENGINE HOOK
14. SPLIT ADAPTER RING



## 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.

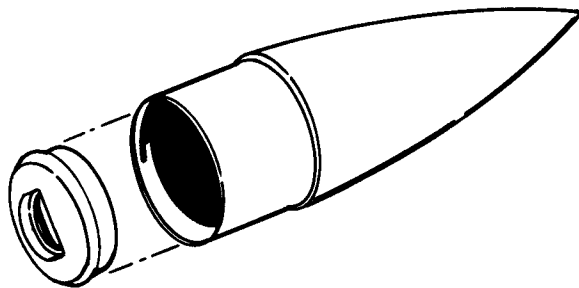
1. Read and understand each step and study the drawings before beginning any part in that step.
2. Always test fit the parts before assembling them. If they do not fit because they are too tight, sand them slightly. If they are too loose, build them up as described in the instructions.
3. Proper glue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

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

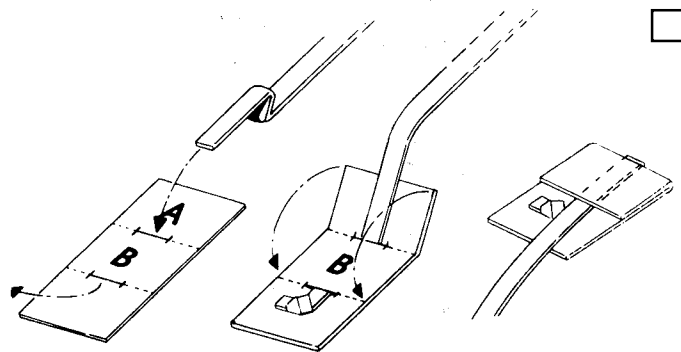
## ASSEMBLY INSTRUCTIONS

### Step 1

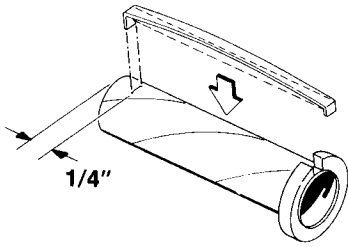


Using plastic cement or instant glue, glue the nose cone base to the nose cone. Wipe off excess glue and put aside to dry.

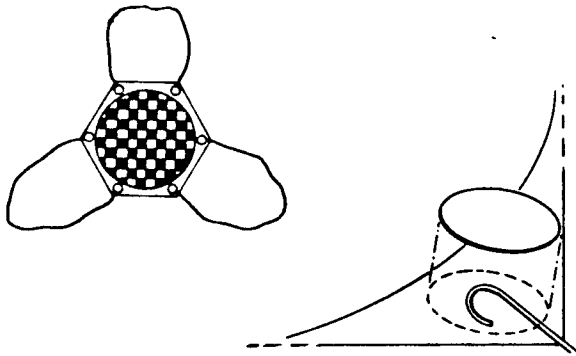
### Step 2



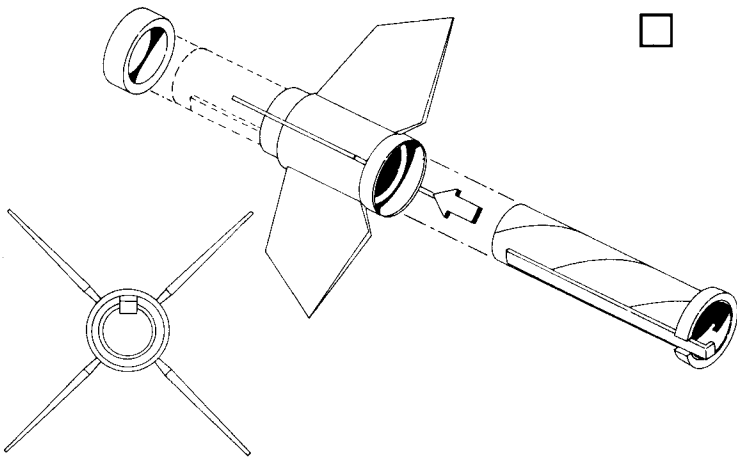
Cut out the shock cord holder on page 3 of the instructions. After it has been cut out, make two slits with your modelers knife on two dotted lines. Do not make slits any wider than is marked by the dotted lines. Feed the shock cord through the two slits as indicated in the drawing and put a small knot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

**Step 3**

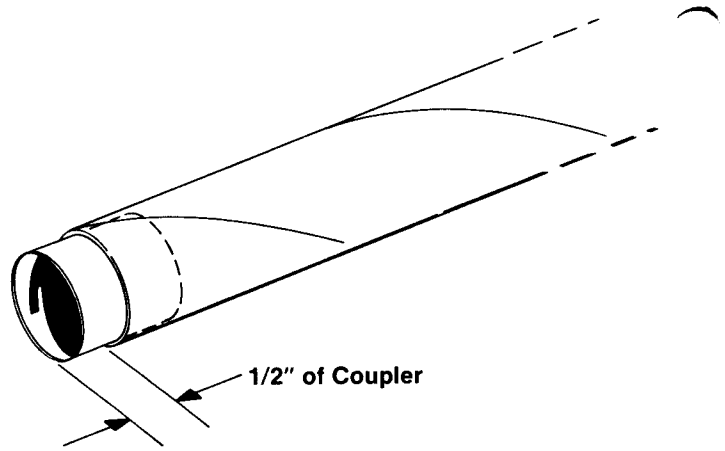
Take the split ring and glue it flush with one end of the engine mount tube with white glue. Cut a 1/8 of an inch slit in the tube at 1/4 of an inch away from the other end of the tube and directly in line with the gap in the split ring. Pick up the engine hook and note that the hook has one end larger 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. Set this assembly aside to dry.

**Step 4**

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.

**Step 5**

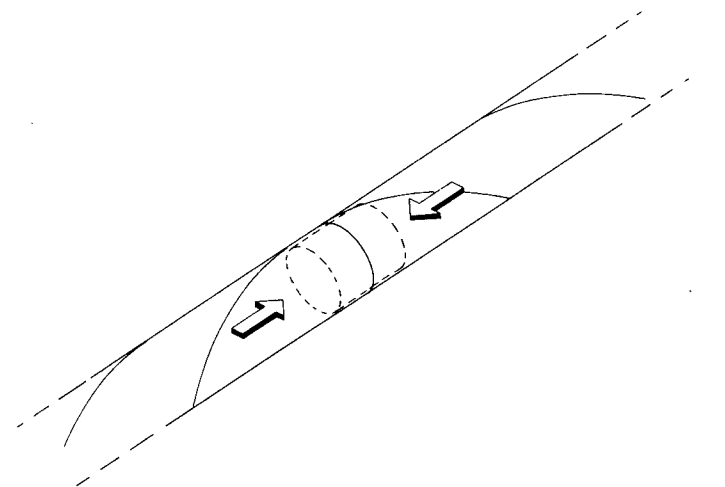
Add glue to the front and sides of the split adapter ring. Do not get glue on the engine hook. Slide the engine mount assembly into the fin assembly from the rear. Position it so the engine hook is directly between two fins. Apply glue to the exposed front part of the engine mount and slide the engine 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.

**Step 6**

Take two of the body tubes and two of the hollow body tube couplers. For each tube, apply a ring of glue to the inside of one end of each tube. Insert one half of each coupler into each body tube. You should have two tubes with couplers appearing as in the above drawing. Set these pieces aside to dry.

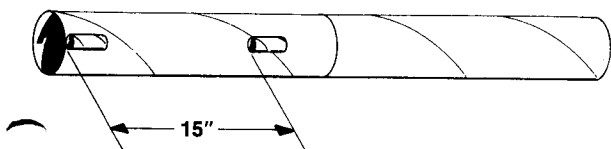
**Step 7**

Take the launch lug and cut it into two 5/8 of an inch pieces.

**Step 8**

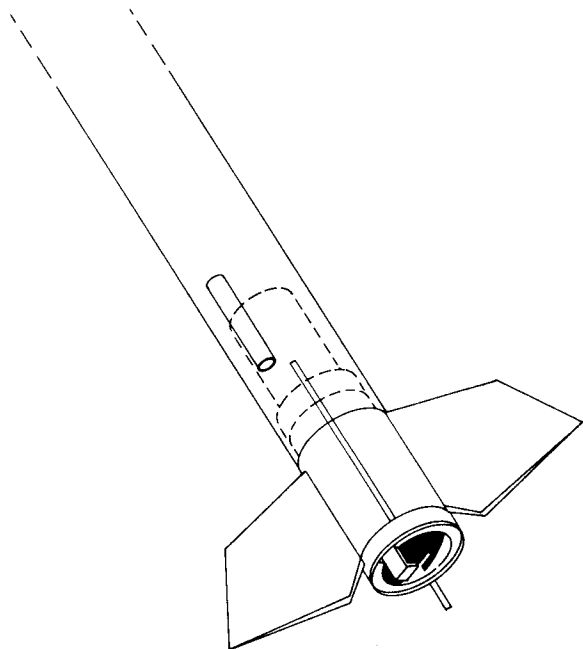
Apply a ring of glue to the inside of one end of the remaining unused body tube and attach it over the exposed part of one of the hollow body tube couplers. These two tubes must meet straight and flush; the tubes should be set on an absolutely flat surface so that the tubes will remain aligned while drying. When this assembly is dry, glue the remaining body tube with coupler into the larger body tube assembly and set it aside, following the same precautions as noted above.

Step 9



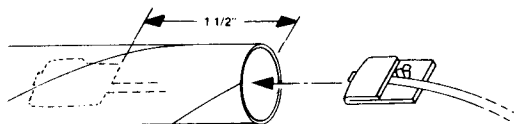
Make a straight line from one end 16" in length down the 3 joined body tubes. Gently clamp the body tubes between two solid objects and use a ruler to make this line as straight as possible. Make a mark on this line 15 inches from the end of the tube. Glue one launch lug to the end of the tube on the line and glue the other lug so that the rear of the lug matches up with the 15 inch mark. Allow the lugs to dry for 1/2 hour then apply a line of glue to each side of the lugs for reinforcement.

Step 10

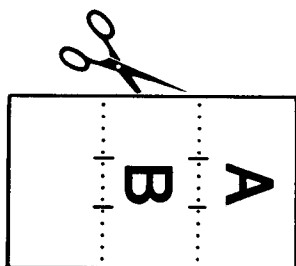


Apply a ring of glue to the inside of the body tube at the end where a launch lug was mounted. Insert the completed fin and engine mount assembly into the body tube. The launch lugs and the engine hook should be on the same side for best results. Set the assembly aside to dry.

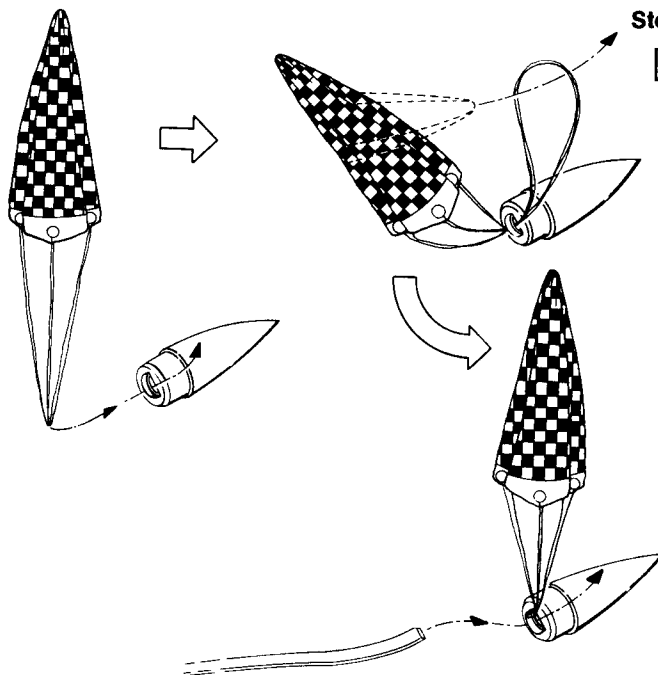
Step 11



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 the position.

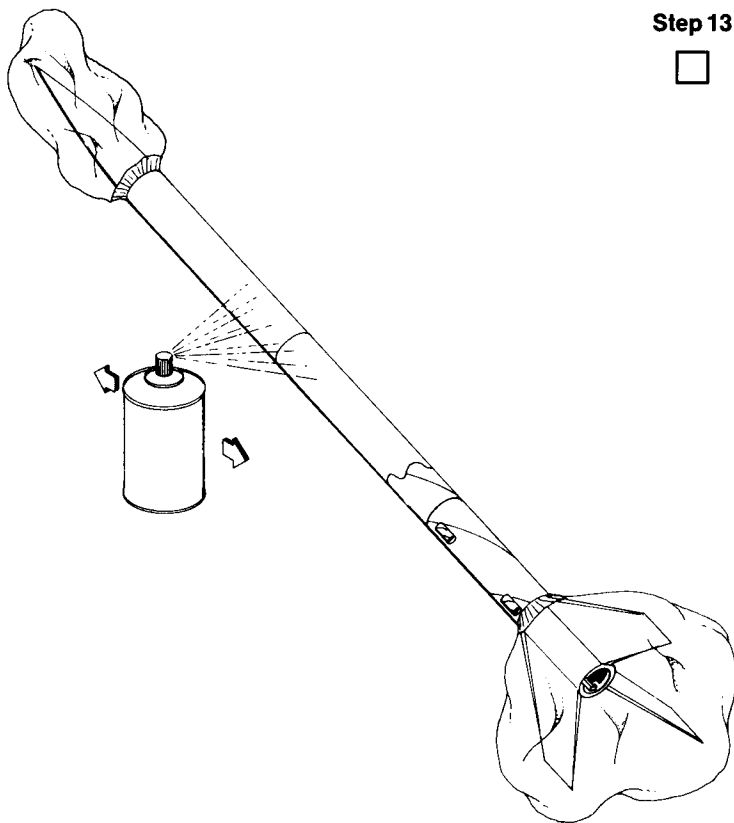


Step 12



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



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 14



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.

**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!



TM

**MODEL RECTIFIER CORPORATION**  
2500 WOODBRIDGE AVENUE  
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TODAY  
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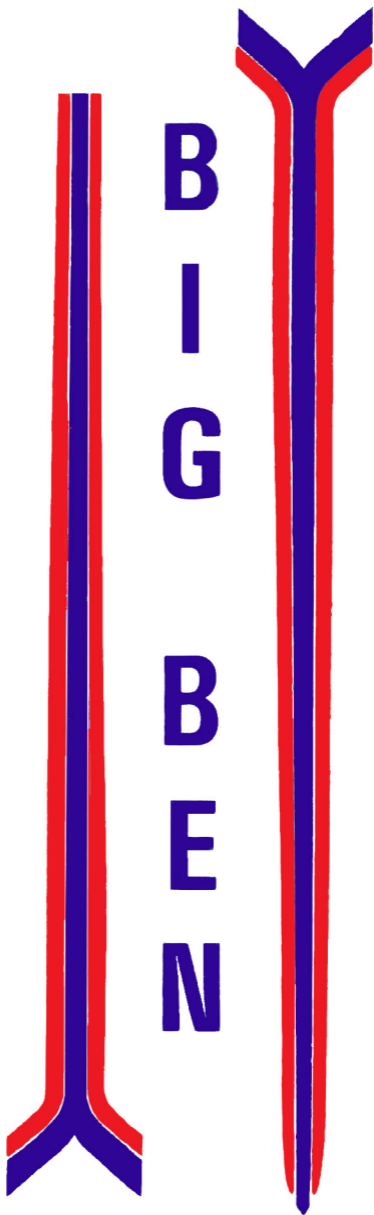
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