

# **MRC** MOONBLASTER

**High flying  
Model Rocket  
Stands over two  
feet high**

- Huge 18" Parachute
- Can fly with 'B', 'C' and 'D' powered engines
- Scale like appearance
- Large, rugged balsa fins

**For intermediate  
modelers**



**Model Rectifier  
Corporation**

2500 Woodbridge Ave.  
Edison, New Jersey 08817



Length: 27.25 in (692.2 mm)  
Body Diameter: 2.04 in (51.8 mm)  
to 1.637 in (41.6 mm)  
Weight: 3.85 oz. (109.1 gms)

**Recommended Engine  
Sizes:** B4-2 (first flight), C6-3,  
D12-5

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

# MOONBLASTER

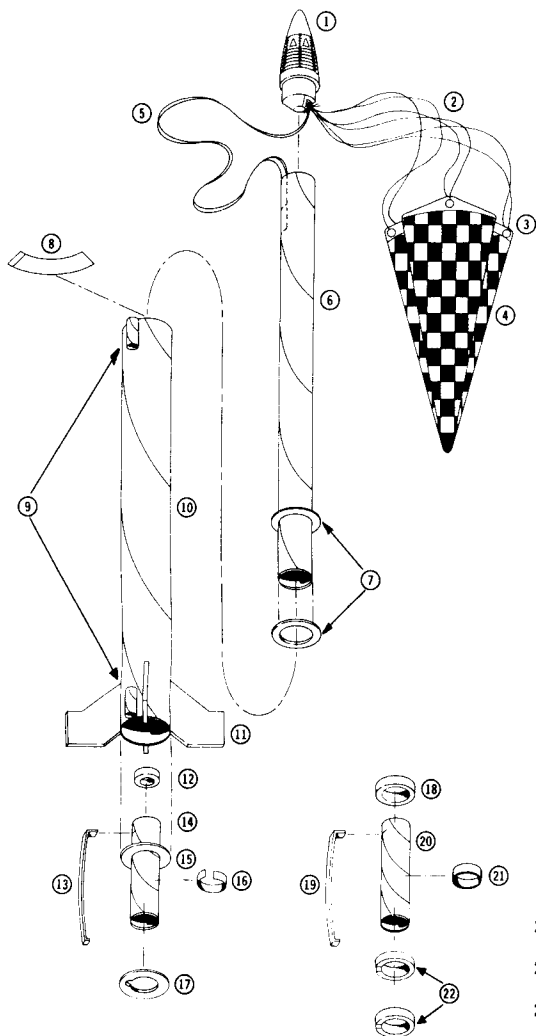
KIT NO. TR 109

**SKILL LEVEL: FOR INTERMEDIATE MODELERS**



**MODEL RECTIFIER CORPORATION**  
2500 WOODBRIDGE AVENUE  
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## PARTS IDENTIFICATION



1. NOSE CONE
2. PARACHUTE CORDS
3. TAPE DISCS
4. PARACHUTE
5. SHOCK CORD
6. 1.625" O.D. BODY TUBE
7. THIN ADAPTER RINGS (2 PIECES)
8. TRANSITION SHROUD
9. LAUNCH LUG (CUT INTO TWO PIECES)
10. 2" O.D. BODY TUBE
11. FINS (4 PIECES)
12. ENGINE ADAPTER RING
13. ENGINE HOOK
14. LARGE ENGINE MOUNT TUBE
15. ENGINE MOUNT RING
16. ENGINE HOOK HOLDER
17. ENGINE MOUNT RING WITH INDENTATION
18. ENGINE ADAPTER RING
19. ENGINE HOOK
20. SMALL ENGINE TUBE MOUNT
21. ENGINE HOOK RETAINING RING
22. SPLIT ADAPTER RINGS (TWO PIECES)

## 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 MOONBLASTER

- |                                       |   |
|---------------------------------------|---|
| 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. Enamel Paint  |
| 5. Ruler                              |   |
| 6. Modelers Paint Brush               |   |

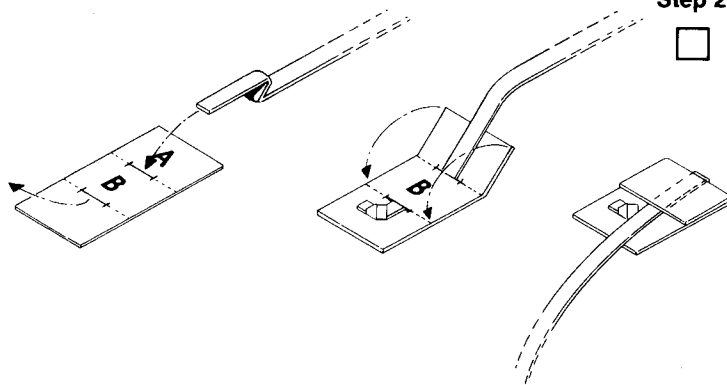
## ASSEMBLY INSTRUCTIONS

### Step 1



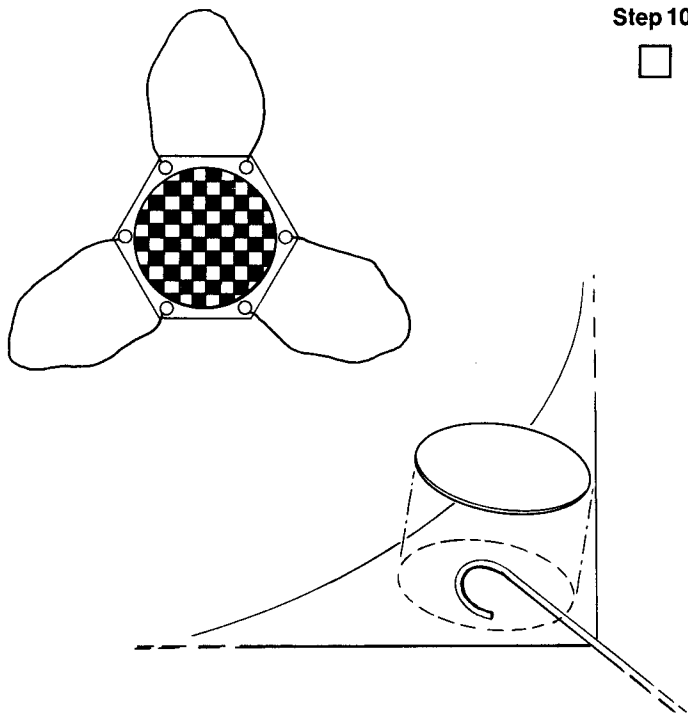
Clean off any excess plastic along the seams of the nose cone with your modeling knife. Also, the "eye" in the nose for attaching the parachute and shock cord may have to be cleaned out with your modeling knife.

### Step 2



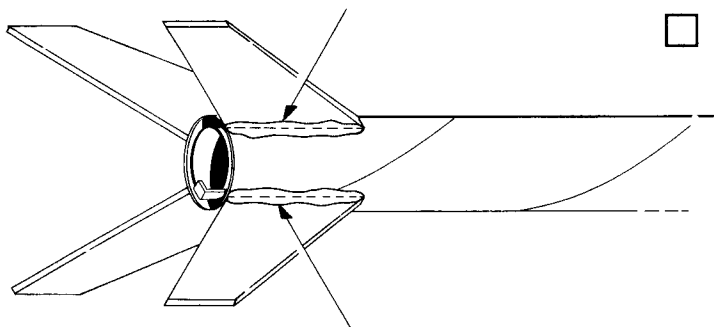
Cut out the shock cord holder on the paper parts sheet. After it has been cut out make two slits with your modelers knife on two dotted lines. Do not make slits any wider than is marked by the solid lines. Feed the shock cord through the two slits as indicated in the drawing and put a small knot at the 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 10



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 36 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 11



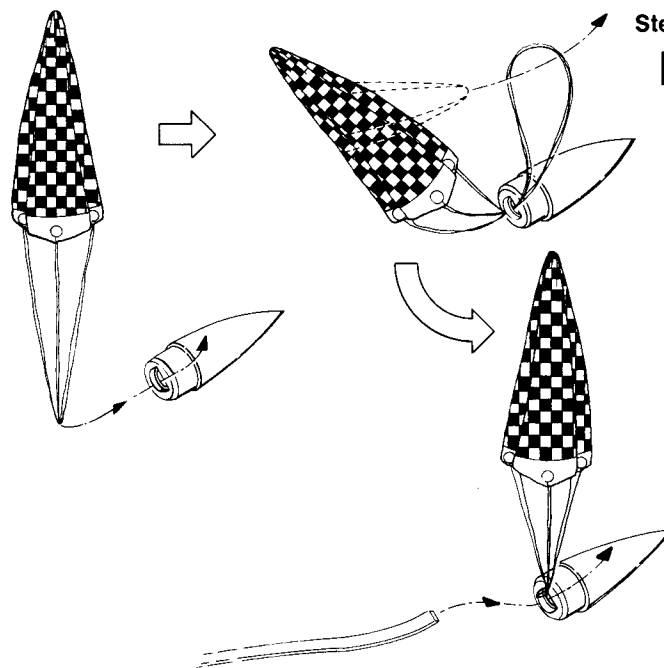
Apply a line of white glue to each side of the four fins for reinforcement.

Step 12



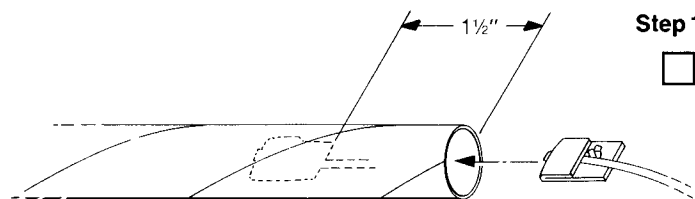
Take the launch lug and cut it into two 1/2 of an inch pieces. Glue one lug to each end of the large body tube along the marked launch lug line. After the glue has dried, add an additional bead of glue to each side of the launch lug as a reinforcement bond.

Step 13

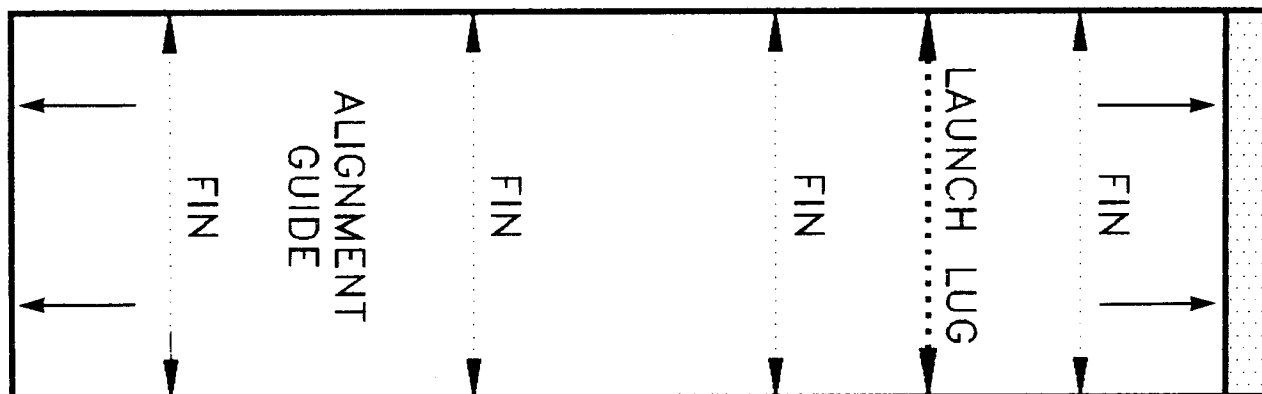


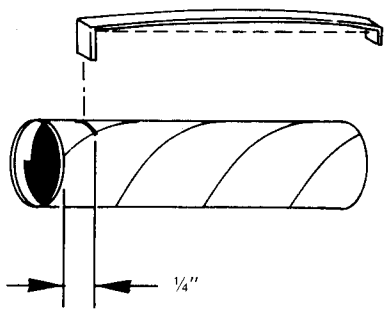
Hold the parachute by its center and pull the cords together evenly. Pass the cords through the eye of the nose cone base and loop the cords around the nose cone so that the parachute is firmly attached to the nose cone as shown in the diagram. Tie the free end of the shock cord to the nose cone base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

Step 14



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.

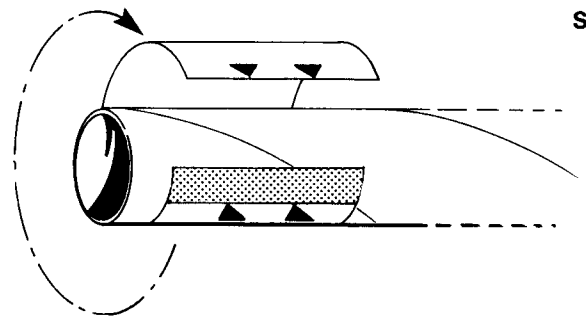




**Step 3**



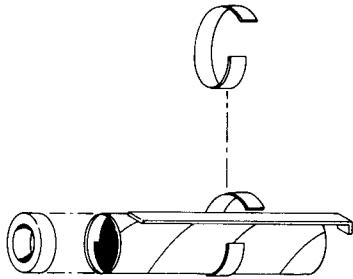
Locate the large engine mount tube. Cut a  $\frac{1}{4}$ " slit in the tube  $\frac{1}{4}$ " from one end of the tube. Put a slight bend into engine hook. Note that the engine hook has one end larger than the other. Insert the larger sized end of the hook into the slit as shown.



**Step 7**



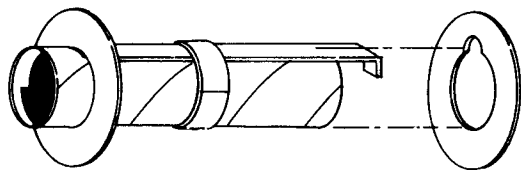
Cut out the paper tube marking guide on page 3. Roll ends of the guide in the direction of the large arrows around the outside of the large body tube. Line up the alignment arrows and tape the ends as shown in the diagram. "TAPE ONLY THE GUIDE; DO NOT PUT TAPE ON THE BODY TUBE." Position bottom of the guide at  $\frac{1}{4}$ " 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 the entire length of the body tube.



**Step 4**



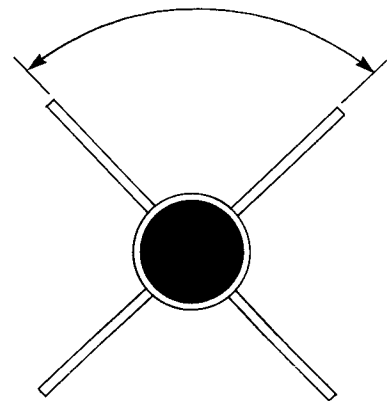
Cut out the engine hook holder from the paper parts sheet and glue it to the outside of the large engine mount tube, wrapping it around the tube and engine hook 1" from the rear end of the engine mount tube. Glue the engine adapter ring to the inside of the engine mount tube at the end where the engine hook was inserted through the slit. The ring should rest squarely against the hook end.



**Step 5**



Remove the two thick width engine mount rings from the white adapter ring sheet. Glue the ring without the small indentation to the large engine mount tube at  $\frac{1}{4}$  inch from one end, over the slit in the engine mount tube. Glue the ring with the indentation even with the edge of the tube at the end opposite from the first ring as shown. When the glue joints are dry; add another layer of glue to the joints as reinforcement.



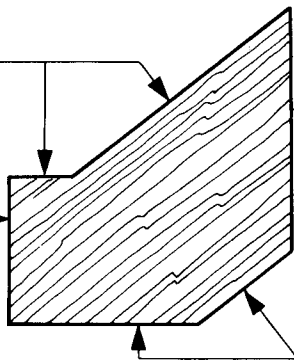
**Step 8**



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. Be sure the assembly is dry before proceeding.

LEADING EDGE  
Round Off

TIP EDGE  
Sand Flat



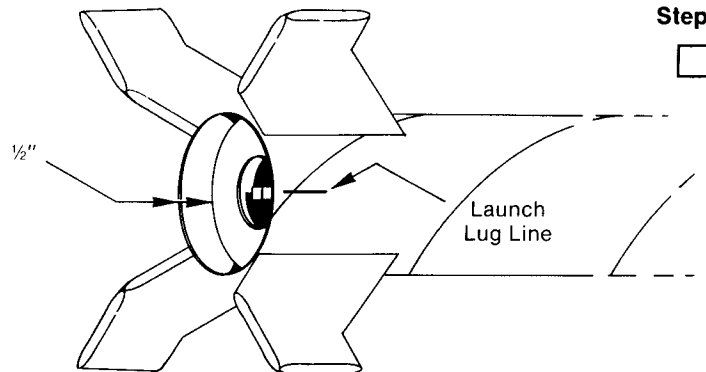
**Step 6**



ROOT EDGE  
Sand Flat

Round Off

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 and the tip edge flat. All other edges including the leading edge are to be rounded evenly.

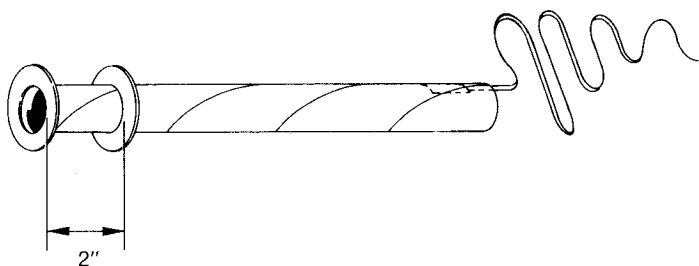


**Step 9**

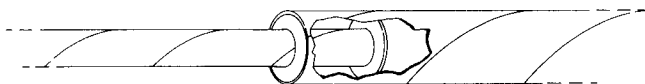


Test fit the completed engine mount into the large body tube. Sand the adapter rings if necessary.

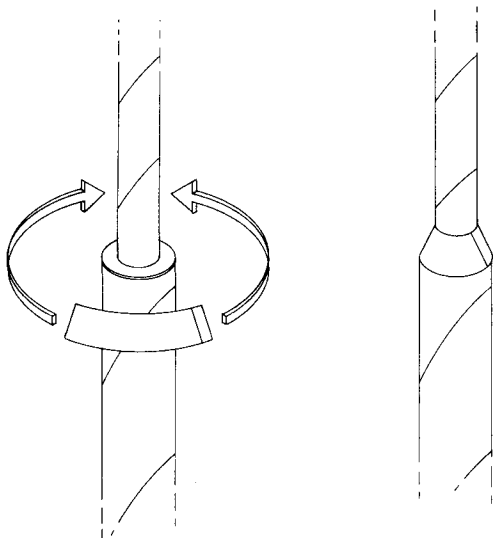
Apply a ring of glue to the inside of the large body tube at about  $2\frac{1}{2}$  inches from the end of the tube. Make a mark inside the tube at  $\frac{1}{2}$  inch from the end. Insert the engine mount into the body tube with the hook end pointed out. Do not stop while inserting the tube since the glue might "grab" the mount while in the wrong position. The rear of the engine mount should line up with the  $\frac{1}{2}$  inch mark and the engine hook should be located directly underneath the launch lug line. Apply glue to the exposed portion of the lower adapter ring for reinforcement.

**Step 15**

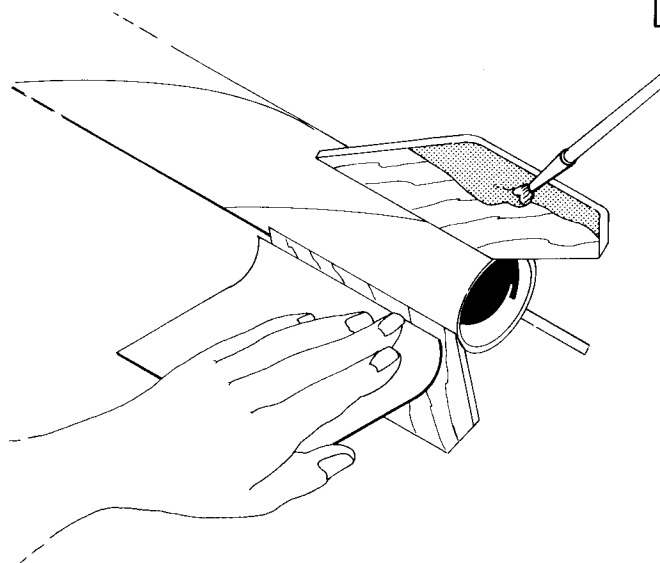
Make marks on the small body tube at the end opposite the shock cord mount at 2 inches from the end of the tube. Remove the two large thin adapter rings from the second adapter ring sheet. Glue one adapter ring to the tube at the 2 inch mark and glue the other ring even with the edge of the tube. Both rings must be accurately placed on the tube and have their glue joints reinforced after the first glue application has dried.

**Step 16**

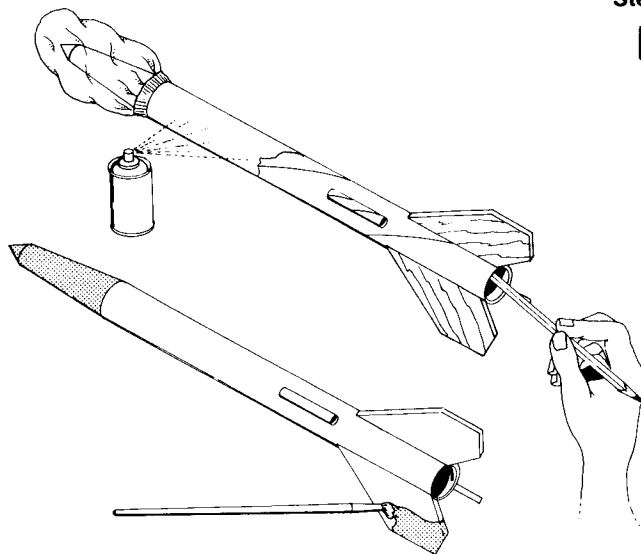
Apply a ring of glue to the inside of the large body tube about 1½ inches from the top of the tube. Insert the small body tube with the adapter rings into the large body tube until the adapter ring at the 2 inch mark is even with the top of the large body tube. This ring should be located just inside the lip of the large body tube. Add glue to the joint of this ring and the large body tube for reinforcement.

**Step 17**

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 18**

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 the sealer has dried to get the smoothest finish.

**Step 19**

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.

**Step 20**

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.

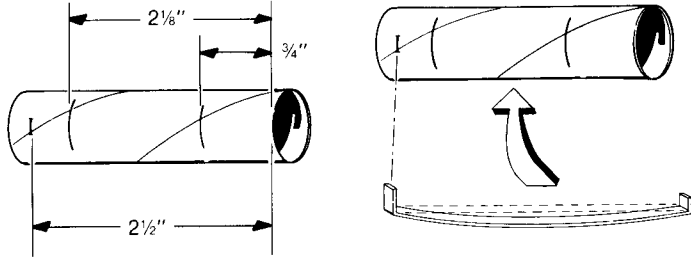
To apply decals, remove the individual decals from the sheet. Position the decal on the rocket lightly and carefully. Press the decal firmly onto the rocket, making sure the decal surface is evenly applied, with no bubbles or loose edges, by rubbing the surface with your fingernail. You may have to cut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

**NOTE: The engine mount as installed is for use with D engines. The following construction steps are for an adapter to use B and C engines in your Moonblaster rocket.**

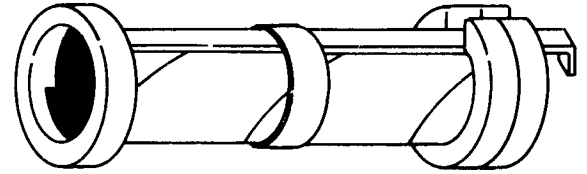
Step B



Step A



Make two marks on small engine mounting tube at  $\frac{3}{4}$ " and  $2\frac{1}{2}$ " from the rear of the tube. Cut a  $\frac{1}{8}$ " slit in the tube at  $2\frac{1}{2}$ " 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.



Put a small amount of glue over the engine hook and slit and put a small amount of glue around the tube at 1 inch from the end of the tube where the hook extends out. Slide the retaining ring over the tube and hook until the ring is 1 inch away from the end of the tube. Glue one engine adapter ring to the end of the tube at the end nearest the slit. The ring should sit flush with the end of the tube. The two split adapter rings should be glued to the opposite ends of the tube, flush against each other and with one ring sitting even with the end of the tube. The gaps in the rings should line up with the engine hook.

**FOR SAFE LAUNCHES, YOU MUST FOLLOW THE ACCOMPANYING CHECKLIST EVERYTIME 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. 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 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 B4-2 engine as recommended. Insert the igniter as per engine instructions.
6. Engine Installation
  - A. For B to C Engines — Insert the engine into the B/C adapter until it stops against the top portion of the engine hook. The rear hook must latch over the rear of the engine with the nozzle pointed outwards. Then insert the adapter mount into the large engine mount. Give the adapter a one-quarter turn so that the large engine mount hook latches over the end of the split adapter rings and NOT OVER THE GAP IN THE RINGS. 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." Proceed to Step 7.
  - B. For D Engines — 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 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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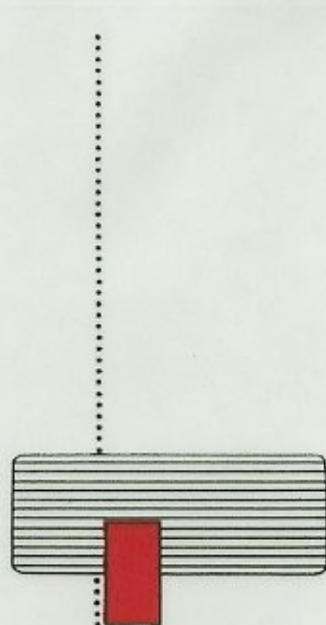
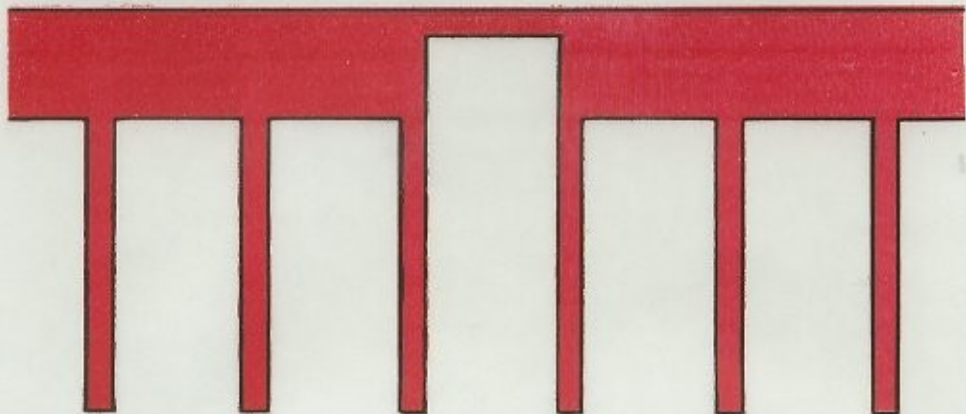
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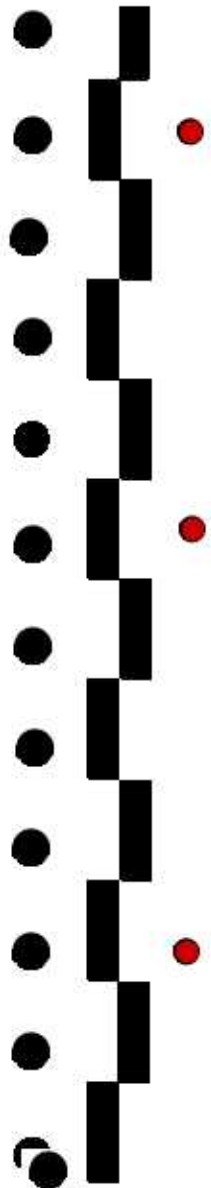
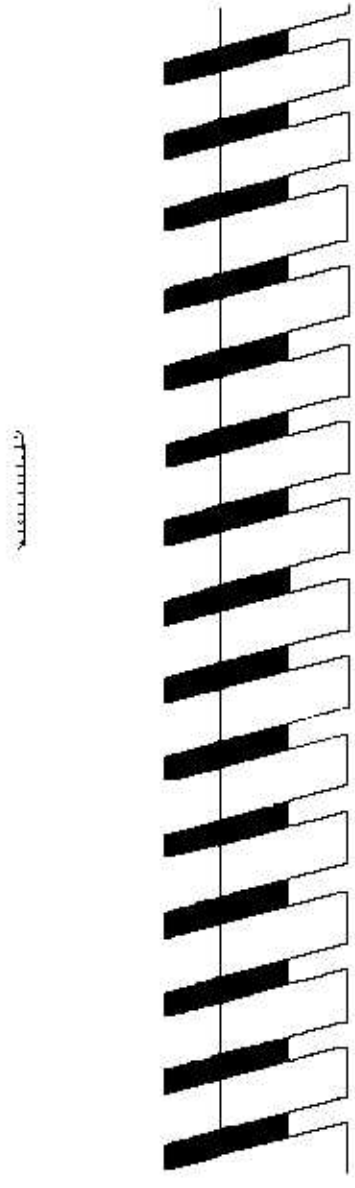
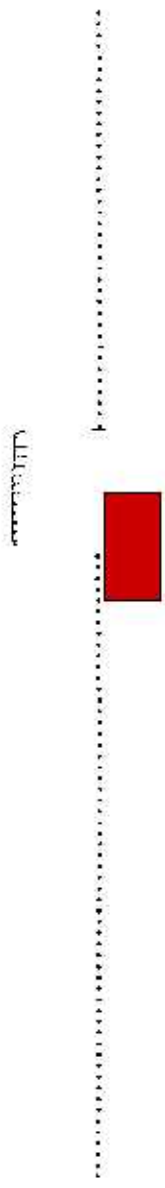
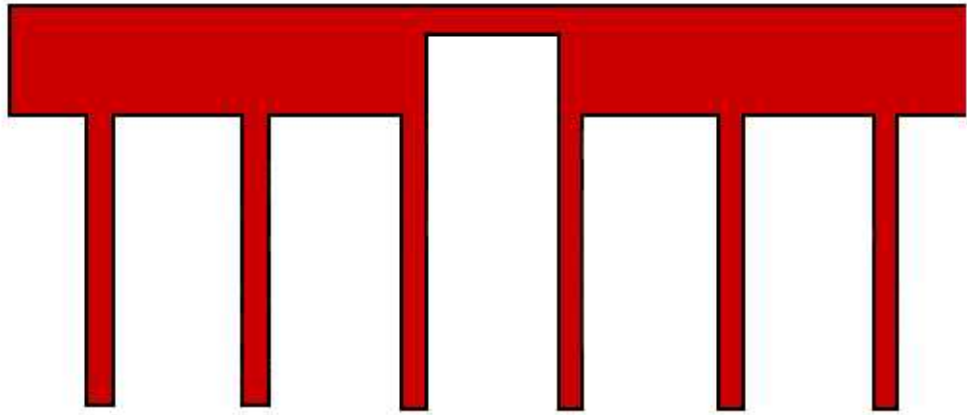
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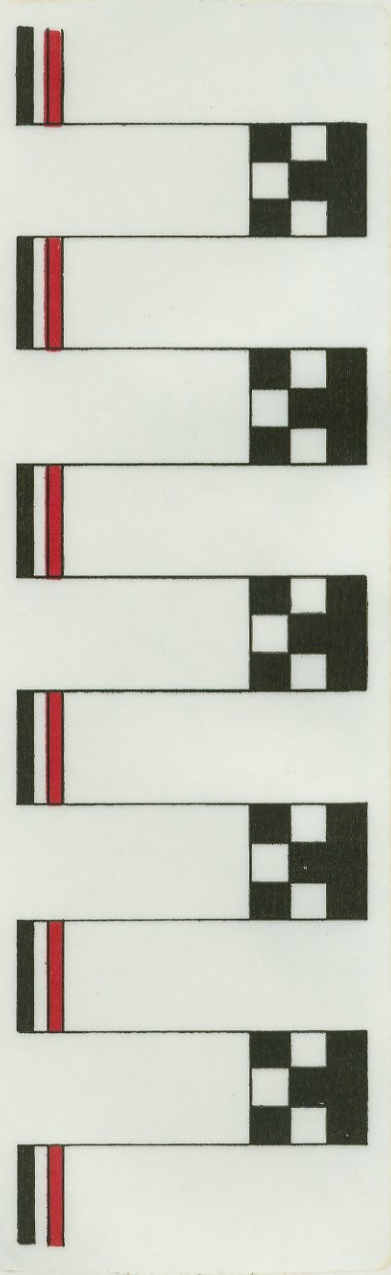
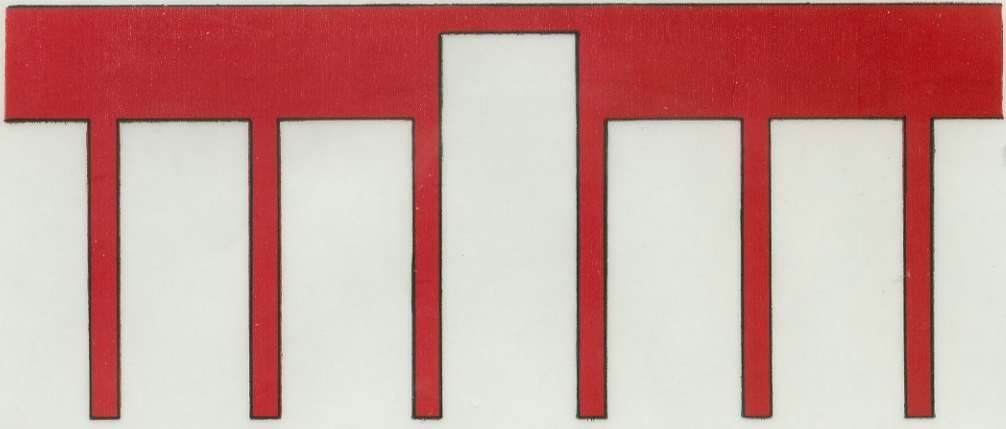
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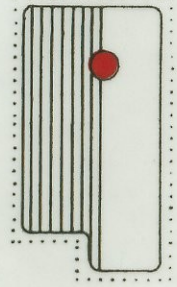
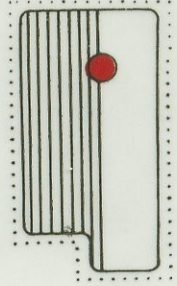


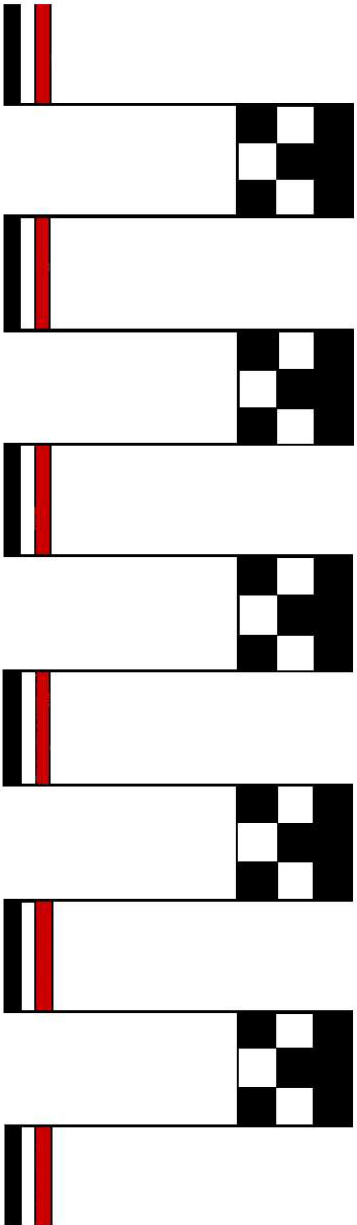
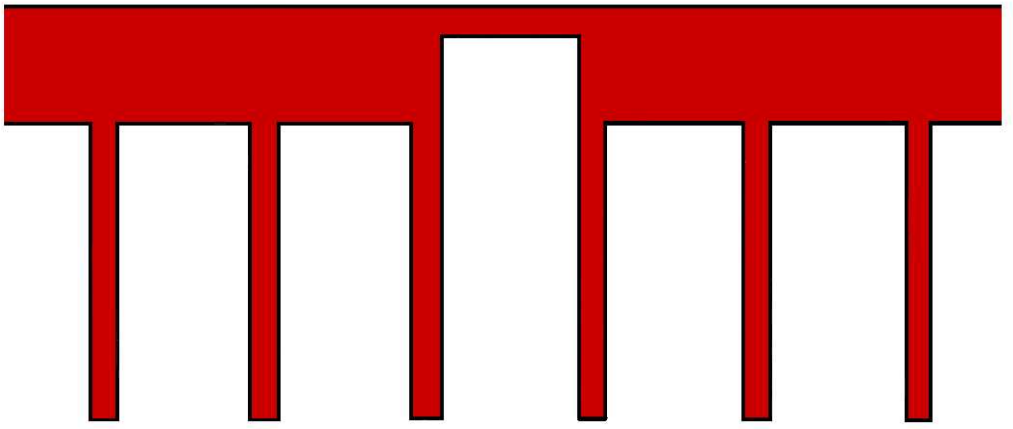
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15	16	17
22	23	24
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MAY		
6	7	8
13	14	15
20	21	22
27	28	29
JUNE		
2	3	4
9	10	11
16	17	18
23	24	25
30		
JULY		
1	2	3
7	8	9
14	15	16
21	22	23
28	29	30
31		
AUGUST		
4	5	6
11	12	13
18	19	20
25	26	27
28		
SEPTEMBER		
1	2	3
8	9	10
15	16	17
22	23	24
29	30	
OCTOBER		
6	7	8
13	14	15
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NOVEMBER		
3	4	5
10	11	12
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DECEMBER		
1	2	3
8	9	10
15	16	17
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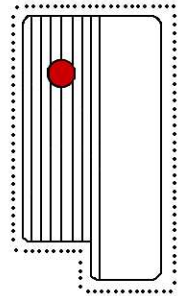
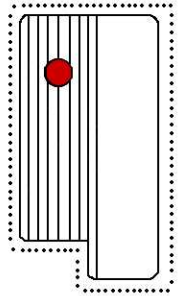


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## **MRC TR 109 Moon Blaster**

Refer to instructions for description of part numbers referenced here.

Part #4 - 18"

Part #6 - 14 inches long

Part #9 - 1/8" X 1.25"

Part #10 - 12 inches long

Part # 11 - 3/32" balsa

Parts 12 thru 17 for 24mm engine mount

Parts 19 thru 22 for 18mm engine mount