

SIDEWINDER

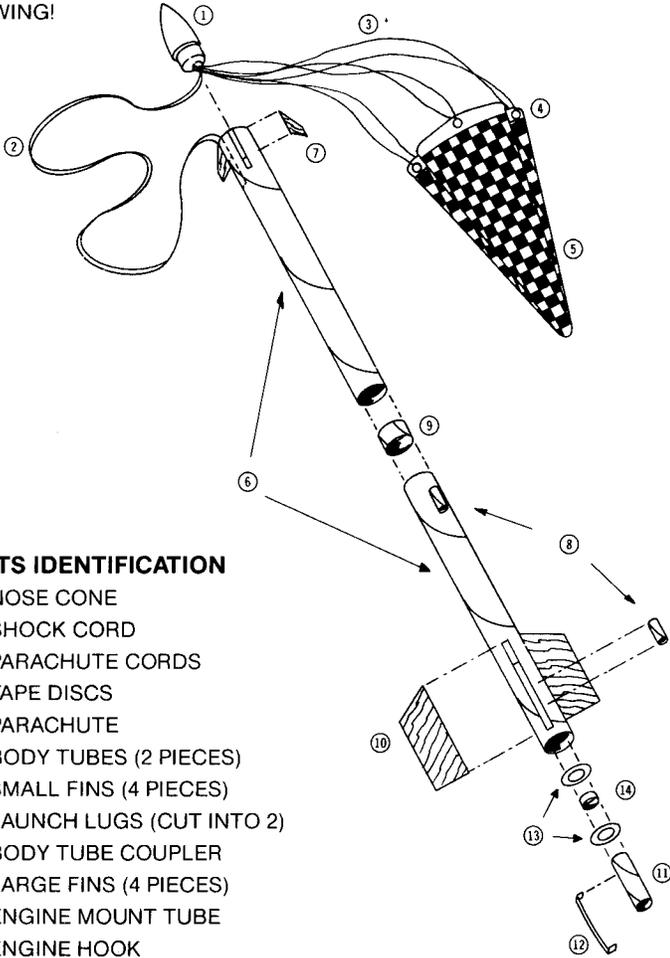
KIT NO. TR 108

SKILL LEVEL: FOR INTERMEDIATE MODELERS



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NOTE: DO NOT POSITION
 FINS ON TUBE AS
 SHOWN IN THIS
 DRAWING!



PARTS IDENTIFICATION

1. NOSE CONE
2. SHOCK CORD
3. PARACHUTE CORDS
4. TAPE DISCS
5. PARACHUTE
6. BODY TUBES (2 PIECES)
7. SMALL FINS (4 PIECES)
8. LAUNCH LUGS (CUT INTO 2)
9. BODY TUBE COUPLER
10. LARGE FINS (4 PIECES)
11. ENGINE MOUNT TUBE
12. ENGINE HOOK
13. ADAPTER RINGS
14. RETAINING 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.

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

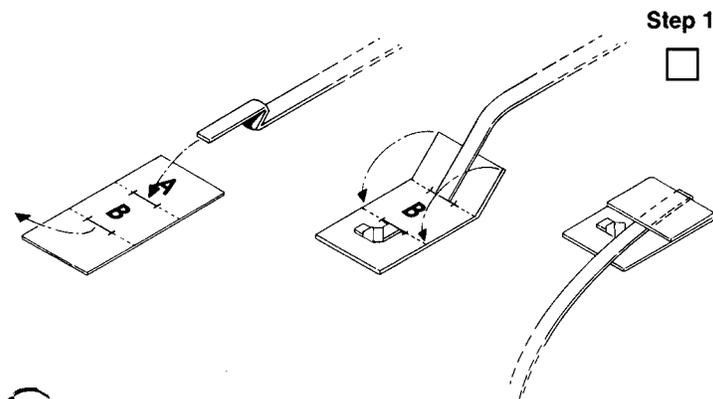
Before building this kit gather the necessary tools and materials and read all instructions thoroughly. In addition, keep the following points in mind.

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 SIDEWINDER

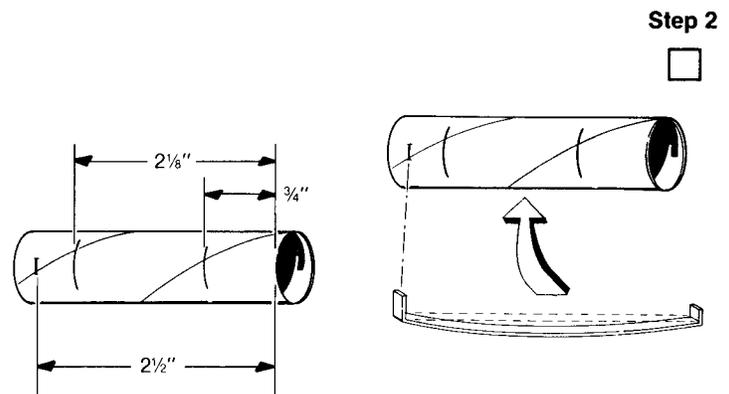
- | | |
|---------------------------------------|---|
| 1. Cotton swab on stick (like Q-tip™) | 7. Modeling Knife |
| 2. Pencil | 8. White Glue or Aliphatic Resin Glue (such as Titebond™) |
| 3. 400 grit sandpaper | 9. Enamel Paint |
| 4. Scissors | 10. Waxed Paper or Plastic Wrap |
| 5. Ruler | 11.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

ASSEMBLY INSTRUCTIONS



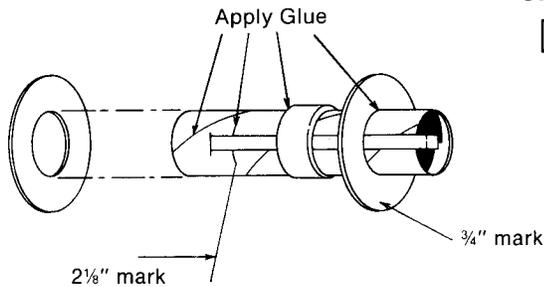
Step 1

Cut out the shock cord holder on paper 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 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.



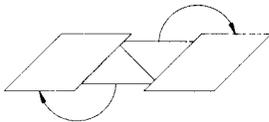
Step 2

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

Take the white cardboard sheet with a pair of diecut rings on it, and push the 2 rings out. Note that one ring has an indentation cut into it. Sand the inside of the rings for a proper fit. Push the ring with the indentation over the engine hook and onto the engine tube mount from the front and make it line up with the $\frac{3}{4}$ " mark on the tube. Slide the retaining ring over the tube and the hook until the ring is $\frac{7}{8}$ of an inch away from the end. Slide the second ring onto the engine tube mount until it matches up with the $2\frac{1}{8}$ " inch mark. Apply a ring of white glue to 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.

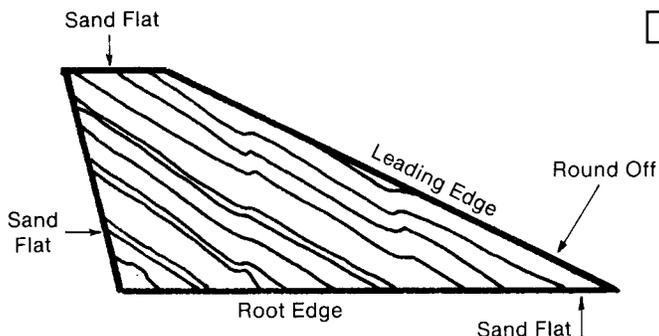
Locate the large die-cut fin sheets. You will notice there are two large parts and two smaller parts on each sheet. Gently sand the top and bottom sides of the sheet, and remove the fins by cutting along the die-cut marks using your modeling knife. Lay a sheet of waxed paper or plastic wrap onto a flat surface.

**Step 4A**

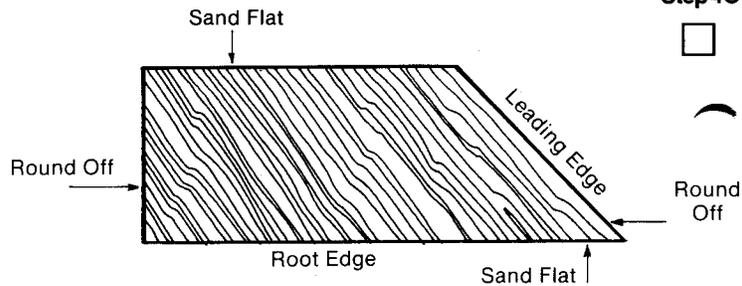
Noting the diagram above, you will see that each small fin part is intended to be attached to a larger fin part. The surfaces where these parts meet must join together flush for maximum strength. The simplest way to join the small and large fin parts flush is to rub the surfaces of each fin part against each other where they will meet. Or it is suggested that you use a flat sanding block on these fin surfaces or you can tape a piece of sandpaper to a flat surface with the grit side facing upwards to sand the fin faces perfectly flat. Use white glue to fasten a small fin part to the larger fin part as shown in the diagram.

One suggested way for a strong joint is to temporarily attach the fin parts together with cellophane tape on one side of the fin. Open the joint between the parts using the tape like a hinge. Apply glue to the surfaces to be joined; then match the parts together by "closing the hinge". The fin parts must be matched straight and even.

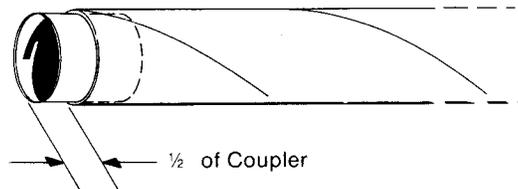
You should have 4 large fin assemblies when done. Set them on the waxed paper or plastic wrap to dry with another sheet of waxed paper or plastic wrap on top of the fins and a weight on top of them all, such as a book, to be sure that the fins dry straight and even. Set the pieces to dry overnight. Remove the cellophane tape when the assembly is dry.

Step 4B

Locate the small die-cut fin sheet. Gently sand the 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; follow the above diagram for proper sanding of the other surfaces.

Step 4C

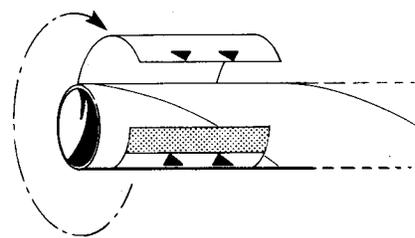
Remove the large fin assemblies from the waxed paper. Gently sand the flat surfaces of the fins. Sand all edges so that the fins are identical. Refer to the diagram to identify the root edge. Sand the root edge flat; follow the above diagram for proper sanding of the other surfaces.

Step 5

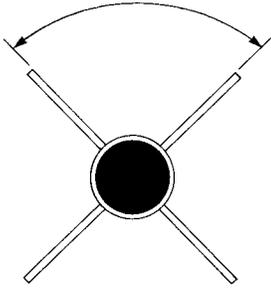
Take one body tube and the hollow body tube coupler. In most cases it is suggested that the outside surface of the coupler and the inside surface of the body tube be thoroughly sanded before gluing parts together in both steps 5 and 6. You must test fit these parts before assembly! Apply a ring of glue to the inside of one end of the body tube. Insert one half of the coupler into the body tube. Be sure the coupler has been inserted evenly. Set this piece aside to dry for a short while.

Step 6

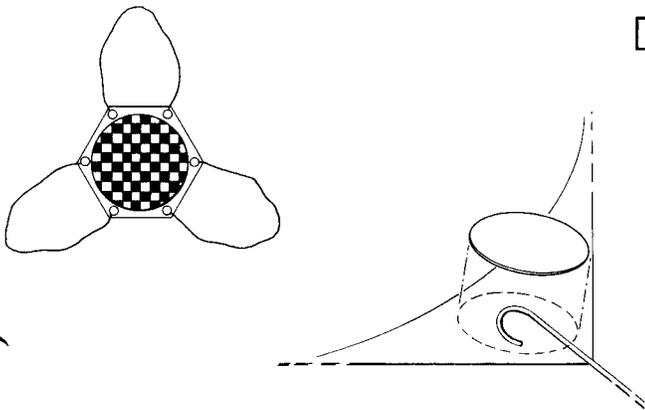
Apply a ring of glue to the inside of one end of the remaining unused body tube and attach it over the exposed part of the hollow body tube coupler and the two tubes now joined should meet flush and straight. Set this assembly aside to dry.

Step 7

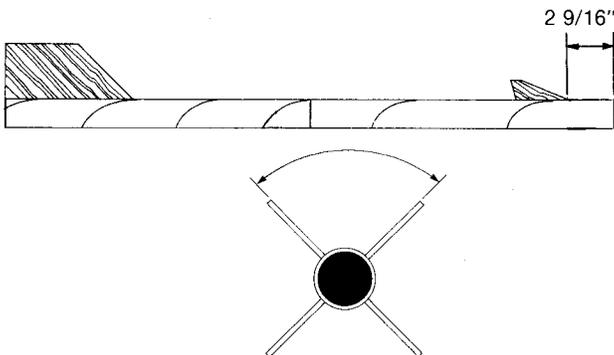
Cut out the paper tube alignment guide on page 4. Roll ends of the guide in the direction of the large arrows around the outside of the body tube where you will install the engine mount. Line up the alignment arrows and tape the ends as shown in the diagram. "TAPE ONLY THE GUIDE; DO NOT PUT TAPE ON THE 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 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 straight door edge join each pair of marks in a vertical direction as straight as possible. All lines should extend for the entire length of the joined body tubes.

Step 8

Using a cotton swab apply a small application of white glue to the root edge of each of the large fins. 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 rear of the root edge of each large fin should be located at the end of the joined body tubes. After each fin has dried, apply the next fin in the same manner.

Step 9

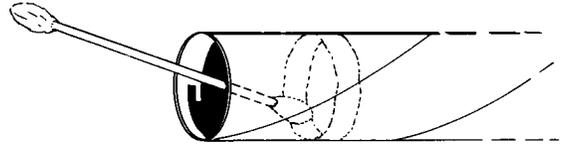
Cut the parachute out along the dotted lines printed on the sheet. Take the bundle of parachute cord and cut it into 3 pieces of equal length, of about 36 inches each. Take one end of the parachute cords and bend it over for about $\frac{1}{8}$ of an inch. Place this bent end on one of the circles drawn 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

Using a cotton swab apply a small application of white glue to the root edge of the small fins. 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 front of the root edge of the fin should be located at $2 \frac{9}{16}$ " from the front edge of the body tube. The front fin should also line up with its matching rear fin. **THIS ALIGNMENT IS ABSOLUTELY CRITICAL FOR SAFE STABLE FLIGHT!** After each fin has dried, apply the next fin in the same manner. Erase any leftover pencil marks after the glue has dried.

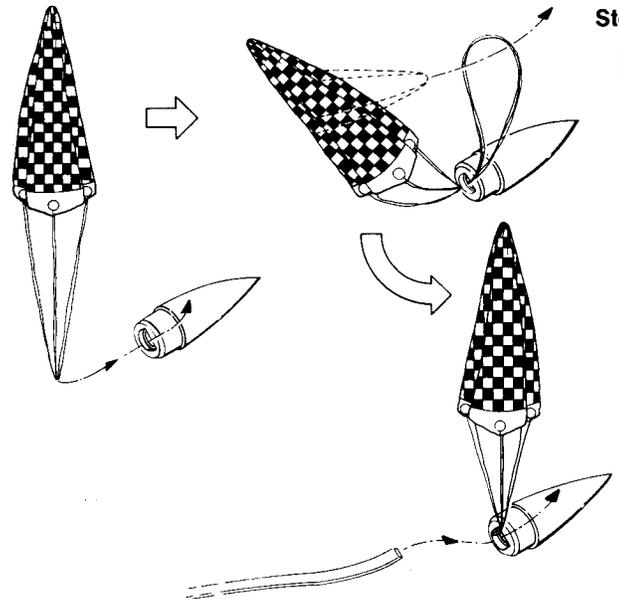
Step 11

Take the launch lug and cut it into two $\frac{3}{8}$ of an inch pieces. Mount one launch lug on the drawn launch lug line $\frac{1}{2}$ inch from the end of the body tube between two of the large fins. The other launch lug piece should be mounted 14 inches from the end of the body tube where the large fins are located.

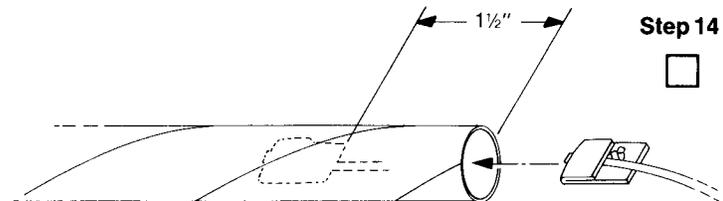
Step 12

Test fit the engine mount unit into the 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 lugs.

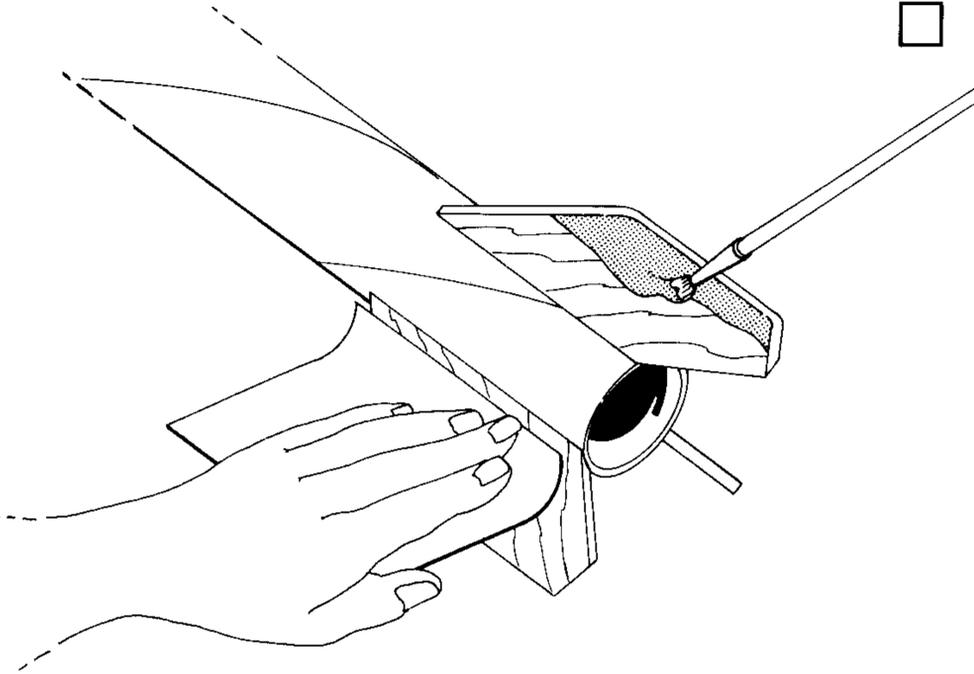
Step 13

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

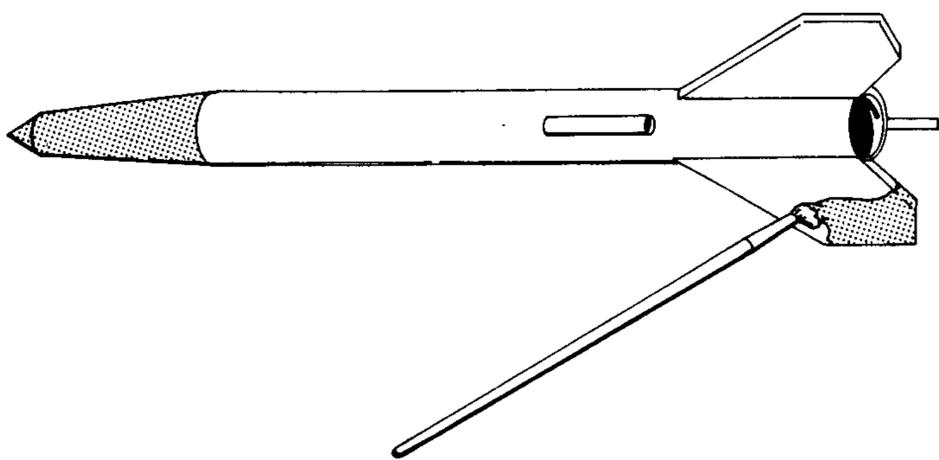
Apply glue to a spot $1 \frac{1}{2}$ " inside the top of the body tube using a cotton swab. Press the shock cord mount onto the glue and hold it in place for a minute. Do not let the mount slide away from this position.

Step 15



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 16



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

For protection of the parachute and shock cord, you should temporarily push them inside the body tube and mount the nose cone over them.

In some cases, the nose cone may fit tightly on the body tube. It is advisable to twist the nose cone in the body tube to stretch the tube until the nose cone fits snugly not tight.

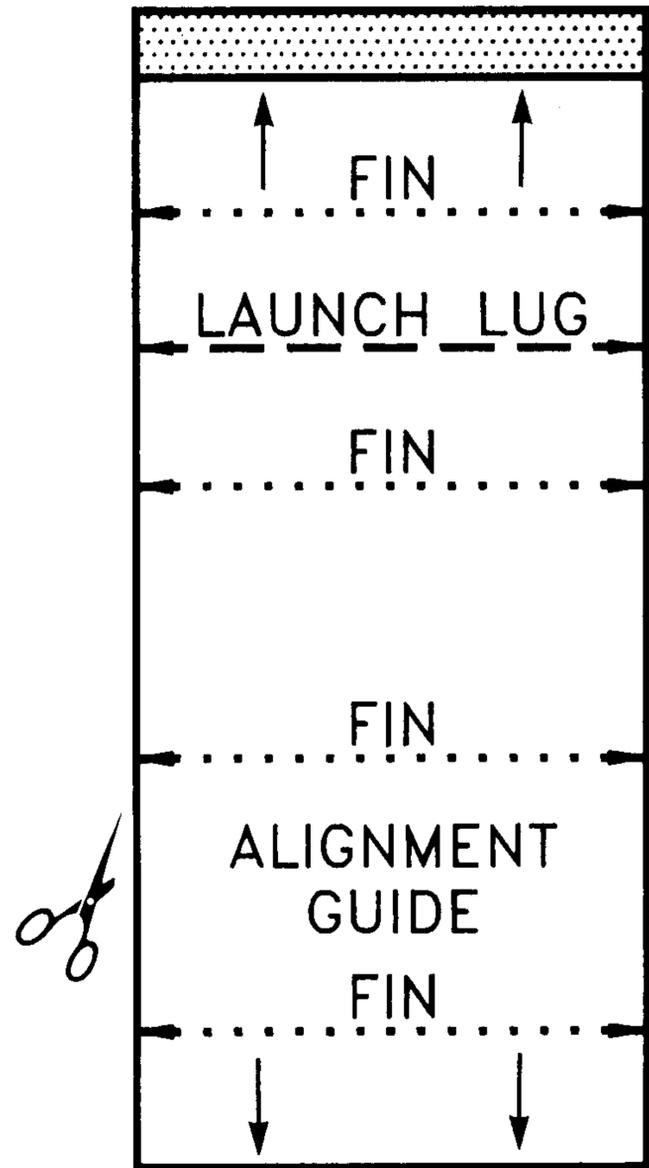
An alternative is to lightly sand the inside of the body tube and the shoulder of the nose cone.

Step 17



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 rocket photo on top and bottom of box for decal location.



FOR SAFE LAUNCHES, YOU MUST FOLLOW THE ACCOMPANYING CHECKLIST EVERYTIME YOU USE YOUR MODEL ROCKET.

READ AND FOLLOW THE SAFE WARNINGS ON THE NAR/HIA SAFETY CODE INSERT EACH TIME YOU USE YOUR MODEL ROCKET.

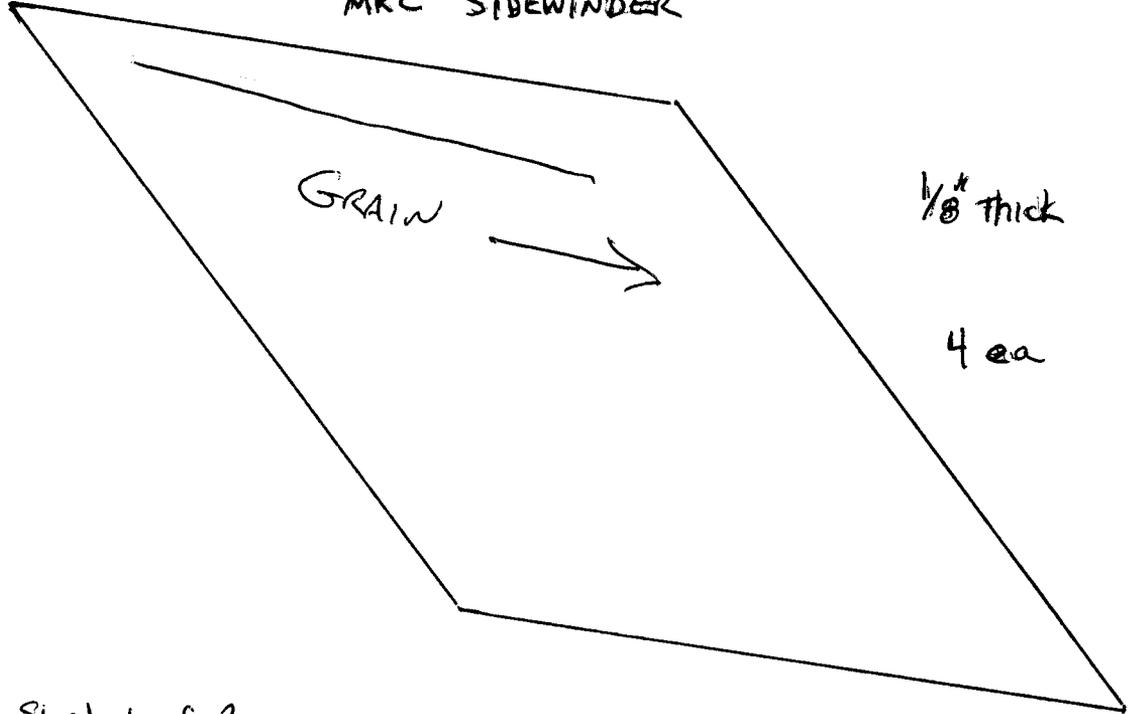
LAUNCH CHECKLIST

1. Disarm the launch system by removing the safety key.
2. Loosely pack several 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 — Insert the engine into the engine 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 SAFETY KEY FROM THE LAUNCH SYSTEM BEFORE YOU APPROACH THE LAUNCHER. DO NOT PUT YOUR HANDS AND FACE NEAR THE TOP OF THE ROCKET...

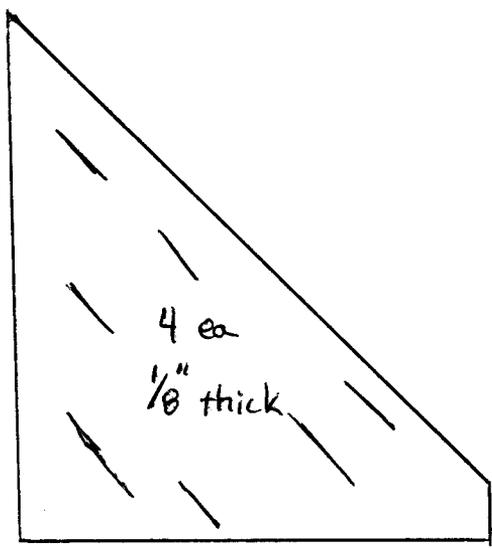
When you are ready to leave the launch site, we suggest you pick up and properly dispose of all debris such as used igniters, flameproof wadding or engine packages. A clean launch site is a safe launch site!

MRC SIDEWINDER



Sheet 1 of 2

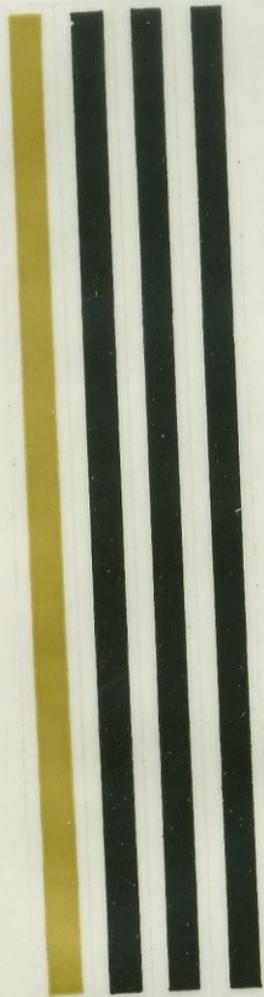
MRC SIDEWINDER



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Sheet 2 of 2

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CF9-01

**DESIGNATION C1 696143A
NGN 0020-01-151-7696AB
P/N 7631126-130
CODE IDENT 98752**

**CAUTION
DISENHANCE ELECTRICAL
CONNECTORS BEFORE
REMOVING GUIDANCE UNIT**





CR9-01

CAUTION
DISENGAGE ELECTRICAL
CONNECTORS BEFORE
REMOVING GUIDANCE UNIT

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