

## About Semroc Astronautics Corporation

Semroc Astronautics Corporation was started by Carl McLawhorn in his college dorm at North Carolina State University in November, 1967. Convincing a small group of investors in his home town of Ayden, North Carolina to invest in a small corporation, the company was re-incorporated as Semroc Astronautics Corporation on December 31, 1969.

Semroc produced a full line of model rocket kits and engines. At its peak, Semroc had twenty-five full time employees working at two facilities. One was for research and development, printing, shipping, and administration. The other was outside town and handled all production and model rocket engine manufacturing. For several years, Semroc was successful selling model rocket kits, supplies, and engines by mail-order and in hobby shops. In early 1971, Semroc became insolvent and had to close its doors.

After 31 years of dreams and preparations, Semroc Astronautics Corporation was reincorporated on April 2, 2002 with a strong commitment to helping put the fun back into model rocketry.

## About the April Dancer™

The Semroc April Dancer™ is based on a special effects missile from the old television spy series "Man from U.N.C.L.E." Lee Piester, the president of Centuri Engineering, designed the model rocket for his friend, Gene Winfield. Gene was the manager of the division of AMT that built the car used on the series. One of the special effects used rocket launch tubes in the gull-wing doors to fire the "heat-seeking" missiles. Lee designed the original model rockets used on the series in 1967. The original models used the Centuri Mini-Max "F" engines. The explosive effects were added in post-production.

The Semroc April Dancer gets its name from the "Girl from U.N.C.L.E." played by Stefanie Powers. Although the series only lasted one season, she made quite an impact on thousands of fans. The Semroc April Dancer uses laser-cut balsa fins, balsa nose cone, ejection baffle, and parachute recovery. Since the original fins were so small, a clay weight is added to the nose cone for improved stability.

## What is a Retro-Repro™?

A Retro-Repro™ is a retro reproduction of an out-of-production model rocket kit. It is a close approximation of a full scale model of an early historically significant model rocket kit from one of the many companies that pioneered the hobby over the past half century. A Retro-Repro is not a true clone or identical copy of the original. It incorporates improvements using modern technology, while keeping the flavor and build appeal of the early kits.

May 8, 2005, December 12, 2015

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**SEMROC**

## April Dancer

Rocket from U.N.C.L.E.

Precision Turned  
Balsa Nose Cone

Laser Cut Balsa  
Fins

Colorful Water  
Slide Decal

Parachute  
Recovery

Baffle  
Included

Dances  
in the  
sky



FLYING MODEL  
ROCKET KIT

Made in the U.S.A by Semroc - Dayton, Ohio

## APRIL DANCER™ Kit No. KA-5

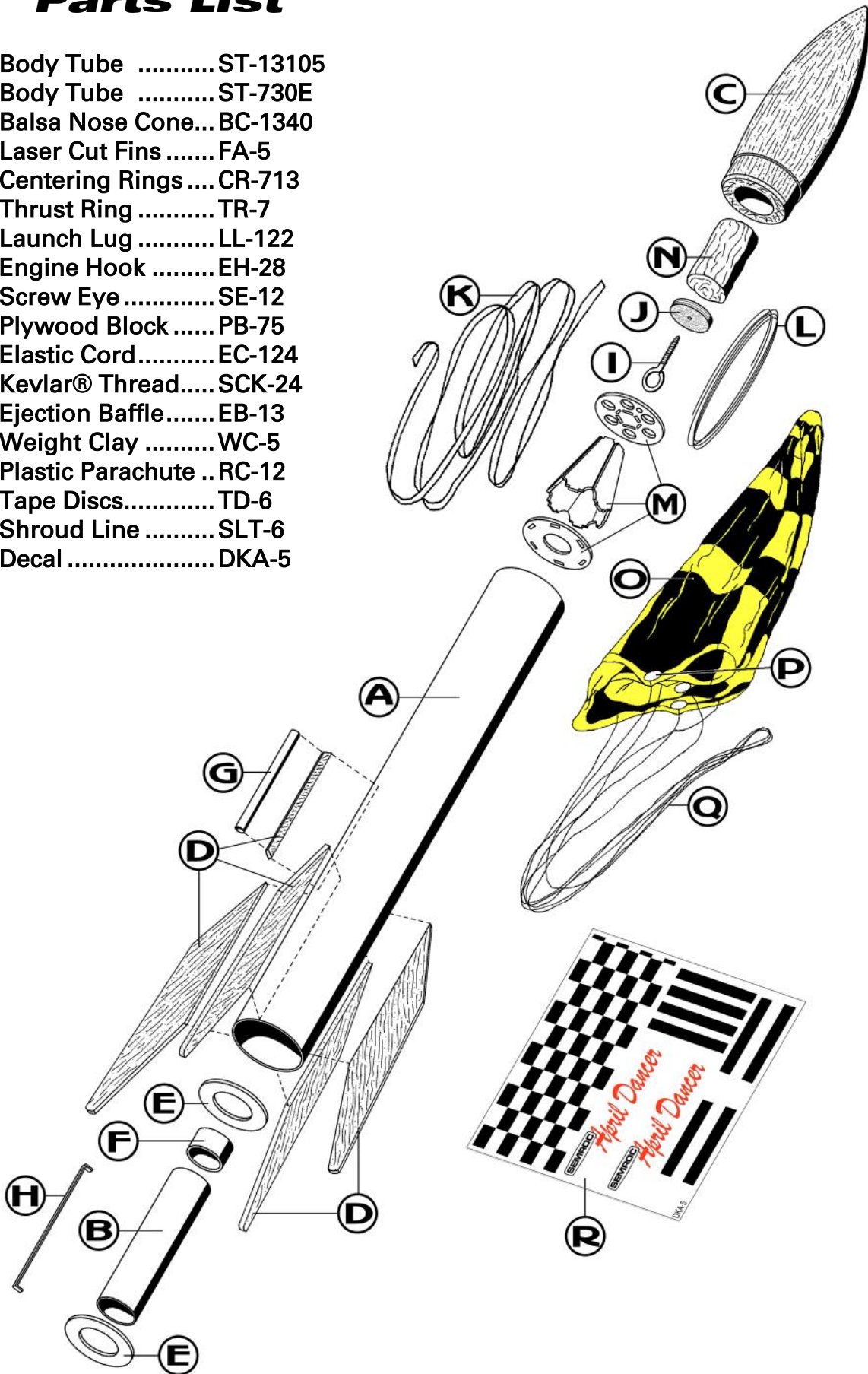
Specifications	Engine	Approx. Altitude
Body Diameter 1.34" (3.4 cm)	A8-3	125'
Length 16.6" (42.2 cm)	B6-4	400'
Fin Span 3.1" (7.9 cm)	C6-5	900'
Net Weight 1.9 oz. (53.9 g)		

**Skill Level 1**

# Parts List

# EXPLODED VIEW

- A 1 Body Tube .....ST-13105
- B 1 Body Tube .....ST-730E
- C 1 Balsa Nose Cone... BC-1340
- D 1 Laser Cut Fins ..... FA-5
- E 2 Centering Rings .... CR-713
- F 1 Thrust Ring ..... TR-7
- G 1 Launch Lug ..... LL-122
- H 1 Engine Hook ..... EH-28
- I 1 Screw Eye ..... SE-12
- J 1 Plywood Block ..... PB-75
- K 1 Elastic Cord ..... EC-124
- L 1 Kevlar® Thread ..... SCK-24
- M 1 Ejection Baffle ..... EB-13
- N 1 Weight Clay ..... WC-5
- O 1 Plastic Parachute .. RC-12
- P 1 Tape Discs ..... TD-6
- Q 1 Shroud Line ..... SLT-6
- R 1 Decal ..... DKA-5



## BEFORE YOU START!

Make sure you have all the parts included in this kit that are listed in the Parts List in the center of these instructions. In addition to the parts included in this kit, you will also need the tools and materials listed below. Read the entire instructions before beginning to assemble your rocket. When you are thoroughly familiar with these instructions, begin construction. Read each step and study the accompanying drawings. Check off each step as it is completed. In each step, test-fit the parts together before applying any glue. It is sometimes necessary to sand lightly or build-up some parts to obtain a precision fit. If you are uncertain of the location of some parts, refer to the exploded view in the center of these instructions. It is important that you always ensure that you have adequate glue joints.

## TOOLS

In addition to the parts supplied, you will need the following tools to assemble and finish this kit.

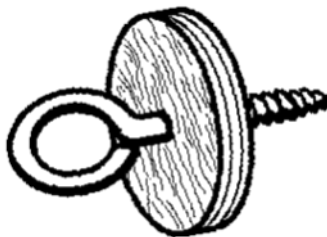


## ASSEMBLY

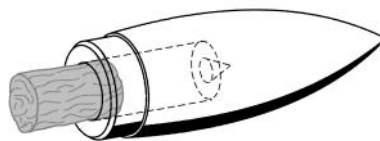
1. These instructions are presented in a logical order to help you put your April Dancer™ together quickly and efficiently. Check off each step as you complete it and we hope you enjoy putting this kit together.

## NOSE CONE

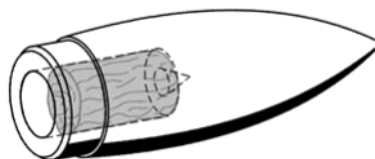
2. Twist the screw eye into the center of the plywood disc. Only screw it in until the threads just disappear into the plywood. Apply glue to the thread side and set this assembly aside to dry.



3. Roll the Clay Weight into a cylinder about 5/8" in diameter. Insert into the drilled hole in the nose cone.



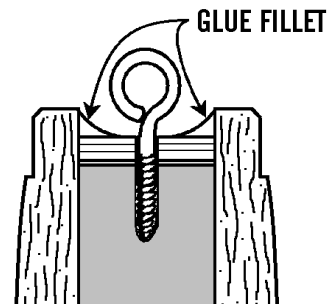
4. Using a wood dowel, pencil eraser, or your finger, push the Clay Weight as far into the nose cone as possible.



5. Insert the plywood disc and screw eye assembly into the hole in the nose cone and press it firmly against the Clay Weight.

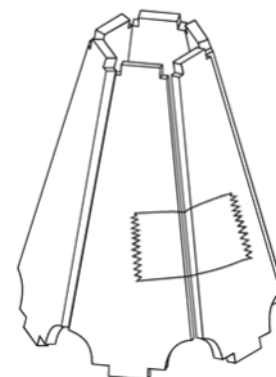


6. Make sure there is no clay showing. The glue will not stick to the clay. Apply a glue fillet around the plywood disc-nose cone joint. Leave the nose cone in a vertical position with the screw eye facing upwards until the glue is completely dry.



## BUILD EJECTION BAFFLE

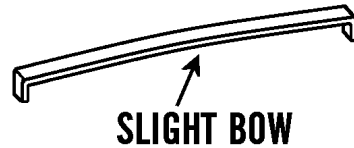
7. Carefully punch out the Ejection Baffle parts from the laser-cut fiberboard sheet. Carefully crease the middle section on the scored lines to form a cone. Hold it together with a small piece of tape as shown.



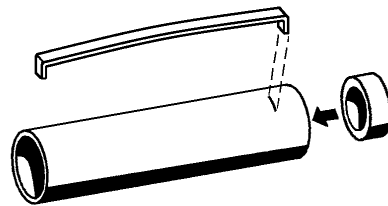
8. For extra protection from hot ejection gasses, coat the inside with a thin coat of wood glue. Punch out the center hole and all the slots in the bottom ring. Align the tabs of the middle section with the slots in the bottom ring and assemble the two parts. Apply glue to all the joints, making sure all the duct holes are left open.

## ENGINE MOUNT

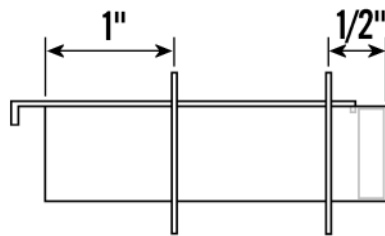
- ❑ 11. Bend the engine hook slightly so it forms a slight bow in the direction shown.



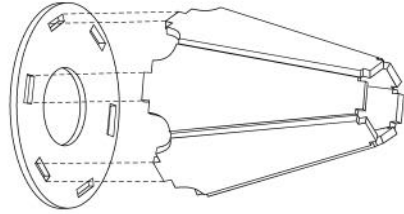
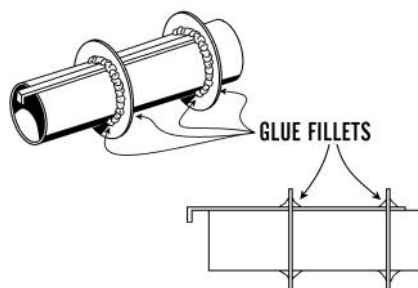
- ❑ 12. Insert one end of the engine hook into the pre-punched engine tube slot. Glue the thrust ring in place on top of the engine hook as shown.



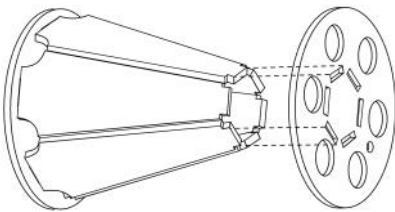
- ❑ 13. Slide the two centering rings onto the engine tube. Position them to the approximate locations as shown.



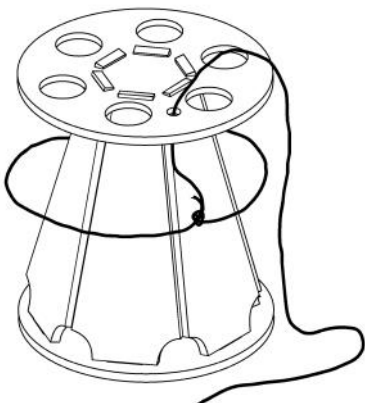
- ❑ 14. Apply a heavy fillet of glue around both sides of each centering ring at the joints with the engine mount tube. Continue turning the assembly until the glue does not run. Set the assembly aside to dry completely.



- ❑ 9. Punch out the outer holes and all the slots in the top ring. Align the tabs of the middle section with the slots in the top ring and assemble the two parts. Apply glue to all the joints, making sure all the round duct holes are left open.

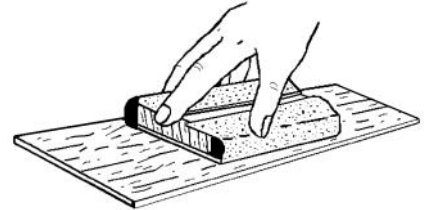


- ❑ 10. Tie one end of the yellow Kevlar® thread snugly around the top of the cone and pass the long free end through the smallest hole. Apply a bead of glue around the thread and on the knot. Set the assembly aside on a piece of wax paper and allow it to completely dry.

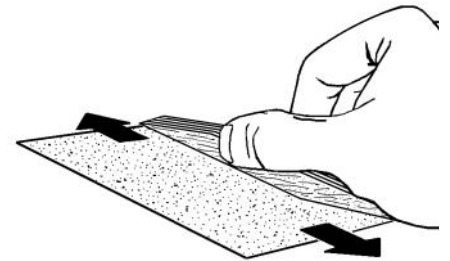


## PREPARE FINS

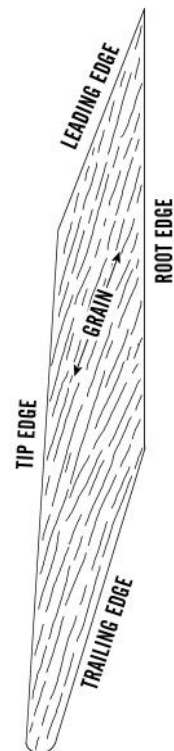
- ❑ 15. Lightly sand each side of the laser-cut fins. Carefully push the laser-cut fins from their sheet. Start at one point on each fin and slowly and gently work around the fin.



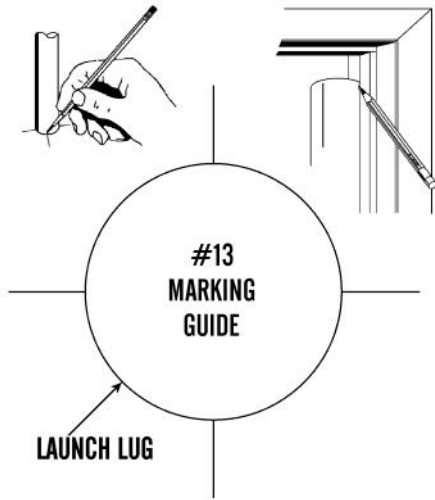
- ❑ 16. Stack all four fins and line them up squarely. Run the fins back and forth over some fine sandpaper to get rid of the hold-in tabs as shown. Carefully sand the launch lug standoff and set it aside for later.



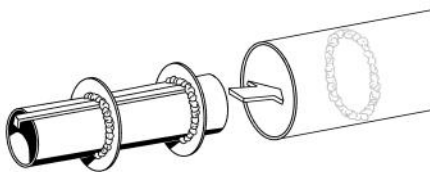
- ❑ 17. Round all edges except the root edge. The root edge should remain flat since it will be glued to the body tube.



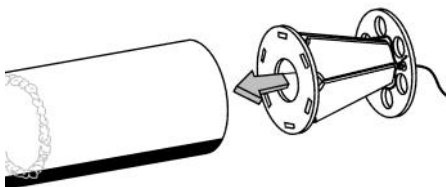
❑ **18.** Stand the body tube on the fin guide below and using a pencil make the fin position marks and the launch lug mark on the sides of the tube. Find a convenient channel or groove such as a partially open drawer, a door jamb (as shown,) or a piece of molding. Using the channel, extend the marks the full length of the tube to provide lines for aligning the fins and launch lug.



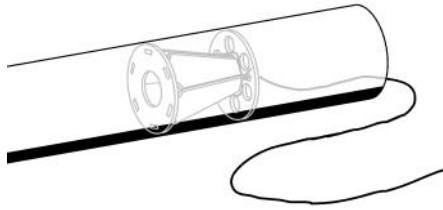
❑ **19.** Apply a thick bead of glue inside the aft end of the main body tube. Insert the engine mount assembly with the thrust ring end first into the main body tube until the engine mount tube is flush with the end of the main tube. Do not stop until it is in the correct place. Apply a good fillet of glue around the rear joint. Allow to dry completely.



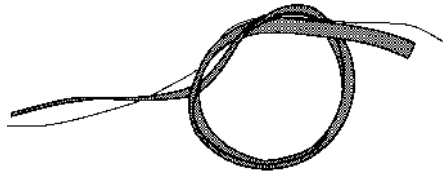
❑ **20.** Apply a thick bead of glue inside the forward end of the main body tube. Align the ejection baffle as shown with the single hole towards the top of the main body tube and the Kevlar® thread away from the body tube.



❑ **21.** Push the ejection baffle assembly into the body tube until it is three inches deep. Do not stop until it is in place. Apply a fillet of glue around the top ring and body tube joint. Allow to dry completely.

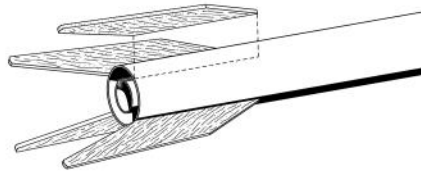


❑ **22.** Tie the free end of the Kevlar® thread to one end of the elastic cord using an overhand knot.

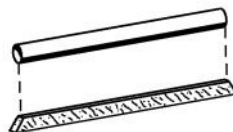


## FIN ASSEMBLY

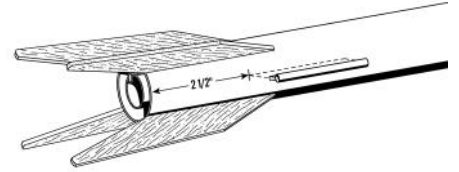
❑ **23.** Apply glue to the root edge of a fin and position it along one of the lines drawn for the fins on the side of the body tube. Remove, allow to almost dry, apply additional glue, and reposition. Repeat for the other three fins.



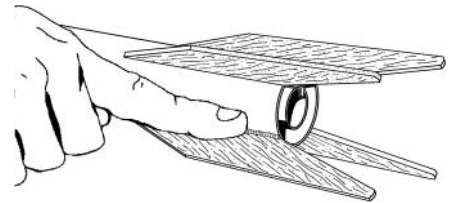
❑ **24.** Glue the launch lug to the short side of the balsa standoff as shown. Allow to dry.



❑ **25.** Glue the standoff and launch lug assembly to the main body tube along the line previously marked and 2 1/2" from the bottom of the main body tube. Allow to dry.

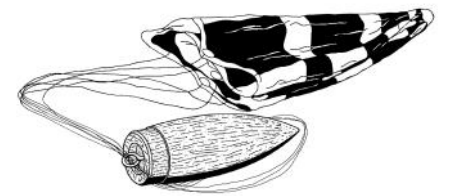


❑ **26.** After the fin assembly is completely dry, run a small bead of glue along both sides of each fin-body tube joint. Using your forefinger, smooth the glue into fillets.

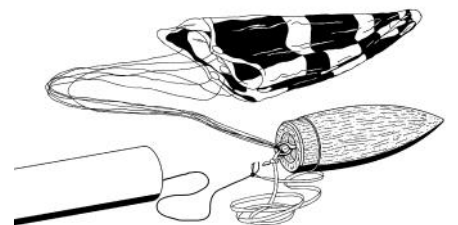


## FINAL ASSEMBLY

❑ **27.** Assemble chute using instructions printed on canopy. Attach chute by passing the lines through the screw eye and looping them over the tip of the nose cone as shown. Pull the lines tight and make sure they are all of equal length. Put a drop of glue on the joint to keep the lines from moving.





❑ **28.** Tie the free end of the elastic cord to the screw eye.




## FINISHING

❑ **29.** When the fillets have dried, prepare balsa surfaces for a smooth professional looking finish. Fill the wood grain with balsa fillercoat or sanding sealer. When dry, sand with fine sandpaper. Repeat until smooth.

 1st coat of fillercoat

 2nd coat of fillercoat

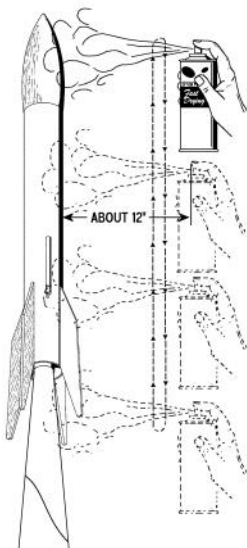
 After 1st sanding

 3rd coat of fillercoat

 After final sanding

❑ **30.** After all balsa surfaces have been prepared, wipe off all balsa dust with a dry cloth. First spray the model with an enamel primer. Choose a high visibility color like white for the final color. The nose cone may be painted separately. Red was used on the original model.

❑ **31.** Spray painting your model with a fast-drying enamel will produce the best results. PATIENCE...is the most important ingredient. Use several thin coats, allowing each coat to completely dry before the next coat. Start each spray a few inches above the model and end a few inches below the model. Keep the can about 12" away and use quick light coats. The final coat can be a little heavier to give the model a glossy wet-looking finish.



❑ **32.** After the paint has dried, decals should be applied. The decals supplied with the April Dancer are waterslide decals. Each decal should be cut separately from the sheet. Apply each decal before starting the next. Think about where you want to apply each decal and check for fit before wetting the decal. Use the cover photo for suggested placement.

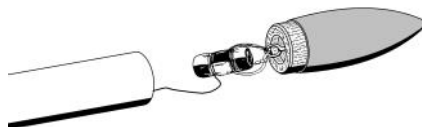
This completes the  
assembly of your

**SEMROC**  
*April Dancer*

## FLIGHT PREPPING

❑ **33.** Mounting the engine: Insert the engine and make sure the engine hook keeps the engine in snugly. The hook may be slightly bent to make sure the engine is retained.

❑ **34.** Fold the parachute and pack it and the shock cord on top of the ejection baffle. Recovery wadding may be used, but is not necessary. Slide the nose cone into place, making sure it does not pinch the shock cord or parachute.



❑ **35.** Refer to the model rocket engine manufacturer's instructions to complete the engine prepping. Different engines have different igniters and methods of hooking them up to the launch controllers.

❑ **36.** Carefully check all parts of your rocket before each flight as a part of your pre-flight checklist. Launch the April Dancer from a 1/8" diameter by 36" long launch rod.