

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 motors. 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 of town and handled all production and model rocket motor manufacturing. For several years, Semroc successfully sold model rocket kits, supplies, and motors 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. Many years of excellent service to the rocketry community passed by until sadly, on August 11 2013, Carl passed away and left a great void in the hearts of many rocketeers. He is forever in our hearts and minds.

In February of 2015, Semroc was sold to eRockets and moved to Dayton, Ohio where it resides today. It is our goal to continue the level of service and dedication to the hobby that Carl and his family were so well known for. We strive to serve you, our customers, to the best of our abilities as we carry the vision of Carl McLawhorn boldly into the future.

About the SLS Lil' Augie

Originally designed by Bill Simon, the Lil' Augie was released as free plan #10 in Model Rocket News circa the Fall of 1962. The current design is loosely based on that rocket but upscaled to take advantage of the 29mm Black Powder motors now available. Phil Queen and Dave Combs of local rocketry club Wright Stuff Rocketeers (NAR 703) contributed greatly to the development of this kit and have our deepest gratitude.

January 2017

Copyright © 2017 Semroc
www.semroc.com

SEMROC

SEMROC Lil' AUGIE

Semroc Large Series

Precision Turned Balsa Nose Cone

2 Stage Excitement!

Howls Like A Dog

Water Slide Decals

Laser Cut Basswood Fins

Original design by Bill Simon

Heavy Duty Body Tubes

15" Rip Stop Nylon Parachute

MADE IN THE USA

FLYING MODEL ROCKET KIT

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

SLS Lil' Augie™ Kit No. KA-38

Specifications	Engines	Approx. Altitude
Body Diameter	2.75" E16-0, E16-6	1800ft
Length	24.5" F15-0, F15-6	2800ft
Fin Span	6.0"	
Net Weight	3.7	

Skill Level 3

BEFORE YOU START!

Make sure you have all the parts included in this kit that are listed in the Parts List in 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 identity of some parts, refer to the exploded view. 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



ASSEMBLY

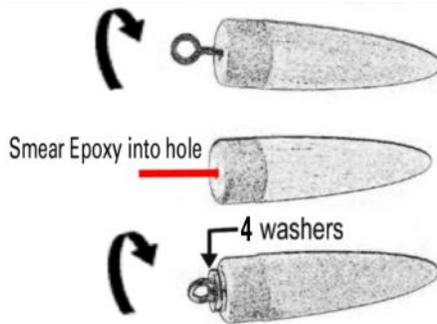
- ❑ 1. These instructions are presented in a logical order to help you put your SLS Lil' Augie™ together quickly and efficiently. Check off each step as you complete it. We hope you enjoy putting this kit together.

NOSECONE

- ❑ 2. Insert the nose cone (E) into the upper airframe tube (B) and check for proper fit - snug enough to stay in place but not so tight it's hard to remove. If it is too loose, add masking tape. If it is too tight, sand the shoulder slightly.

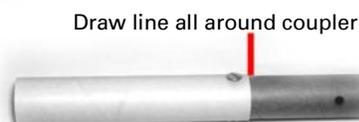


- ❑ 3. Twist the screw eye (K) into the center of the base of the nose cone. Unscrew it and smear epoxy into the hole. Place the four washer weights (J) onto the screw eye. Reinstall the screw eye, then epoxy around the edges of the washers to secure them to the cone. Wipe off any excess glue.



ASSEMBLY

- ❑ 4. With the Binding Post (I) in place, draw a line around the coupler (C) where it meets the lower airframe tube (D).



- ❑ 5. Remove the Binding Post. Smear a line of epoxy 1 inch inside the bottom of the lower airframe

Glue inside this end of the tube



- ❑ 6. Insert motor block (H) and spent motor casing. Push the spent Estes 29mm black powder motor casing into the lower airframe tube with the coupler until the mark you made in step 4 is even with the top of the lower airframe tube. Quickly remove the coupler and spent motor.

Insert until this line is even with top of lower airframe tube



- ❑ 7. Wipe away any excess glue with the glue applicator (Q)

Wipe away excess glue

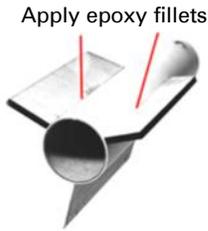


- ❑ 8. Place the two fin guide tools (P) around the lower airframe tube (D) and set the assembly on a flat surface. Note the orientation of the lower airframe tube in the photo. Slide one of the inner fins (F) into the fin guide tools until the trailing edge of the fin is even with the bottom of the lower airframe tube. Tack the fin in place with CA glue, taking care to avoid gluing the fin guide tool to the airframe tube. Do this for all three inner fins.

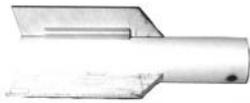
Motor block on this end



- ❑ 9. When all three inner fins have been tacked in place, remove the fin guide tools and apply a fillet of epoxy to all inner fin/lower airframe tube joints. Epoxy the launch lug (L) in place against the middle of a fin in the fin/tube joint.



Apply epoxy fillets



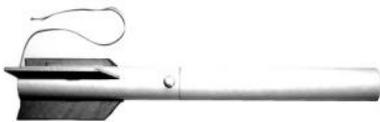
10. Slide the coupler into the lower airframe tube and insert the Binding Post. Thread the Kevlar cord (R) through the hole in the coupler and secure with a double overhand knot. Cut off any excess Kevlar. Feed the Kevlar back through the lower airframe tube.



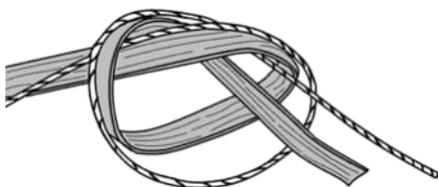
11. Apply a ring of epoxy 2 inches inside the upper airframe tube (B). Insert the coupler until the upper and lower airframe tubes fit snugly against one another. Allow time for epoxy to cure before proceeding.



Epoxy 2 inches inside



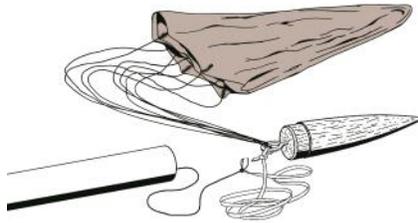
12. Tie the Kevlar cord (R) to the 1/4 inch elastic cord (N), then pass the cord through the motor mount and out the top of the rocket.



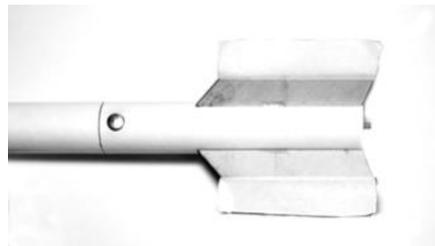
Pass through tied together cords



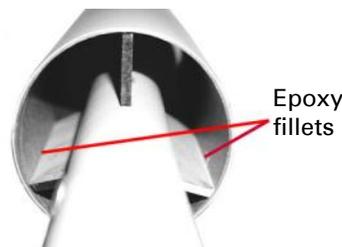
13. Attach chute (O) by passing the lines through the screw eye and looping them over the tip of the nose cone. Pull the lines tight and make sure they are all of equal length. Put a drop of glue on the joint to keep the lines from moving. Tie the loose end of the elastic cord to the screw eye. Put a drop of glue on the knot to keep it from untying.



14. Paint the entire airframe and nosecone now as painting the inner fins will be difficult after the next step. Mask off 1/16 of an inch of the inner fins as shown so you won't be applying epoxy over paint later. Paint the rocket the color of your choice and allow to dry thoroughly before proceeding.



15. Remove tape from the fins. Slide the shroud tube (A) over the inner fins until the tops of the fins are even with the top of the shroud. Apply epoxy fillets to all inner fin/shroud joints.



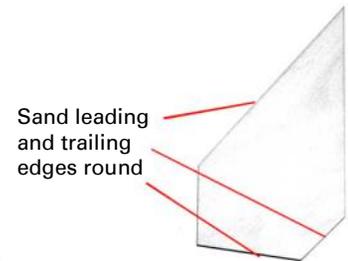
Epoxy fillets

18. Using a straightedge, extend a line from both sides of the inner fins down the outside of the shroud tube.

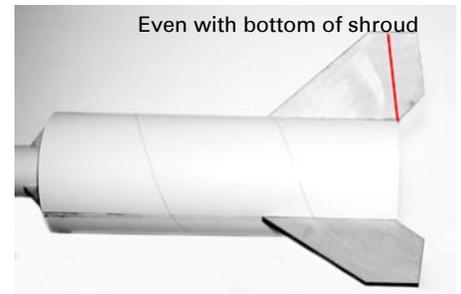
Extend lines to the bottom of the shroud



19. Prepare the outer fins (G) by sanding the leading and trailing edges round. Using CA glue, tack each outer fin in place with the trailing edge even with the bottom of the shroud tube.

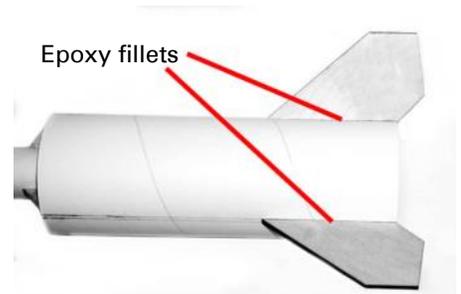


Sand leading and trailing edges round



Even with bottom of shroud

20. Apply epoxy fillets to the outer fin / shroud tube joints



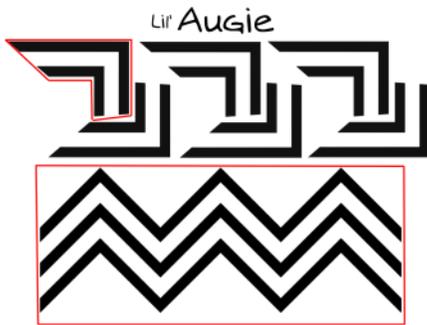
Epoxy fillets

21. Install the aluminum flame protection tape (M). Remove the adhesive backing from one of the sheets. Apply the sheet inside the shroud tube to protect it from the heat of the second stage motor. Overlap the sheets 1/4 of an inch or so as you work your way around. Cut off any overhanging material with a sharp razor or hobby knife.



DECALS

❑ **22.** To apply the decals to your Semroc SLS Lil' Augie, cut along the lines as shown in the photo below. You may be tempted to cut out the Zig-Zag pattern for the large wrap decal but take the author's word for it when he says it makes a real mess of things.



❑ **23.** Refer to the cover illustration for decal placement on the fins. The "Points" of the large decal should be close to the leading edge of the shroud tube and pointed at the inner fins.

❑ **24.** This completes the assembly of your Semroc SLS Lil' Augie. The following instructions will help you have a safe and exciting flight!

FLIGHT PREPPING

❑ **1.** Install the motors in this fashion. Remove the Binding Post. Insert the upper stage motor until the nozzle end comes to rest against the motor block. Replace the barrel bolt.

❑ **2.** Remove the nosecone and add 3 to 5 sheets of loosely crumpled recovery wadding. Carefully roll the parachute and insert it into the rocket. Replace nosecone—check the fit.

❑ **3.** Insert the first stage motor by friction fitting it into the bottom of the lower airframe tube. It will stop against the motor block.

❑ **4.** Apply a piece of tape to the launch rod to support the launch lug or use a standoff to keep the shroud from sitting directly on the blast deflector plate.

❑ **5.** Install an igniter according to the manufacturer's instructions.

Have a **HOWLING** good time!

Parts List

A	Shroud Tube.....	LT-27580
B	Upper Airframe Tube.....	LT11575
C	Coupler.....	CPL-52HH
D	Lower Airframe Tube.....	LT-11560D
E	Nosecone.....	BC-11554
F	Inner Fin (3).....	FA-38
G	Outer Fin (3).....	FA-38
H	Motor Block.....	CR-50-52H
I	Binding Post.....	BP1
J	Washer Weight (4).....	WW-8
K	Screw Eye.....	SE-12
L	Launch Lug.....	LL-423
M	Flame Protection Tape (6).....	APS-1
N	Elastic Cord.....	EC-218
O	Ripstop Nylon Parachute.....	CP-12-24
P	Fin Guide Tool (2).....	TKA-38
Q	Glue Applicator.....	GA-1
R	Kevlar Cord.....	SCK-436
S	Decal Sheet.....	DA-38

