About Semroc

Semroc 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 Semroc Vega™

The Semroc Vega™ was released in 1969 as the fifth Semroc-Kit. Designed to be a large rocket for beginners, the Vega™ was inspired by the early Estes Big Bertha plans. Since the Vega™ was Semroc's fifth kit, it was named after the fifth brightest star (not counting the sun.) The Vega™ also was the forerunner to the Semroc Goliath™. To cut down on inventory, the Vega™ was redesigned with slightly larger fins, the body tube was cut to provide a payload section and released as the Goliath™. Since it was possible to build and fly the Goliath™ with a single engine, the Vega™ was only sold for one year. The Vega™ was part number KB-5 and retailed for $2.49 when it was first introduced.

In 2019 the Retro-Repro™ Vega™ was updated by using laser-cut balsa fins and a Kevlar® shock cord attachment. An engine hook was added to make engine mounting more convenient. A single 15" parachute is provided. The original balsa nose cone has been replaced by a plastic nose cone. This is our first kit with a plastic nose cone. The patriotic American design is in honor of Eagle Scouts, and proudly displays an eagle.

July 20, 2005, August 15, 2015, February, 2020

SEMROC

VEGA™

American Design Honoring Scouts

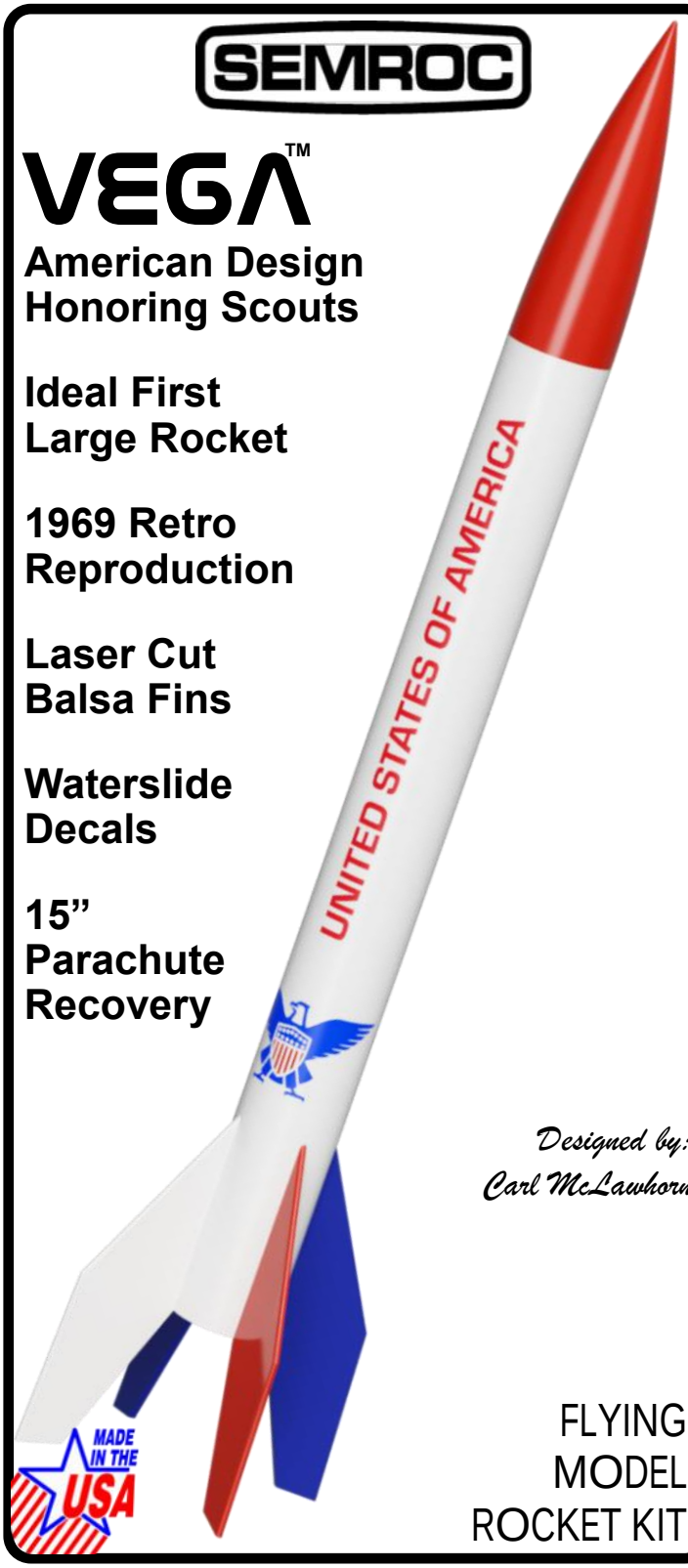
Ideal First Large Rocket

1969 Retro Reproduction

Laser Cut Balsa Fins

Waterslide Decals

15" Parachute Recovery



Designed by:
Carl McLawhorn

FLYING MODEL ROCKET KIT

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

VEGA™

Specifications	
Body Diameter	1.64"(4.2cm)
Length	23.875"(60.64cm)
Fin Span	5.375"(13.65cm)
Net Weight	2.1oz(59.5g)

Engine	Approx. Altitude
B6-4	300'
C6-5	700'
C12-6	800'
D16-8	1200'

Skill Level 1

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.

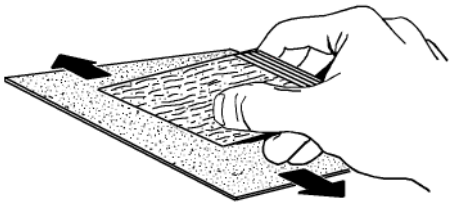
TOOLS

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

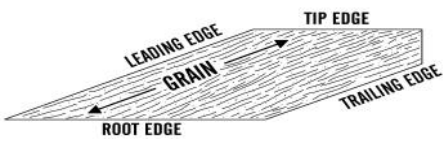
White or Wood Glue Spray Paint
Balsa Fillercoat or Sanding Sealer
Fine Sandpaper 320 to 600 Grit
Ruler Pencil Hobby Knife
Masking Tape Scissors

FINS

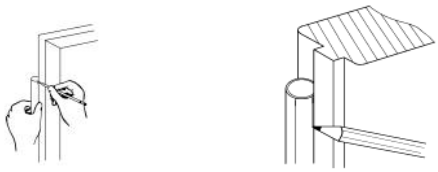
❑ **1.** Stack all four fins together. Line them up squarely and sand the fins back and forth over some fine sandpaper to get all of your fins to the same size.

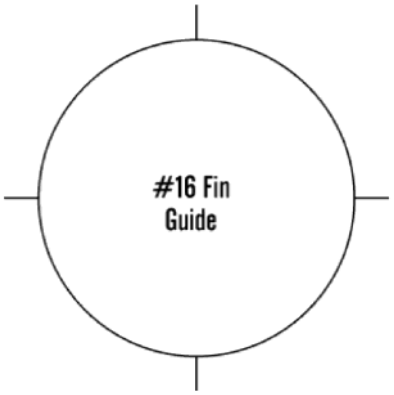


❑ **2.** Round all leading edges. Round or taper all trailing and tip edges. Leave the root edges flat. Use the diagram below to aid in identifying the different edges.



❑ **3.** Stand the largest body tube on the fin guide and make the fin position marks 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.

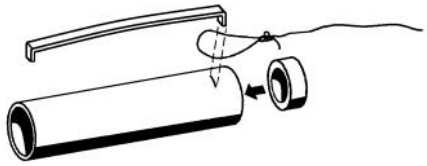




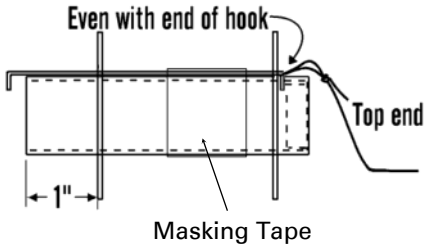
ENGINE MOUNT

❑ **4.** Tie a loop in one end of the yellow Kevlar® cord using an overhand knot.

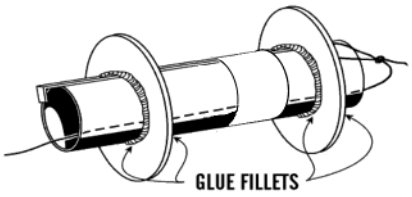
❑ **5.** Insert one end of the engine hook through the loop in the yellow Kevlar® cord and into the pre-punched engine tube slot. Glue the thrust ring in place on top of the engine hook as shown.



❑ **6.** Glue the two centering rings on the engine mount tube as follows. Slide the first ring from the bottom until it is even with the end of the engine hook. Make sure the yellow Kevlar® cord is free and comes out from the top of the tube as shown below. Mark 1" from the bottom of the engine mount tube and slide the other centering ring from the bottom until it is even with the mark. Add a wrap of Masking tape around the motor hook and tube.



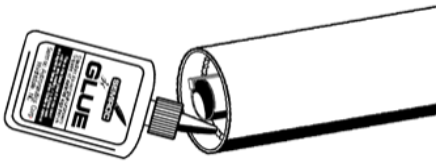
❑ **7.** When the centering rings are positioned properly, apply glue fillets around the engine mount tube at all four joints as shown. Pull the cord back through the engine tube.



❑ **8.** Apply a bead of glue about 1/4" inside the large body tube. Insert the engine mount assembly until it is flush with the bottom of the tube. Stand the tube on end with the engine mount pointed downward and allow to dry thoroughly.

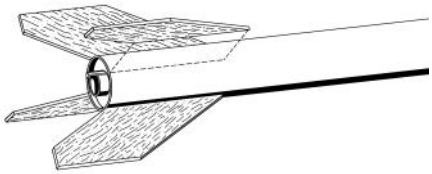
❑ **9.** Feed the yellow Kevlar® cord back through the engine mount tube until it comes out the opposite end. Make sure it is pulled all the way through the engine mount.

❑ **10.** Apply a bead of glue around the bottom centering ring. Stand the assembly on end with the engine mount upward and allow to dry thoroughly.



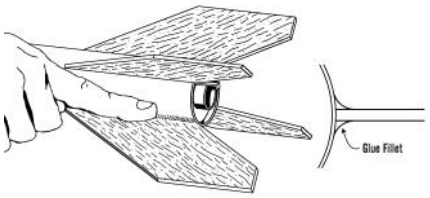
FIN ASSEMBLY

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



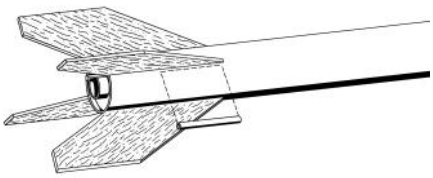
❑ **12.** Allow to dry standing vertically, checking for alignment visually while the assembly dries. Stuff the shock cord and Kevlar® cord into the body tube so it will remain vertical.

❑ **13.** 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.



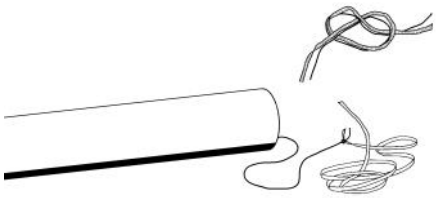
Llaunch lug

❑ **14.** Glue the launch lug onto the body against one of the fin joints and even with the top edge of the fin as shown. Stand the assembly vertically again and wait for the fin fillets to completely dry. Watch for runs in the glue and wipe any before they run down the tube.



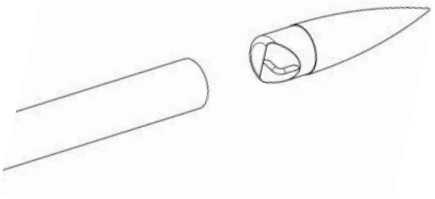
SHOCK CORD

❑ **15.** Prepare the main shock cord as follows. Line up one end of the elastic shock cord with the free end of the Kevlar cord and tie an overhand knot at the end of the two cords. Pull the knot tight and place a small drop of white glue on the knot to prevent it from loosening.



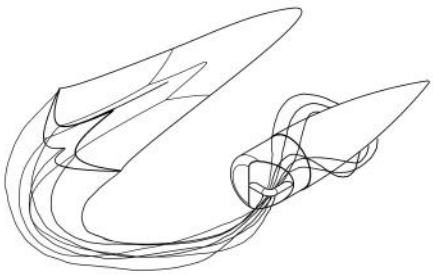
NOSE CONE

❑ **16.** Insert the nose cone in the body tube and check for proper fit. The nose cone should be snug to hold itself in alignment. If it is too loose, add masking tape. If it is too tight, sand the shoulder slightly. Do not glue the nose cone into the body tube!

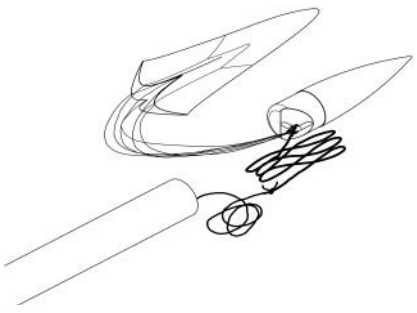


PARACHUTE ASSEMBLY

❑ **17.** Assemble the 15" chute using instructions with the chute. Tie the chute to the screw eye and use a drop of white glue to set the knot.



❑ **18.** Tie the free end of the elastic cord to the screw eye using an overhand knot. Put a drop of glue on the knot to keep it from untying.



❑ **19.** This completes the final assembly of your Vega™. It may be flown as it is, but continue with the finishing for a better looking rocket!

This completes the assembly of your

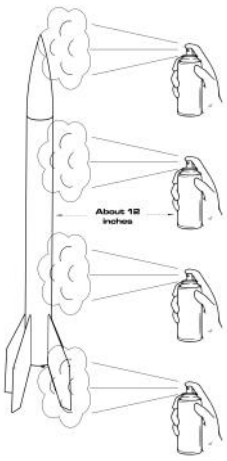
VEGA

FINISHING

❑ **20.** Prepare balsa surfaces for a smooth professional looking finish. Fill the wood grain with Fill'n'Finish diluted about half and half with water, When dry, sand with fine sandpaper. Repeat until smooth.

❑ **21.** After all balsa surfaces have been prepared, wipe off all balsa dust with a dry cloth. First spray the model with a primer.

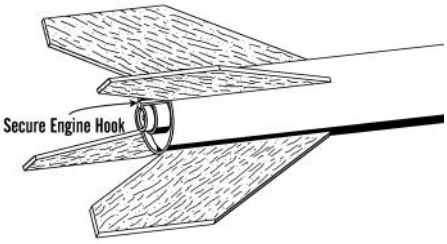
❑ **22.** Spray painting your model with a fast-drying enamel will produce the best results. PATIENCE...is the most important ingredient. Use several thin coats, allowing each coat to completely dry before the next coat. Start each spray a few inches above the model and end a few inches below the model. 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.



❑ **23.** After the paint has dried, the decal may be applied. The decal supplied with the Vega™ is a waterslide decal. Cut around the decal and place it in a dish of water. When it is loose on the paper backing, slide it onto the main tube.

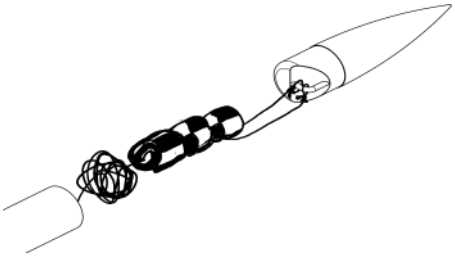
LAUNCH PREPARATION

❑ **24.** 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.



❑ **25.** Pack the recovery wadding from the top of the body tube. Use a sufficient quantity to protect the parachute, but not too much that it will interfere with the proper deployment of the parachute. For best results, only push the recovery wadding down far enough to allow room for the chute and cords.

❑ **26.** Fold the parachute and pack it and the shock cord on top of the recovery wadding. Slide the nose cone into place, making sure it does not pinch the shock cord or parachute.



❑ **27.** Carefully check all parts of your rocket before each flight as a part of your pre-flight checklist. Launch the Vega™ from a 1/8" diameter by 36" long launch rod. A longer rod will result in better flight control and stability.

Why the eagle? The constellation that the star Vega is located in is also known as the "soaring eagle." Since all of us at Semroc are Boy Scout oriented, the eagle has a special place for us.

The Eagle has been revised using the top portion of the Eagle Scout emblem. This is to encourage American scouts to persevere in their endeavors in scouting.

Parts List

A	1	Body Tube	ST-16160
B	1	Body Tubes	ST-730E
C	1	Plastic Nose Cone	PNC-60R
D	1	Laser Cut Fin Set	FV-25
E	1	Centering Ring Set	CR-7-16
F	1	Thrust Ring	TR-7
G	1	Launch Lug	LL-122
H	1	Engine Hook	EH-28
I	1	Elastic Cord	EC-124
J	1	Kevlar Thread	SCK-236
K	1	Plastic Parachute	CP-12-24
L	1	Decal	DKV-25