

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 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 a group of investors and Randy Boadway of 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 Blue Jay™

The Semroc Blue Jay was designed by Jay Berry and Randy Boadway. Randy has built delta wing gliders for years and flown them in competition too. Randy had a number of complaints about the typical design that was available on the market so he put Jay Berry to work creating a delta wing model without the disadvantages of similar models.

Jay is a member of NAR section 703, Wright Stuff Rocketeers in the Dayton, Ohio area. He designed this glider to be nearly fool proof. It is almost impossible to put a part in the wrong place. The keel is extra heavy duty and the hook system designed by Eric Specht forces the glider off at apogee. After naming the rocket after Jay we had to add a Bluejay head to the kit. We promise this rocket will never raid the nests of other songbirds and steal their eggs. We hope you enjoy building and flying it!

January 2017

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SEMROC

Blue Jay™

**Delta Wing
Boost Glider**

**Precision Turned
Balsa Nosecone**

Sturdy Fuselage

**Laser Cut Balsa
Parts**

**Unique Motor
Pod Hook**

**Glider and
Streamer
Recovery**

*Designed by:
Jay Berry*



FLYING MODEL
ROCKET KIT

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

Blue Jay™ Kit No. KC-03

	Specifications	Motor	Approx. Altitude
Glider	Wingspan 13.5"	B6-2	175'
	Length 16"	C6-3	400'
Tube	Diameter 0.73"		
	Length 13.75"		

Skill Level 2

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. It is important to always make sure 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

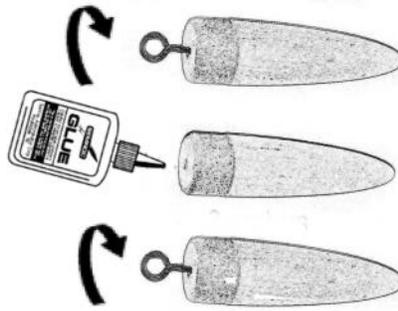
❑ 1. These instructions are presented in a logical order to help you put your Blue Jay™ together quickly and efficiently. Check off each step as you complete it. We hope you enjoy putting this kit together.

NOSECONE

❑ 2. Insert the nose cone into the body tube 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.

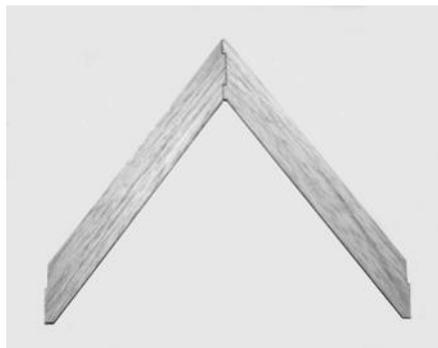


❑ 3. Twist the screw eye into the center of the base of the nose cone. Unscrew it and squirt glue into the hole. Reinstall the screw eye and wipe off any excess glue.

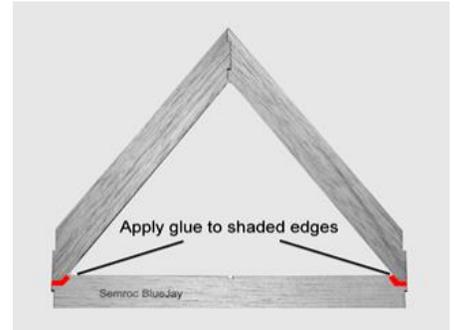


WING

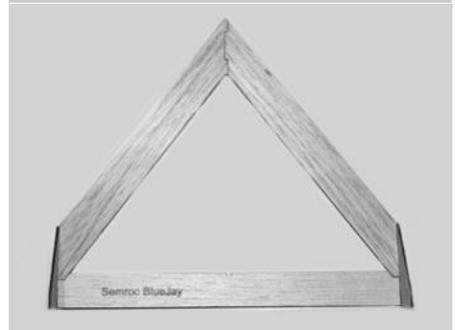
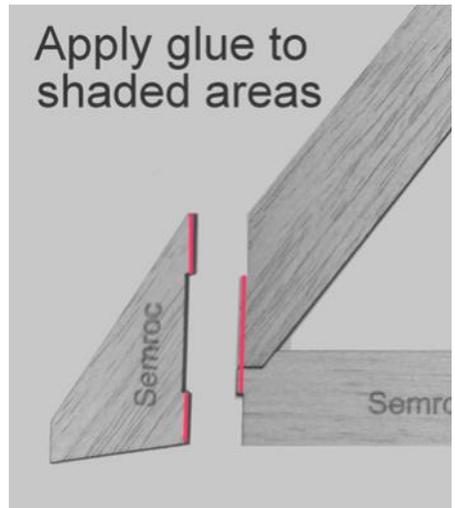
❑ 4. Take the two wings and lay them on a flat surface covered in wax paper. Apply glue to the tabs where the wings join and then glue them together. Hold in place with weights or a copy of Rockets of the World until dry.



❑ 5. Apply glue to the tabs and attach the tail section of the glider. Make sure the entire assembly remains flat on the table and weighted down.

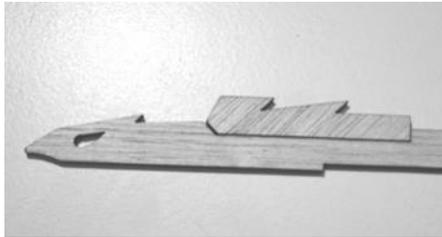
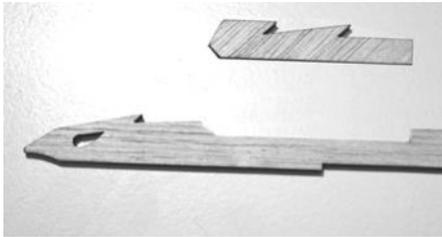


❑ 6. The uprights are attached next. Glue the uprights in place as shown. You may wish to use a triangle to ensure they are attached at a 90 degree angle.



FUSELAGE

❑ 7. Attach the hook to the fuselage as shown. Make sure the hook is flush with both sides of the fuselage before gluing in place.



❑ 8. After the glue on the hook has cured, attach the fuselage to the wing. The notch in the underside of the fuselage aligns with the leading edge of the wing while the other end aligns with the notch in the rear wing. **Only glue the leading edge of the wing to the underside of the fuselage at this time.** Just like the uprights, make sure the fuselage is at a 90 degree angle to the wing.

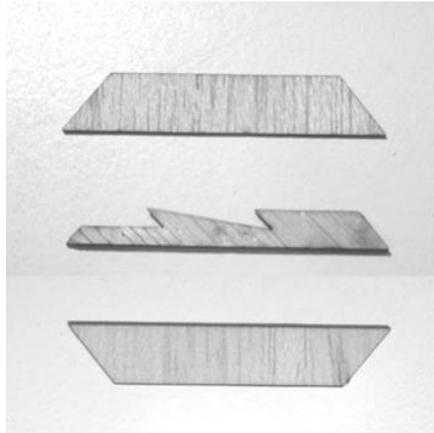


❑ 9. After the glue has dried from step 8, the tail of the glider is glued to the fuselage to form the elevator. Clamp in place with hobby clamps or a clothespin while the glue dries.

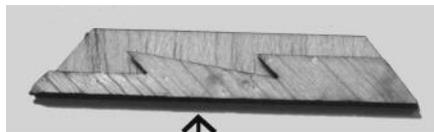


MOTOR POD

❑ 10. Locate the 3 pieces of the motor pod hook.



❑ 11. Glue the hook to the cheek while making sure the bottom edges are aligned.



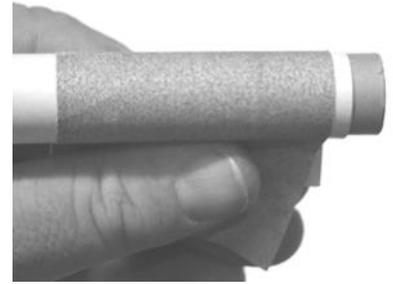
This edge must remain flush



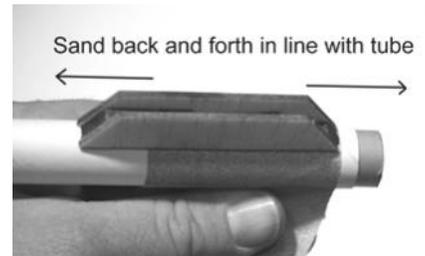
❑ 12. Glue on the other cheek and you'll have an assembly that looks like this.



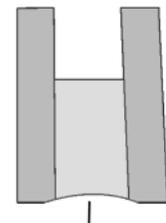
❑ 13. Sand a contour into the motor pod hook so it fits snugly onto the motor tube. Take an empty motor casing and insert it into the motor pod tube. Leave about 1/4 inch hanging out so you can grab it to pull it out later. Wrap a piece of sandpaper around the tube and hold it in place.



❑ 14. Take the motor pod hook in hand and sand it gently back and forth, making sure to keep it aligned with the tube. Do your best to apply light, even pressure while sanding. If you don't sand it straight, you'll end up with divergent thrust and your rocket won't fly straight.



Viewed from the end, the motor pod hook should look like this when contour sanding is finished.



Note contour

❑ 15. Test fit the motor pod hook and the fuselage hook. If the fit is too tight, the motor pod won't separate when the motor fires the ejection charge. Lightly sand the fuselage hook with fine sandpaper until the motor pod hook slides off smoothly.

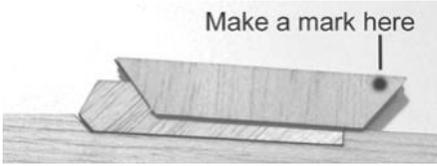
Test fit motor pod hook



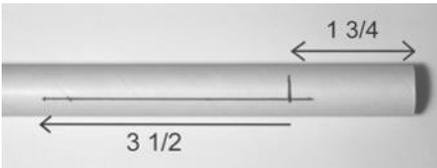
Sand lightly if fit is too tight



❑ 16. After you're satisfied with the fit of the motor pod hook and fuselage hook, make a mark at the rear edge of the motor pod hook.



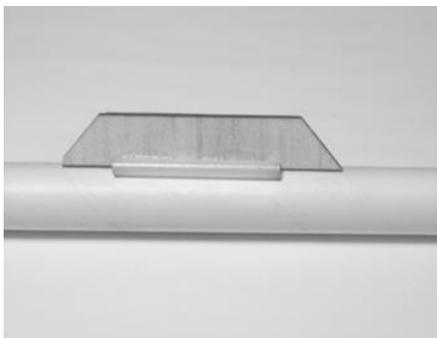
❑ 17. Make a mark on the motor pod tube 1 3/4 inches from one end. Using a straightedge, draw a straight line through the 1 3/4 inch mark and another 3 1/2 inches up the tube.



❑ 18. Place the motor pod hook on the line. The end of the pod with the mark you made in step 16 should be even with the 1 3/4 inch mark. Make sure the motor pod hook is in alignment and glue into place.



❑ 19. Glue the launch lug into place between the motor pod tube and the pod hook.



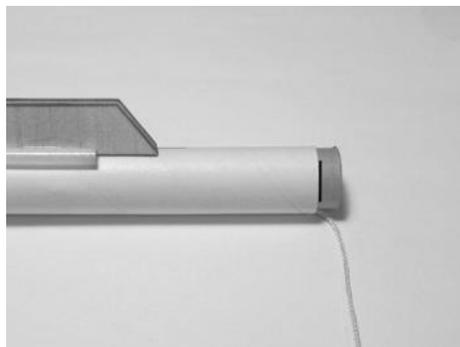
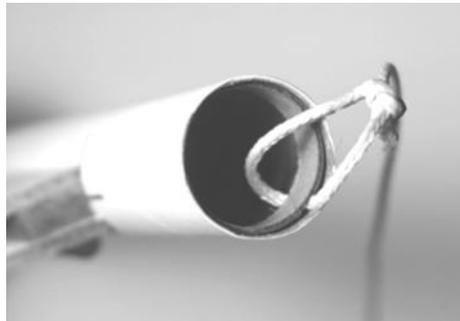
❑ 20. Tie the length of Kevlar around the motor block. Use the old motor casing as a spacer to tie it in a loop. Set the knot with a drop of glue and cut off the loose end.



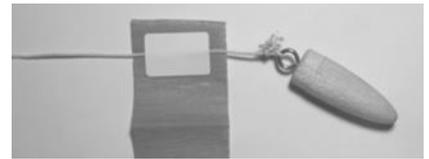
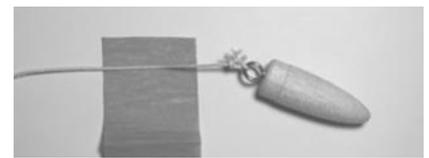
❑ 21. Mark the motor casing 1/4 inch from one end. Spread a layer of glue around 2 1/4 inches inside the end of the tube with the hook.



❑ 22. Insert the motor block as shown and push into place with the empty casing until the 1/4 inch mark is even with the end of the tube. Quickly remove the motor casing with a twisting motion.



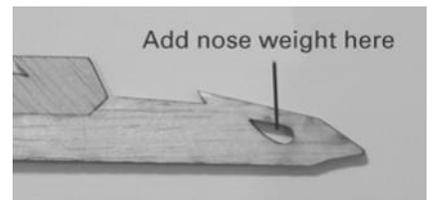
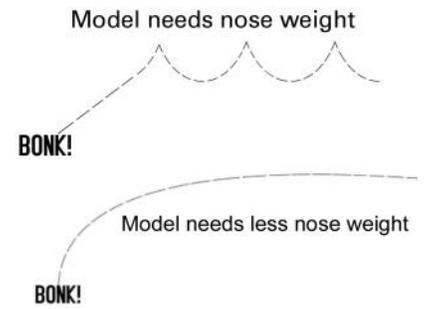
❑ 23. When the glue has dried, feed the Kevlar cord through the motor tube and tie it to the nosecone. Unroll the streamer material and lay the loose end under the Kevlar as shown. Apply the tape to hold the streamer in place.



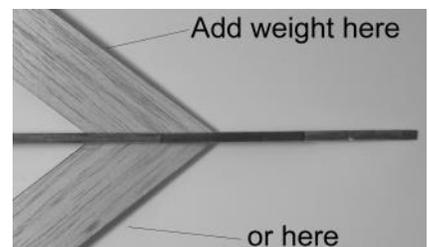
❑ 24. This concludes the construction of your Semroc Blue Jay boost glider! We hope you enjoy flying this high quality kit.

Glider Trimming

❑ 25. Locate a clear grassy area free of objects that will damage your glider. Face the wind and gently toss the glider with the nose slightly elevated. If the glider stalls, add some weight in the "eye" of the glider body and try again. If it dives, remove some of the nose weight until level flight is achieved.



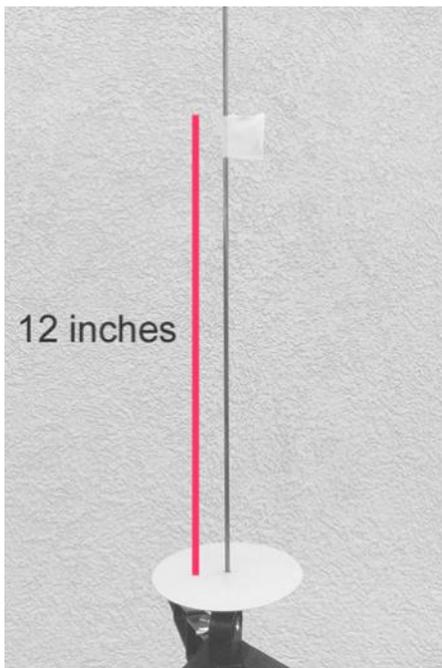
❑ 26. Once you have obtained a straight and level glide path, add some weight to the left or right wing to make the glider turn. If the glider doesn't turn, you're in for a long walk!



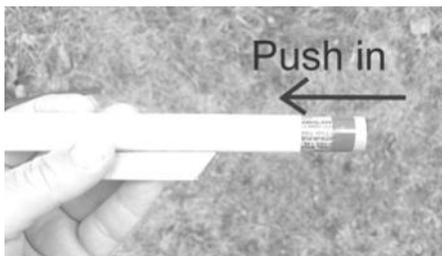
FLIGHT PREPPING

1. Carefully check all parts of your boost glider before each flight as a part of your pre-flight checklist. Launch the Blue Jay™ from a 1/8" diameter by 36" long launch rod.

2. Take a 2 inch long piece of masking tape and make a tab on the launch rod 12 inches from the blast deflector plate. This will hold the tail of the glider off of the blast deflector plate and prevent it from separating before launch.



3. . Wrap tape around the nozzle end of the motor until it fits snugly into the tube. Insert the motor until it stops against the motor block. Grab it with your fingers and try to pull it out—it should not come out easily.



4. Apply a few sheets of recovery wadding in the top of the body tube. Roll the streamer 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 streamer.

5. Install the igniter so the leads are opposite the pod hook and attach the pod to the glider.

6. Drive a wooden dowel into the ground at an angle away from the pad. Tape the leads down to this makeshift umbilical tower while making sure you can still get the clips onto the igniter. This helps prevent the leads from getting caught by the tail section as the rocket launches and seriously fouling the flight.



7. After each flight, promptly remove the spent motor casing and dispose of properly.

Parts List

A	1	Balsa Nose Cone	BNC-20B
B	1	Body Tube	BT-20L
C	1	3/16" Balsa Keel	FC-03
D	1	3/32" Balsa Parts	FC-03
E	1	3/13 Basswood Hook	FC-03
F	1	3/16" Balsa Hook	FC-03
G	1	Screw Eye	SE-10
H	1	Kevlar 200#	SCK-236
I	1	Launch Lug 2.25"	LL-122
J	1	Motor Block	CR-5-20
		-1/8"	
K	1	Streamer Pack	SP-236
L	1	Clay Weight	WC-2

