



Model Rocket Safety Code

- 1. Materials.** I will use only lightweight, non-metal parts for the nose, body, and fins of my rocket.
- 2. Motors.** I will use only certified, commercially-made model rocket motors, and will not tamper with these motors or use them for any purposes except those recommended by the manufacturer.
- 3. Ignition System.** I will launch my rockets with an electrical launch system and electrical motor igniters. My launch system will have a safety interlock in series with the launch switch, and will use a launch switch that returns to the "off" position when released.
- 4. Misfires.** If my rocket does not launch when I press the button of my electrical launch system, I will remove the launcher's safety interlock or disconnect its battery, and will wait 60 seconds after the last launch attempt before allowing anyone to approach the rocket.
- 5. Launch Safety.** I will use a countdown before launch, and will ensure that everyone is paying attention and is a safe distance of at least 15 feet away when I launch rockets with D motors or smaller, and 30 feet when I launch larger rockets. If I am uncertain about the safety or stability of an untested rocket, I will check the stability before flight and will fly it only after warning spectators and clearing them away to a safe distance.
- 6. Launcher.** I will launch my rocket from a launch rod, tower, or rail that is pointed to within 30 degrees of the vertical to ensure that the rocket flies nearly straight up, and I will use a blast deflector to prevent the motor's exhaust from hitting the ground. To prevent accidental eye injury, I will place launchers so that the end of the launch rod is above eye level or will cap the end of the rod when it is not in use.
- 7. Size.** My model rocket will not weigh more than 1,500 grams (53 ounces) at liftoff and will not contain more than 125 grams (4.4 ounces) of propellant or 320 N-sec (71.9 pound-seconds) of total impulse. If my model rocket weighs more than one pound (453 grams) at liftoff or has more than four ounces (113 grams) of propellant, I will check and comply with Federal Aviation Administration regulations before flying.
- 8. Flight Safety.** I will not launch my rocket at targets, into clouds, or near airplanes, and will not put any flammable or explosive payload in my rocket.
- 9. Launch Site.** I will launch my rocket outdoors, in an open area at least as large as shown in the accompanying table, and in safe weather conditions with wind speeds no greater than 20 miles per hour. I will ensure that there is no dry grass close to the launch pad, and that the launch site does not present risk of grass fires.
- 10. Recovery System.** I will use a recovery system such as a streamer or parachute in my rocket so that it returns safely and undamaged and can be flown again, and I will use only flame-resistant or fireproof recovery system wadding in my rocket.
- 11. Recovery Safety.** I will not attempt to recover my rocket from power lines, tall trees, or other dangerous places.

LAUNCH SITE DIMENSIONS

Installed Total Impulse (N-sec)	Equivalent Motor Type	Minimum Site Dimensions (ft.)
0.00 — 1.25	1/4A	50
1.26 — 2.50	A	100
2.51 — 5.00	B	200
5.01 — 10.00	C	400
10.01 — 20.00	D	500
20.01 — 40.00	E	1000
40.01 — 80.00	F	1000
80.01 — 160.00	G	1000
160.01 — 320.00	2 Gs	1500

SEMROC

triton

**1968 Retro
Reproduction**

Laser Cut Balsa Fins

**Precision Turned
Balsa Nose Cone**

**Featherweight
Recovery**

Designed by:
Carl McLawhorn

**FLYING MODEL
ROCKET KIT**

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

TRITON™
Kit No. KV-23

Specifications	Engine	Approx. Altitude
Body Diameter	.759" (1.9cm)	A8-5 600'
Length	5.4" (13.7cm)	B6-6 1000'
Fin Span	2.9" (7.4cm)	C6-7 1600'
Net Weight	0.2oz. (4.5g)	

Skill Level 1

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.

About Semroc Astronautics Corporation

Semroc was started by Carl McLawhorn in his college dorm at North Carolina State University in November, 1967. It was originally called Southeastern Model Rocket Corporation. Convincing a small group of investors in his home town of Ayden, North Carolina to invest in a small space-age 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.

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LIMITATION OF LIABILITY

Model rockets are not toys, but are functional rockets made of lightweight materials and are launched with NAR or Tripoli safety certified model rocket motors, electrically ignited and flown in accordance with the NAR Model Rocket Safety Code. If misused, model rockets can cause serious injury and property damage. Semroc certifies that it has exercised reasonable diligence in the design and manufacture of its products. Semroc cannot assume any liability for the storage, transportation, or usage of its products. Semroc shall not be held responsible for any personal injury or property damage whatsoever arising out of the handling, storage, use, or misuse of our products. The buyer assumes all risks and liabilities therefrom and accepts and uses Semroc products on these conditions.

Your purchase and use of any Semroc products is construed as your agreement to and acceptance of these terms. If you do not agree to these terms and conditions, you must return the product, unused, for refund or credit.

100% SATISFACTION GUARANTEE

If you are not 100% satisfied with your Semroc product, we will make it right by providing whatever you consider fair, from refund to replacement.

Contact us at:

Semroc
www.semroc.com

JOIN THE NAR!

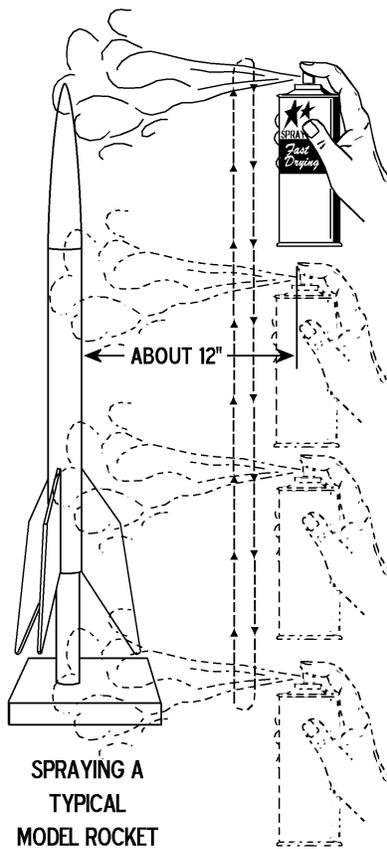
Sign up online at www.nar.org to join the premier model rocketry organization. Semroc fully supports the National Association of Rocketry and recognizes it as the sport's official voice. The NAR is the oldest and largest sport rocketry organization in the world. Since 1957 over 100,000 serious sport rocket modelers have joined the NAR to take advantage of the fun and excitement of organized rocketry. It is always more fun if you fly with friends. The *Sport Rocketry* magazine is one of the best ways to keep informed of new developments in the hobby.



About the Semroc Triton™

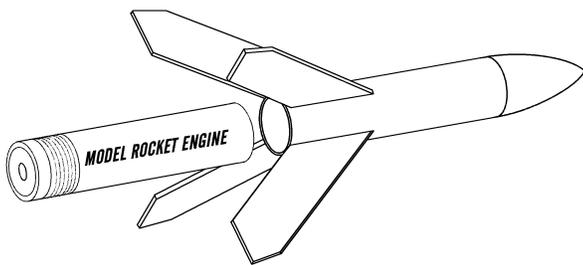
The Triton™ was designed in 1968 by George Corbett, Vice President of Semroc Astronautics as the first Semroc-Kit. Designed to be an entry-level high-performance model rocket, the Triton™ was about as simple as you could get. Using featherweight recovery, the rocket was very light and capable of high altitudes. If you could find the Triton™, it was ready to fly again. The Triton™ was stock number KB-1 and retailed for just 75¢ when it was first introduced!

The Retro-Repro Triton™ is updated by using laser-cut fins and an improved launch lug. The original balsa nose cone and body tube are still used. As in 1968, the body tube has a slightly larger inside diameter to make it easier to insert and remove the model rocket engine. The walls are about 70% thicker than most model rockets for higher durability.



FLIGHT PREPPING

- ❑ **15.** Mounting the engine: The engine must have a small amount of masking tape applied to keep it from falling out of the body tube. Since the engine will kick out at ejection, it must not be too tight.



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

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

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.

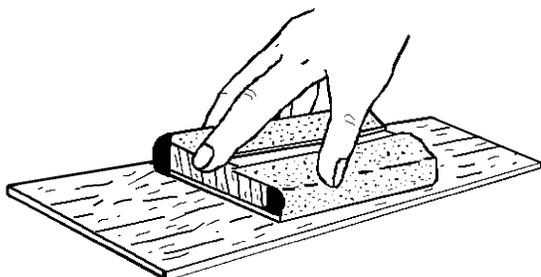
TOOLS: In addition to the parts supplied, you will need the following tools to assemble and finish this kit.



ASSEMBLY

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

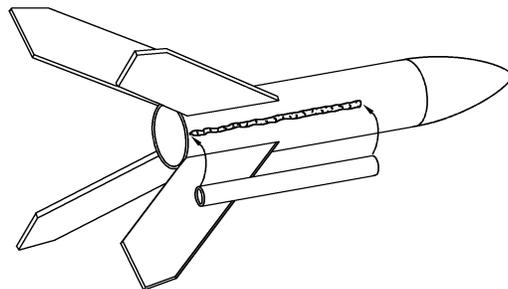
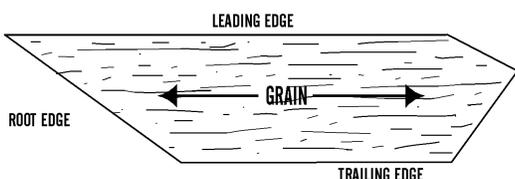
❑ **2.** Lightly sand each side of the laser-cut fins. Carefully push the laser-cut fins from their sheet. Start at one point on each fin and slowly and gently work around the fin.



❑ **3.** 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 below.



❑ **4.** Round all edges except the root edge. The root edge should remain flat since it will be glued to the body tube. The trailing edge may be sanded in a streamlined taper if you want a higher performance rocket.



FINISHING

❑ **12.** 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

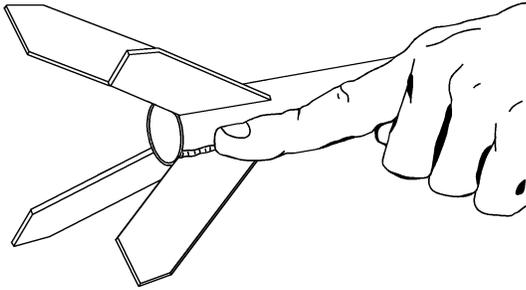


After final sanding

❑ **13.** 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 yellow or orange for the final color.

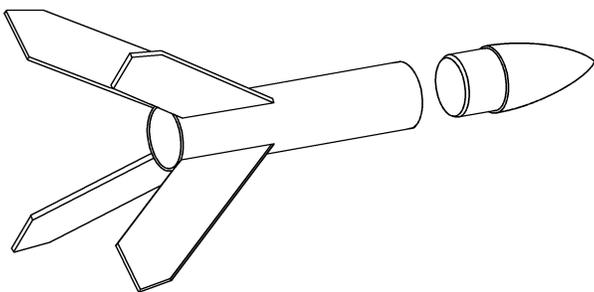
❑ **14.** Spray painting your model with a fast-drying enamel will produce the best results. PATIENCE...is the most important ingredient. Use several thin coats, allowing each coat to completely dry before the next coat. Start each spray a few inches above the model and end a few inches below the model.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

- 8.** 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.



- 9.** 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.

- 10.** Check the nose cone for proper fit. If it is too tight, sand the shoulder slightly. Apply a thin bead of glue inside the top of the body tube. Insert the nose cone and allow it to dry completely.

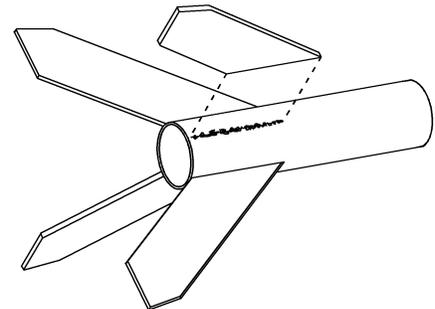


- 11.** Glue the launch lug on the side of the body tube between two fins and even with the bottom of the body tube.

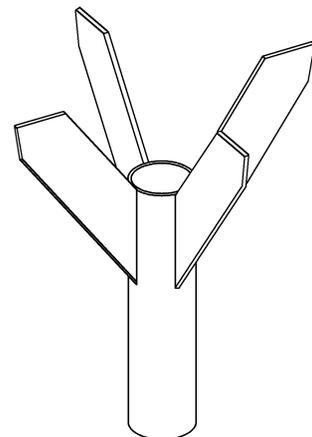
- 5.** Stand the body tube on the fin guide below and make the fin position marks on the sides of the tube. Find a convenient channel or groove such as a partially open drawer, a door jamb (as shown,) or a piece of molding. Using the channel, extend the marks the full length of the tube to provide lines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



- 6.** 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 dry, apply additional glue, and reposition. Repeat for other three fins.



- 7.** Allow to dry standing vertically, checking for alignment visually while the assembly dries.



Parts List

- A 1 Body Tube ST-730
- B 1 Balsa Nose Cone BC-714
- C 1 Laser Cut Fins FV-23
- D 1 Launch Lug LL-122

EXPLODED VIEW

