

**SEMROC**

# GOLDEN SCOUT

**1960 Retro  
Reproduction****Tumble  
Recovery****Celebrating  
the Golden  
Years of  
Rocketry***Designed by  
Vern Estes***FLYING MODEL  
ROCKET KIT**

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

**GOLDEN SCOUT™  
KV-4**

Specifications	Engine	Approx. Altitude
Body Diameter 0.767"(1.9cm)	1/2A6-2	250'
Length 7.1"(18cm)	A8-5	600'
Fin Span 2.7"(6.9cm)	B6-6	1100'
Net Weight 0.3 oz(8.0g)		

**Skill Level 1****ABOUT THE ORIGINAL SCOUT**

The Scout was designed by Vernon Estes and was granted US Patent # 3,114,317 which was filed in 1960. Using a novel design that shifted the Center-of-gravity rearward behind the Center-of-pressure at engine ejection time, the Scout tumbled slowly during its recovery phase. The tumbling increased the drag and slowed the descent somewhat over a ballistic, nose-first configuration. This was the Estes' first kit and was originally shipped in red engine mailing tubes. Provided with each kit was Technical Report #1 which educated millions of budding rocketeers about the concepts of stability in rocket flight. It was originally sold as Catalog # K-1 for \$.70 and introduced millions to the sport of model rocketry.

**ABOUT THE SEMROC GOLDEN SCOUT™**

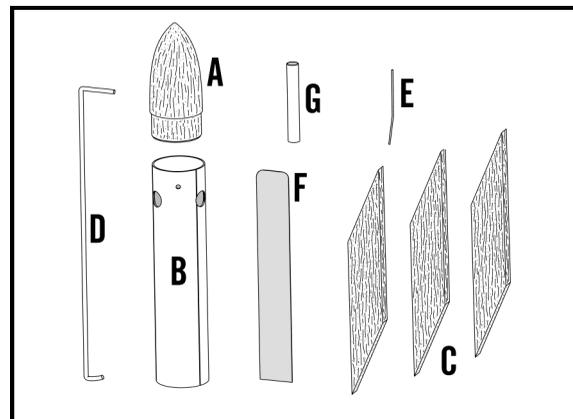
Realizing that the 50th anniversary of Vern and Gleda Estes' beginnings in model rocketry was approaching, Ken Montanye (the Rocket Doctor) suggested on the rocketry forums that it be remembered in a special way. Ken had the idea that rocketeers all over the country and the world should build a "golden" Scout and fly it for Vern and Gleda to commemorate their 50 years of contributions to the sport of model rocketry. All of us at Semroc were caught up in his proposal and after many conversations with Ken and the Estes', the Golden Scout™ concept crystallized. During the month of July of 2008, over 1000 Golden Scouts were flown in honor of Vern and Gleda Estes, celebrating their Golden Anniversary of the beginning of the "Golden Age of Model Rocketry."

**ABOUT THE COVER**

Launching the Golden Scout™ on the cover is Betty Estes, the oldest of three daughters of Gleda and Vern. (Linda and Sharon would become model rocketeers later.) At the age of eight, Betty was the first model rocketeer to build the Scout from the original set of written instructions and prototype parts. After a successful build and a perfect flight, the Scout Kit was ready for its fans! Unfortunately, that Scout was lost over the years, but not forgotten.

**Parts List**

<b>A</b>	<b>1</b>	<b>Balsa Nose Cone</b>	<b>BNC-30DE</b>
<b>B</b>	<b>1</b>	<b>Body Tube</b>	<b>BT-30AP</b>
<b>C</b>	<b>1</b>	<b>Laser-cut Fin Set</b>	<b>FV-4</b>
<b>D</b>	<b>1</b>	<b>Engine Catch Hook</b>	<b>EH-KV-4</b>
<b>E</b>	<b>1</b>	<b>Retaining Wire</b>	<b>RW-1</b>
<b>F</b>	<b>1</b>	<b>Tyvek® Reinforcing</b>	<b>TVK-73</b>
<b>G</b>	<b>1</b>	<b>Launch Lug</b>	<b>LL-2A</b>



**WHERE'S THE GAUZE ???** The original Scout had a sheet of gauze reinforcing for the hook and fins. We did not provide them in this kit because modern glues and materials do not require them and it is much easier to finish the model without them.

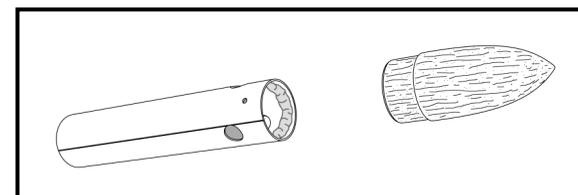
**TOOLS:** In addition to the parts supplied, you will need the following tools to assemble and finish this kit.

**ASSEMBLY**

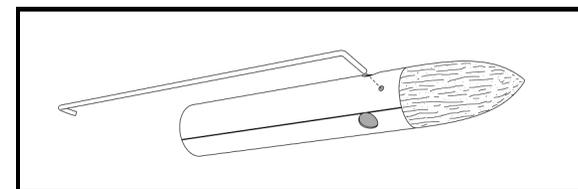
**1.** These instructions are presented in a logical order to help you put your Golden Scout™ together quickly and efficiently. Check off each step as you complete it and we hope you enjoy putting this kit together.

**ATTACH NOSE CONE**

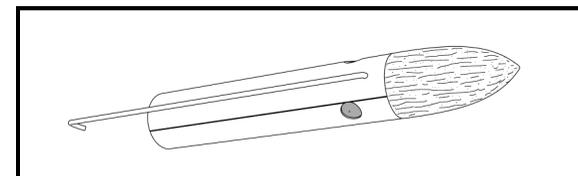
**2.** Test fit the nose cone in the end of the body tube with the punched holes. If it is too big, sand the shoulder until you get a good fit. Apply a bead of glue around the inside of the top end of the body tube and insert the nose cone. Wipe off any excess glue and allow to dry.

**INSTALL THE ENGINE CATCH HOOK**

**3.** Use a large pin to prepare the smallest pre-punched hole by working it into the balsa to about 1/2 inch deep to make it easier to insert the engine catch hook. Remove the pin and insert the longest hook into the small hole. When it fits properly, remove it and apply a small amount of glue in the hole. Reinsert the hook and align it parallel to the lines drawn on the body tube.



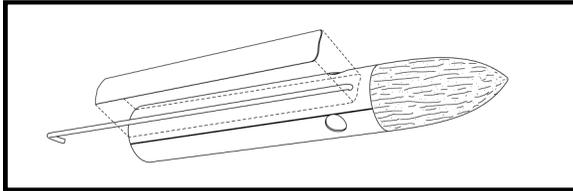
**4.** Apply a small amount of glue along the engine catch hook to hold it in place for the reinforcing strip that will be applied later. Set this aside to dry.



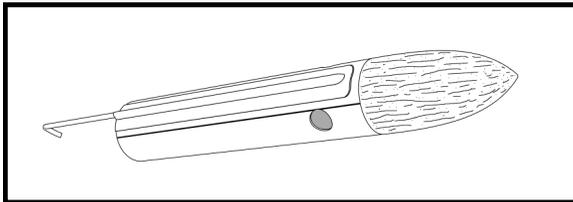
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❑ **5.** Test fit the Tyvek® strip over the engine catch hook. The flat end should be even with the bottom of the body tube and it should be centered over the hook. Use your finger to press the strip against the hook until you get a visible bulge in the strip. Press the strip until it conforms with the hook. Apply a generous bead of glue along the bottom of the strip and apply it over the engine catch hook. Patience is required to get a neat cover for the hook.

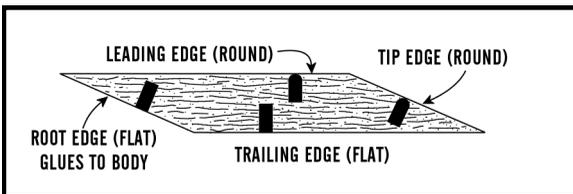


❑ **6.** While the glue is setting, keep pressing the strip against the hook and body tube to keep the joint tight. After the glue is almost set, wet your finger slightly and “feather” the edge with a small amount of glue to get a smooth joint. Allow to dry.

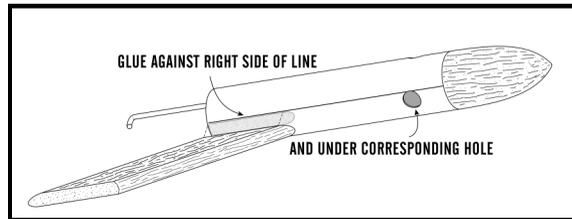


## PREPARE FINS

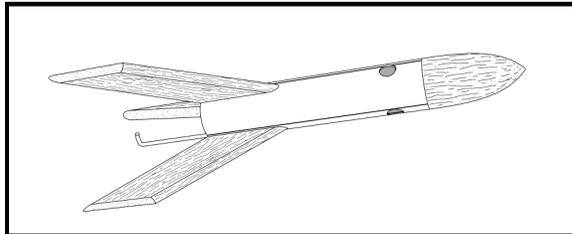
❑ **7.** Sand the tops and bottoms of each fin until smooth. Sand the leading edge and tip edges until they are rounded. Leave the root and trailing edges flat.



❑ **8.** Apply a bead of glue to the root edge of one of the fins. Touch the fin along the right side of one of the marked lines (with rocket in vertical position.) and even with the end of the body tube. Set the fin aside until the glue gets tacky (about ten minutes.) Reapply the fin and hold in position until the glue sets.

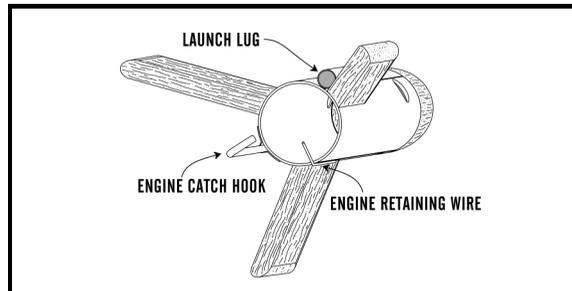


❑ **9.** Repeat with the other two fins, sighting from the top to ensure the fins are still aligned properly until the glue sets. After the glue is dry, apply a generous film of glue along the joint and also covering the top section of each fin for strength.

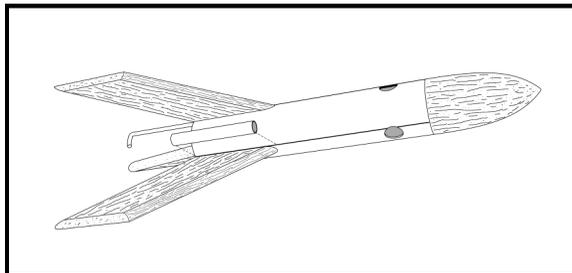


## LAUNCH LUG

❑ **10.** Refer to the drawing below for placement as you finish the remaining steps.

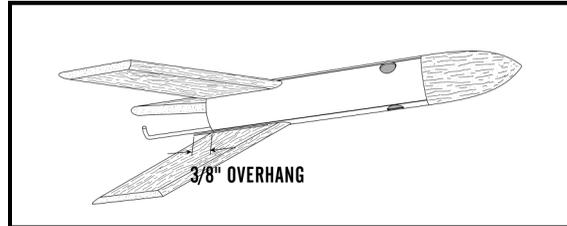


❑ **11.** Apply a bead of glue against the left side of the fin opposite the engine catch hook. Apply the launch lug on this joint even with the bottom of the body tube.



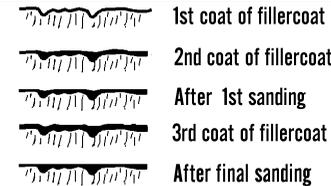
## ENGINE RETAINING WIRE

❑ **12.** Glue the small engine retaining wire along the fin and body tube joint adjacent to the engine catch hook as shown. Make sure 3/8” of the wire overhangs past the end of the tube.

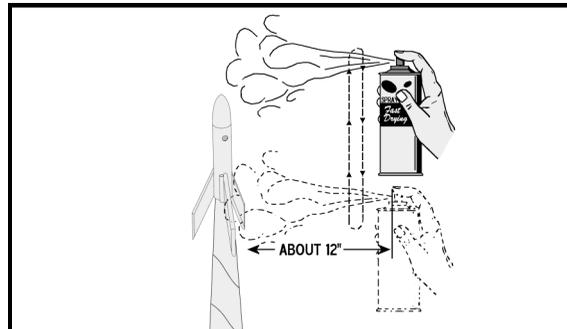


## PAINTING AND FINISHING

❑ **13.** When the fillets have dried, 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. Wipe off balsa dust.

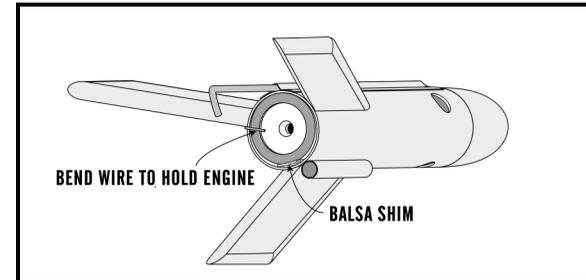


❑ **14.** First spray the model with an enamel primer. Paint the final color fast-drying **bright metallic gold** enamel. **PATIENCE...** is the most important ingredient. Use several thin coats, allowing each coat to completely dry before the next coat. Start each spray a few inches above the model 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.



## PREPARE FOR FLIGHT

❑ **15.** The original Scout was flown with engines that were heavier and had less-powerful ejection charges. As such, it is harder to get flights with the same reliability using modern engines. For best results, add a small piece of 1/32” thick by 3/16” wide balsa for the length of the engine on the opposite side of the engine catch hook to help keep the engine from kicking out. Make sure the engine moves in and out with some resistance, but is not too tight. Bend the engine retaining wire inward to keep the engine from falling out after the clips are attached.



❑ **16.** 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

❑ **17.** Carefully check all parts of your rocket before each flight as a part of your pre-flight checklist. Launch the Golden Scout™ from a 1/8” diameter by 36” long launch rod. After the flight, clean the inside of the body tube and make sure the holes are free of any ash.