

Sprite™

CLASSIC DESIGN

**GREAT FOR
SMALL FIELDS**

**BALSA NOSE
CONE & FINS**

1964
Retro-Repro

Design by
Gene Street

FLYING MODEL
ROCKET KIT

MADE
IN THE
USA

SEMROC

Made in the U.S.A. by Semroc Astronautics Corporation - Knightdale, N.C. 27545

Sprite™

Kit No. KV-86

Specifications	Engine	Approx. Altitude
Body Diameter 0.759" (1.9 cm)	1/2A3-2T	150'
Length 5.4" (13.9 cm)	A10-3T	250'
Fin Span 2.5" (6.4 cm)	A3-4T	300'
Net Weight 0.4 oz. (11.3 g)		

TUMBLE RECOVERY

About the Sprite™

The Astron Sprite was released in 1964 as a free kit on the mailing cover sheet of the February 1964 Model Rocket News. It was specially designed for the new Series III "Shorty" engines. Gene Street, while Chief Illustrator of Estes Industries, designed the Astron Sprite using the same tumble recovery method that was used in the Estes Scout. It quickly became a classic design and was in production for almost ten years. The demise of the Shorty engines marked the end of an era and also the Astron Sprite. It was released as Catalog Number 641-K-15 and had an introductory price of \$.75.

The Retro-Repro™ Sprite™ is updated with laser-cut fins. The original BT-30 is replaced with a with a slightly smaller inside diameter for better engine fit and the gauze strip is replaced with Tyvek, but the model remains close to the original. Extra empty casings the same size as the "Shorties" allows the use of standard "T" mini-engines.

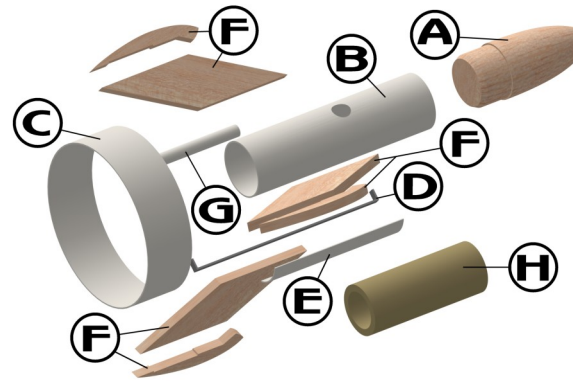
About Estes Industries, Inc.

In July 1958, G. Harry Stine of Model Missiles, Inc. in Denver, Colorado approached Vern Estes about making model rocket engines for them. On January 15, 1959, Vern's automated model rocket engine fabricating machine, "Mabel", produced the first of many millions of Estes model rocket engines. In 1960, Estes was producing more engines than Model Missiles could sell. Vern and his wife Gleda opened a mail order rocket company and introduced the Astron Scout and Astron Mark.

In 1961, a catalog was mimeographed and hand stitched on Gleda's sewing machine. Later that year, Estes Industries had outgrown the confined space in Denver. In December 1961, the entire operation was moved to an old farm in Penrose, Colorado quickly establishing the small town as the "Model Rocket Capital of the World."

Estes Industries was sold to Damon in September 1969. The name Estes is synonymous with model rocketry. Almost everyone remembers growing up firing Estes rockets or knowing someone that did. Estes Industries has introduced millions of youngsters of all ages to model rocketry for over half a century

EXPLODED VIEW



PARTS LIST

A	1	Balsa Nose Cone	.....	BNC-715D
B	1	Body Tube	.....	ST-728P
C	1	Ring Tube	.....	RT-70
D	1	Engine Hook	.....	EH-28
E	1	Reinforcing Strip	.....	IKV-86R
F	1	Laser-cut Fin Set	.....	FV-86
G	1	Launch Lug	.....	LL-2A
H	4	Empty Casings	.....	MC-717
I	1	Template (Not Shown)	.....	IKV-86T
J	1	Decal (Not Shown)	.....	DKV-86

TOOLS

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



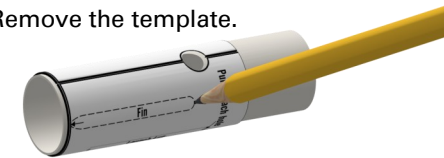
May 20, 2012

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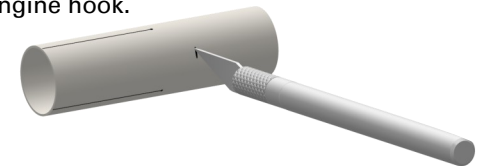
ASSEMBLY

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

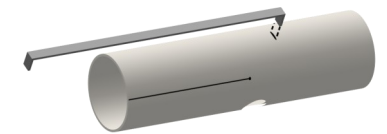
❑ **2.** Cut out the marking template (IKV-86T) and using a sharp pencil, punch a small hole in each of the circles. Use your hobby knife to punch a slot at the top of the engine hook mark. Wrap it around the punched body tube (ST-728P) so the hole lines up with the round notches on the sides of the template. If it does not align with the bottom, turn it around. Use your pencil to mark the tube through the template at each hole and the slot. Place a mark at each of the three arrows on the tube. Remove the template.



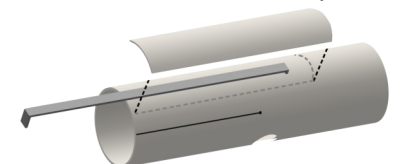
❑ **3.** Using a pencil, connect the marked points for the three fins and the launch lug. Use your hobby knife to place a small slit at the mark for the engine hook.



❑ **4.** Insert one end of the engine hook (EH-28) in the slit.



❑ **5.** Run a bead of glue over the engine hook and about 1/8" on each side of the hook. Align the Tyvek strip over the engine hook with the rounded end toward the top and the flat end even with the bottom of the body tube.

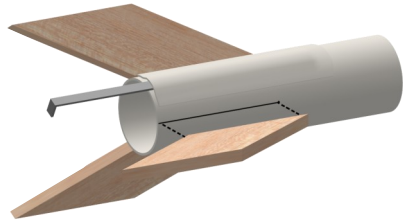


❑ **7.** Press it into place, conforming with the engine hook. Clean up any excess glue and allow to dry.

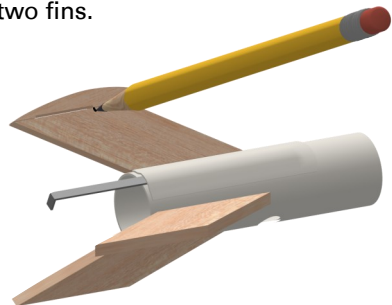


❑ **8.** Lightly sand each side of the laser-cut fin sheet (FV-86). Carefully push the laser-cut fins from their sheet. Start at one point on each fin and slowly and gently work around the fin. Since the fins are thick, a hobby knife may be used to help extract them. Sand the edges slightly to remove the hold-in tabs, but do not shape them at this time.

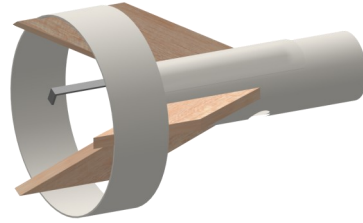
❑ **9.** Apply glue to the root edge of one of the fins and position it along one of the lines drawn for the fins on the side of the body tube and even with the bottom of the body tube. Remove the fin, set it aside and allow it to almost dry, apply additional glue, and reposition. Repeat for the other two fins. If you follow these instructions, the fins will not require much additional work to keep them aligned. Allow the fins to completely dry, checking carefully to make sure they are parallel with the main body tube.



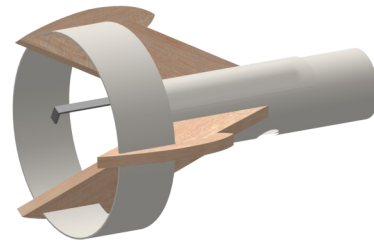
❑ **10.** After the fin assembly is completely dry, run a small bead of glue along both sides of each fin-body tube joint. Using your forefinger, smooth the glue into fillets. Fit one of the fin tips on the root edge of a main fin. Place a small mark at the ring slot in the main fin. Repeat with the other two fins.



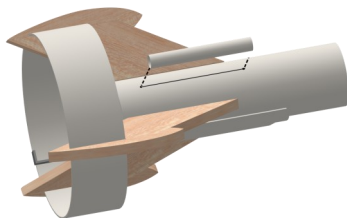
❑ **11.** Slide the ring tube (RT-70) over the fins and check for fit. Slightly sand the root edges of the fins until you get a snug fit. Align the ring so the top edge of the ring is even with the marks on the fins.



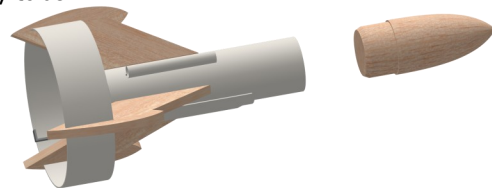
❑ **12.** Glue a fin tip to a main fin, capturing the ring tube in the slot. The ring may be moved to allow the fin tip to fit the main fin with no gaps. Wipe off any excess glue. Allow to dry, then repeat with the other two fin tips. Run a fillet of glue along each joint of the fins and the body tube and ring tube.



❑ **13.** Glue the launch lug (LL-2A) onto the body tube on the line drawn earlier.

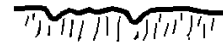


❑ **14.** Insert the nose cone (BC-715D) in the body tube and check for proper fit. Apply a bead of glue inside the top of the body tube and insert the nose cone until the shoulder is flush with the body tube.

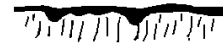


FINISHING

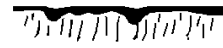
❑ **15.** When the fillets have dried, prepare balsa surfaces for a smooth professional looking finish. Round the edges of the fins, then fill the wood grain with balsa fillercoat or sanding sealer. When dry, sand with fine sandpaper. Repeat until smooth.



1st coat of fillercoat



2nd coat of fillercoat



After 1st sanding



3rd coat of fillercoat



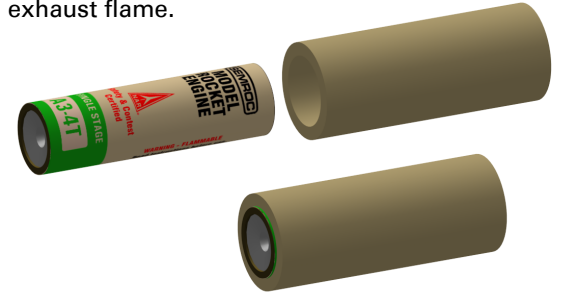
After 1st sanding

❑ **16.** 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 white for the final color. 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.

❑ **17.** After the paint has dried, decals should be applied. The decals supplied with the Sprite™ are waterslide decals. Each decal should be cut separately from the sheet. Think about where you want to apply each decal and check for fit before wetting the decal. Use the cover photo for suggested placement. Dip each decal in a small dish of water that has a drop of detergent. It will take about 30 seconds before the decal is loose enough to apply. Slide the decal in place and use the paper backing to work the bubble out. Repeat for all the decals.

FLIGHT PREPPING

❑ **18.** Test fit one of the supplied empty casings (MC-717) in the Sprite™. It should be just tight enough to stay in place against the top of the engine hook. Add masking tape to the outside of the casing if required. Glue or wedge-fit a small "T" type engine (mini-engine) in the empty casing so it is even with both ends of the casing. If you wedge-fit the engine, make sure it is tight enough that it will not go forward when the engine ignites. Make sure when the engine assembly is moved back by the ejection charge that the engine hook will capture the back of the casing. It may be necessary to bend the engine hook slightly inward. Do not bend it inward any more than needed or it will be directly in the engine exhaust flame.



❑ **19.** 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.

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

❑ **21.** After each flight, clean any residue from the inside of the tube and make sure the vent hole is clear.