

A Shot from Out of Left Field - Making Featherweights Featherier

By R. A. Stott - NAR 35610

The Micro Scout and Micro Sprite

Now lets put this straight right up front. Teeny Weeny is not as small as Itsy Bitsy, and Itsy Bitsy is not as small as Iddy Biddy. But when you get to Mini and Micro, welllllll. . . .

Many of you folks out in rocketdom might have seen those great scaled up models Jim Flis of the Goddard Society has built. They have been shown at Pearl River and in American Spacemodeling. And two articles ago, we saw the plans for the MAXI SPRINT. Well, how about this time we go in the opposite direction?

It's time for all of us to GET SMALL!

Scaling down two of Estes smallest rockets can give some folks the jitters. When you shrink down a small model, you start running into a balance problem. Surprisingly, these two shrink down nicely. But first, some history!

The K-1 ASTRON SCOUT, as we all know, was the first kit Estes put out in 1961. As for the K-15 ASTRON SPRITE, introduced in 1964, it was originally powered by the now long defunct SHORT engines (for those not familiar with SHORT engines, they were as long as a MINI, and as wide as a STANDARD engine). Like the Scout, the Sprite used a tumble recovery by sending the engine to the end of an extended engine hook, causing the rocket to become unstable, thus tumbling to the ground, rather than the more direct approach the rocket would take if the engine ejected completely. Unlike the Scout, the Sprite was a more exotic design, with a BT-ring built into the two piece fins.

In scaling down the Sprite there was only one slight change made. The body tube is slightly longer than it would be if scaled one to one with its original ASTRON SPRITE version. One way or the other, it flies great.

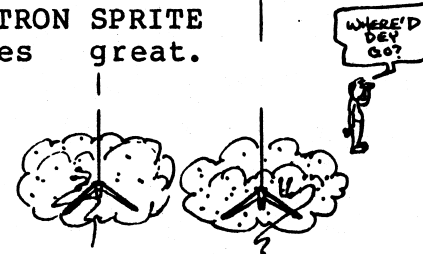
Reference

FLYING ROCKET KITS 1958-1988 A GUIDE FOR SPACEMODELERS

By Richard M. Jungclas

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Parts Needed for MICRO SCOUT

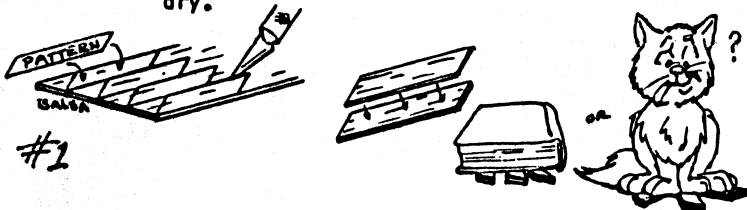
- A. BNC-5E Nose Cone
- B. Standard Size Engine Hook
- C. 2 3/4" section of BT-5 Body Tube
- D. 1/16th thick Balsa Fin Stock
- E. 1 1/4" Launch Lug
- F. Gauze

Parts Needed for MICRO SPRITE

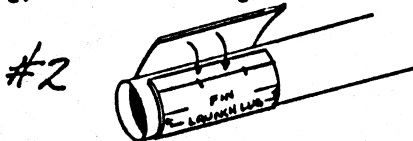
- A. BNC-5V Nose Cone
- B. Standard Size Engine Hook
- C. 2 1/2" section of BT-5 Body Tube
- D. 5/8" section of BT-60 Body Tube
- E. 3/32nd thick Balsa Fin Stock
- F. 1 1/4" Launch Lug

How to Build a MICRO SCOUT
or
How to Make a ASTRON SCOUT
Get Small

1.() Cut out the fin pattern. Trace and cut out SIX fins from the fin stock. Take two fin halves and glue them together. This will make a much stronger fin than cutting three fins out of 1/8th thick stock. Repeat twice. Place the fins under a heavy flat object like a book, or your cat, until they dry.



2.() Cut out the fin marking guide. Wrap it around the tube, and mark the tube. Make sure you mark which fin gets the launch lug, and which gets the engine hook.

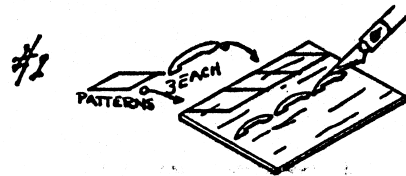


3.() Using a hole punch, reach down as far as you can from the top of the tube and along the hole line, and punch a hole in the body tube. This will be where the ejection gases escape. It also makes a great whistle!

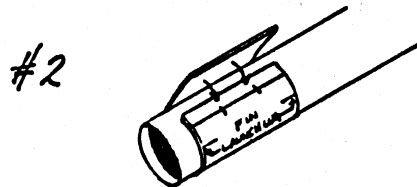
Note! If your hole punch has a collecting trap for all the confetti these punches make, I suggest that you remove it temporarily, if you can. Otherwise, you might not be able to get down far enough to make the hole. BT-5's are just that way!

How to Build the MICRO SPRITE
or
How to Shrink an ASTRON SPRITE
Down to Size

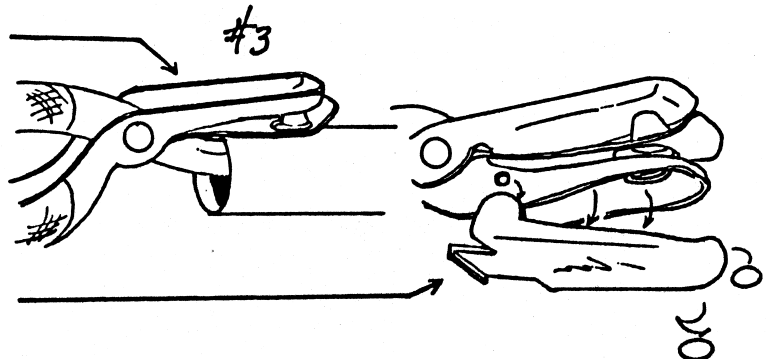
1.() Cut out the fin pattern. Trace and cut out THREE fins and THREE ring straps from the 3/32nd thick fin stock.



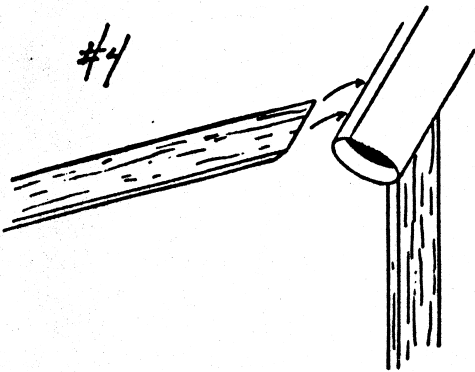
2.() Cut out the fin marking guide. Wrap it around the tube, and mark the tube.



3.() It's hole punching time again! Follow step #3 from the MICRO SCOUT.

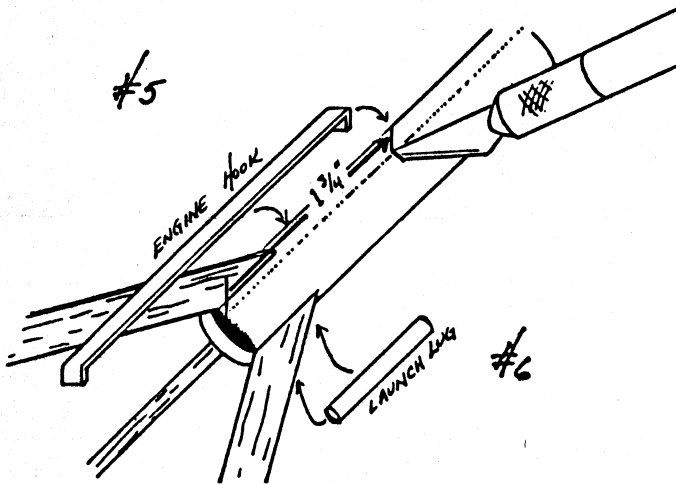


MICRO SCOUT



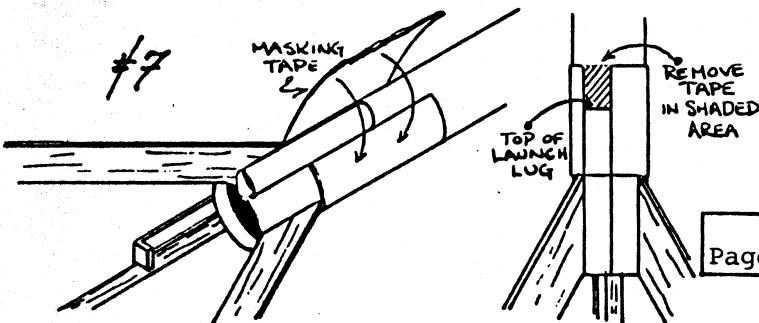
4.() Glue the fins to the body tube.

5.() Mark the tube on the engine hook line $1\frac{3}{4}$ ". Cut a slot for the hook at this mark AWAY FROM THE FIN. The hook will fit along side the fin. Insert the hook.



6.() Glue the launch lug to the far side of the fin to the right of the engine hook. Make sure it is even with the bottom of the tube.

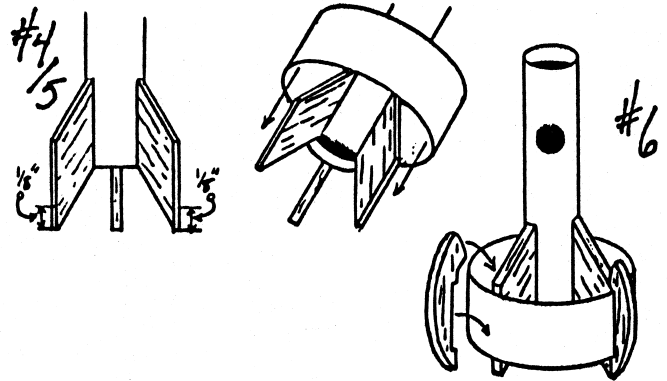
7.() Using $\frac{3}{4}$ " masking tape, and starting at the launch lug, wrap it around the body tube ONCE, even with the top of the fins. This will work as the engine hook's wrap. Cut any excess tape from the top of the launch lug.



MICRO SPRITE

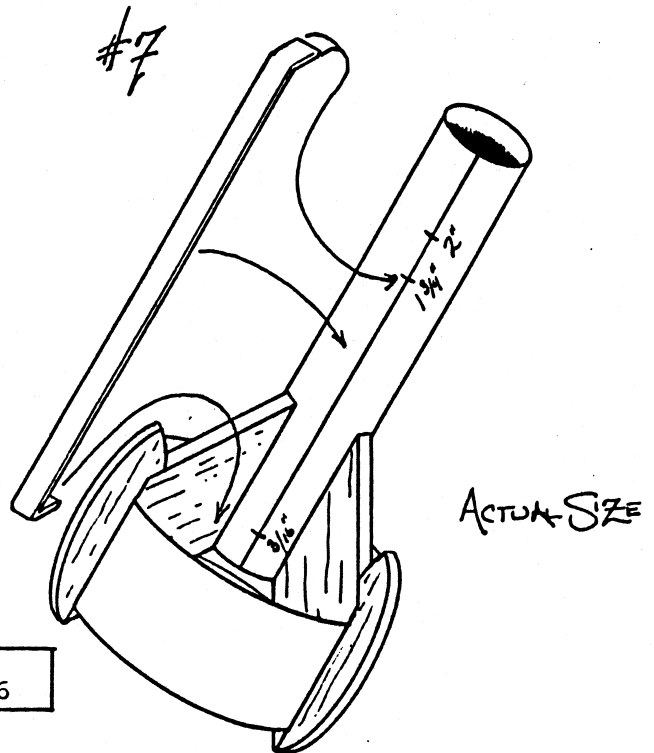
4.() Glue the fins to the body. Simple enough! Now for the tricky part!

5.() Measure up from the bottom outside edge of each fin $\frac{1}{8}$ " and mark. Take the BT-60 tube and slide it down the fins. If the tube distorts too much, sand a little off EACH fin. This will give a more even appearance, and a truly centered ring fin. Once even, glue the ring into position.



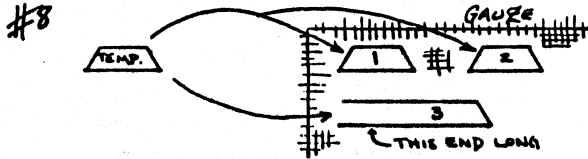
6.() Glue the ring straps to the outside of the ring and fins. Make sure that the straps are even with the edge of the fins.

7.() Mark the tube on the engine hook line $\frac{3}{16}$ ", $1\frac{3}{4}$ " and 2". Cut a slot for the hook at the $1\frac{3}{4}$ " mark. Insert the hook.

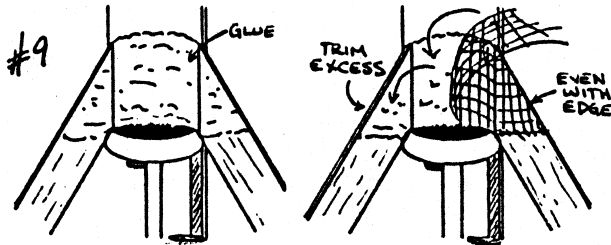


MICRO SCOUT

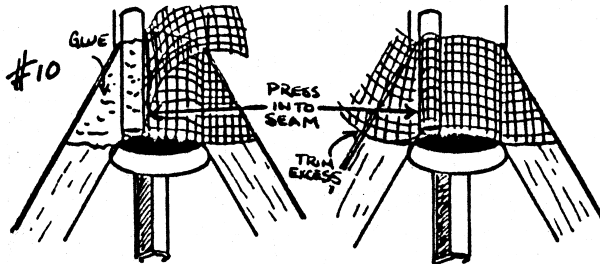
8.() Cut out the gauze template, and trace and cut out TWO gauze tapes. Trace out only the RIGHT SIDE of the template on the third gauze tape, and extend the top and bottom lines an extra 1/2" or so. This is so that when you cut out this gauze tape, it will cover over the launch lug.



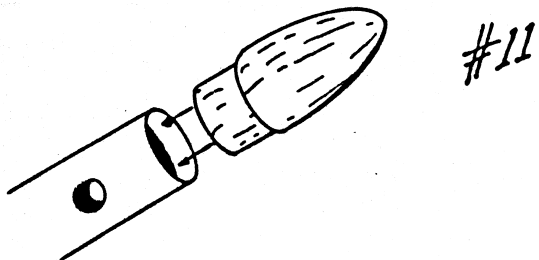
9.() Smear glue between the fins on the hole side. Lay one of the two short gauze tapes into this glue until centered. Once centered, smear glue on the fin areas where the gauze will touch. Smooth into position. Repeat with the engine hook side.



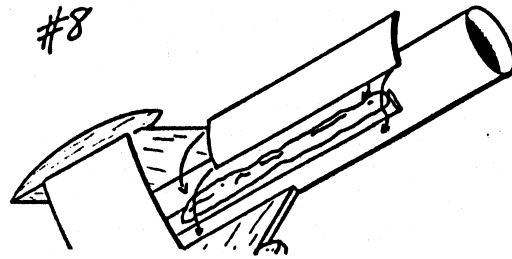
10.() Smear glue between the launch lug and the right fin on the launch lug side. Lay the gauze over the glue and center until the angled side is even with the outside edge of the right fin. Smear glue over the launch lug below the masking tape, and on the left fin. Smooth the gauze over the launch lug and left fin. When dry, trim off the extra gauze on all of the fins.



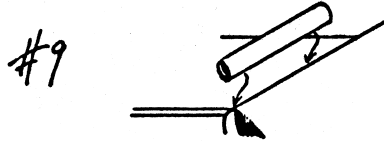
11.() Glue the nose cone into the body tube. The rocket is ready for finishing.



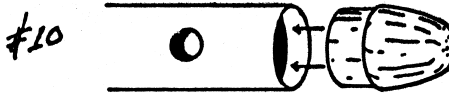
MICRO SPRITE



8.() Cut out the engine hook hold down plate. Run a bead of glue from the 3/16" mark to the 2" mark on the engine hook. Lay the plate over the glue and smooth it out with your fingernail or convenient flat object if you chew your fingernails too much.



9.() Glue the launch lug to the body tube even with the bottom edge.



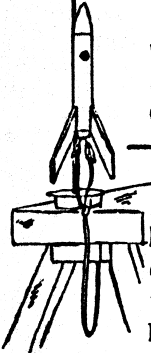
10.() Glue the nose cone into the body tube. The rocket is now ready for finishing.

To prevent unnecessary burning of the bottom of the nose cones, you might want to seal the bottoms with a white or resin glue. DO NOT SEAL WITH A DOPE BASE OR STANDARD SEALER. These types of sealers do not build up enough of a shielding layer as does a white or resin glue. You can do this after the nose cones are installed, if you simply pour the glue down the tube, making sure none runs down the sides. Mind you, this also makes the best seal, but you'll need to leave the rocket standing on its nose for quite awhile. But, heck, since one could build one of these rockets whilst standing on one's head, why not have the rocket join you?

A Note to the Flying

The last time I flew these two shrimps of rockets, as of keypunching this mess into my good old Tandy, was August 27, 1988 at North Branch with my GSSS cohorts. I discovered two facts about these two beasts on that day.

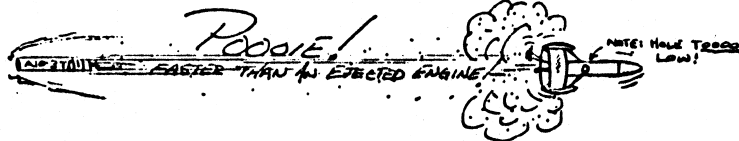
One. To be able to find these rockets after launch, one MUST have a person away from the launch site to track the flight, otherwise the rockets blisters the air with a whoosh, and that's the last time they are seen or heard from again. Someone standing 50 to 100 feet away should do, depending on the engine. Just enough to be antisocial.



Two. If you make the mistake of punching the hole on the bottom end of the rocket, you might as well trash the body tube, and start over. This is because the ejection charge will not have discharged enough pressure to prevent the engine from blowing out of the rocket completely, and NO! THAT IS NOT WHAT WE WANT, IS IT?!

Oh, it is?

WRONG!



Having had to rebuild my Micro Sprite once because of the failure of the ejection charge to fire at all, I punched the hole low on the rocket instead of high. This last time I flew it, it fired the engine out like a bullet, striking a nearby tree and damaging a pine cone.

Ever been booked on assaulting a pine cone?

Onwards & Upwards

