

THE LEADING EDGE



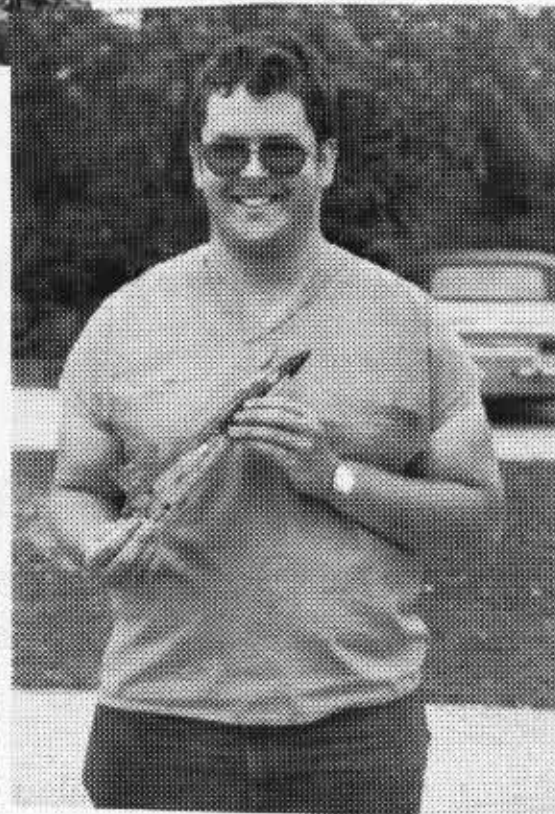
Where



now?



are they



T MINUS 1

MONTHLY MEETINGS

March 4, 1988
 April 1, 1988
 (no kidding folks!)
 May 6, 1988
 June 3, 1988

We need volunteer speakers to entertain the troops after the business meeting, so call Lawrence Bercini at 5651-8098 if you have a topic to present, or if you have ideas about interesting topics others can speak on.

SPORT LAUNCH SCHEDULE

President Lawrence Bercini has reviewed our contest and activity schedule and set the **THIRD SUNDAY** of the month as our sport launch date for this season. Launches start at 2 PM, and take place at Ackerman Park, near the intersection of St. Charles and Swift Roads in Glen Ellyn. Bring your own launcher. Members usually retire after the launch to a local fast food restaurant, so plan on making a day out of it.

SPORT LAUNCH DATES

April 17, 1988
 May 15, 1988
 June 19, 1988
 July 17, 1988
 August 21, 1988
 September 18, 1988
 October 16, 1988
 November 20, 1988



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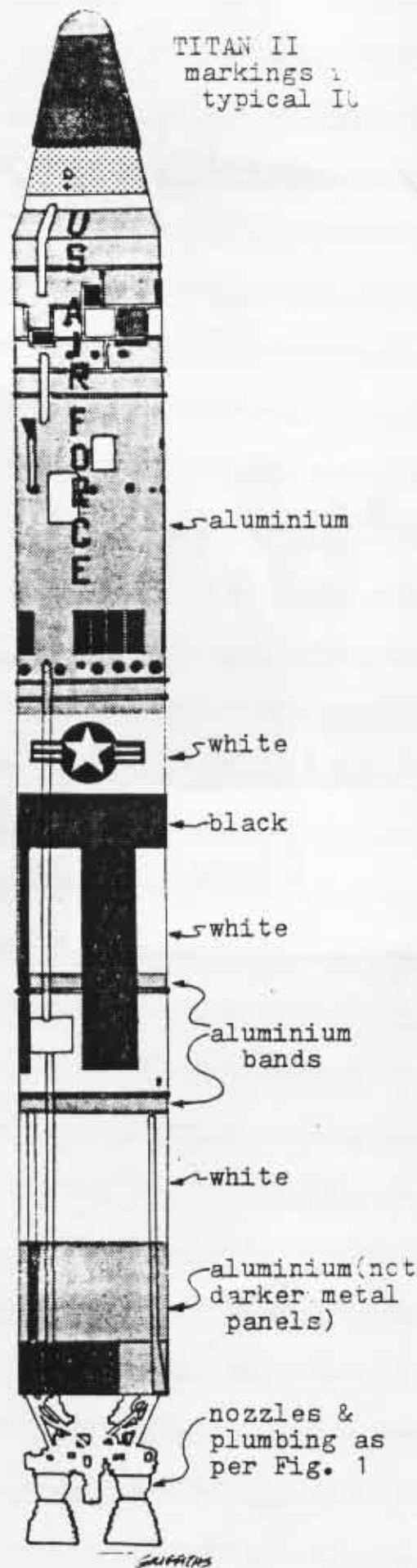
is published bi-monthly by and for members of the Northern Illinois Rocketry Association, NIRA, NAR Section #117, and is dedicated to the idea that Model Rocketry is FUN! Membership dues are \$3.00 per year and include a six issue subscription to the Leading Edge.

Non-member subscriptions are available for \$5.00 per six issues. All membership applications and subscriptions should be sent to Bob Kaplow, 1628 Waterford Lane, Palatine, IL 60074. Articles, plans, other newsletters, and news items of interest should be sent to Mark Bundick, Editor, 1523 Cleveland Street, Evanston, IL 60202. Any material in the Leading Edge may be reprinted if proper credit is given.

Next Issue

Plans, Drawings and Tips for your Estes Titan II kit!

TITAN II markings as typical I/O



NIRA'S CLASSIFIEDS

FOR SALE: RUELLER 34C SOLID COPPER MICRO CLIPS

8 for \$1.00! Less than what our favorite big rocket company charges for two of lesser quality. About the same price as your local electronics store charges for junk. Include an SASE (1 oz. per set, any excess postage returned), to address below.

COLLECTOR'S ENGINES FOR SALE (NOT FOR FLYING)

Estes engines in unopened mailing tubes. These are late 60's to early 70's vintage with Astron ignitors. 1/4A3-2 @ 3/\$3.00; 1/4A3-2S @ 3/\$3.00; B3-7 @ 3/\$3.50; 1/4A3-4 @ 3/\$3.00; A8-5 @ 3/\$3.25; A few other sizes available. Also, Composite Dynamics Pro-Jets; loose motors, no ignitors. E20-4,7,10 - \$4.00 each; F40-6,9,15 - \$6.00 each; F45-4,8,12 - \$7.00 each. Quantities limited! Engine shipping charges and insurance not included. Make checks payable to Bob Kaplow. To order clips or for shipping info on engines, write: KGB Aerospace, 1628 Waterford Lane, Palatine TWP, IL 60074

HABBIT'S ROCKET SHOP HARDWARE SALE

Quality Sears Craftsman Lathe, 1/2 HP Motor and Table. Swing up to 12" diameters, 36" long. Three motor speeds available. Excellent condition; used only a couple of times. Ideal for HPR use or regular woodworking. Will deliver locally; beyond Chicagoland means you pay the freight. Reduced to \$75. Send checks or inquiries to: Mark B. Bundick, 1523 Cleveland Street, Evanston, IL 60202, 312-475-5048

ROB'S CHUTES COMEBACK

High quality ripstop nylon chutes 36" diameter. Sewn nylon lines end in a high strength nylon loop. These chutes won't come apart on you. Great for the new Dual Eggloft event, old Estes Maxi-Brutes, HPR work or other large sport models. Quantities are limited, so order today. Yours for \$4 each plus shipping and handling. Send checks or inquiries to: Barbara A. Bundick, (address and phone above)

CRAZY GAFF'S PLASTIC MODEL SALE!!!

Don't miss out on these kit bargains. Come on, now! Some late night you're going to need a plastic model conversion and all the stores WILL BE CLOSED! Why risk it? Call Crazy Gaff today and ask for a complete list including firm (make that slightly negotiable) prices! Ric Gaff, 331 Third Street, Northfield, IL 60093, 312-724-2975. Crazy Gaff won't be undersold!

NEED TO PLACE A CLASSIFIED?

Remember, classified ads are free to any NIRA member! Just get your ad to Bunny before the next issue.

STAFF

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NEWSLETTER OF THE
NORTHERN ILLINOIS ROCKETRY
ASSOCIATION
1985, 1986 AND 1987 NAR
NATIONAL SECTION CHAMPIONS

CONTRIBUTORS

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HEARD ON THE STREET

Rumors and such, with apologies to the Wall Street Journal

OBITUARY

CMR is apparently dead, or at least dying. Orders are being returned to senders and the company is working on a "bailout" plan to fill back orders. Several folks are interested in buying out the Colonel's competition operation, including Ken Brown, Southland Contest Board Chairman and NOVAAR advisor, Art Rose, Internats competitor extraordinaire, and Grant Boyd, proprietor of Acme Rocketry Company, seller of nostalgia rocket items.

NO MORE VAPORWARE

Enertek has released a slick color brochure; it's not quite a catalogue. Their kit prices run from \$20 to \$70. Ric Gaff is a sure ringer to buy their 22 oz., \$60 Astrobee 1500. The kits feature ejection baffles to eliminate wadding, and pre-slotted body tubes to insure solid fin mounting. Recovery is via a florescent orange cloth chute. Engines range from the E15 (two for \$10) to the G80 (\$13 each). Engine certification has started, and should be completed by the spring.

SMOKESCREEN

Other HPR manufacturers have been quiet. Rumors abounded last fall for the introduction of Vulcan "Smokey Sam" composites, but nothing has appeared on S&T's doorstep yet. NCR, formerly an Aerotech distributor, needs these motors in order to have an engine line, since Enertek now has sole distribution rights to Aerotech Class C motors.

COLUMBUS GROUNDED

The Santa Maria/LOFT-1 project seems to be on permanent hold. The sponsoring company, E-Systems, has run into difficulties securing insurance coverage for the flights, and continues to be snarled in red tape getting permission for using the Cape for test flights. We should note that the Vulcan motors and NCR airframe have performed flawlessly to date. Makes you wonder if the Air Force and NASA are jealous.

WORLD'S LONGEST RUNNING STUDENT

Guppy Youngren, America's first FAI Spacemodeling Gold Medalist, has returned to MIT to (finally) get his degree. Rumors abounded that the RC BG ace had indeed accumulated sufficient credit hours to graduate from the banks of the Charles River, but failed to complete a required paper.

We'll see if he makes it this time. Go Gup!

IN THE OLD COUNTRY

England has relaxed its model rocket regulations, opening another European avenue for our hobby. Estes is already preparing to sell a limited line of kits there, complete with metric measurements on the packaging. British flyers have participated in several World Championships to date, even with the old restrictions in place. Here's looking forward to more English faces at the next WC's.

STEELE SPLASHDOWN

Congrats to Matt and Robyn Steele on the arrival of Cody David Steele at 5:29 PM on Feb 25, 1988. Everyone is fine, and Cody weighs in at 8 lbs, 5.5 oz., 22" long. Nice of Matt to give his firstborn the same first initials as former Model Rocketeer Editor Chris Tavares.



Matt Steele in pre-papa days.

HINTS FROM MISTER STRATO'S WORKBENCH

by Lawrence Bercini

Recently, I had the opportunity to build several Estes kits. These ranged from Skill Level 1 to Skill Level 4, but all required techniques that I'd like to pass along.

Most kits now come with die-cut balsa fins. When you get to the step in the instructions where you remove the fins from the sheet, take a little time to trace the patterns on to index cards. Label the grain direction and number of times this pattern is needed for this model. The fin marking guide should also be saved. Label the index cards and marking guide with the name of the model and put them in an envelope, also labeled with the kit's name.

This only takes a few minutes to do, but can be very helpful.

As I built an SR-71 and was in the process of gluing on the bottom rudders. I realized I had lost one, but not until I'd

glued the first one on. Fortunately, I had a pattern traced, so I could make a replacement.

Some kits come with shock cord anchors printed on index card stock. Throw them away! They are too thick to work with. Other kits come with the shock cord anchors printed onto the middle of the fin marker guide. The kind of paper is OK, but using it will ruin the marking guide.

An inexpensive and workable paper for shock cord anchors is from a standard brown paper grocery bag. Copy the kit pattern onto the brown paper, cut out and prefold, then smear on the glue. Once the glue gets a bit tacky, assemble the mount with the shock cord in place. Then, since the paper is soft and pliable, it can be easily shaped to the curvature of the tube. That way, when glued in place, the mount will create a secure bond with a minimum obstruction inside the tube.

Once the model is complete, we're at the step most modelers rush through: finishing.

Equal care should be made for

as was for construction. When applying fillercoat or sanding sealer, apply carefully! Apply the sealer smoothly and evenly over the balsa surface just as if it were a paint job. The better you apply the sealer, the easier the sanding will be. Sanding off a thick drop of sealer can be done, but you will almost assuredly sand too much off the surrounding area in the process.

Avoid getting sealer on plastic parts. However, it is good to put sealer on body tubes. In fact, a coat of sealer on a tube and sanding smooth not only enhances the finished appearance, it improves paint adhesion and makes color masking easier.

On the topic of masking, let's not forget the greatest boon to spray painting ever invented: coupon inserts. In your Sunday Tribune comes a handful of glossy paper advertisements with clip out coupons. If you don't need to save 50 cents on Kibbles and Bits, save that whole sheet for masking material.

Many kits, like the Sizzler, Wizard and Phaser, require large portions of the model be masked off while a second color is applied. Use that advertisement to cover all areas

Mr. Strato (con't)

to be left unpainted. Do not try to get by with masking only the part adjacent to the color. Overspray is creative and will get on the rest of the model. The nice thing about glossy paper is that its ink won't rub off on the model, it won't let paint soak through, and it's cheap!

Plastic parts make model building easier but require an extra step during painting. Suppose you paint your Big Bertha all yellow. Because the plastic nose cone is somewhat translucent, the model will actually appear to be two different shades of yellow as the light "leaks" through the nose cone.

To prevent this, I always use a dark primer coat on my models. Since I use Krylon paint on my sport models, I use their grey sandable primer which covers well and can even be buffed with steel wool to achieve an ultra-smooth finish before applying final colors.

Here's another nose cone hint. Before painting, slide the cone up out of the body tube just a little bit, no more than 1/8 inch.

Just a little bit of color paints the shoulder of the cone, but doesn't interfere with the nose sliding off and on. I do this because models, particularly ones painted in dark colors look less realistic if the glaring white plastic shoulder peeks out of the tube.

Finally, the finishing touches, the decals. Kit decals will usually have their clear film extend well beyond the edges of the colored part. When the decal is a roll pattern or is to be applied to a large flat area, there is not problem. But whenever the color area is to fit within the outlines of the model, the clear film becomes a pain.

For example, the Nova Payloader has decals which fit exactly within the shape of the fin tips. To aid in fitting these decals in, remove them from the decal sheet with a SHARP knife and straight edge, cutting just a hair outside the color lines. Apply these decals as you would normally.

There you have it, some hints from Mr. Strato's Workbench. I hope these hints will help make your building easier and give you better results.



Author with Mickey Roc at NARAM-24.



Making chutes: a tedious but necessary part of model rocketry.



Oops! Something to avoid.



RAM JET™ #1994

FLYING MODEL ROCKET

Sport Model Kit Review by Bunny

Rating: ***

Every year you get used to the annual Estes "new but not improved" sport model onslaught. This year's offerings are different. The Ram Jet is a relatively simple sport model with a different look and reasonable price tag.

Designed to look like an air-breathing machine of some sort, the Ram Jet consists of a BT-20 core containing all the "real" parts of the rocket: engine hook, nose cone and recovery system. Surrounding this are two shorter sections of BT-55 supported by three sets of six balsa vanes spaced evenly around the BT-20.

While the die cut balsa parts are cleanly cut, the instructions wisely suggest a light sanding on both sides of the sheet and removal with a modeling knife. The balsa in my kit was pretty heavy and tightly grained, bad for BG's, but great for a sport model and

easier than soft wood to finish.

I suggest you follow the instructions up to Step 5. Estes suggests placing the vanes in the center of the marking guide lines. I think it would be easier to line them up with their edges even to the marking line. You choose. I'd also consider putting the launch lug on the BT-20. Putting it on the BT-55 makes it easier to see what your doing, but clutters up the exterior of the rocket.

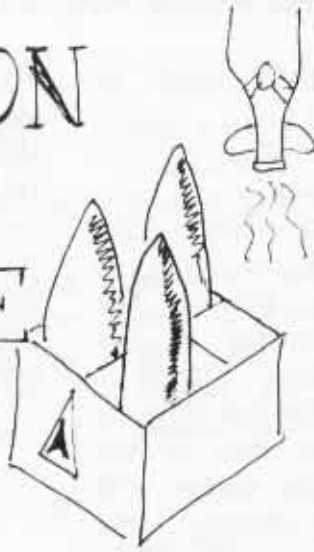
Estes says to put sealer on the vanes prior to gluing on the BT-55's. A wise move, I intend to speed the process slightly by using Hobbypoxy "Stuff" as a sealer instead of sanding sealer. The instructions leave the painting of the vanes until the rocket is assembled. Getting complete coverage of the vanes after the BT-55 is installed will be difficult, so consider painting them prior to gluing on the BT-55. If you go this route, remember to sand the root edges before gluing, lest you get a bad bond. The decals, while not plentiful, are sufficient to get a snazzy looking sport bird.

The model flies with the Estes standards, A8-3, B6-4 and C6-5. With a retail price of \$4.95, this kit is typical of the lower priced end of the kit market. All in all, a three star kit featuring some clever styling, good materials and clear instructions.



PEARSON & STEELE

PREMIUM
COOLED
ROCKETEERS



SINCE THE HIGH POWERED ROCKET BUSINESS IS JUST A PASSING FAD, MATT AND I HAVE DECIDED IN FAVOR OF A MORE PROMISING CAREER - WINE COOLERS!



WE INTEND TO OFFER A FULL LINE OF WINE COOLER PRODUCTS, INCLUDING COMPOSITE FLAVORS - (SUCH AS CHICKEN CHERRY CHEESE CAKE) - JUST AS SOON AS MATT FIGURES OUT HOW TO GET THE CHICKEN INTO THE BOTTLE.



IN THE MEANTIME, LET'S LOOK AT A FEW TASTY RECIPES. MATT TELLS ME THAT COOLERS TASTE A WHOLE LOT BETTER IF YOU MIX WINE WITH FRUIT INSTEAD OF, SAY, SALTED COOFISH.



WHEN MAKING COOL WINE COOLER POPSICLES, TRY TO USE A REALLY COLD FREEZER. MATT TELLS ME THAT WINE DON'T FREEZE TOO GOOD.



AND FINALLY, WE HOLD CORKS IN PLACE WITH A QUICK SQUEEZE FROM MATT'S HOT GLUE GUN. KEEP THOSE CARDS COMING IN AND WE APPRECIATE YOUR SUPPORT.



BAB

ESTES PLANT VISIT

by Bunny

After 22 years in the hobby, I finally made the "pilgrimage". I finally visited the Estes Industries plant in Penrose. The scenery was quite spectacular, and the plant tour opened my eyes to new insights at the world's largest model rocket manufacturer.

Mary Roberts was a knowledgeable and entertaining tour guide for the Hunsickers, John Pursley, Pat Miller and I. Our tour took over an hour, and Mary probably needed the time on some other projects. So a hearty NIRA thanks for the effort.

The main offices house the Art and Printing departments. Estes prints millions of pages of flyers, kit instructions, promotional materials (NAR applications!) and newsletters a year. They have a new four color automated press that was hard at work on Model Rocket News during our tour.

The stripping department prepares the color separations. Their computer controlled camera took 100 foot rolls of film 36 inches high. This large format is needed to prepare full sized negatives for kite printing.

The kite printing press, over a story tall, was hard a work, since spring is a big selling season for kites. Plastic went into one end, and Chinese dragon kits came out the other in a continuous stream. This press is also used to print parachutes for rockets. Of interest is the fact that all Estes chutes are folded by hand!

Estes maintains a staff of full time machinists, many of whom spend their time making "gadgets", automating processes that would be too costly if done by hand. Example: how's about a machine that wraps exactly 200 feet of kite cord on a plastic handle? Estes has one, invented right in Penrose.

There's also the igniter making machine. This little jewel was spot welding the thin igniter wire on the thicker leads, dipping the assembly into pyrogen, baking the wet pyro,

then dumping the completed product into a bin.

Mary Poppins, the nose cone making machine was hard at work, too. I started to steal some of the rejects (I'm not as picky as Estes' quality control), but thought better of it.

The engine making area is off limits, and with good reason. Somehow the idea of wandering around a bunch of buildings with lots of black powder lying around made me nervous. There are now seven of Mabel's sons and daughters hard at work making the life blood of model rocketry. I wasn't tempted to steal any reject engines. Estes quality control won out there.

The staging area is where kits are produced. The assembly line was running full tilt on a big rush order, and all went smooth as clockwork. The completed kits were being boxed for shipment as soon as they came off-line.

The only area I didn't see was the R&D department. Maybe Mary thought we'd spill the beans on new products coming out of the Estes "Skunk Works". The R&D guys have done some pretty good work

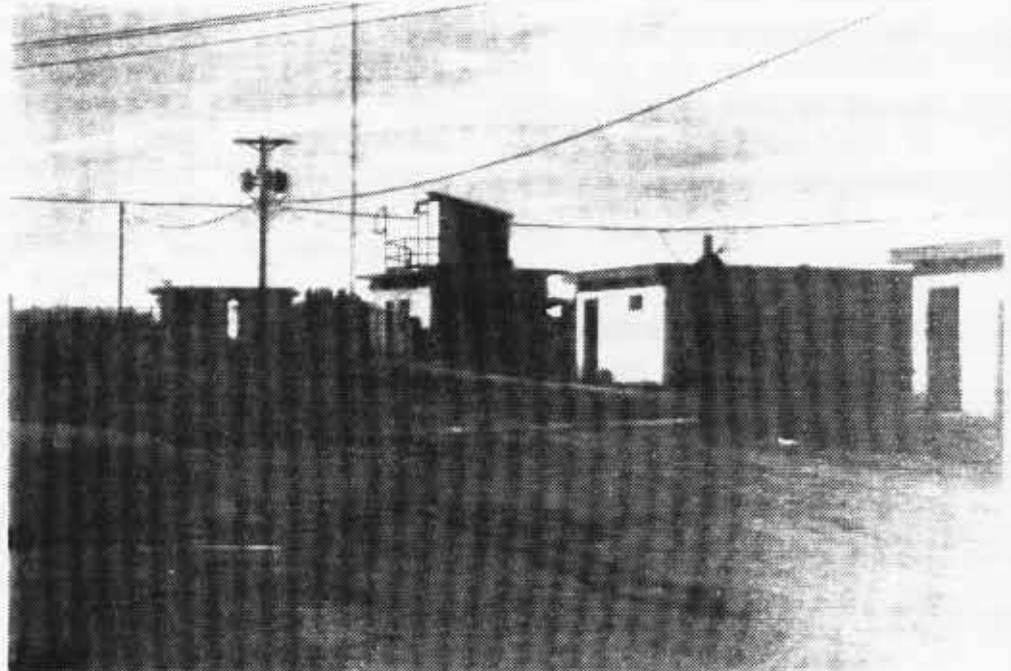
*Estes Plant
(con't)*

over the past couple of years; I hope they make good use of the Little Joe data I returned to Mary in some future kit.

While I couldn't recommend a trip to Penrose JUST to see the Estes plant, if you're on your way west, try to take a peek. The plant is open for tours from roughly 8:30 to 4:00 on weekdays. You may not have Mary as a guide, but you'll surely be entertained.



The front door of the "Model Rocket Capital of the World"



Mabel's house is modest by most standards, but cozy enough for her.



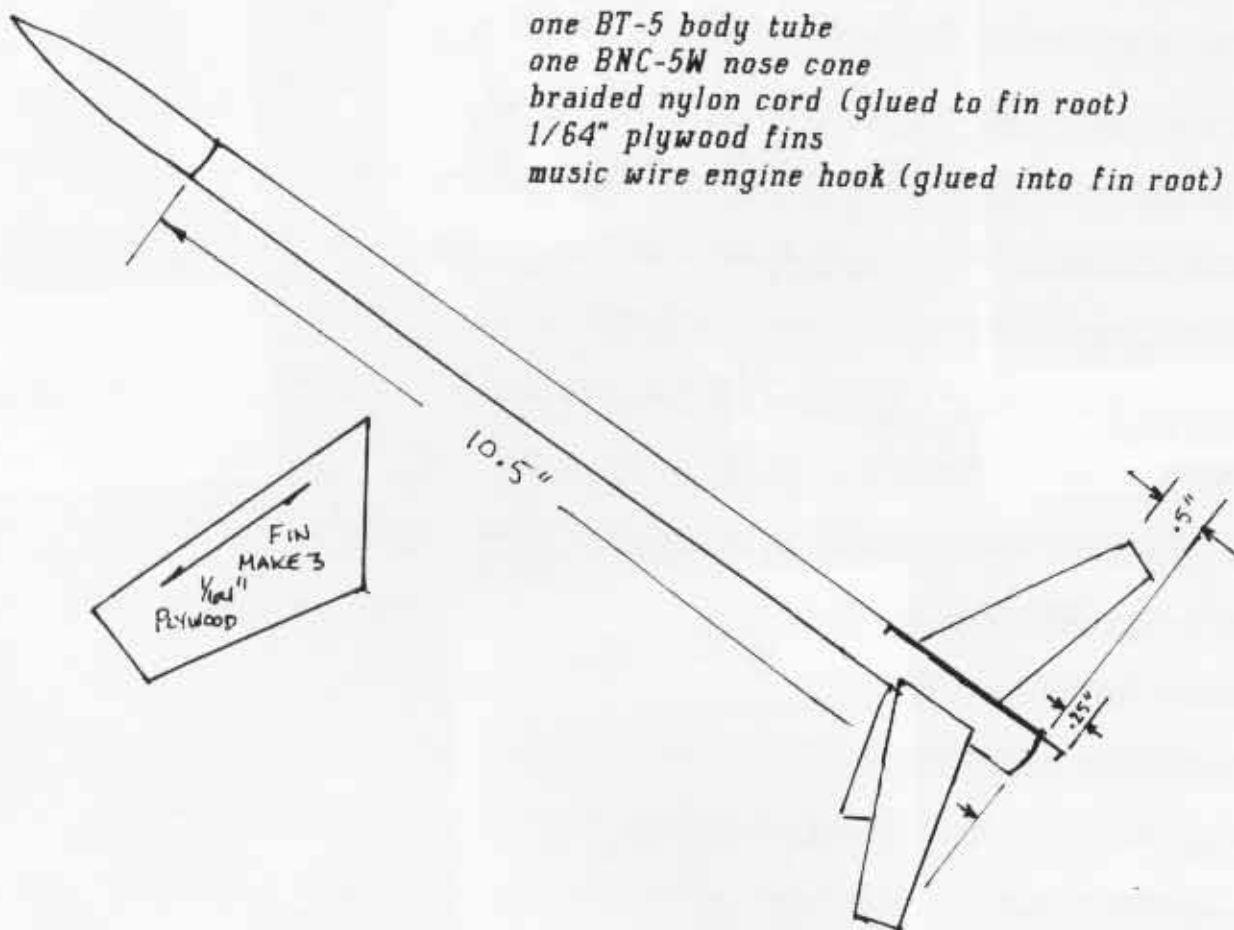
How's this for the view from your office at Estes? Pike's Peak is in the center.

PHOBOS: by Harland "The Obscure Rocketeer" Pell

*an all-purpose model for 1/2 A and A
streamer and parachute duration*

PARTS LIST

- one BT-5 body tube*
- one BNC-5W nose cone*
- braided nylon cord (glued to fin root)*
- 1/64" plywood fins*
- music wire engine hook (glued into fin root)*





HI! I'M LAWRENCE
BERCINI, A/K/A MR.
STRATO. WHEN I
GET READY TO LAUNCH
ULLYSES THE FLYING
OCTOPUS, I GET
MY SUPPLIES FROM
THE GLEN ELLYN
TOY AND CARD
SHOP, WHERE ...
AIRRGH!!!

THE LEADING EDGE
c/o Bob Kaplow
1628 Waterford Lane
Palatine, IL 60074

SEND TO: