

SNOAA NEWS

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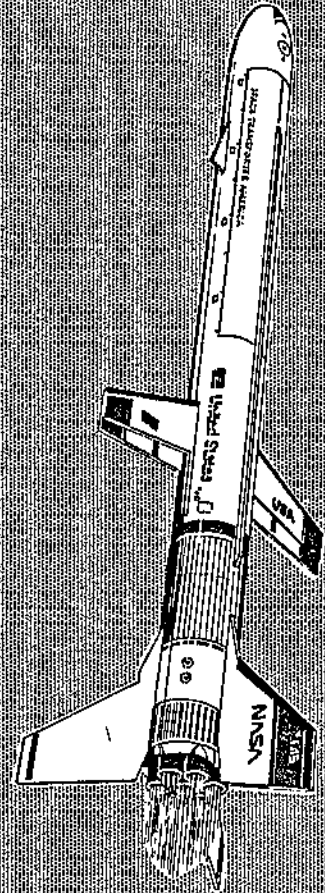


PAT MILLER AT LORS!

"NEW DIRECTIONS IN MODEL ROCKETRY"

SNOARR NEWS

THE LEADER IN MODEL ROCKETRY!



SNOARR NEWS
37541 BROVE AVE
#202
WILLOUGHBY, OH
44094

TO:

[Empty rectangular box for mailing address]

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SNOAR NEWS

AUGUST 1984 VOLUME 10 NUMBER 5

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COVER STORY:

PAT MILLER AT LDRS-3! NAR PRESIDENT PAT MILLER WILL BE AT LDRS-3 TO TALK TO HIGH POWER ENTHUSIASTS. FROM THESE PHOTOGRAPHS, RECENTLY PURCHASED AT QUITE A HIGH PRICE, IT CAN BE SEEN THAT PAT HAS BEEN SEEN WITH AT LEAST AN F (OR IS THAT A G?) ANYWAYS, IT DISPROVES THE THEORY THAT HE DOESN'T FLY ROCKETS ANY MORE.

CREDITS:

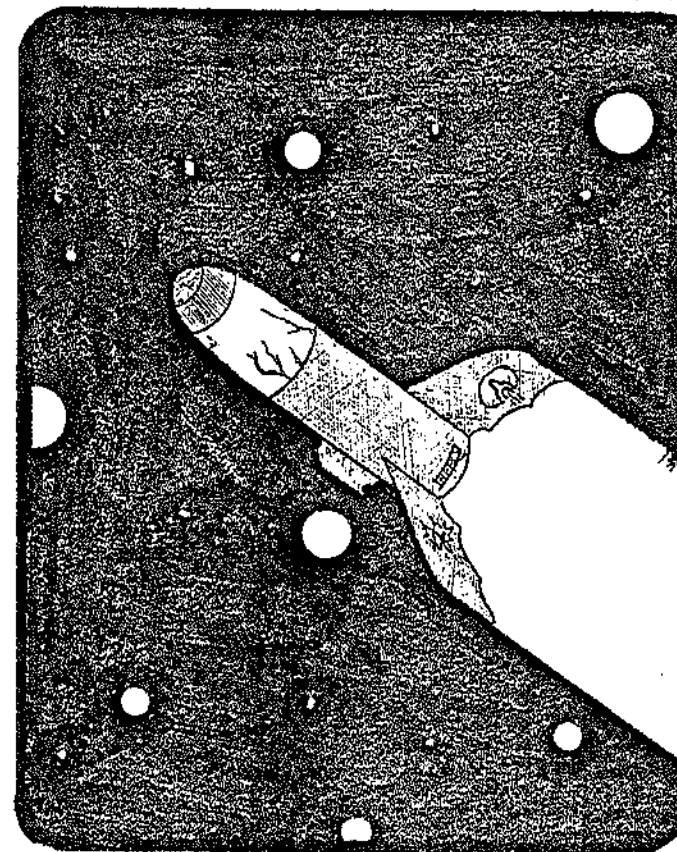
EDITORIAL DIRECTOR AND PUBLISHER: MATT STEELE, 3598 CHASEWOOD DR #1, HUNTSVILLE, AL 35805; EDITOR AND SUBSCRIPTIONS DEPARTMENT: CHRIS PEARSON, 37541 GROVE AVE #202, WILLOUGHBY, OH 44094.
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FROM YOUR SOMETIMES SOBER EDITORS:

Well, there was supposed to be an editorial here. As usual, the pre-NARAM rush, along with work, prevented the tenth anniversary issue of SNOAR NEWS to come off right, so instead, this will be a normal 16 page issue. The commemorative issue will be published later this year, but we wanted to do a good job on it, and have an issue out for LDRS and NARAM, and there just wasn't time for it. Fortunately, the SNOAR NEWS word processor is pretty well stocked with material, so putting together this issue wasn't all that bad. Please excuse the typos; it is about 3 AM, and this has got to go to the printer's in the morning, so there's little time to proofread.

So, stop in and have a drink with us at NARAM or LDRS!

Matt and Chris



"It's still cosmic?"

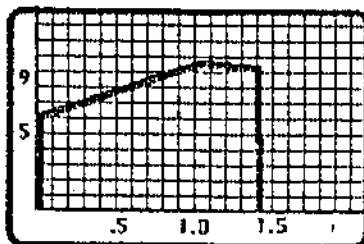
ANNOUNCING...
 NORTH COAST ROCKETRY'S
"NORTH COASTERS"

HIGH PERFORMANCE !
 LOW COST !
 EXCEPTIONAL RELIABILITY !

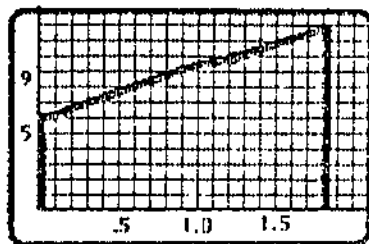
THAT'S RIGHT, NORTH COAST ROCKETRY HAS RELEASED IT'S FIRST ENGINE SERIES, THE "NORTH COASTERS". MUCH LIKE THE ORIGINAL "COASTER" MOTOR OF THE 1960'S, THESE ENGINES SIGNIFICANTLY ADVANCE THE STATE OF THE ART IN LARGE MOTOR TECHNOLOGY. USING ADVANCED PROPELLANTS AND CASING MATERIALS, NORTH COASTERS DELIVER RELIABLE POWER FOR LESS COST. TRY THEM IN YOUR NEXT BIRD AND SEE THE DIFFERENCE!

SPECIFICATIONS:	<u>E28</u>	<u>F41</u>
TOTAL IMPULSE:	40 N-SEC	79.6 N-SEC
BURN TIME:	1.4 SEC	1.8 SEC
INITIAL THRUST:	5.85 LB	7.30 LB
PEAK THRUST:	9.30 LB	15.4 LB
MOTOR DIAMETER:	.938"	1.125"
MOTOR LENGTH:	2.75"	3.50"
PROPELLANT MASS:	18.9 GRAMS	37.8 GRAMS
DELAYS:	4, 8, 12 SEC	6, 9, 14
PRICE:	\$7.75	\$7.75

NORTH COASTER E28-4,8,12



NORTH COASTER F41-6,9,14



SURE-FIRE IGNITION TECHNIQUE

By "Moose" Lavigne

Nothing can piss you off more than to watch your well finished, expensive payload rocket boost straight and then fail to eject, leaving you helpless as you watch your model plummet to earth. I've had two camera carrying vehicles -perform such a death dive. Both failures were with Clown (Crown) motors, but, of course, any motor could fail.

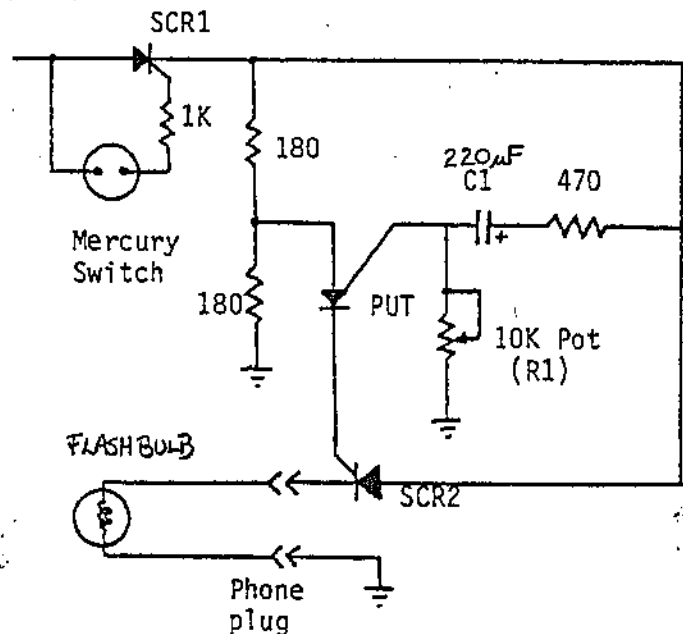
The sure fire ejection system is a self contained, timer ejector set up which prevents the above scenario from ruining your day (and your model). It is composed of: a mercury deceleration switch, timer, battery, and pyrotechnic recovery system activator. The operation of the unit is simple. You place it in the model, turn it on, launch, and if the model fails to eject, a flashbulb surrounded by powder ejects the parachute. The circuit board is small enough to fit into any tube larger than a BT-55. The largest component is the battery. I use a 7.2 volt NiCad, also known as a "9V applications" battery. NiCads are great for this purpose, as they can provide ample current for on-board ignition and other high current pulse type applications. Small sub AA cells would also work.

Here's how it works: Power is absent during boost. At burnout, the mercury switch activates SCR1, allowing power to the circuit. Now C1 comes into play, holding the gate of the PUT more positive than it's anode for an amount of time determined by R1C1. During this time, the capacitor discharges through R1 and the gate. When the gate's potential reaches about .6 volt more than the anode, the PUT conducts, turns on SCR2, and ejection occurs. Simplicity itself!

Parts for the project: 2 (2N5061) SCR's; 1 (2N6027) PUT; 1 220 uF/10V capacitor; 1 1K resistor; 2 180 ohm resistors; 1 10K potentiometer; 1 micro mercury switch (Radio Shack); 1 470 ohm resistor; 1 9V battery or similar; and misc. wire and a board to mount it all on. (PUT = Programmable Unijunction Transistor; SCR = Silicon Controlled Rectifier)

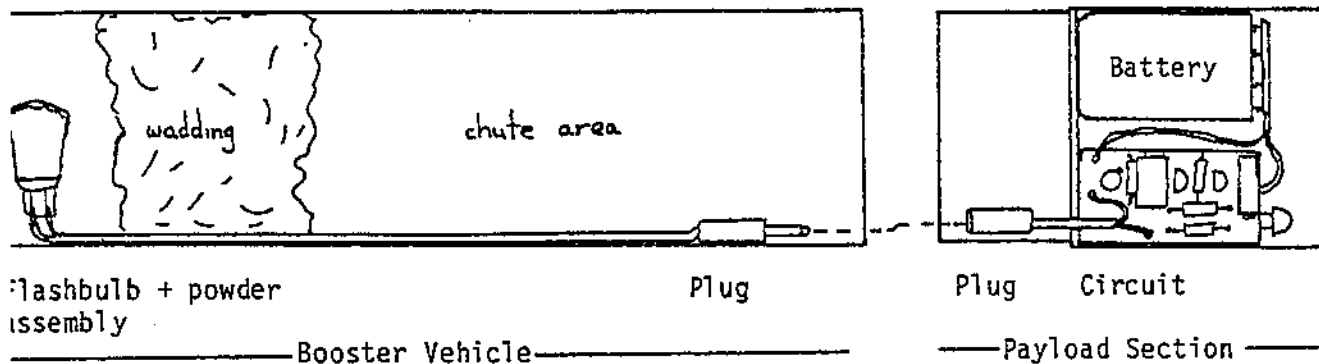
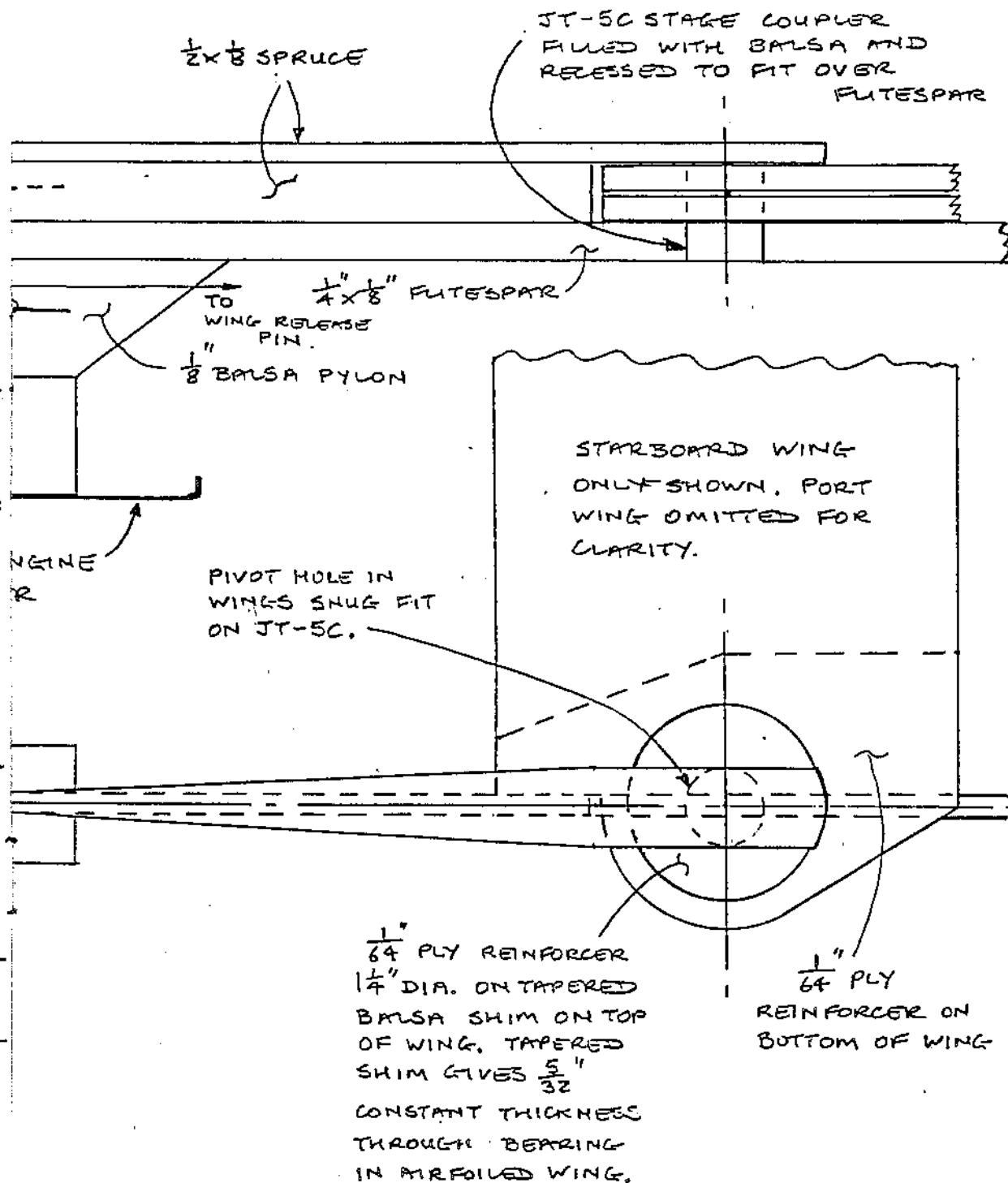
Other notes: Use about a gram or so of black powder, depending on the body tube diameter, and for best results, dip the flashbulb in some clear dope, and then into the black powder to coat the flashbulb. Remember to orient the mercury switch so that it conducts at burnout, and that the mercury will travel forward at burnout. That's all there is to it; go out and fly your models without worrying about ejection problems!

Circuit:



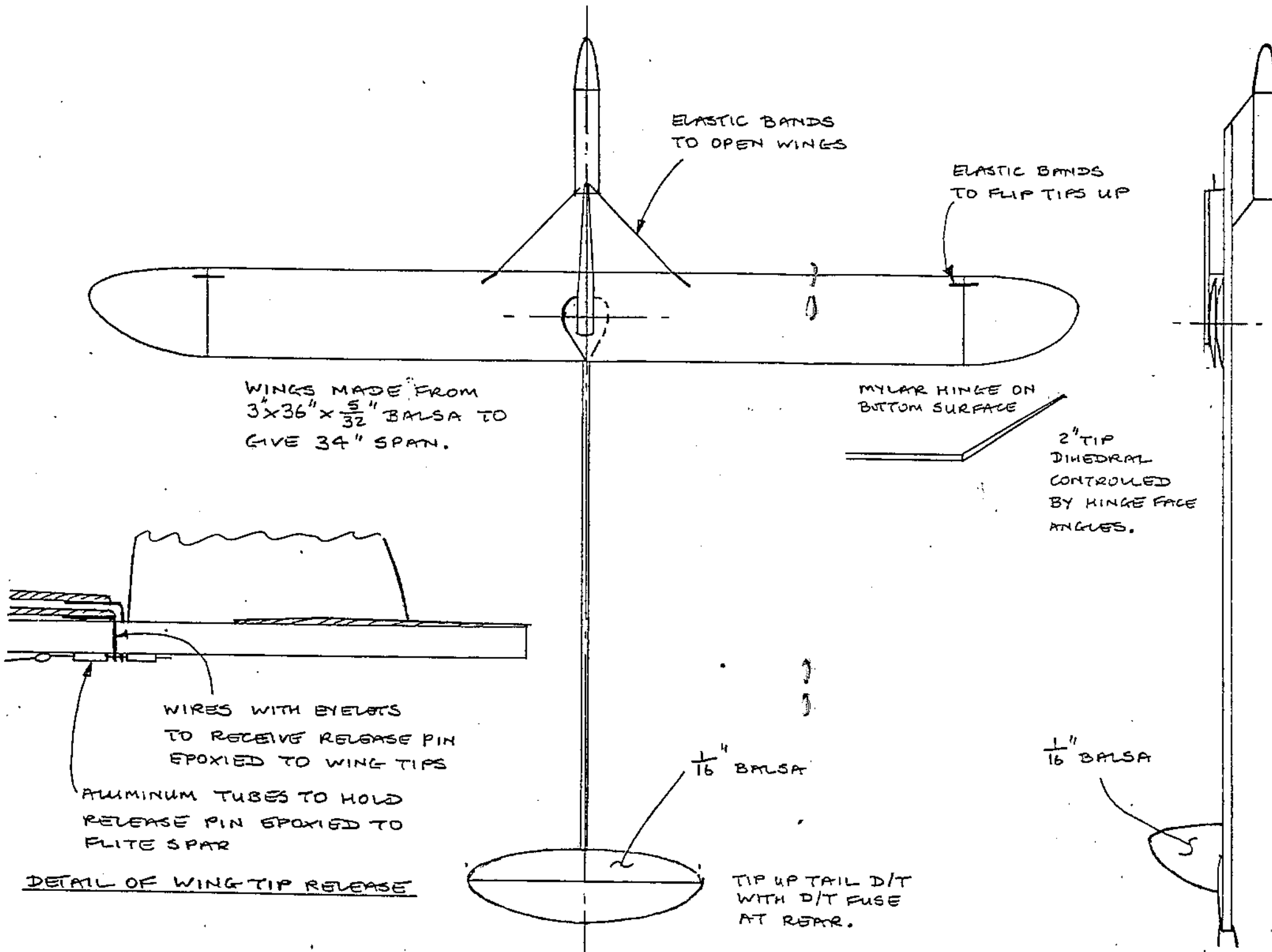
The Parts:

- 2ea 2N5061 SCR's
 - 1 2N6027 PUT
 - 1 220µF/10V capacitor
 - 1 1K resistor
 - 2ea 180-ohm resistors
 - 1 10K potentiometer (Radio Shack)
 - 1 Micro-mercury switch (Radio Shack)
 - 1 470-ohm resistor
 - 1 Set of subminiature phone plugs or similar
 - 1 "9V applications" battery or similar
 - Misc. wire & board to mount stuff on.
- PUT= Programmable Unijunction Transistor
 SCR= Silicon Controlled Rectifier



Use around a gram of FFF black powder, depending on body tube diameter. Orient the mercury switch such that it conducts upon burnout. (The Hg will be slung forward at B.O.) Enclose the powder around the bulb

figure 1
6



FOR WING PIVOT
DETAILS SEE
OTHER SHEET.

WING RELEASE
BY EJECTION
CHARGE BURNING
NYLON THREAD
TO RELEASE
TENSIONED BAND
CONNECTED TO
CONTROL-LINE
WIRE WITH
RELEASE PIN AT
OTHER END.

SAME SYSTEM
AS ON
"GREAT DANE"
SWING WINGS.

HOT TURKEY
C ROCKET GLIDER

SCALE: $\frac{1}{4}'' = 1''$

WINGS MADE FROM
3x36x $\frac{5}{32}$ Balsa TO
GIVE 34" SPAN.

MYLAR HINGE ON
BOTTOM SURFACE

2" TIP
DIHEDRAL
CONTROLLED
BY HINGE FACE
ANGLES.

WIRES WITH EYELETS
TO RECEIVE RELEASE PIN
EPOXIED TO WING TIPS

ALUMINUM TUBES TO HOLD
RELEASE PIN EPOXIED TO
FLITE SPAR

DETAIL OF WING TIP RELEASE

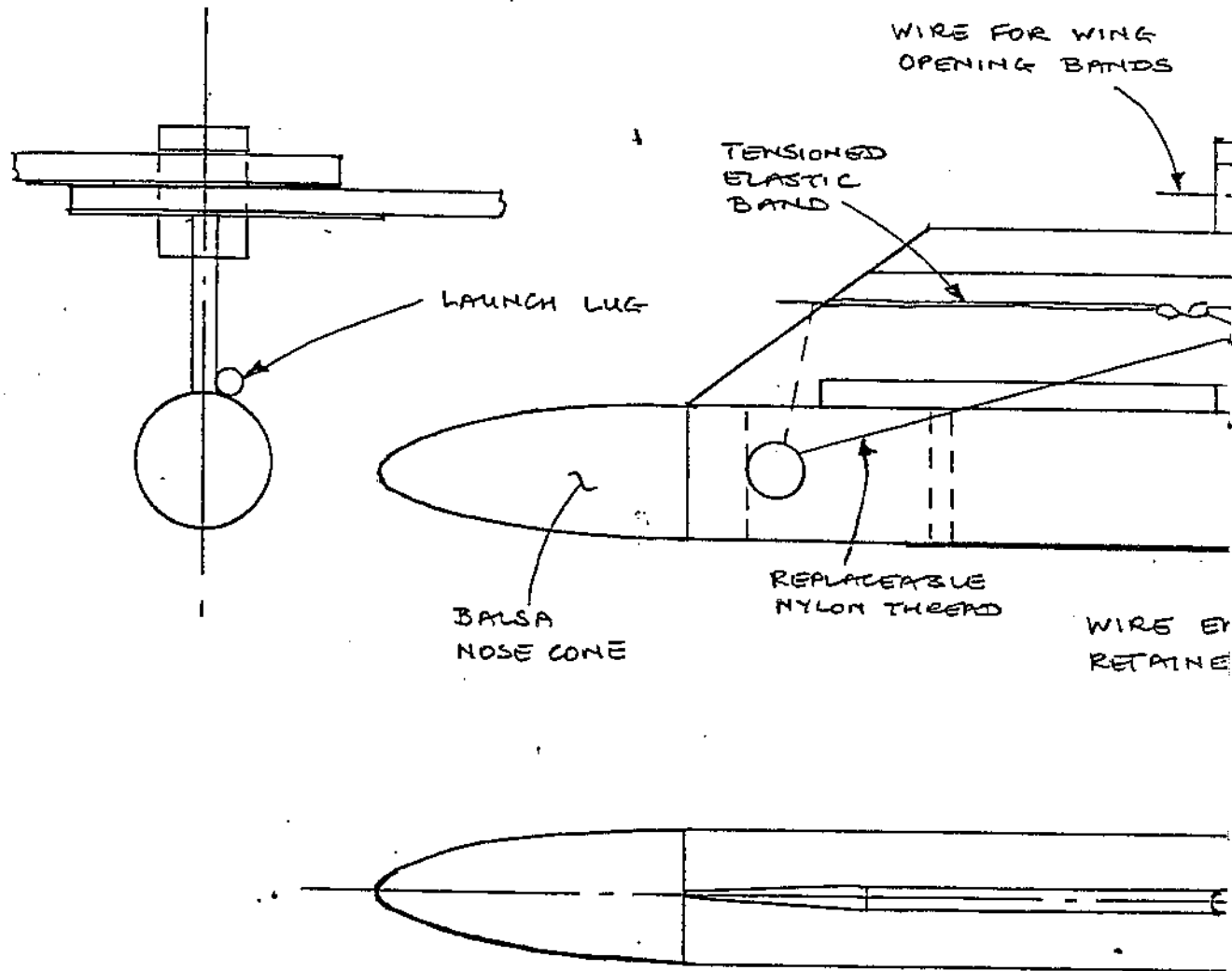
ELASTIC BANDS
TO OPEN WINGS

ELASTIC BANDS
TO FLIP TIPS UP

$\frac{1}{16}$ " Balsa

$\frac{1}{16}$ " Balsa

TIP UP TAIL D/T
WITH D/T FUSE
AT REAR.



HOT TURKEY

C ROCKET GLIDER

DETAILS OF NOSE ASSEMBLY

SCALE - FULL SIZE.

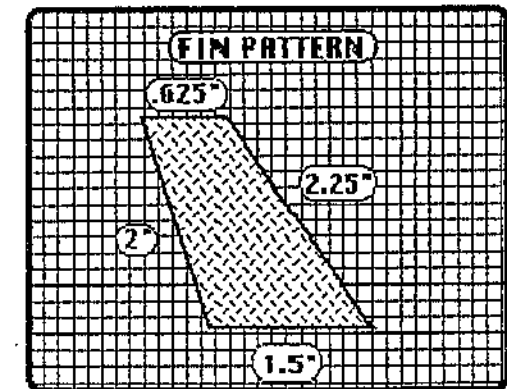
THE OZONE BABY A B/C INTERNATIONAL SD BIRD

The "OZONE BABY" is a solution to the problem of the B and C International Streamer Duration events. Typically, the novice has had problems picking the right design for this event, whereas the more experienced modeler has been plagued with reliability problems such as shock cord separation, engine ejection, and stability.

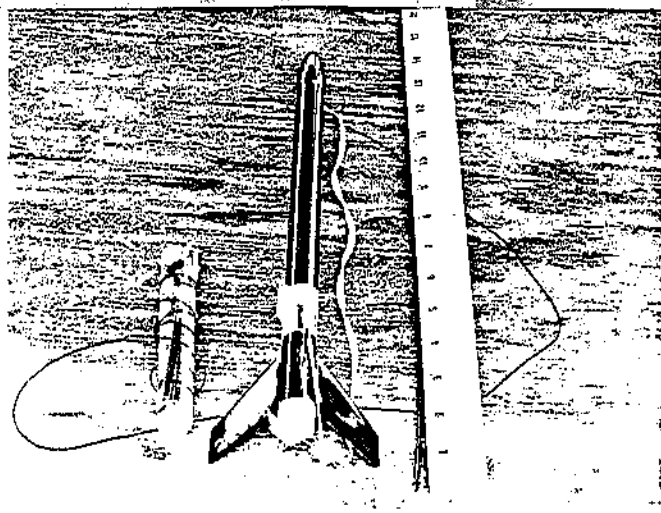
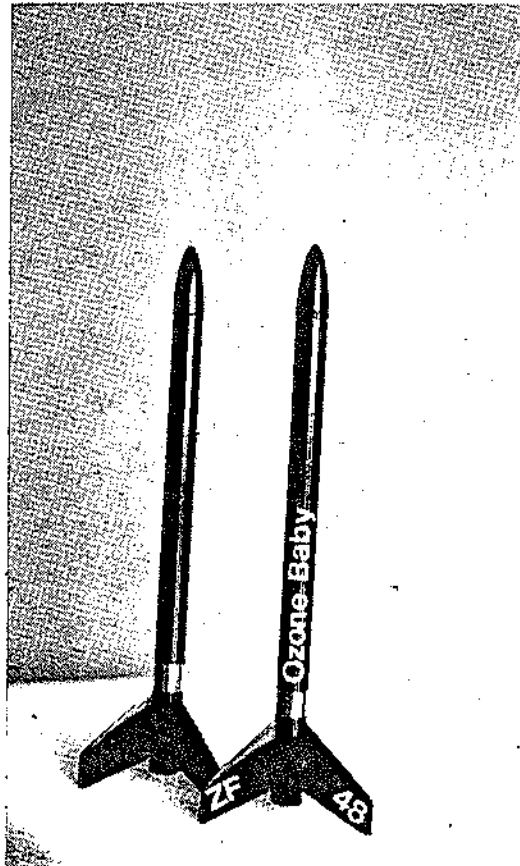
The "OZONE BABY" is constructed entirely from Estes parts, a rarity these days. The primary reason for this was the widespread availability of parts. CMR parts can be substituted, if you desire. Be careful if you chose a CMR nose cone though; while they are light and require no finish, they are prone to separation if not properly glued together.

An 11" length of BT-20 should be cut to start construction. While a shorter length could be used, this length insures that there is enough space to pack the recovery system time and time again. The nose cone should be an Estes BNC-20B.

The fins should be chosen from light, but hard 3/32" balsa. Be picky when choosing wood, as you want light wood, but not weak wood. Models with broken fins don't fly second and third rounds very well. Take your time and sand in a good, symmetrical airfoil into the fins. Mark off the three fin lines, insuring that they are straight, and leave a 1/4" space between the end of the tube and the fins. This will be important when prepping the model. Use a jig to glue the fins, and preferably a "slow" super glue such as Hot Stuff Super T or CA+ Zap-A-Gap. A light fillet of the same glue will provide a clean, strong joint.



Since Estes, hence balsa, parts were chosen, it means a lot of time with sandpaper. Take your time to sand and seal the balsa surfaces



properly. I like to use SIG sanding sealer, but Pactra and other types work as well. Apply two coats before sanding. Usually, good results can be obtained with only three sandings. Be sure to start with 220 grit, then work down to 320, 400, and finish off with 600. Also, sand the body tube, and give it two coats of sealer. It doesn't take that much extra work, but the results are well worth it.

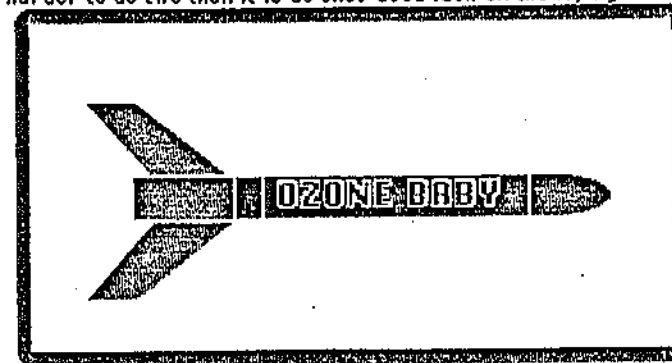
Cut a 24" length of white elastic shock cord, and glue it into a fin/body joint. Use an aliphatic resin glue here, not a super glue, as the super glues cause the cord to become brittle and possibly break. Also, glue the screw eye in carefully, adding extra glue to insure that it is secure. The streamer should be a heavy duty paper one, about 5"x50". Run the shock cord through the screw eye, and tie it off. Knot one end of a 28" section of 30 lb test cord. The cord will be attached to the narrow end of the streamer. Using a 2" wide strip of adhesive mylar, lay 1" on the back of the streamer, then lay the line on the top, and fold the mylar over. Then securely tie the line to the screw eye.

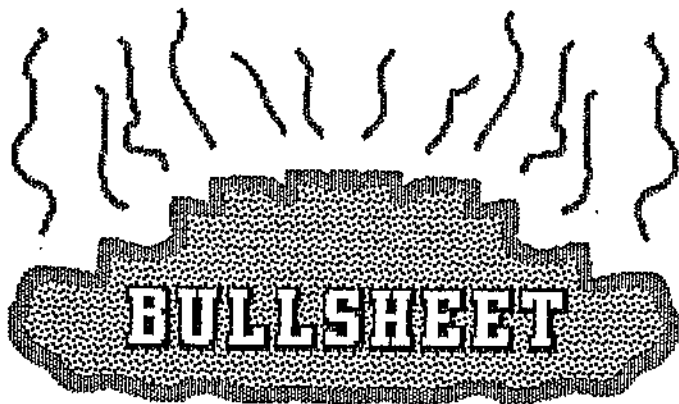
The "OZONE BABY" was designed to be launched from a tower, but a standard lug or a pop lug can be added if desired.

Paint the model in a high visibility color, but don't get paint on the shock cord. The original model was painted Raven Black with Pactra's polyurethane "Formula U" spray paint. When the paint is dry, add a 3/4" wide strip of aluminized mylar just above the fins. This will help prevent the shock cord stripping off.

To prep the model for flight, select either a B6-6 or a C6-7. Friction fit the engine into the model, leaving at least 1/4" hang out. Wrap a 1/2" wide strip of mylar around both the engine and the rear of the body tube to act as sort of an "engine hook". Fold the streamer with accordian folds for 2/3 of the way, then roll it the rest of the way, and wrap the attachment line around it. This will help prevent the streamer from ripping upon deployment. Insure there is plenty of wadding in the model, and that the streamer doesn't bind inside the tube. If it binds, repack the streamer or replace it with a smaller one.

The OZONE BABY's construction is relatively straightforward and should be a snap. Keep in mind that the OZONE BABY will also work well in B and C International Parachute Duration, as well as the "standard" SD and PD events. Remember to construct two models as the rules allow. It's not that much harder to do two than it is do one. Good luck on the flying field!





BULLSHEET

The latest news from Estes is that two and six second delays are gone for mini-engines! Yes, that's a fact. The NAR is currently looking into purchasing a large number of the engines to supply it's members with for contests, but that situation is uncertain. Also, rumours of a new camera have no basis in fact, according to Estes. We'll see...

Crown is still in business, as Mark Mayhle has sold the business to his brother. No word on how much the business went for. It looks as though Crown will continue to provide high power engines.

Stargate is also back on track, according to Larry Broadbent. Plans for a liquidation have been changed, and Stargate will continue to offer their line indefinitely.

New motors from Scott Dixon and Vulcan Systems! Chas Russell has flown a few of these babies already, with good results. The motors are designed for sport flying and payload boosting. An E40 and an F80 (one second burn for each) will be produced, as well as a 125 n-sec G97 (1.2 second burn). Chas says that the engines have a regressive time thrust curve with a high initial thrust to get the birds off the pad in a hurry. The E is 3.125" long and about 2.5 oz, while the F is 4.5" long and about 3.25 oz. Both have a diameter of 1.125". We'll have a complete flight product review in the next issue.

The Estes Pershing 1a nose cone is out of stock, with no plans to replace it. Slowly, the stock of Estes nose cones for BT-39 has been depleted. The only available cone now available is the Ace NC-39, a blow molded cone that is pretty nice. The cones are available through North Coast Rocketry as well as Ace. North Coast is exploring nose cones for it's other tubes as well.

Estes is also considering making a special batch of engines for the next Internats team. Although things are still in the planning stages, it seems that Estes will make a micro 9 mm engine, similar to the East European engines used in competition.

The NAR will begin random sampling of engines as a quality control measure. Funded by the HAIA, the NAR will use this system to replace the defunct MESS system.

Terry Lee will rule again! Yes!rree, Mr. Swan hisself will take over the National Contest Board from Charlie Sykos after NARAM 26. This will be Terry's second stint as CB Chairman. We know he'll do a good job. Also, congratulations to Charlie for a job well done.

Suscribe now to SNOAR NEWS or we'll run the "BIG NICK" ad again! Yeah, Pearson is pretty pissed about some people not renewing, so send those bucks in, or we'll run what has to have been our most-talked about ad again. You were warned!

