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COVER STORY:

PAT MILLER AT LDRS-3 IAR: President Pat Miller will be at LDRS-3 to talk to high power enthusingasts. 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 6?) anyways. It disproves the theory that he doesn't fly rockets anymore.

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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 types; 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:

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<td>5.95 LB</td>
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<td>18.9 GRAMS</td>
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<td>15.4 LB</td>
<td>1.025&quot;</td>
<td>3.07&quot;</td>
<td>37.8 GRAMS</td>
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SURE-FIRE IGNITION TECHNIQUE

By "Moore" 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 CL comes into play, holding the gate of the PUT more positive than it's anode for an amount of time determined by RC1. 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 (2N6037) PUT; 1 220 uF/10V capacitor; 1 1K resistor; 2 180 ohm resistors; 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!

DIAGRAM AND PLAN ON OPPOSITE PAGE.
Circuit:

SCR1

1K

Mercury Switch

180

220uF 470

10K Pot (R1)

SCR2

Flashbulb

Phone plug

The Parts:

2ea 2N5061 SCR's
1 2N6027 PUT
1 220uF/10V capacitor
1 1K resistor
2ea 100-ohm resistors
1 10K potentiometer
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

Wing

ENGINE

1/8 Balsa Pylon

STARBOARD WING
ONLY SHOWN, PORT WING OMITTED FOR CLARITY.

1/4” PLY REINFORCED
1/4” DIA. ON TAPERED Balsa shim on top of wing. Tapered shim gives 5/8” constant thickness through bearing in framed wing.

JT-5C STAGE COUPLER, FLUTED WITH Balsa and recessed to fit over flutespar.

Wing Release pin.

4X6” FLUTESPAR

Pivot hole in wires snug fit on JT-5C.

Plug Circuit

Payload Section

FLASHBULB + powder assembly

Booster Vehicle

chute area

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 slug forward at B.O.) Enclose the powder around the bulb.

figure 1

figure 6
WING RELEASE
BY EJECTION
CHARGE BURNING
NYLON THREAD
TO RELEASE
TENSIONED BAND
CONNECTED TO
CONTROL LINE
WIRE WITH
RELEASE PIN AT
OTHER END.
SWING SYSTEM
ATTACHED ON
"GREAT DANE"
SWING WINGS.

FOR WING PIVOT
DETAILS SEE
OTHER SHEET.

WINGS MADE
FROM
3/8 x 36" x 5/32" BALSA TO
GIVE 34" SPAN.

WIRE MOUNTED ON
BOTTOM SURFACE

2" TIP
DINICAM
CONTROLLED
BY HINGE FACE
ANGLES.

WIRE WITH EYELETS
TO RECEIVE RELEASE PIN
SPIGNED TO WING TIPS

ALUMINUM TUBES TO HOLD
RELEASE PIN SPIGNED TO
ELITE SPAR

DETAIL OF WING TIP RELEASE

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

HOT TURKEY
C ROCKET GLIDER

SCALE: ½" = 1"
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. CPR parts can be substituted, if you desire. Be careful if you chose a CPR 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 5008-205.

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 airflow 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 fill 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 S16 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 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 a thin resin glue here, not a super glue, as the super glue causes the cord to become brittle and possibly break. Also, glue the screw eye in carefully, adding extra glue to ensure that it is secure. The streamer should be a heavy-duty paper one, about 5x50". Run the shock cord through the screw eye, and tie it off. Knot one end of a 25" 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 it 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 polyurathane “Formula U” spray paint. When the paint is dry, add a 3/4" wide strip of subdued mylar just above the fins. This will help prevent the shock cord stripping off.

To prep the model for flight, select either a D6-6 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 a sort of an “engine hook”. Fold the streamer with accordion 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 wedging in the model, and that the streamer doesn’t bind inside the tube. If it binds, repace the streamer or replace it with a smaller one.

The OZONE BABY’s construction is relatively straightforward and should be easy. Just keep in mind that the OZONE BABY will also work well in B and C International Parachute Duration, as well as the “standard” SO and PD events. Remember to construct two models as the rules allow. It’s not that much harder to do than it is to do one. Good luck on the flying field!
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 its members for contests, but that situation is uncertain. Also, rumors 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 liquid fuel 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 E80 (one second burn for each) will be produced, as well as a 125 in-sec 097 (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 Ia 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 its 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 NAIA, the NAR will use this system to replace the defunct NESS system.

Terry Lee will rule again! Yes, Mr. Swan himself 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.

Subscribe now to SWAR NEWS or we'll run the "BIG NICKY" 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!