SNOAR NEWS©

Quarterly

a SNOAR® publication

Special Salute to Ed McMahon Issue!

"New Directions in Model Rocket Technology"

SNOAR NEWS Quarterly

Volume 9
Number 2

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Our Motto: If we didn't bitch, who would?

Credits:

Editor and Editorial Director: Matt Steele, Co-Editor, Technical Editor and Plans Editor: George "Fatcat" Gassaway, Generally in Charge of a Lot of Things: Chris Pearson, Executive Janitor and Drug Connection: Bob Ferrante, Art Director: Tony "Maddog" Williams, Executive Secretary: Heidi Smakula, Office Cat: Cat, Office Hamster: Ethel, Bill Arbitrator and Enforcer: "Big Jim" Backlas, Mailing Services: John Alexander and his OSI, Publisher: The United States Department of Defense.

>Important Sounding Stuff<

SNOAR NEWS springs from the private sea, and is published quarterly at 37541 Grove Ave., #202, Willoughby, OH, 44094. This is Volume 9, Number 2. One years subscription is $7.50 American. Make checks payable to Chris Pearson. The first person who discovers the words "Pat Miller" printed somewhere in this issue wins a free trip to one of Pat's math classes. Thrilling, no?

From your sometimes sober Editors:

FROM YOUR SOMETIME SOBER SPOTLIGHT GUEST:

ED: "Not live! Not from Burbank, California! Not the Tonight show! With special guest stars Tony Williams, Hank Williams,Jr.,Alan Williams, and the SNOAR Zunofark Blues Band Orchestra!
And HEERE'S Matt,Tony, George, and Chris!"
("Where's my drink? Where's that bottle?")
("Oh,we're still on?")

"Well, good evening ladies and gentlemen. Thank you so much for your applause. Now the question is, will you love us after the next thirty four pages?

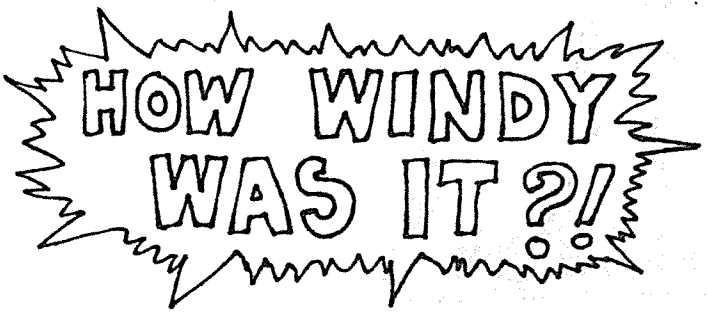
Thanks alot,Ed! Good evening to all of you folks out there in the studio audience, and those of you who are reading this issue at home. Yes, this is SNOAR NEWS, the newsletter that most people don't read while watching the Tonight Show.

(Muffled chuckles)

Well, you know, you really remind me of an audience we had in here the last issue; one G.Harry Stine joke and they're suing the shirt off your back! That's OK, though, as by this time, Harry probably could use a new shirt! That white one of his has got to be GREEN by now!

(Wild applause!)

Hey, well that sure was a nice weekend for flying- kites,that is! Yessiree,boy, it was really windy this weekend."



"Well, it was SO windy that I saw Jeff Flygare passing out Hi-Flier merchandise certificates at H&H Hobbies!

(Boo...Hssss....Boo)

Karnac: May Mark Bundick marry your sister!

(Wild applause)

Well, we've got a really good issue lined up, so there's no sense wasting any more time on this basement bomber monolog, so....."

(Wild wailing on a lone harmonica and the sound of a fist hitting a wall... FADE OUT)

"Are you tired of pretending you enjoy reading the "acceptable types of rocketry publications" espoused by the NAR?!"

Go for the good stuff - the latest SNOAR NEWS!

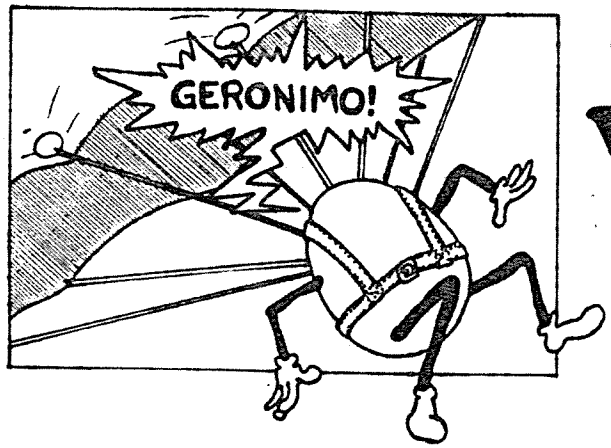
Published by twelve knockout blond princesses and a pumpkin, a SNOAR NEWS subscription contains vast quanities of stimulating entertainment, FOR WHICH IT IS NOT NECESSARY TO DRESS UP IN FUNNY LOOKING CLOTHES IN ORDER TO READ IT! (A major sociological breakthrough!)

This remarkable new concept makes it possible for you, in the absolute privacy of your own home (or cave, as the case may be), to frug yourself into a frenzy without the fear of stressfull peer pressure, usually applied by disspated personages with dark glasses with pointy tips on them, nerd haircuts and so forth, bent on questioning your morals and ethics.

So, this is your chance! Right Pat? Mark?

With this fully in mind, send $7.50 in legal tender (No joints please) for a SNOAR NEWS subscription. I fully realize that there may never be another issue published, but we do have a good track record for nine (count 'em) years.

So, get out your checkbook, and make out a check to Chris Pearson, 37541 Grove Ave., #202, Willoughby, OH, 44094. Please leave the amount blank (just kidding!). Do not make the check out to SNOAR NEWS, you dummy, so if you did, tear it up and start over! For all your efforts, you will receive four, perhaps five, liver-quivering issue of the one and only SNOAR NEWS! Prepare yourself!



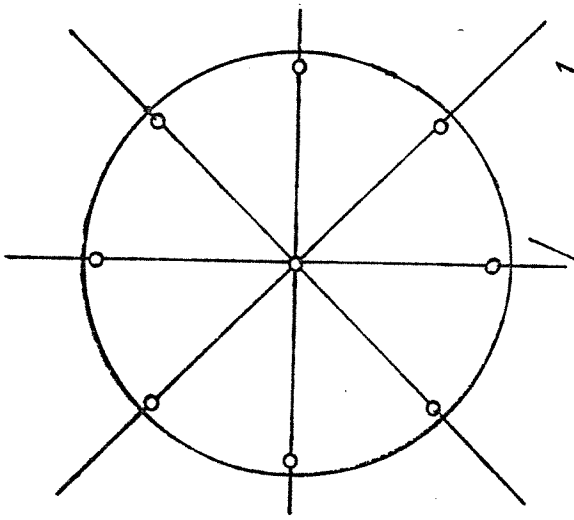
The Art of Winning Egg Duration

The egg duration event has turned out to be a popular NAR event. From its humble origins as a special event at GRANDSON OF MAR to being flown at NARAM, the event combines the thrill of egglofting with the fun of duration. Yet, there are quite a few disqualifications in this event, most of them quite unnecessary.

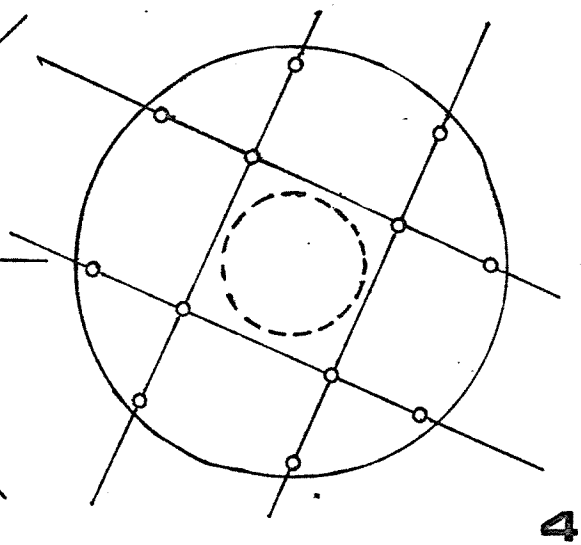
Parachutes cause most of the problems in these events. For smaller classes such as B and C Eggloft Duration, plastic parachutes, especially Centuri ones, are good if they are reinforced. For very large plastic chutes, certain types of plastic drop cloth work well. Beware, though, as certain types tend to stick together, and will not deploy reliably. Mylar can be used as well, but stay a away from ¼mil. It rips and tears much too easily.

On small power parachutes, use a good number of shroud lines. A minimum number would be eight, a better number would be twelve. Run the shroud lines across the tops of the parachute to reinforce it, using either the normal method or the "tic-tac-toe" method. (See the illustration below) Strips of adhesive mylar are probably the best for shroud tabs as they are much more flexible and adhere much better than normal adhesive tabs.

"NORMAL METHOD"



"TIC TAC TOE METHOD"



For high power models, in the D,E and F classes, the pre assembled types of parachutes made by FSI and Competition Chutes. (Tony will testify as to the durability of the FSI chutes. He still has one that's been hanging on a power line with half of a CMR Dual Eggloft capsule for over FIVE years!!!). These parachutes may seem rather expensive,but they may be well worth their' cost, depending on what your point of view is.

Fortunately, there is an alternative method to make heavy duty chutes for the high power egg duration events. This is the "low sew" chute, which requires a minimum of seamstress' skills. To make one, cut a flat canopy from a piece of polyester lining(available at most fabric shops) with a sharp knife or razor blade. A large needle is then used to "weave" the shroud lines about 1¼" into the canopy. Seal those shroud/canopy interfaces with a few drops of alpha-cyanoacrylate. Use the super glue sparingly, as it tends to stiffen the fabric, making it hard to fold and pack.

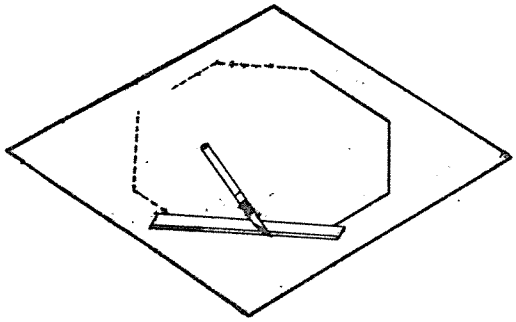


FIGURE 1:USE A METAL STRAIGHT EDGE AND A SHARP HOBBY KNIFE TO CUT OUT THE CANOPY. PINNING DOWN THE EDGES OF THE MATERIAL HELPS AVOID "SNAGS".

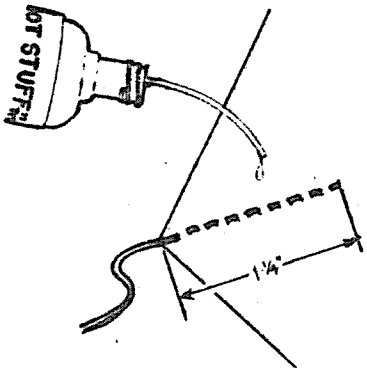
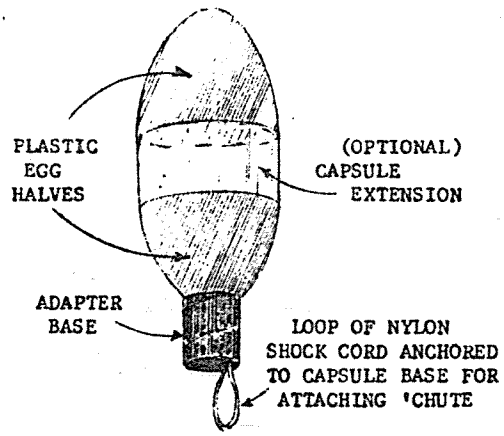


FIGURE 2: WEAVE THE SHROUD LINES INTO THE FABRIC ABOUT 1¼" AND BOND THEM CAREFULLY IN IN PLACE WITH HOT STUFF OR A SIMILAR GLUE.

There are several ways to decide what sort of egg capsule and booster design to use. generally , a CMR egg capsule will protect an egg better than any other type of competitive capsule. An Easter Egg type capsule,on the other hand, will perform better and still protect the egg adequately. The Easter Egg capsule will perform better due to a bit lower drag profile and a lighter weight. For the rocket body, the are two basic approaches: the standard type, and the conical shroud type (as used in the "Two Minute Egg").

For those of you not in the know, here's how to build an Easter Egg capsule. First of all, get the rigid, plastic type eggs; the pliable,rubber like ones are too small. Remove the plastic flash from inside of two egg top sections (only the larger halves are used;discard the smaller sections). Then sand the insides smooth. Cement an appropriate sized base to one of the halves (a short length of JT 20C for BT-20,RB-74 for RB77,or no base at all for a shroud model). That's all there is to it! The capsule halves can be taped together, ala CMR, for flight.



Some modelers like to add an extension to the Easter Egg capsule by placing a section of tubing, such as an old Estes PST-65 or CMR RB180 trimmed to fit, between the egg capsule halves. This allows more room for padding to cushion the eggs.

For the rocket body, there are two types of boosters: the conventional style, and the conical shroud type (such as the "Two Minute Egg"). The conventional body offere less drag (according to most theories) and a bit less mass than a shroud model. A shroud model, however, offers more space to pack the parachute, and is less prone to eject the engine. With a normal body model, bu sure that the length and diameter are sufficient to allow the parachute to eject reliably. Don't expect a 36" chute to work well in a BT-20. Models using tubes seem to work bet with a BT-50 for B&C power and RB120 for D power.

Quite a few kits can be adapted for egg duration just by replacing the nose with an egg capsule. For low power event, the Estes Sprint is good,while a Goblin or Cherokee D is a good idea for D egg duration. CMR,on the other hand, offers some egg altitude kits that can be adapted very easily to egg duration. The HUMPTY DUMPTY parts can be used to make a shroud model, but the

RB77 body tube should extend at least three inches behind the shroud. The model will not boost as squirrely,and the engine will not take up chute space in the shroud. Don't forget that egg duration is for single stage models only,so don't make a two stage model. The other CMR kit that is excellent is the Double Eggle. The RB120 body is well suited for D12 power,but the dual egg capsule is a little large for a single egg. Maybe Howard will come out with a sinlge egg version in the near future.

Do not fail to overlook what is often the weak link in the chain, that is, the shock cord. Be sure that you have the shock cord securely connected to the egg capsule, and that all knots are secure. Use 1/8" elastic for low power events, and 1/4" for the higher power ones. As Chico Esquala once said, "Don't use rubber! Rubber no good, rubber break! Is not good for egg,OK?" Protect the shock cord from the ejection gasses as much as possible. Use of a thin wire shock cord mount is suggested.

Some padding shoud be used to protect the egg. One of the best types of padding comes from the stvrofoam egg cartons that eggs come in. Use a sharp blade to cut out a cup that the egg will fit inside, and hold it securely. Be sure the cup fits inside the capsule,too. At least two will be needed (top and bottom) with two more sometimes being useful in taking up slack and adding padding.

A final consideration is strategy. Factors to be considered include weather conditions (especially wind) and the quanity and quality of your fellow competitors. It doesn't do you any good to DQ twice at a section meet by using a super chute that never opens where a modest chute could've gotten a decent time and a place in the contest. You ought to be able to reliably get a 24" chute to eject and deploy. If you can't do that, you need more help than this article can provide. Consider a 24" chute as a qualifying chute for the low power classes. Remeber, egg duration is scored on the best returned flight. A good idea is to play it safe on the first flight and insure a safe, recovered, and unbroken qualified flight. This will give you a chance to place, even if your "all out" second flight DQ's. Actally, "all out" is a relative term, since you must decide whst chute to use. A 36" diameter chute is relatively reliable, although recovery in windy conditions can be a problem. Reliability goes down significantly with chutes on the order of 42-48". Also, since a big chute takes longer to open generally, the time it takes to deploy could cost you valuable altitude. A good idea is to prepare ahead of time with a large variety of chutes, so as to allow you some flexiblity in your strategy.

Keep a few other things in mind: A pop lug with 3/16" lugs is a good method for guidance;Don't use piston launchers as their reliability is poor for heavy models; Try different methods of folding chutes to get the fastest deployment time; and, alaways use talcum on the chute to aid in deployment. Also, use short delay engines.

All in all, armed with these tips and a good solid model, egg duration can be fun and profitable.

Question of the Month

What ever happened to Alan Tuskes, former editor of SNOAR NEWS?

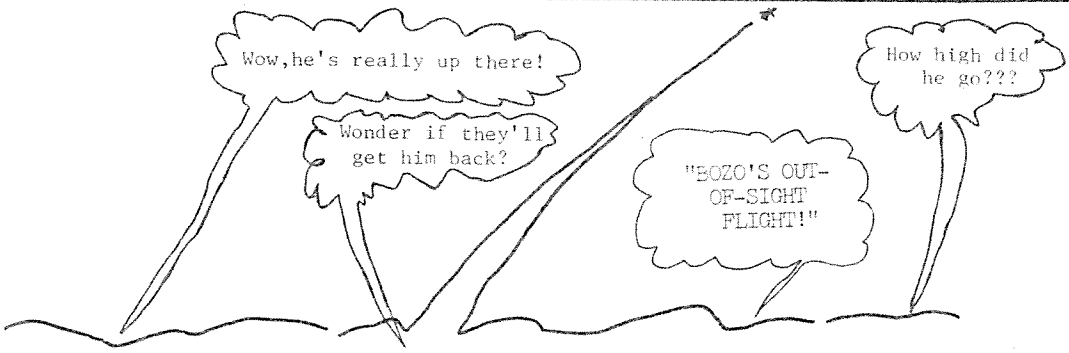
Competition Article

You and the Single Payloader

BY CHRIS FLANIGAN

Just like baseball players in spring training, it's important to spend some time talking about the basics from time to time. There are three factors that are critical to a Single Payload model, whether you are talking about the NAR or FAI version. The key factors are; mass,drag, and total impulse. To improve total impulse (other than advanced engine technology), a piston launcher seems like the best idea. These devices have been proven to improve altitudes for model rockets, although the percentage improvement goes down for heavier models. A second very important item in reguards to total impulse is to not waste any energy due to a bad launch. A 1/8" rod is inadequate for a Single Payloader. A 3/16" rod is probably the minimum, but could be improved upon. John Langford suggests a tower, but the tower must be a good,close tolerance, low friction tower. A somewhat different approach that I have used is a 3/4" aluminum tube that is six feet long. It is based on the pop lug theory, with the lugs being the diameter of the aluminum tube. This advantage of an extremely rigid launcher,low drag, and long guidance. It does impose the necessity for a pop lug - hopefully a small penalty.

The second item of concern is drag and how to minimize it. A smooth finish is better than a rough finish,but the weight that goes into the finish is also a factor. A light, medium smooth model will go higher than a smooth but heavy model. Factors other than surface finish also affect drag. Drag of a standard C6 desigh might be minimized by reducing the surface area of the model. How? By using a short nose cone rather than a long one and by building a minimum length model. In reguards to a minimum length model, don't forget about the effect of dynamic stability. High aspect ratio fins can also reduce drag. The net result: a smooth, light, short model with high aspect ratio fins launched from a piston with a low friction rigid long launcher.



Weight is also a problem with Single Payloaders. How do you minimize the mass of a Single Payload model? Here a few ideas:

* Insure that the payload is exactly the proper weight.
* Glue adds weight, so use the lighter stuff (Hot Stuff, Ambroid) where applicable rather than epoxies or wood glue.
* Use a minimum size parachute made from a light material.
* Use a minimum amount of shock cord.
* After getting the first flight tracked with tracking powder, omit it on the subsequent flights.

And those are really the basic factors in building a winning Single Payloader.

---

* * Some Club Notz * *

May 28, Euclid Library Meeting. The usual matters will be discussed. Final plans for GLRM and LDRS will be disclosed. Slide and info from the Michigan Convention will be shown. AeroTech motors will be available for sale or just drooling upon, and there might be some Ace Rockets stuff too! Sport launch outside library!

June 18-19, Medina Great Lakes Regional Meet 83. See details elsewhere in this issue.

June 25, Euclid Library Meeting. If you haven't submitted your FAA waiver specs yet, its too late! Slides will be shown. Impromtu launch will be held outside the library. Bring some rockets!

July 23, Medina, MWW-1 (Mike Wagner Weeding #1) No meeting this month because of this grand event and the fact that LDRS is the next week. All are invited.

July 30-31, Medina Large and Dangerous Rocket Ships 2. See info elsewhere in this issue.

At this time, we have only one Estes demonstration launch scheduled, and that is on June 4, in Highland Park, which is in Cincinnati (!). No one is really expected to drive 300 miles for a gift certificate, so Chris Pearson will probably be the only one going.

On March 31, Mike Wagner, Jim Backlas and Chris Pearson held a instruction and launch session at Midview Middle School in Grafton, Ohio, for a class of learning disabled students. The students had built rockets supplied by Estes, and they were judged by Chris and Jim. Engines were handed out and the rockets prepped and flown. Information on rocketry was also passed out to many students in several classes, and several other classes came out to watch the launch activities.

On April 6, Jim and Chris again traveled to the wilds of Lordstown, Ohio to speak to another group of students, this time they were elementary school students that use rocketry as a learning and reading tool. Most of them were already skilled in basic rocketry, and Chris and Jim talked about other aspects of the hobby and passed out the masses of technical information that Estes supplied. A rocket launch is planned for May, which SNOAR plans on attending.

CONSTRUCTION

The Tasmanian Devil

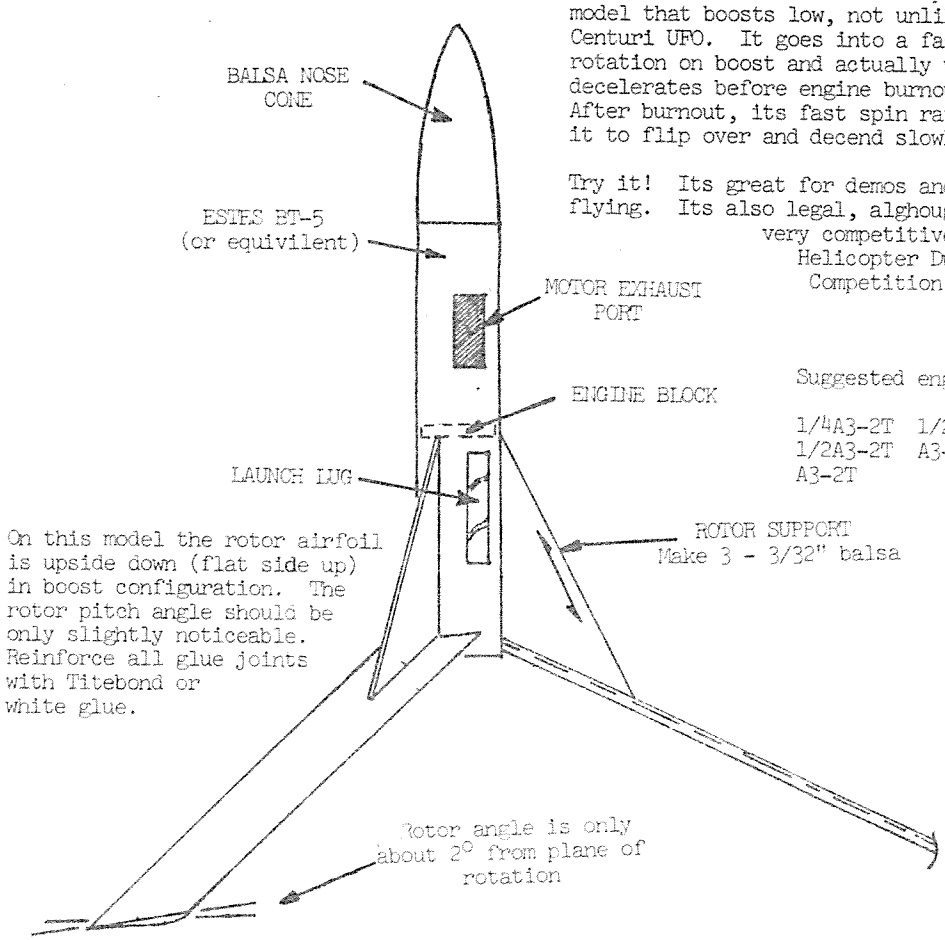
A Midwest favorite! Featuring "No Moving Parts" Helicopter Recovery. Designed by the infamous George "Fat Cat" Gassaway. Drawn by Tony "Maddog" Williams.

The Tasmanian Devil is a fun sport model that boosts low, not unlike the Centuri UFO. It goes into a fast rotation on boost and actually will decelerates before engine burnout. After burnout, its fast spin rate allows it to flip over and decend slowly.

Try it! Its great for demos and sport flying. Its also legal, alghough not very competitive, for Helicopter Duration Competition.

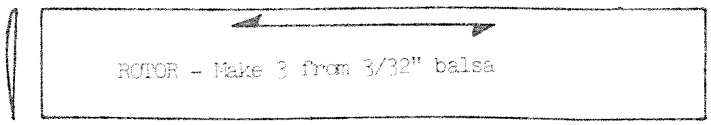
Suggested engines:

1/4A3-2T 1/2A3-0T
1/2A3-2T A3-0T
A3-2T



On this model the rotor airfoil is upside down (flat side up) in boost configuration. The rotor pitch angle should be only slightly noticeable. Reinforce all glue joints with Titebond or white glue.

FULL SIZE DRAWINGS

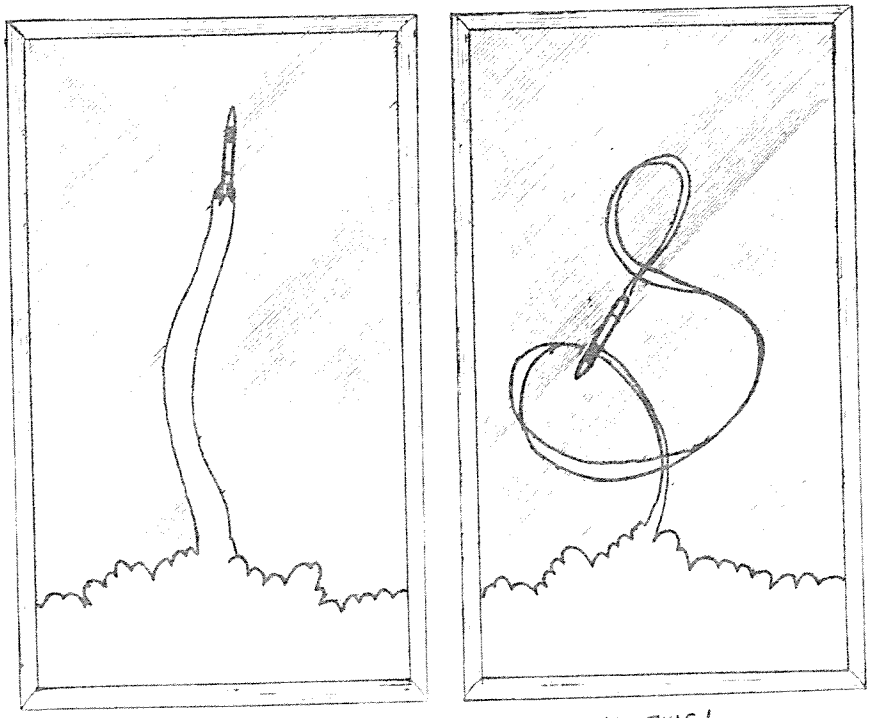


Mr. Maddog's™ Tips For Beginners

TANK HUGH BERY MOOCH. TODAY WE TALK ABOUT SUMTING BERY HYMPORTENT....

FINS

FINS HA BERY HYMPORTENT TO THE MADEL RAHKITS.
MADEL RAHKITS WITHHOUT THE FINS DANT FLY TO GOODE.
HALSO, FINS WIHTHOUT THE MADEL RAHKITS DANT FLY TO GOODE, HETHOR.
SO IS BESST TO FLY THE FINS AND THE MADEL RAHKITS TOOGETHER!
THEES HIS BERY HYMPORTENT -- TOOGETHER.
NOW. YOU BUILD THE MODEL RAHKITS WIHTH THE FINS, HO-KEY?



FINS!

NO FINS!

FINS HA BEEN BERY GOODE TO ME.
MADEL RAHKITREY HA BEEN BERY, BERY GOODE TO ME.
TANK HUGH BERY MOOCH,
YOU CAN TURNED HA PAGE NOW.

International Report

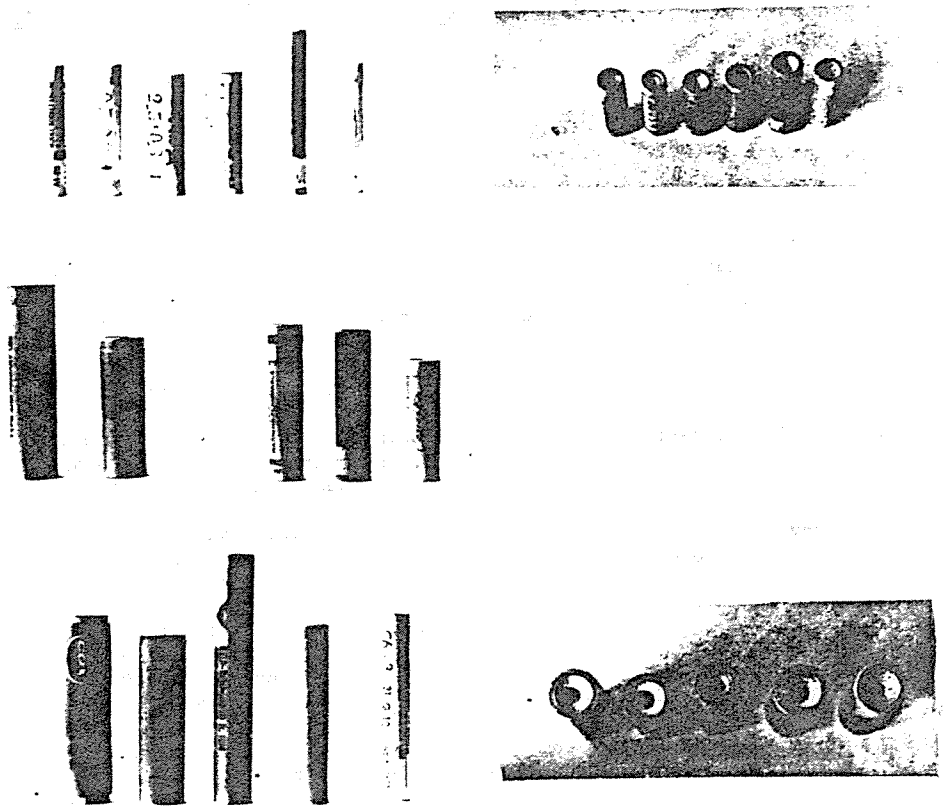
1983 INTERNATS PREVIEW

The following is an overview of the events at the 1983 World Championships in Nowy Sacz, Poland, on September 6-11,1983.

STREAMER AND PARACHUTE DURATION: ENGINES: The Eastern bloc use mini-engines that are very similar to the Estes Mini-Brute. The Bulgarians use an 2.5(A)0.8-4 or 6, and the Poles have a 2.5(A)1.6-4 or 6. External dimensions are basically the same as the Estes engines, although the Bulgarians do have a special contest mini-engine that is only 11 mm in diameter. Otherwise, with the exception of paper ejection charge retaining caps, the engines are copies of the Estes product.
STREAMERS: No significant changes or improvements in streamer material have appeared. One half mil mylar seems to be the material of choice,with the usual accordian folds.
PARACHUTES: Mylar again seems to be the material of choice for most of the Eastern bloc competitors.
OVERALL: The Bulgarians will be well prepared and well practiced in these two events. Tower launchers are rare,and piston launchers are non-existant in most cases. Nonetheless, the Bulgarians have developed techniques that allow them to max consistantly. At the most recent European championships,the winner had to go seven rounds against nine other flyers to win. Obviously important factors will be a good recovery team with radio communications and a third model available for flyoff rounds.

C BOOST GLIDE: ENGINES: In this department, nobody does it better than Estes. The Czechs have comparable 18mm engines, but their famous "Widowmaker" engine is not really suited for this event. The Bulgarian C engines are, quite frankly,poor. They even admitted as much during the last CIAM meeting, when they wanted to fly B BG instead of C. Why? "Because our B engines are much better than our C engines" was the answer. FAI rules have it so only C BG will be flown at a World Championships, so that's what the event will be in Poland, much to the dismay of the Bulgarians. Just because the Bulgarians don't have the best engines,though, don't count them out. They will no doubt have their models match their engines quite well,as in 1980 where their flexwings were consistantly outboosted by George Gassaway's D12/D12 combo,but they were still able to max consistantly.
MODELS: Flexwings will dominate the European bloc, with the possible exception of the Poles and Czechs. The Bulgarian/Russian flexwing design has not changed all that much since 1978 when the OPEL appeared. Latest photos show that the rear balsa bulkhead and the nose cone DT are still being used. Models seem to be in the 18" to 20" range and covered with ½mil chrome mylar. There also seem to be no major booster modifications. As a rule, these are well constructed models that should have little problems maxing.

INTERNATIONAL ENGINES: top, MINI ENGINES: L to R: Centuri mini, Bulgarian 11mm contest engine, standard Bulgarian mini,Polish mini,Czech mini-B, and Estes mini-A; center, B ENGINES: Left,Czech mini-B flanked by AVI mini and Estes mini; Right, Estes B14 and Bulgarian B6-6; bottom, C ENGINES: L to R: Cox C6-4, Czech C6,German Held 1000,Bulgarian C6, and Estes C6-3. Photos © 1983 by SNOAR NEWS QUARTERLY and Matt Steele.



C BOOST GLIDE(con't): OVERALL: It is quite possible that one of the Bulgarian C BG team members might be the female that won the event two years ago at the European championships. The Russians can also be expected to field a strong team in this event,if they show at all. This event should pose a number of problems for the US team,especially since there is still some discussion as to the team's third and final member.

C SCALE ALTITUDE: ENGINES: As previously mentioned, the Estes engines are no doubt the winning ticket in this event. Only the Czech engines are in the same ballpark. MODELS: The Bulgarians have switched prototypes apparently in an effort to squeeze some more altitude out of their engines. Instead of the KOSMOS type seen in 1980, look for a variation of the METEOR sounding series. The Poles and Czechs will also use different variations of the METEOR, and all three teams can be expected to model the same prototype per team. The Spanish team did not fly this event at the recent European championships, and is not expected to enter.
OVERALL: As the last time, the Bulgarians and the Americans can be expected to dominate this event,although the Czechs could make it interesting. The Americans are probably fielding their stongest team here, especially if Chris Flanigan decides to fly with Chris Morgan and Matt Steele, last time's gold medal team.

SCALE: The Bulgarians can be counted on to dominate this event with their fantastic Soyuz models. Most likely, the Czechs will follow with Saturn V's and the Poles with Saturn 1B's. It will be difficult for the US to break into the top five slots,although engine reliability counts heavily in this event, and only the Bulgarians seem to have their act down. The unique models of Tom Hoelle (Ariane) and Rob Justis (Space Shuttle Columbia),as well as John Pursley's Saturn V should do well, the question is, just how well? Look for a 1-2-3 sweep by the Bulgarians; anything else would be an upset.

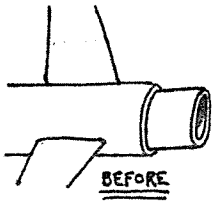
E RC RG: ENGINES: As in the US,engines for this event are a problem. The Bulgarians are using a home brew engine that is 18mm x 200mm which burns for about 7 seconds and delivers close to 40 n-sec. That's like three C engines taped together! There have been problems with cato's,though it is expected that those problems will be worked out by September.
RADIO CONTROL GEAR: The Bulgarians and the Russians are apparently using Kraft or Graupner (made in West Germany) FM receivers,and either Kraft,Graupner or Cannon servos. Reliability of these systems is high, but they are no match for an all up Cannon Super Micro flight pak, either in terms of size or mass.
MODELS: The models are basically strengthened free flight models with fixed pods. These designs have not evolved radically from the designs seen in previous issues of SNOAR NEWS. In fact, the best flying bird at this year's European championships was the same bird that took third place last year! The emphasis is on glide characteristics, and simplicity. Wings are usually built up and covered either with tissue or Monokote. Wingspans are a little larger than most US designs, using box or triangular fuselages. Sophisticated rolled balsa booms have not been seen.
OVERALL: The Bulgarians have posted some good times, which compare favorably with the best US efforts. Only seven to nine of these birds have been seen in Europe, although the Canadians can be expected to bring one or two to the meet. The Bulgarians have the most experience in this event, followed by the Russians. This is still a risky event,and almost impossible to predict. The introduction of Gary Rosenfield's (Aerotech) E6 long burn engine will help improve the US team's chances considerably.

CONCLUSION: At best it will be difficult for the US team to repeat its convincing victory on Poland's turf. At worst, the Bulgarians could dominate alomst every event and make things difficult for their European neighbors as well. The Czechs and possibly the Russians will field good solid teams, and the Poles, Spanish,Canadian, and Rummanian teams are a bit unknown. Most likely the German and British teams will be small,but respected. The challenge will certainly be to the US to retain it's world championship.

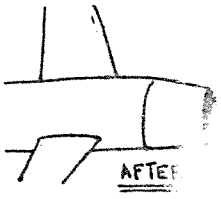
How about some T&A?

(Tips & Advice)

When I need a smooth transition from my new Egglofter's T-20 body to the end of its T-19 motor mount, I simply dabbed on some HobbyPoxy "Stuff", smoothed it, and sanded it to shape a few hours later!



HOBBYPOXY STUFF TIP O' THE WEEK: "HOW TO MAKE AN E-Z BOATTAIL!"



Piss & Moan Dept.

Look here,folks. Tony's sorry that this issue is late. We're all sorry this issue is late. But it takes time to put together a quality issue, and Tony, George, Matt, and Chris can't do it all by themselves. So how about jotting down the plans to your latest wet dream model rocket,or do that article that you've always threatened to do. We're looking for articles from you! And that includes Harry Stine, Elaine Sadowski, Kevin Barkes, Pat Miller, Mark Bundick, John Rains, Doug Kushnerick, Alan Bland, Gary Ottgen, Guy Bradley, Otakar Saffek,Chris Johnston, Chris Johnston, Jim Hartman,Jim Hartman, Terry Lee, Randy Kelling, Guppy, Dr. G., Jon Randolph,Pete Covell, Mark Mothersbaugh, Alan Tuskes, Jim Gazur, Jim Backlas (remember you'd said that you'd draw those plans for me? This is a good job since you're unemployed now.),Steve Behrends, Don Carlson, Rob Justis, and Parky. Also, we're looking for something really sick and twisted for Jeff Flygare and Bob DelPrincipe. So send those contributions to the Editor of your choice, and we'll see about getting this thing out on time. And, we'll quit doing Steve Martin,too.


PAT MILLER DREAMS OF BEING IN.....
THE RIGHT STUFF COMICS
THE NAR,ALWAYS ON THE LOOKOUT FOR SAFETY VIOLATIONS,CHECKS OUT ANOTHER MEET...
Jeez,just an "H" engine...
Roger,Chicago control,we got the photos.
THE SCEMRA FLAG FLEW WELL ON THE MOON...
AND AN IMPORTANT PHONE CALL IS PLACED...
So, I had the fin on
Sir crooked,so I sez to Harry,
Look,Bunny,we've got a real problem.
SNOAR has a new LDRS complex.
He got THAT for free?
1,000,000 D12
Nice plane, Chris!
You must infiltrate them and bring back proof that we...
Do I have the RIGHT STUFF?

-CONTEST DEPT.-

Who is the real Chris Johnston?

CANDIDATE A

THUMBNAIL SKETCH:

*White Male
*Enjoys home computers, sci-fi
*Prefers shy,quiet types
*Former National Champ

CANDIDATE B

THUMBNAIL SKETCH:

*White Male
*Girls,sci-fi, flying to meets
*Will take anything that moves
*Former National Scoring Champ

Yes, SNOAR NEWS readers, we'll let you decide. For years, the debate has raged as to the true identity of the REAL CHRIS JOHNSTON! Now, we're going to end the controversey once and for all. Just write us here at SNOAR NEWS and let us know which Chris Johnston is the real one (in fifty words or less). EXTRA SPECIAL BONUS!!! A FREE kit ,courtesy of Estes/Centuri and SNOAR NEWS (postage and handling possibly not included). How can you afford not to

CHRIS JOHNSTONS ARE NOT ELLIGIBLE TO ENTER (but we'll read your reply)

The winning answer to this contest may be printed if it is REAL good

Competition News

STORAGE, HANDLING, AND TRANSPORT OF MODEL ROCKETS

By George Gassaway

You put hours of work into every model you build to make it the best that it can be. But how much time do you put into making sure that your models make it to the flying field in good condition? A few minutes of attention paid to the protection of your models will extend the life of most of the models that you have and save quite a bit of frustration.

In general, the key to protection is to search for various sizes of cardboard boxes suited to different sizes and types of models. Boxes should have tops or flaps that the boxes can be completely closed up. Open type boxes do not offer much protection. A 4"x16"x20" box can hold several low power model rocket gliders easily. A 4"x8"x12" box can be used to hold most PD,SD and other lightweight contest birds. A 6"x18"x24" box can handle most other types of models, with the exception of scale birds and RC BG's,as those models demand special attention. If you come across several identical boxes, be sure to grab them, as they can be neatly stacked for storage.

At home or in the workshop, models can be stored easily in large numbers without any concern for damage, as long as the boxes are not moved or dropped. These boxes will be used like warehouses to store models, not to transport them. Any models you have out in the open, such as for display, should be on sturdy, wide base display stands. A scale bird just sitting on it's fin tips is an accident just waiting to happen. Even with a sturdy stand,display models should be set in an out of the way area,so that no one can knock it over easily. Remember, dust can ruin the appearance of models;good scale models, or plastic conversions should be protected as such.Consider a clear display case. A display case can be obtained for under $30. If you have dogs, urchins, or model tanks running around the place,a display case is an especially good idea.

TRANSPORT is considered to be the normal situation of taking your models with you in a car, where you have control of how they are handled. For transport, choose a few suitable box sizes for models you'll be taking. Typically,the gliders can go in one box,PD/SD birds in another,etc. If you throw all the models in one box, the larger ones will damage and break the smaller and lighter ones. At the field, you'll find models easier and quicker if they are separated.Most models will not need padding since you should always see to it that the boxes are always kept upright.

SHIPPING is when you have to pack models in your luggage and/or send them via the mail,or UPS. This is usally the case when you are flying to a meet (typically NARAM) or doing some proxy contest flying. Shipping always involves a lot of planning, time and effort to do well. You'll need several cardboard boxes, as the best way to ship models is to box them, and then pack that box inside another box. The larger box should be about 2-4" larger in all dimensions than the smaller box to allow for padding. This allows the big bruisers that ignore (or can't read) the "FRAGILE" markings to bash sides of the bigger box ,without really damaging the smaller box. When several models are being shipped, consider shipping two smaller boxes rather than one large one. Expect to do some trial and error fitting and packing in order to make this work efficiently. The main idea is to not let heavy models mix with light ones, and keep models immobilized as much as possible.

Once the boxes are selected, the models must be carefully packed in them. A few models can be packed easier, if they are constructed with removable parts. For example,the tail section for a Rotaroc can be easily removed for storage or shipping, and the rotors can be removed at the hinge joint,if necessary. A wrap of masking tape secures the tail section for flight. Most superrocs are constructed in the same manner. Rocket gliders with T-rail slide wings usually can be built so that the wing is removable. Be sure that the models do not fit tightly in the boxes,as that will increase the chances for damage. Also, don't over pack the boxes. Be sure to leave enough room for adequate padding.

There are several types of good padding materials. The best is the styrofoam "peanuts". They are lightweight and absorb a lot of shock. Also good is stale popcorn (but be sure to protect the models from the natural oils in the popcorn.) Sponge-type foam padding can be useful for certain applications. Shredded newspaper of classified government documents are a good last resort. Be careful of newspaper ink, though, as it has a tendancy to smear over everything. Thin plastic drop-cloths or dry cleaner bags are good materials to protect models with.

Always fill the bottom of the box with padding, and if you're going to be generous with the padding, this is the place to do it, rather than the top of the box. Then carefully set the models in, and layer in the cushioning material. Don't put the models in and then just dump the padding in. That's asking for a lot of broken fins. Don't let anything but padding touch the side of the box. Once full, seal the box with mylar tape and shake it. If the model rattles a lot, you should probably add some more padding.

US ROCKETS

US ROCKETS KNOWS ROCKETS!!

BOX 1242 CLAREMONT, CALIFORNIA 91711

Checks payable to Claremont Rocket Society.

US ROCKETS
MASS MARKET MODEL ROCKET KITS

AERO-ROC * Large simple sport model for high power motors. Fully capable of flying with power in excess of 300ns, the Aero-Roc is perfectly suited to beginner high power flying. It is designed with a motor conversion mount so any type of motor can be used such as the Estes D12-5, Flight Systems E60-6, F100-8, AeroTech E6-2, F10-4, G25-8, Crown E45-7, E30-8, F50-9, F67-8, G99-10, and many others. Plywood fins and rings highlight this kit and it features 16" parachute recovery.

AERO-ROC 3 * A basic but large cluster model. Designed specifically to be flown with AeroTech E6-8 and Estes D12-7. It goes VERY high. Similar features as the AR, with plywood parts, heavy duty body tubing, elastic shock cord, illustrated instructions, and quality packaging. Designed and engineered for ease of building and flying, to encourage repeat motor and kit sales. Can also take Crown E45-10, Estes D11-9, and others.

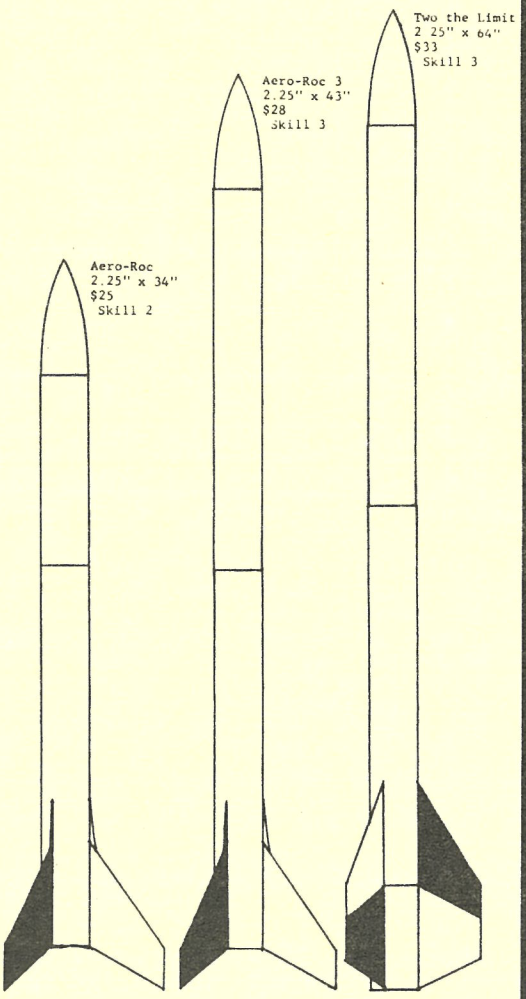
TWO THE LIMIT * Very large two stage rocket for F motors. Designed to withstand the rigors of high speed flight and repeated firings. Best flights are with FSI F100-0 to AeroTech F10-8, but many other combinations are OK. Can be flown in small fields with E60-0 to E60-8. Can be flown single stage. Highest flights are with G25-P to G25-12. Similar features as the AR and AR3. All US Rockets kits come with 3/16" launch lugs.

BREAK APART * High performance rocket for small fields. As the name implies, the vehicle 'breaks apart' (nose blow recovery) with no parachute for recovery. This causes near launcher recoveries. A streamer may be added for visibility, but is not required to prevent landing damage. It accepts all 0.94" diameter motors such as D12-7, D11-9, E6-8, E45-10 and others. Super easy to build! An excellent first power freak's rocket.

TRIPLE TROUBLE * Two stage, three cluster C motor power. For the person with a limited budget or flying field, this is a good model for learning clustering and staging. Accepts common Estes A-C motors!! Precut plywood parts, heavy duty body tube, elastic shock cord, and super easy construction highlight this kit. A super seller. Uses FSI igniters for clustering of the upper stage, so stock up. It looks mean and it screams...

MINIROC 2 * Very high performance two stage rocket. Designed to fly with Estes D12-0 to D12-7 or AeroTech E6-0 to E6-8!! It can go over 8000' with E6 motors!! It should generally be flown with D motors to facilitate recovery. Plywood parts, heavy duty tubes, very high performance design, and streamer recovery highlight this kit. Can be flown with C motors if converted. Can also be flown single stage. Contest approved.

EL LUBBO * Largest possible model rocket under one pound. This 4" diameter rocket can be flown with many short delay motors including E60-4, F100-4, F10-2, F67-6, and others. Features balsa and plywood parts, elastic shock cord, and easy construction and flying. Essential.



US ROCKETS

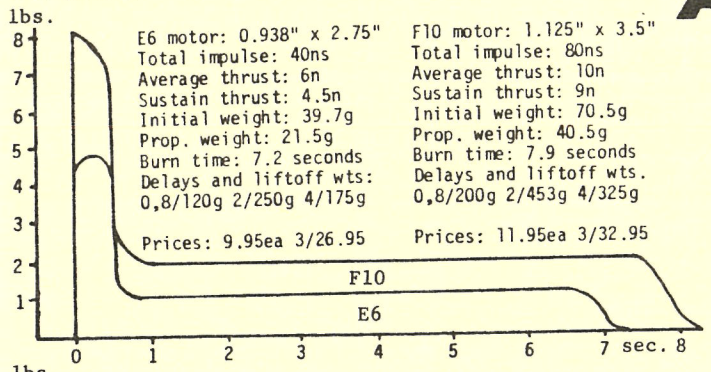
US ROCKETS KNOWS ROCKETS

WE ENDORSE ESTES AND AEROTECH MODEL ROCKET MOTORS

MODEL ROCKET DIVISION
Motors!!

THRUST YOU CAN TRUST

AeroTech



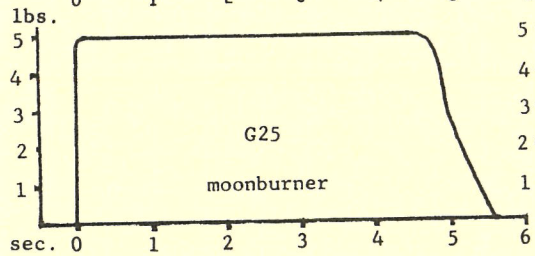
E6 motor: 0.938" x 2.75"
Total impulse: 40ns
Average thrust: 6n
Sustain thrust: 4.5n
Initial weight: 39.7g
Prop. weight: 21.5g
Burn time: 7.2 seconds
Delays and liftoff wts:
0,8/120g 2/250g 4/175g

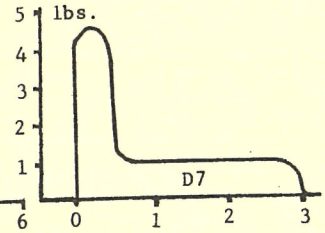
Prices: 9.95ea 3/26.95

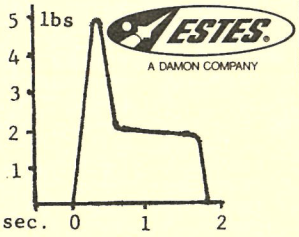
F10 motor: 1.125" x 3.5"
Total impulse: 80ns
Average thrust: 10n
Sustain thrust: 9n
Initial weight: 70.5g
Prop. weight: 40.5g
Burn time: 7.9 seconds
Delays and liftoff wts.
0,8/200g 2/453g 4/325g

Prices: 11.95ea 3/32.95

The AeroTech E6 is the world's first composite endburner model rocket motor!! It is also the first to have a direct staging capability. It's even LIGHTER than an Estes D12! Altitudes of nearly 6000' single stage and over 8000' two stage are possible!! An F10 motor can propel a light rocket to over 6000' and will go to unheard of altitudes two stage! Both motors are designed to be used in Estes and other kits with no modifications. E6 and F10 are the most powerful and lightest motors in their class ever produced.







AeroTech G25: 1.125" x 4.7"
Total impulse: 130ns
Average thrust: 25n
Sustain thrust: 25n
Initial weight: 100g
Propellant wgt: 62.5g
Burn time: 5.5 sec.
Delays and liftoff wts:
0,5/600g 10/300g

Prices: $20ea 3/$54 10/$170

AeroTech D7: 0.938" x 2"
Total impulse: 20ns
Average thrust: 7n
Sustain thrust: 4.5n
Initial weight:
Propellant wgt: 11g
Burn time: 3.0 sec.
Delays and liftoff wts:
0,8/120g 2/250g 4/175g

Prices: 8.95ea 3/23.95

Estes D12: 0.938" x 2.75"
Total impulse: 17ns
Average Thrust: 10n
Sustain thrust: 9n
Initial weight: 44g
Propellant wt: 24g
Burn time: 1.7 sec.
Delays and liftoff wts:
0,3/400g 5/285g 7,9/230g

Prices: 3/4.25 30/$40

G class motors are model rocket motors in some ststes and countries.
Follow all local ordinances when flying rockets. Check out the rules.

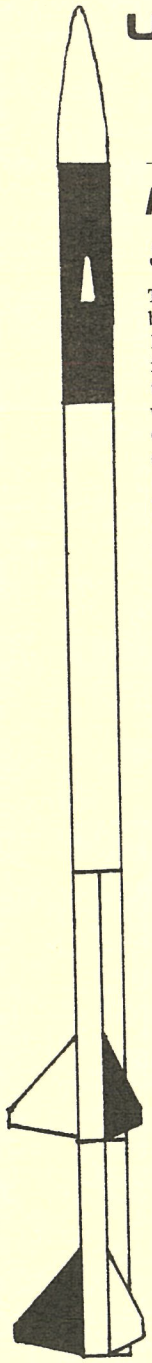
Checks payable to Claremont Rocket Society. All orders postpaid. Catalog $1 cash.

US Rockets • Box 1242, Claremont, CA 91711 USA.

US ROCKETS

US ROCKETS KNOWS ROCKETS

EXPERIMENTAL PRODUCTS DIVISION



Hi-Test 2650

$60

The Hi-Test 2650 was developed by U.S. Rockets to fill the gap left by the Enerjet 2650 sounding rocket when it was discontinued in 1972. The two stage version of the Hi-Test 2650 was engineered to fly with three H class (320ns) motors in each stage. With a two pound camera payload, a 2650 has been tracked to over two miles. Altitude performances well in excess of that are possible with this rocket and H motors in each stage.

This "model" features a main airframe of G-10 fiberglass for low weight and strength. Heavy duty body tubes are used and a nylon parachute is used for recovery. The precut plywood fins and rings are very durable and aid in quick assembly. The wedge fin attach provides easy and positive alignment of fins.

The two stage version includes a payload section and the booster stage. A kit without these sections is available for $15 less. The single stage and two stage versions are both great research rockets for experienced rocketeers with some background in clustering and staging with composite motors.

The most significant feature of this collectable kit is certainly the beautiful handmade ACE balsa nose cone (& coupler). A great deal of thought has gone into this kit, which should increase its collectors value.

2.65" x 74" w/B & P
Skill level 4

Mega-Roc

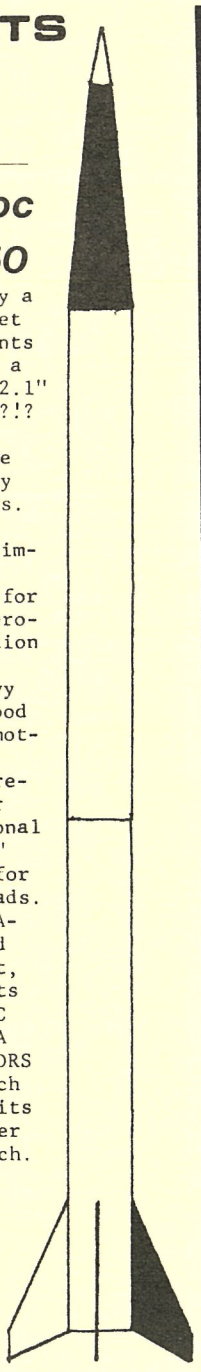
$50

What rocket do you get to fly a J, I, or H motor? What rocket has interchangable motor mounts for 1.125", 3 .94", 1.5", or a motor or custom mount up to 2.1" and get it back to fly again?!? The US Rockets MEGA-ROC, of course! This humungous brute is equally at home on display and in the air at mach speeds. Designed specifically to be flown with mild thrust high impulse composite motors, the MEGA-ROC is the easy choice for the motors available from Aero-Tech and Composite Distribution in the G-J class.

Constructed with very heavy wall ACE BT-39, precut plywood fins and rings, heavy wall motor mount tubes, and elastic shock cord. The rocket is recovered by 48" parachute for many fun, safe, and educational flights. The large 4" x 34" payload section is perfect for camera and electronic payloads.

The large size of the MEGA-ROC allows easy tracking and recovery flight after flight, and makes small field flights possible. Both the MEGA-ROC and Hi-Test 2650 require FAA clearance for launch (ie. LDRS or Smoke Creek). 1/2" launch lugs are provided in both kits and a 1/2" x 6 foot or longer rod is recommended for launch.

4" x 81"
Skill level 3



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US Rockets • Box 1242, Claremont, CA 91711 USA.

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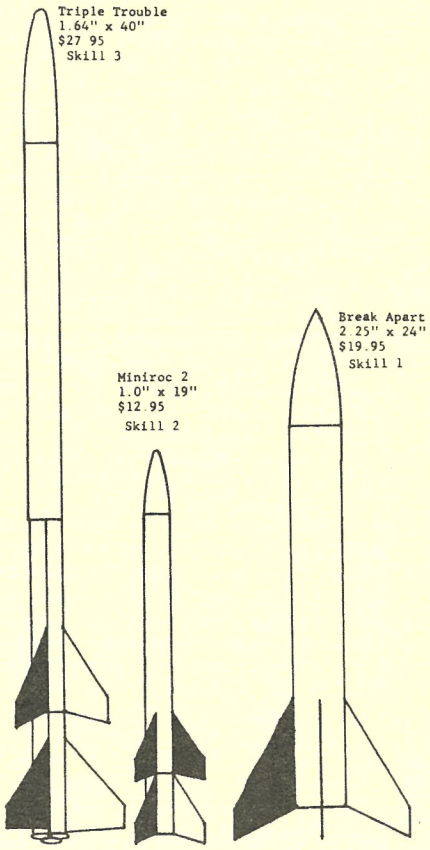

Once satisfied with the model box packing,prepare to put it and any other model boxes in the shipping box. The cushioning in the shipping box is not as critical as in the model box; crumpled newspaper works quite well. Once again, be sure to cusion the bottom and the sides of the box. Before sealing the box, add a little slip of paper that has your address and the shipping address on it. This will assist in the package getting to the right place if the outer label is damaged. Finally, be sure and seal the box well with mylar or shipping tape. If you are shipping the box, usually UPS is the cheapest,and most reliable method of shipping.

Some models require special treatment. All workmanship models,such as scale, plastic models,etc.,should be stored, transported and shipped in specially selected boxes for each model. They should be wrapped in plastic and well cushioned, as any damage may be impossible to repair. You might want to cut out a custom sponge foam typeholder for that special model.

Finally, consider making a sturdy transport box out of plywood. For years, John Langford has used such a system to transport his world-class Athena-H models. It has sponge foam cradles attached to the bottom and sides and more foam attached to the hinged top lid so that when it is closed, the model is well protected. The Bulgarians used a similar system on their gold medal Soyuz models, but unfortunately, "Air Bulgaria" still managed to mangle one of the models. Canadian Bill Henderson uses a large transport box that was orginally intended for Wakefield and towline model airplane gliders. He cut it down to about 36" in length, and 18" in height. The box is also made of plywood, and has a hinged top. The box is large enough to hold several types of models. Although he does not use boxes to separate the models, the method he has developed works quite well. For PD/SD type models, he simply uses a section of sponge foam with ½" and 3/4" holes cut in them. The models just slip into the holes. and,instant protection. The foam blocks are glued to the top of the lid, so gliders and large models can fit in the bottom.

That's the basics of storage,transport, and shipping of model rockets. Keep in mind that the forces involved in shipping are usually the one that will break or damage a model, not those of flight. Nothing can be more frustratin than to spend many sleepless nights building a model,only to have Mr. T's cousin at the Post Office mash the whole box. Just follow Mr. Bill's advice,and you won't have to worry about Sluggo Airlines or Mr. Hands destroying your work!

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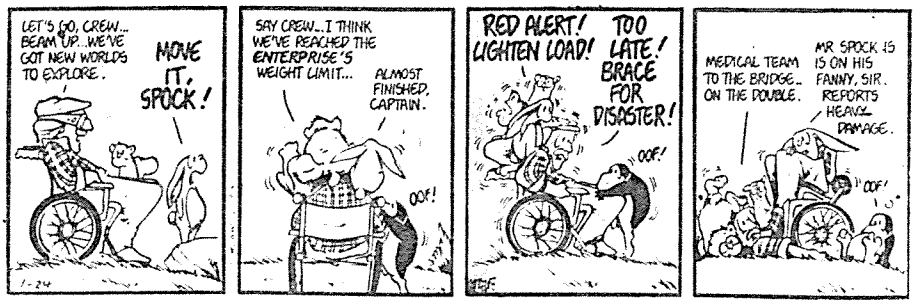
the dreaded space filler



YOU KNOW YOU'VE BEEN IN THE HOBBY TOO LONG WHEN...

By Chris Pearson

* When you come home from the Nationals and there is a "Sold" sign on your front lawn
* You call your best friend and he asks whos calling
* Upon your return from a record trials, there is a 60 Minutes news crew waiting for you on your front yard
* Your cat sharpens his claws on your new foam RC BG wing
* Your girlfriend uses your favorite old NARAM shirt as a paint rag
* Your team partner tells you that he wishes that Anita Bryant would mind her own business
* You want to put on the clothes that you wore back to the hotel room after the manufacturers party, and there aren't any
* You announce that you will be in Europe for a month while at the Internats, and your wife smiles
* Your girl friend says "I love you Harry" and your name is Pat
* You want to buy some of the new high-tech composite endburners but the price sends you into shock
* While searching for your PD model, you notice that the birds circling overhead are buzzards
* A quick estimate tells you that your rocket collection is worth over $2000
* A Divisioners call you "mister" and "sir"
* Your NAR number has only four digits
* You go into JoAnne Fabrics to buy shock cord and parachute material
* You remember NARAM-12
* You start buying epoxy by the gallon
* You are on a first name basis with all the manufacturers
* Conventions start asking you to host discussion groups
* You remember buying stuff from RDC, MRI and AMROCS
* You actually flew a RDC Enerjet 8
* You stop collecting kits because you've run out of room
* You can't remember the last time you actually built a rocket
* You can't remember the last time you actually flew a rocket (Trustee types & Association higher-ups only)
* You get so disgusted with the whole mess that the NAR is in that you quit after 14 years membership
* You actually have a copy of the first edition of Stines handbook
* You have a full collection of Model Rocketry magazines
* You remember who George Flynn is
* F engine flights bore you
* Nothing in the Estes or Centuri catalogs interest you
* You read articles like this

An Original Modroc Screenplay

Matty's Volcano

By Matt Steele

ACT 1,SCENE 1 (George's workroom)

TELEVISION: ...leaving nine dead and countless others injured in Cincinatti.... still another Rock 'n' Roll tragedy...
GEORGE: We shouldn't have stopped at the Colonel's for that Bucket-O-Beaks.
MATT: Yeah, now I'll never get these twenty Sandhawks finished in time for the Internats. Uh, got any Krylon?
GEORGE: Will Magic Marker do?

SCENE 2 (George's workroom, much later)

MATT: Sand and seal, sand and seal, sand and seal,etc.
TELEVISION: You're right, Ellie. Tang fried in Wesson oil DOESN'T taste greasy!
MATT: Sand and seal, sand and seal,sand and seal,and...Ah,ha! Time to paint!
SMALL BOTTLE: Use me!
MATT: Huh?
SMALL BOTTLE: Use me!
MATT (reading label): "Hot Fuel Proof Pactra AeroGloss Dope"?
SMALL BOTTLE: Yup.
MATT: Well, forgive me for asking, but aren't you rather,uh, passé ?
SMALL BOTTLE: Nonsense! Thin me, shake me, brush me or spray me!
MATT: Well, alright. (Spraying and brushing) Hmmm, this isn't so bad.... Ah, that strange aroma...drowsy...Sandhawks....Internats....Fried Tang.....

ACT 2,SCENE 1 (Carl's apartment)

TELEVISION:....That's Rice Krishnas, the only breakfast cereal that chants and asks for donations in your bowl....
CARL: Let's see....What day is it? Wednesday? Well, that must be Ms. Launch Rack 1979!
MATT: Under your bed?
CARL: Why not? '79 was a very good year! Go ahead,see for yourself!
MATT:(Crawling on all fours) Uh, excuse me,miss....uh, what I mean is, do you believe in lust at first sight?
CARL: Careful,Matt, she's a hot one!
MATT: Want to swing test my super roc?
CARL: Looks like a mini-brute to me.
MS. LAUNCH RACK: We'll see...
TELEVISION: But it is real squirrel,Jim. SANKAA brand de-caffinated is 100% pure freeze dried squirrel.
REST OF SCENE DELETED....

SCENE 2 (American Nazi Party Headquarters in Chicago)

TELEVISION: ...When the Titan II booster suddenly exploded...delaying the Titan/Uranus project once again...
ADOLPH: They hit Bundick last night.
HERMAN: The commies?
ADOLPH: No, the society for Prevention of Cruelty to Canadian Mice.

SCENE 3 (NARCS' "Modroc Update" Studio)

UNCLE VERN: Hello, I'm not G.Harry Stine, and aren't you glad? The top story this week: Scientists has discovered the formation of a new, active volcano under the bed in the apartment of one Carl J. Warner....

ACT 3,SCENE 1 (An intensive care unit)

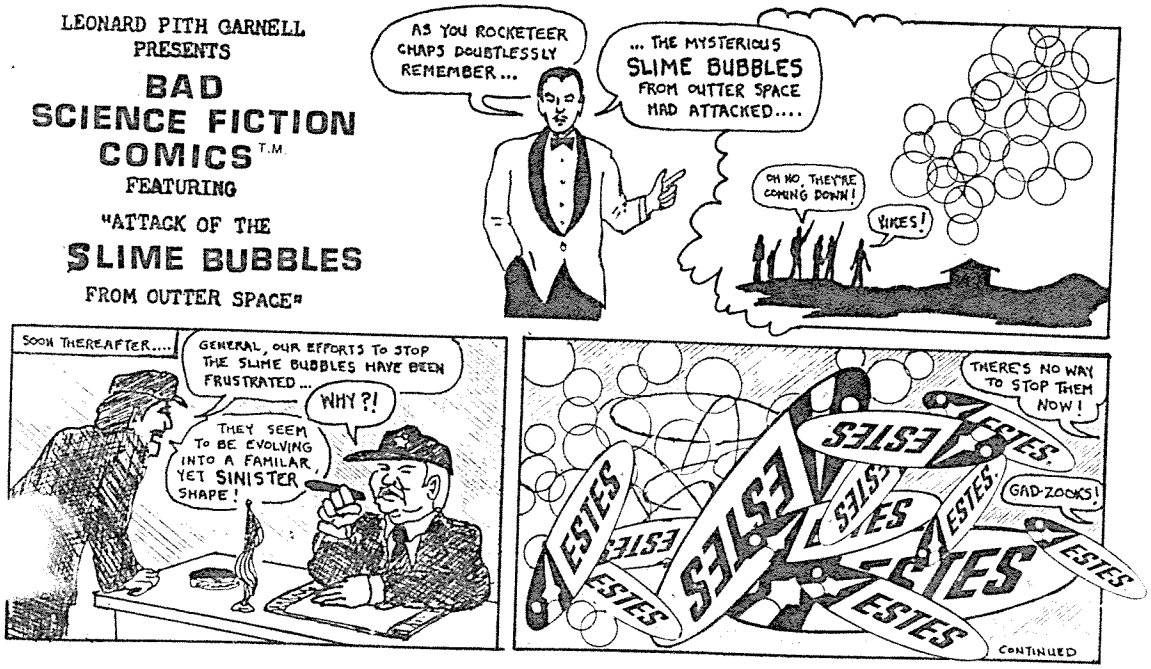
CARL: I TOLD you she was hot!
MATT: Third degree burns! Volcano! Ahhhrrggh!
CARL: And now my wife knows about her,too!
TELEVISION: An' tell the Russians "no arms treaty" until they get those tanks off the White House lawn!

SCENE 2 (In the hospital hallway)

DOCTOR FERRANTE: Yes, a most unusual case! The burns cover 99% of the pelvic area. Want to slip into the supplies closet and discuss it?
NURSE SYKOS: Go weathercock yourself!
DR. FERRANTE: Wanna adjust the rod,then?

ACT 4,SCENE 1 (George's workroom)

MATT: ...volcano....burns...Ms. Launch Rack 79....Carl's wife...Sandhawks.... Internats...AeroGloss...ow, my aching...huh? Where am I? What happened?
SMALL BOTTLE: Why do you think they call it DOPE, anyways?
TELEVISION: ....the preceeding story is true...only the names,places, and facts have been changed to facilitate a more dramatic presentation.....



Balsa Density Chart

WEIGHT IN GRAMS FOR A 3"x36" BALSA SHEET
D= Density lb/cubic ft.
Thickness in inches:

D	1/32	1/16	3/32	1/8	3/16	1/4	3/8
4	3.5	7.1	10.6	14.2	21.3	28.4	42.5
5	4.4	8.8	13.3	17.7	26.6	35.5	53.1
6	5.3	10.6	16.0	21.3	32.0	42.5	63.8
7	6.2	12.4	18.7	24.8	37.3	49.6	74.6
8	7.1	14.2	21.3	28.4	42.5	56.7	85.1
9	7.9	16.0	24.0	32.0	48.0	63.8	95.7
10	8.8	17.7	26.6	35.4	53.1	70.8	106.3
12	10.6	21.3	32.0	47.5	64.0	85.1	127.6
14	12.4	24.8	37.3	49.6	74.6	99.2	148.8
16	14.2	28.4	42.5	56.7	85.1	113.4	170.1

WEIGHT IN GRAMS FOR A 4"x36" or 3"x48" BALSA SHEET

D	1/32	1/16	3/32	1/8	3/16	1/4	3/8
4	4.7	9.5	14.1	18.9	28.4	37.9	56.7
5	5.9	11.7	17.7	23.6	35.5	47.2	70.8
6	7.1	14.1	21.3	28.4	42.7	56.7	91.7
7	8.3	16.5	24.9	33.1	49.7	66.1	99.2
8	9.5	18.9	28.4	37.9	56.7	75.6	113.4
9	10.6	21.3	32.0	42.7	64.0	85.1	127.6
10	11.7	23.6	35.5	47.2	70.8	94.4	141.7
12	14.1	28.4	42.7	56.7	85.1	113.4	170.1
14	16.5	33.1	49.7	66.1	99.4	132.2	198.3
16	18.9	37.9	56.7	75.6	113.4	151.2	226.7

HOW TO USE THIS CHART: This is a handy dandy little chart that will assist you in picking the right balsa for the right application. Just take out your scale and measure how much the sheet of balsa weighs. When you get the weight, go down the chart and determine the density. Most BG and RG models need light (4-6 lb.), whereas other birds need heavy balsa. Happy Hacking!

COLONEL ED "ACE" McMAHON SEZ:

"JOHN GLENN'S LUCKY THAT NASA DIDN'T CHOOSE THIS COMBAT VETERAN MARINE AS AMERICA'S FIRST 'REAL' ASTRONAUT!

"LET'S FACE THE FACTS, FOLKS. PILOTING A PROJECT MERCURY CAPSULE, OOPS, EXCUSE ME, I MEAN 'SPACECRAFT' AROUND IN LOW EARTH ORBIT DOESN'T TAKE MUCH MORE TALENT THAN SHOUTING 'HI-OOOH!' ON NATIONAL T.V.

"I KNOW I HAVE THE 'RIGHT STUFF' TO BE 'SPAM IN A CAN'!"

FRANK, THE STA-PREST CLONE, IS AT IT AGAIN...

A NOW A "TOKEN" MENTION OF MODEL ROCKETRY

(Jasper - INS) The excited world of Scale Model Rocketry — or "Space-modeling" as it is known to pre-adolescent kitbashers - was shocked this week when Antonov Villxms announced that a "typical household accident" had destroyed or critically damaged two of Mr. Maddog's finest scale models.

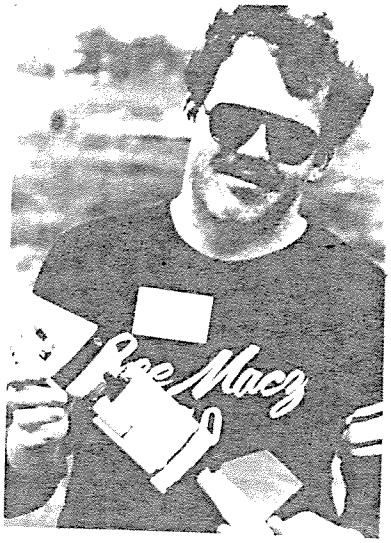
A 1/70TH SCALE ALBINO SATURN-1B (Dead Last But Finished at WARM-1) and a BT-50-sized BLACK BRANT III (Winner at BEAU REGARDS-1) were severely damaged when they toppled approximately 1.3 meters on to a work-room floor. An award-winning model of the ASTROBEE-D, which was also on display, escaped "additional" injury.

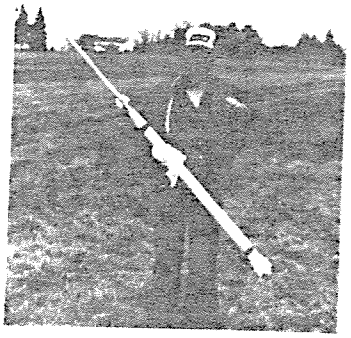
No other information was available at press time.

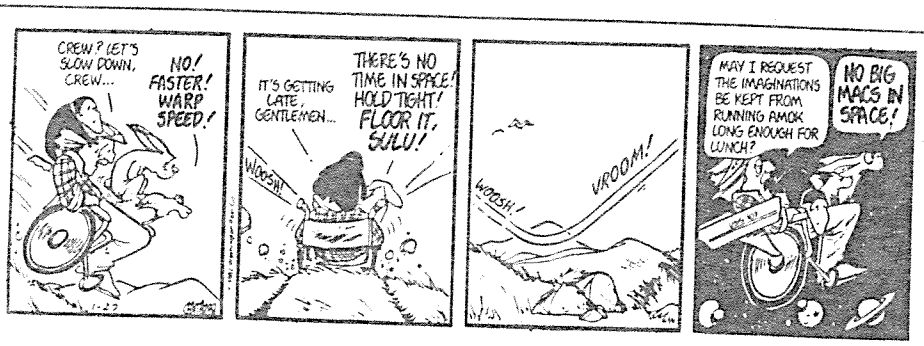
Photo Page

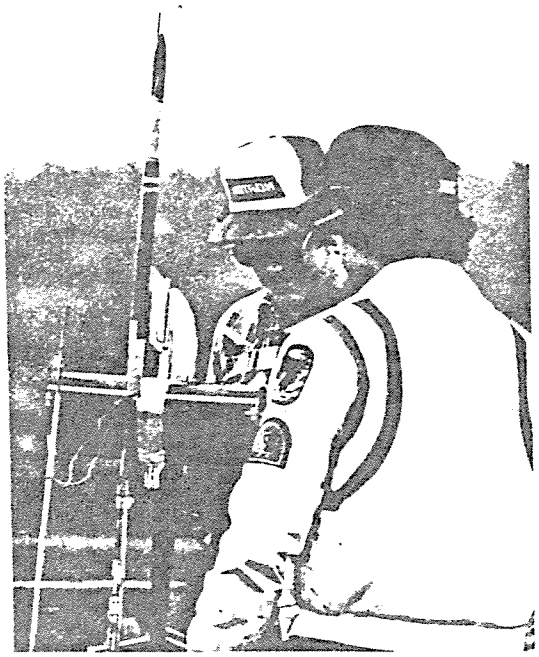
Rocketry In Pictures!

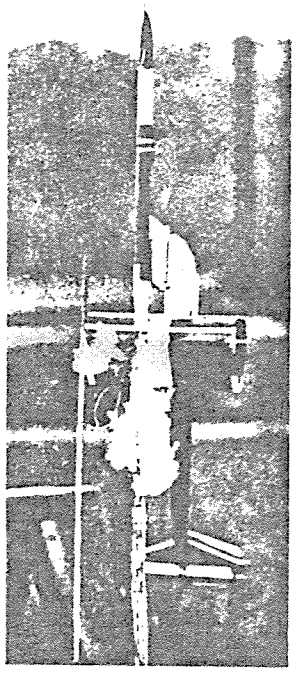
Top right; Bob Geier proudly displays his model with his "Won't work" pose. Bottom right; Bob Ferrante and his Super Loki Dart. Bob suffered a stroke on his left side during the model's construction, hence the awkward pose. Below; John McDaniel holding a very nice D20 powered Pilgrim Observer. Or so he thought, until the turkey engine acted more like a D18. Sorry 'bout that, John.

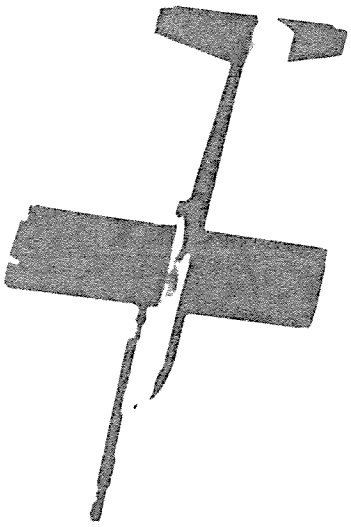


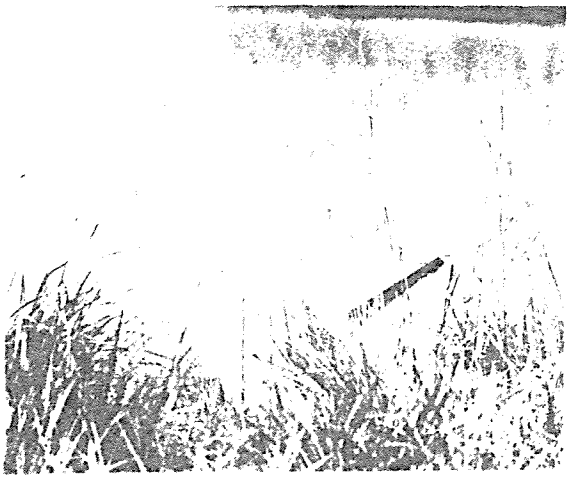










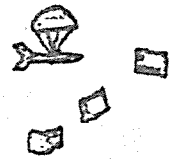


RC BG FOLLIES: (clockwise from top left) 1. Bob Ferrante and Chris Pearson prep Bob's staged D12 RC BG flop wing at WAR 1. 2) 2. The moment of truth at ignition. 3. The model, very under powerer, arcs over after clearing the rod, and starts heading for terra firma. 4. The bird impacts, and the delay train starts burning away, oblivious to the fact that the parachute will not be needed, at least not on this flight. Photographs and Matt Steele.

SNOAR Technical Services presents

THE GREATEST MODROC VIDEO GAME YOU'LL NEVER PLAY ....

RACK-MAN!



THE SKY'S THE LIMIT (literally!) to the fun you'll have when you help everyone's favorite modroc personality, Carl the Contest Director, on his madcap romp across the rocket range. Throttle your joystick and Carl heroically leaps rocket -laden launch racks with a single bound, gathering up the wind-scattered flight cards and recovering stray competition birds...while avoiding nit-picking Contest Board personnel , unscheduled launches , and sniveling East Coast model rocketeers with their ludicrous protest forms!

"Be careful with the next jump, Carl, that Saturn-1b's about to takeoff! Whoooshh! Watch out behind you, there's Jim Wilkerson with a CB-13-79 in hand! Looks like that Flatcat has Red Barroned....Hit the DQ Button before it touches the ground (Extra Points)! There's a downed Payloader over to your right...WAIT ...Is somebody trying to launch a Large and Dangerous Rocket Ship?! Quick, hide under the next rack! No, Carl, get under the rack, not OVER...! Oops, it seems that Carl the Contest Director has embarrassingly impaled himself upon an unprotected launch rod! And Jon Rains is closing in!!"

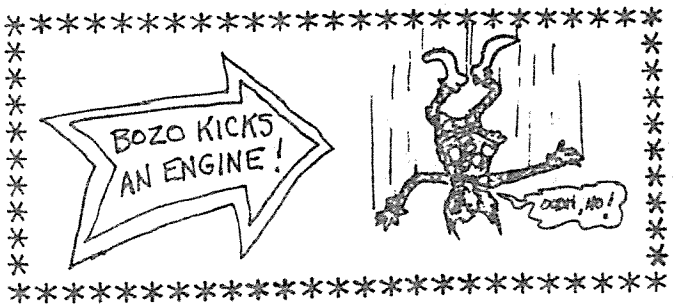
Sounds like fun, eh? Well, that's just a small sample of the excitement awaiting as you play Big Time NAR Contest Director with the new "RACK-MAN!" Game Cartridge and the NARC-O-Visiontm video entertainment system! It's Real Life model rocketry adventure without the tracking problems , sunburn , and tedious paperwork! And with the exclusive NARC-O-Visiontm Systems Adapter (available seperately) "RACK-MAN!" is computer compatable with Atari, Mattel Intellivision , and ColecoVision game systems. High-level resolution Color graphics and five skill levels of play (Section , Open , Regional , NARAM and Internats) make "RACK-MAN!" the most life-like and challenging electronic Home/Arcade model rocketry game to date!

Sold exclusively through NARTS -- Inquiries should be sent to:

NAR Technical Services
182 Madison Drive
Elizabeth, PA 15037

Look for these NARC-O-Vision^{tm} video game blockbusters in the near future:

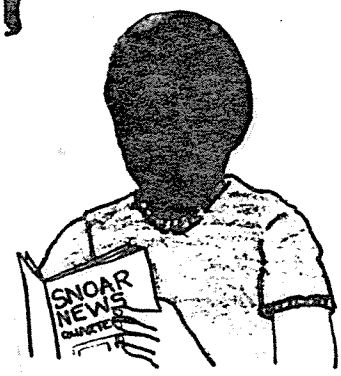
"RADIO/CONTROL MADNESS" with Bernard Biales
"SWAMP RAT FEVER" - Florida Rocketeers in Action!
and "MIDWEST QUALIFIED FLIGHT"



PLAN MAN SAYS :

WORLD FAMOUS ROCKETEER ED "PYRO" McMAHON ASKS:

"WHAT HAVE THEY DONE TO SNOAR NEWS?!"



Well, the guys running this newsletter sure as hell don't know! Alledgedly, Matt Steel is Editor-in-Chief, followed by editors George Gassaway and Tony Williams, and Editor/Publisher Chris Pearson. Of course, for the right ammount of cash, you too can have your name in this section. Unmarked tens and twenties, please!

FRANK THE NO-WAVE CLONE SEZ:

NEXT TIME: "POST-PUNK DEPRESSION"

CONTEST UPDATE

GLRM-83 (Great Lakes Regional Meet 1983)

June 18-19, 1983, Medina, OH.
Events: Plastic [illegible], C Streamer Duration, B Parachute Duration, C Egg Duration, 1/2A Helicopter Duration, B Boost-Glide, D Rocket-Glide, D Superroc Duration. For information, contact: Chris Johnston, 26481 Shirley, Euclid, OH, 44132 (216) 731-3898. No Collect calls!

LDRS-2 (Large and Dangerous Rocketships 2)

July 30-31, 1982, Medina, OH.
This is a NAR Condemmed event! Four unofficial events to be flown. Best Flight, Best Prang, Most Engines Clustered, and Highest Impulse. Attendance by invitation only! For information, contact: Chris Pearson, 37541 Grove Ave., #202, Willoughby, OH, 44094, or call (216) 946-1808 before 11 PM EST. No collect calls (except Matt, of course). Trustee-types and Association zealots not welcome.

NARAM-25 (1983 National Championships)

August 8-12, 1983, Houston, TX.
Events: 1/2A Parachute Duration, A Rocket-Glide, A Helicopter Duration, A Internats Streamer Duration, Predicted Altitude, B Internats Boost-Glide (flex-wings only), B Boost-Glide (fixed wing only), C Superroc Altitude, E Egg Altitude, Research and del Development, Super Scale (C Division), C Scale Altitude (A & B Division). For more information, contact Contest Director Ron Goforth, 11647 Sagemeadow Lane, Houston, TX, 77098, (713) 484-2085.

Quotable · Quotes Anyone?

"Model rocketry boring?? Hell, everything except SEX is boring!"
Chris "Norton Freak" Pearson

"Oh shit! Gravity works!"
Robin Williams

"Radio control.....Is that when you turn the radio and the model goes SPLAT??!!"
Terry Lee

"Canaroc engines? No, I never use them."
Bill Henderson, Model Rocketeer
"Tracking North" writer

30

BULLSHEET

A new engine released from AeroTech recently, and which has received NAR Safety and Contest Certification is the D7. This 20 n-s engine is the same diameter as the Estes D12, but 1/4 inch shorter and lighter, while packing a full 20 n-s instead of the 13 or 14 that the D12 has. It is available in delays of 0,2,4 and 8 seconds, and yes, the zero delay is a booster engine and can be used for staging to other engines. Price for the D7 is a steep $6.95 each, or three for $18.95. AeroTech has also announced many other engines in production, some of them destined to be certified, such as the F15 and F44 engines. Look to this space in the future for more information as it becomes available.

US Rockets will soon announce availability of the Boosted Dart, a high-performance two-stage vehicle which will utilize a seperate engine section for boost, and another smaller section holding the delay train. This model will incorportate the new AeroTech delay motors in the upper stage. US Rockets has also released the Mega-Roc, a four inch diameter rocket which is over 80 inches long, and the Sonic 2700, a 2.6 inch by 66 inch long rocket, which is a two-stage vehicle.

How many times do we have to say it? Reaction Technology Inc. is no longer in business, and is refusing to take orders. Some people are persisting in sending them money, and those who do are taking a good chance of losing it. Mark Weber, former partner in the company is no longer with them, so stop bugging him. Any questions or complaints about orders can be sent to: J.P. O'Connor, 3332 Alamo #6, Cincinnati, OH, 45241.

Irwin Toy has announced that Canaroc is officially out of business. They have sold the last remaining stock to Pan Axiom Autonetics, who will market it until the stock is depleted. No word on what if any availability the engines will have.

The Florida Spacemodeler Quarterly has just published their first issue which has a full color insert section on the front inside covers. For those interested in subscribing, get in touch with: Editor, Florida Spacemodeler, 7498 Oak Street, N.E., St. Petersburg, FL, 33702.

The NARAM curse? I'm sure most of you have heard about the LAC curse, which says that the newsletter which wins the LAC Award will fold shortly thereafter. This curse has proven itself potent many times in the past. Now, the NARAM curse is showing up. This curse causes the section that hosts NARAM to fold up shortly thereafter. Recent victims are SEMROCS. the section that hosted NARAM-22, and more recently, the Orange Rocketeers, who hosted NARAM-24, who not only folded the section, but the newsletter as well.

AAA Aviation Fuels no longer has in stock any of the Composite Dynamics engines, so don't try and buy any from them. They still have a stock of CD parts that are available.

Has the MIT Rocket Society gone down the tubes? The most recent mailing of SNOAR NEWS that went out to them came back marked "Box closed - no fowarding information".

Out of the ashes of Astro-Dynamics comes a new company, Experimental Rocket Systems. Mike Burgess has announced that they will be offering quality high-performance rockets in the near future. More information as it is available.

Rumours have been flying around the SNOAR NEWS offices about the future demise of all the mini-engines from the Estes catalog. Remember, we were the first to tell you about the fall of the 1/4A engines, over a year before it happened.

Yes, cluster fans, Sure-Shot igniters are still available from Centuri. I would recommend getting in contact with them about price though. The last price that we have is two years old.

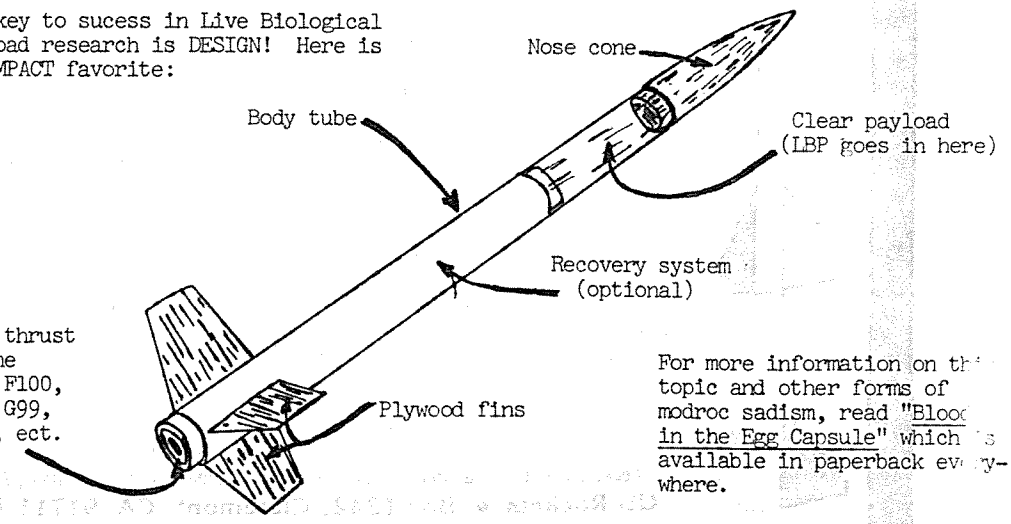
Rumors are also flying about the final release of the FSI 18 mm engines. They are supposedly in the hot little hands of NAR Standards and Testing, and have already been DOT Tested and Certified. No word yet on when they are going to be marketed.

In light of the recent (December) merger of Ace Rockets and AeroTech, Ace has released a whole new line of rockets. They are the Legal Eagle ($25.00), the Mini-Catana ($25.00), the Mini-Mongrel ($25.00), the Stealth ($25.00), the Andante ($20.00), the Squid ($18.00) and the Etude ($18.00). Talk about high-power rocketry at reasonable prices! The rest of the Ace high-power line is also available.

SNOAR Technical Services presents

Live Biological Payloads That Bleed!

The key to sucess in Live Biological Payload research is DESIGN! Here is an IMPACT favorite:

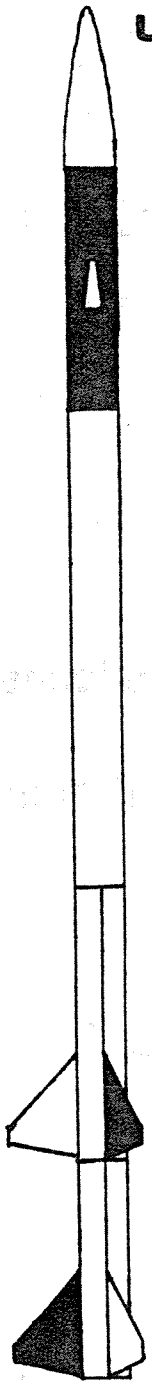


For more information on th topic and other forms of modroc sadism, read "Bloo in the Egg Capsule" which s available in paperback ev y-where.

US ROCKETS

US ROCKETS KNOWS ROCKETS

EXPERIMENTAL PRODUCTS DIVISION



Hi-Test 2650

$60

The Hi-Test 2650 was developed by U.S. Rockets to fill the gap left by the Enerjet 2650 sounding rocket when it was discontinued in 1972. The two stage version of the Hi-Test 2650 was engineered to fly with three H class (320ns) motors in each stage. With a two pound camera payload, a 2650 has been tracked to over two miles. Altitude performances well in excess of that are possible with this rocket and H motors in each stage.

This "model" features a main airframe of G-10 fiberglass for low weight and strength. Heavy duty body tubes are used and a nylon parachute is used for recovery. The precut plywood fins and rings are very durable and aid in quick assembly. The wedge fin attach provides easy and positive alignment of fins.

The two stage version includes a payload section and the booster stage. A kit without these sections is available for $15 less. The single stage and two stage versions are both great research rockets for experienced rocketeers with some background in clustering and staging with composite motors.

The most significant feature of this collectable kit is certainly the beautiful handmade ACE balsa nose cone (& coupler). A great deal of thought has gone into this kit, which should increase its collectors value.

2.65" x 74" w/B & P
Skill level 4

Mega-Roc

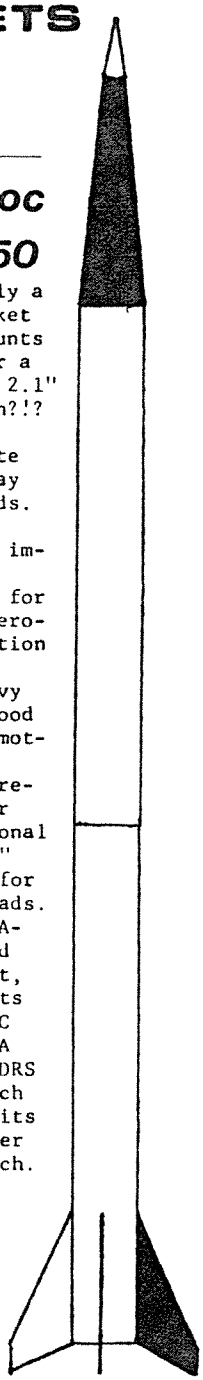
$50

What rocket do you get to fly a J, I, or H motor? What rocket has interchangable motor mounts for 1.125", 3 .94", 1.5", or a motor or custom mount up to 2.1" and get it back to fly again?!? The US Rockets MEGA-ROC, of course! This humungous brute is equally at home on display and in the air at mach speeds. Designed specifically to be flown with mild thrust high impulse composite motors, the MEGA-ROC is the easy choice for the motors available from Aero-Tech and Composite Distribution in the G-J class.

Constructed with very heavy wall ACE BT-39, precut plywood fins and rings, heavy wall motor mount tubes, and elastic shock cord. The rocket is recovered by 48" parachute for many fun, safe, and educational flights. The large 4" x 34" payload section is perfect for camera and electronic payloads.

The large size of the MEGA-ROC allows easy tracking and recovery flight after flight, and makes small field flights possible. Both the MEGA-ROC and Hi-Test 2650 require FAA clearance for launch (ie. LDRS or Smoke Creek). 1/2" launch lugs are provided in both kits and a 1/2" x 6 foot or longer rod is recommended for launch.

4" x 81"
Skill level 3

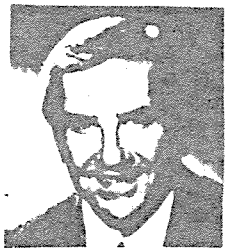


Checks payable to Claremont Rocket Society. All orders postpaid. Catalog $1 cash.

US Rockets • Box 1242, Claremont, CA 91711 USA.

POSTSCRIPT

FAMOUS GUEST STAR **ED** "WHAT THE...!?" **McMAHON** COMMENTS:



Well, I've rally,rally enjoyed working with the boys on this project and I hope that they let me come back to appear in many,many more issues,ha-ha-ha-ha-ha-ha-ha-ha! One thing that really bothers me, though, you know?s Why does the NAR continue to advertise "FREE" decals with membership when...Oh, what's the use?

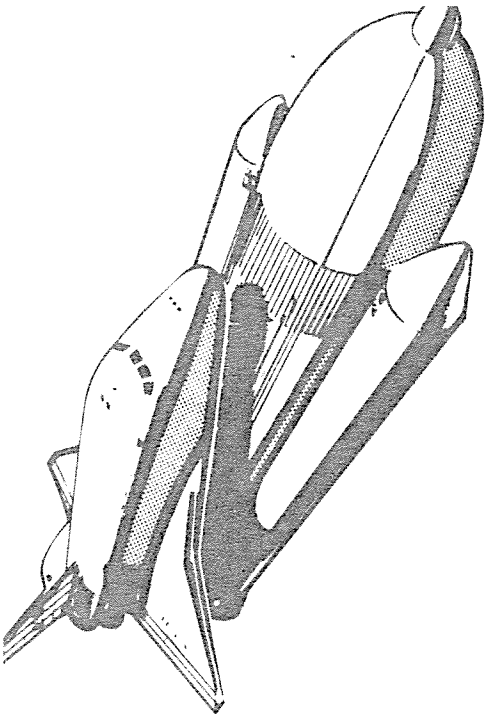
ED'S WARDROBE COURTESY OF COMPETITION CHUTES, THE MAKERS OF MANY FINE TENT AND PARACHUTE PRODUCTS.

FRESH BULLSHEET.... HOT OFF THE COW.....

Dr. G is the new Internats Team Manager; Terry Lee has been added to the C BG and A PD teams. Yes sir, sports fans, Ohio State's own Dr. Gerald Gregorek has been named to head up the 1983 US team following the abrupt resignation of Chris Flanigan. Flanigan resigned in mid-March for personal reasons. Travel plans call for a five day tour of Bavaria after the meet. Total cost to compete: slightly less than $2000, unless, like Matt, you can drive to Munich to meet the team. A team practice is tenatively set for the July 4 weekend, either at Lakehurst or Allentown. Aerotech is going to produce a special E6 for the E RC RG team; it looks like the engine will be plugged, and will have less of an initial spike and a bit longer burn than the stock E6.

Corrections that slipped by the proofers;Matty's Volcano" is by Tony Williams; The Balsa Density Chart was supplied by Bill Henderson; All dimensions on the Tasmanian Devil should be scaled up 33%; similarly, so should the Lumb Duck III plans in Volume 9, Number 1; and sorry about the spelling errors!

Other items of interest: NARAM has been moved back a week to avoid a conflict with LDRS-2..... The Canadian mag, Spacemodeler is likely to have folded by the time you read this... And SNOAR NEWS, V9,N1 is lost in the Twilight Zone.



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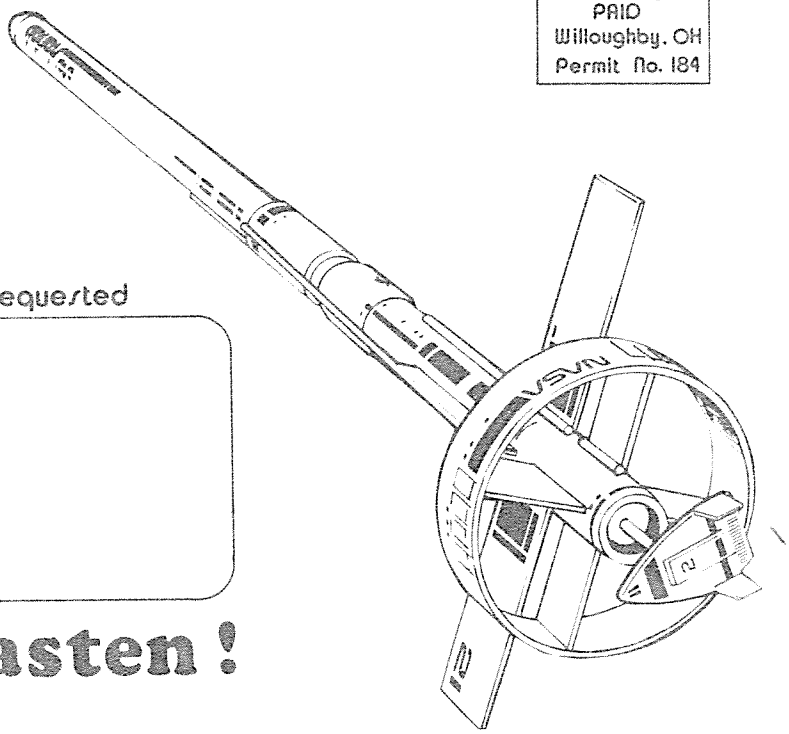

Address correction requested

To:

Hasten!