

SNOAR NEWS

THE IMPACT COMICS GROUP

STARTRASH

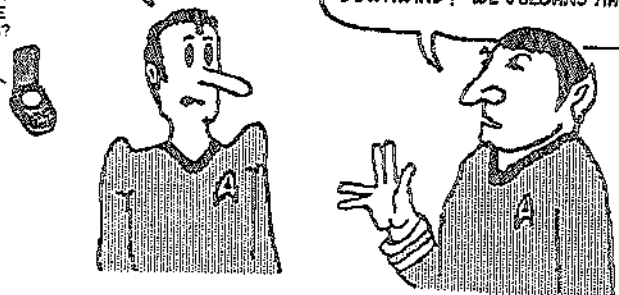
starring
 Frank the Stay-Frost Clone
 as Cop'n James T. Quirk
 with Kats, his pet cigarettes
 as the Communicator

NOT
 APPROVED
 BY THE
 COMICS
 CODE
 AUTHORITY

bzz... 10-6
 GOOD BUDDY! ...
 WHAT'S VOR 20?
 NEGATORY ON
 THE SUB-SPACE
 NUMBER... OVER?

MISTER SPOOK!
 MY ONCE-LOYAL CREW
 HAS DESERTED ME!
 COULD IT BE MY
 ANTI-PERSPIRANT??

IT WOULD APPEAR TO
 BE THE LOGICAL
 CONCLUSION, CAPTAIN!
 ER... SIR, WOULD YOU MIND STANDING
 DOWNWIND? WE VULCANS HAVE A KEEN SENSE
 OF SMELL ...!



in Harlan Ellison's Classic:

"DEODORANT ON THE
 EDGE OF FOREVER!"

Winner of the 1985 LAC Newsletter Award

SNOAR NEWS

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VOLUME 12, NUMBER 5

1985 LAC Newsletter Award Winner

TABLE OF CONTENTS:

- Page 3 From Your Sometimes Sober Editors: Ramblin' on...
- Page 4 Small Glider Airfoils: Mr. Maddog makes it look all so simple!
- Page 6 Edible Model Rockets: Food for flight as well as thought!
- Page 9 This is North Coast Rocketry! A photo plug...
- Page 13 Playboy Shuttle: Wait'll the Meese Commission sees this!
- Page 14 High Boy 53: A Streamer Duration Record Holder
- Page 15 Scale Dimensions: Putting together a scale packet.
- Page 18 BULLSHEET: Vulcan motors are gonna be legal!

COVER STORY:

STARTRASH COMIX PRESENTS FRANK AND KATE in a SNOAR NEWS sneak preview of Star Trek VIII. Back Cover: I want my SNOAR NEWS!

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This is *Volume 12, Number 5*. SNOAR, SNOAR NEWS, and IMPACT copyright ©1986 by the SNOAR, a grand old name in section newsletter publishing. Subscription price is still \$10.00 (the same as AMSPAM, but we'll tell you the good stuff, huh?) Make your checks payable to Matt Steele, not SNOAR NEWS, please! Watch this space for further information.

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"Her eyes fluttered shut and she drew in her breath from the raw shock of just ripping through her body at his touch. She trembled as his hands rubbed over her..."

Well, he!lol

Welcome to another exciting edition of SNOAR News! Yes, this is the model rocket newsletter that asks the musical question, "Do you really want to hurt me?" To wit, yon Board of Trustees eagerly replies, "You bet'cha!"

But seriously folks...

I'm sure you've heard of the ancient Chinese curse that goes, "May you live in interesting times." Well, these do seem to be interesting times! Just look at all the fun things happening in the world of model rocketry-- high power controversy, the "ALL NEW" American Spacemodeler local contests (heaven forbid that! should find out the date, events, etc. or I might actually attend one!), computer-enhanced newsletter units, new engines we'll never need, engines that we need getting dumped, dues increases, (excuse, please, I am only to speak of such in the event that I not re-elected trustee), price increases... Interesting times, eh?

Hey, what about that Terry Lee...? (Sorry, my editorial pencil tends to ramble a bit.)

So what have we here? Another SNOAR NEWS (pronounced "So-nar News" on the East Coast) of course! Enjoy!

Matt & Mac

SMALL GLIDER AIRFOILS

An article by "MASTER SPACEMODELER"
Professor A. M/D Williams, Ltd.

The majority of SNOAR News readers are suave, sophisticated fliers with many years of experience and are well-versed in the art of basic modroc construction. Consider this, then, as a brief refresher course in B/G 101. For those of you who are new to glide recovery, take notes. There will be a test afterwards that will count for 1/3 of your final grade.

Small gliders usually mean low power, small wing area, and thin flying surfaces (i.e. the wing, stabilizer, and rudder). The new Estes DRAGONFLY kit is a good example. It flies on a 1/2A3-2T mini-engine and has a 20 in.² wing that's only .3/32" thick. And, while the model will glide with an unstreamlined sheet of balsa for a wing, there are several ways we can improve it.

The easiest method is to simply round the leading and trailing edges of the part (Figure 1). This reduces aerodynamic drag considerably. You've probably used this airfoil on fins, and it's a good place to start in glider work.

To further reduce drag--and a significant amount of weight--we can taper the trailing edge almost to a point (Figure 2). This is a fine airfoil for small gliders and fins as well. A good sanding block is very useful in removing the unwanted balsa.

The next step is the classic flat bottom airfoil commonly used on Hand Launched Gliders and larger than B/G's. In this airfoil, the thickest part of the wing (usually referred to as the airfoil high point) is located at 20 to 40% of the wing chord as measured from the leading edge. (Figure 3) Although it's a bit harder to shape, this airfoil has a greater lift-to-drag ratio than the plain tapered section discussed earlier. Most contest B/G's use variations of this airfoil and it's a proven winner.

A more challenging lift-producing method is the undercambered airfoil (Figure 4). The undercamber may be fashioned by (a) carefully sanding a thicker balsa section (extremely difficult to accomplish on small wings), (b) warping the section with steam (very tricky), or (c) cutting a flat bottom airfoil along its high point, beveling the edges, and gluing it back together to form an approximate undercamber shape (Figure 5). Small "riblets" may be fitted to the underside of the wing to add strength and stiffness. This isn't an airfoil I'd recommend to beginners, but it is fun for experimenting.

Other airfoil types worth mentioning here include the stretched teardrop (a symmetrical variation of the flat bottom airfoil) and the flat plate with flaps which could be considered a rough undercamber section.

An often overlooked weight and drag reduction technique is span thickness taper. A wing's thickness can usually be tapered down to at least 50% at its tips. (Figure 6) This will really give your sanding block a workout! I find it easier to taper the wing before it is airfoiled.

The aforementioned methods may be used to reduce weight and drag on all parts of the glider: wing, stab, rudder, and fuselage. But be careful not

to reduce the model's structural integrity as well. (Booms can break due to over-zealous sanding.)

By using these methods, your small gliders will weigh less, look better, boost higher, and glide much longer than similar unstreamlined models. Class dismissed.

Figure 1- Rounding the leading and trailing edges reduces drag and improves glide performance.

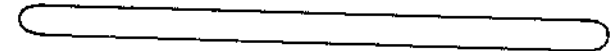


Figure 2- Tapering the trailing edge reduces weight as well as drag. Works great on fins too!

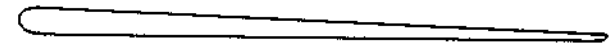


Figure 3- The classic flat bottom airfoil as used on many large B/G's, HLG's and other model planes.

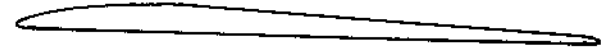


Figure 4- A typical undercambered section. It's hard to reproduce in small scale.

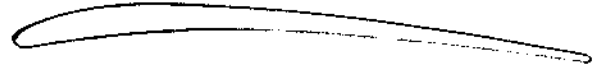


Figure 5- Cheap and Dirty undercamber. Also shown is an optional stiffening rib, ready for installation.

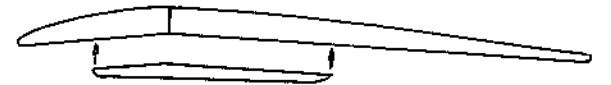
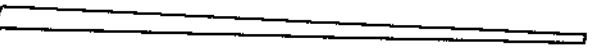


Figure 6- Wing thickness may be tapered to 50% or less at the tips. Note the bevel at the root for dihedral.



A Whole New Meaning to "FAST FOOD"....

EDIBLE MODEL ROCKETS

An essay by Chef Francis Graham

Editor's Note: This was just too weird to pass up. If you can't stomach this sort of demented humor, kindly throw up and turn to the next page.

I guess it all started with the Three Stooges. Throwing pies at a 30's society bash, I mean. I stared with amazement as the cream pastries sailed ballistically about and wondered, "Has anyone ever investigated the aerodynamics of food?"

My interest in this aberration continued with Larry Berclini's article, "Peas and Carrots" in the April, 1986 American Spacemodeler. There, I saw a picture of Jim Sexton's 2nd place egglofter, with a huge egg capsule atop it. The mammoth avian ovoid that was containable therein dwarfed the rocket, and prompted me to take the entire concept one step further: eliminate the rocket.

And, with that, began my gastronomical adventure into the novel vistas of rocket-powered food. Not that any of this matters; but let's worry about practical considerations only after the fun. So, with maniacal zeal, I tossed my American Spacemodeler across the desk and rushed at once to the fridge. There, after a quick search, I found a raw but enticing large carrot. I cored it out, inserted an A3-4T miniengine, and fins made of thick cardboard, and a small straw section rubberbanded against the helpless vegetable. The resulting rocket, (see Figure 1) called Becky's Last Resort, made a superb flight to almost a hundred feet.

My next food rocket was the Hot Potato I (Figure 2). Indeed, by coring out a section in the bottom of the uncooked potato, inserting a D12-7 wrapped in aluminum foil, and attaching a stabilizing stick, one obtains a very edible hot potato following impact, differing only from others in having caroomed through the atmosphere. One might also use this method to plant budding potatoes on inaccessible terrain, complete with the convenience of a marker stick. It's more dynamic than Burpee.

Mindful that the above experiments, lacking recovery devices, are in violation of NAR regulations, with great humility I crawled back to my kitchen to religiously contrive a flying food entree that would meet all tests. It is an onion perched atop a cardboard wax paper tube, with blunted skewers glued inside the tube holding the onion on as a nosecone. The remainder of this device has conventional fins, parachute, and a B engine, except for a small nose ornament I added which came from a neck chain. Called the Orthodox Church, this unorthodox food rocket meets all the orthodox NAR requirements and would undoubtedly elicit tears of joy at even the most byzantine NARAM. Well, it would certainly turnip noses, although in the competition, it might get skinned.

What about high power applications of this rocket food technology? I'd like to do an F version, the Suborbital Gourd. If I can find an aerodynamic gourd. I have fantasies about lofting a watermelon to oblivion with 3 J's

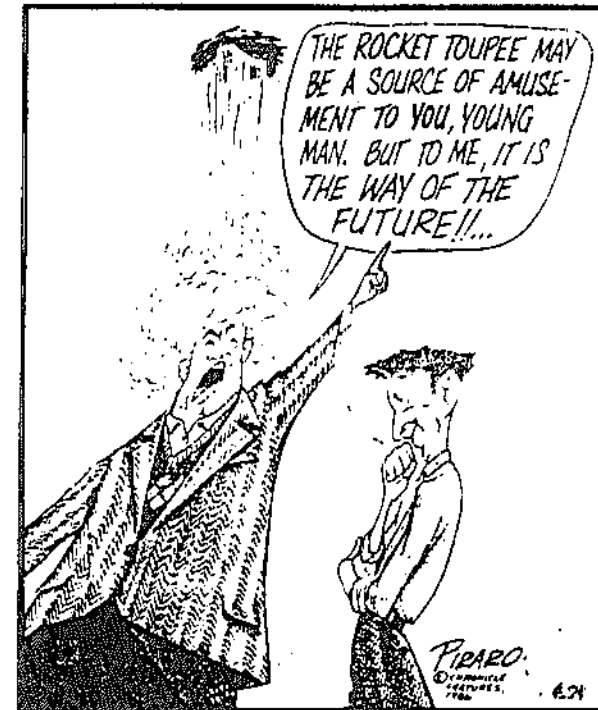
at an LDRS, but I probably won't. A Hot Potato II with a parachute could be developed to mate with a cineroc if Mr. Desind is interested in this hybrid. It's not every day movies are made from rocket-powered potatoes.

And, rocket food could add a whole new dimension to meals-on-wheels!

Those who are still reeling with the above, with mental images of starving Ethiopians, please note that none of this food was wasted. The carrot, potato and onion all became part of a soup I made for my dear 80 year old grandmother. In fact, giant food ICBMs would serve a useful purpose if developed and launched to Ethiopia, Mozambique, Bangladesh, Bolivia or Pittsburg. Aerospace companies could still satisfy their insatiable greed by developing this technology, farmers could survive as subcontractors, Pentagon generals could actually play global ballistic missile games with vast arsenals, and the interests of humanity would, for a change, be served by it all to boot! The vitamins and other additives could be added in space by SDI particle guns, and the SDI lasers could cook the food in the post-boost stage. Relish the thought!

Bizarro

By Dan Piraro



THIS IS NORTH COAST ROCKETRY!

A PHOTO ESSAY ABOUT
"THE LEADER IN HIGH POWER"



Traci Reeves with the NCR Brighthawk.

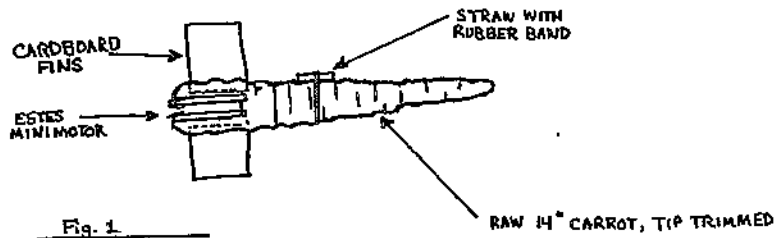


Fig. 1
"BECKY'S LAST RESORT"

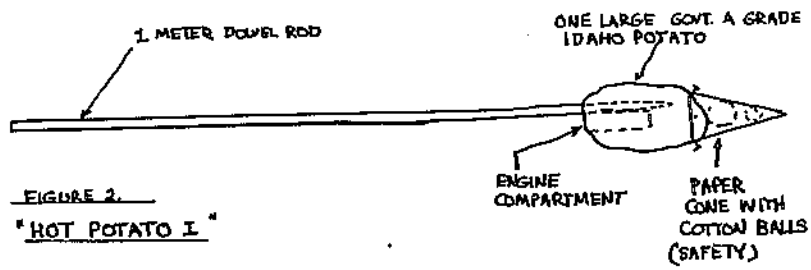


FIGURE 2.
"HOT POTATO I"

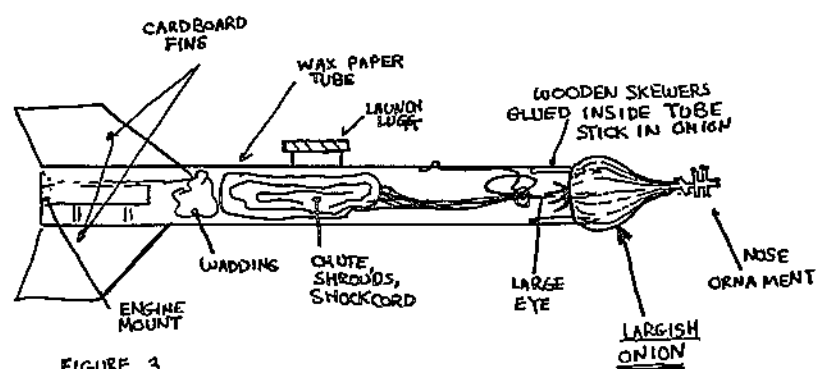
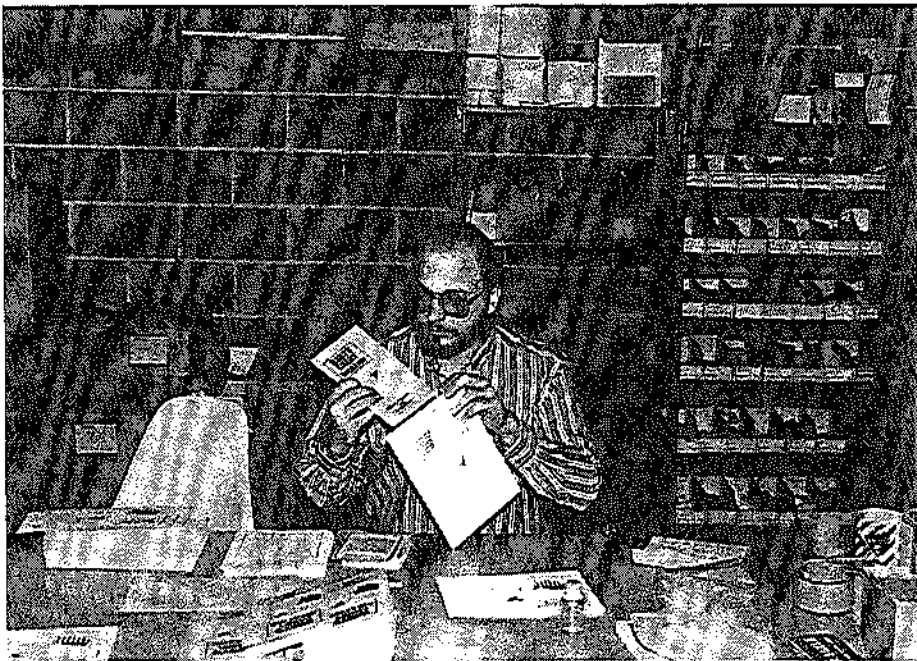
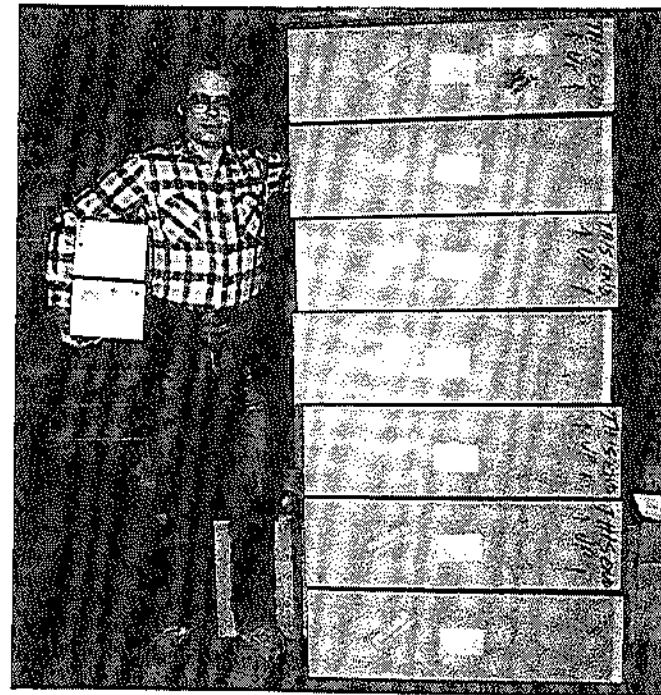


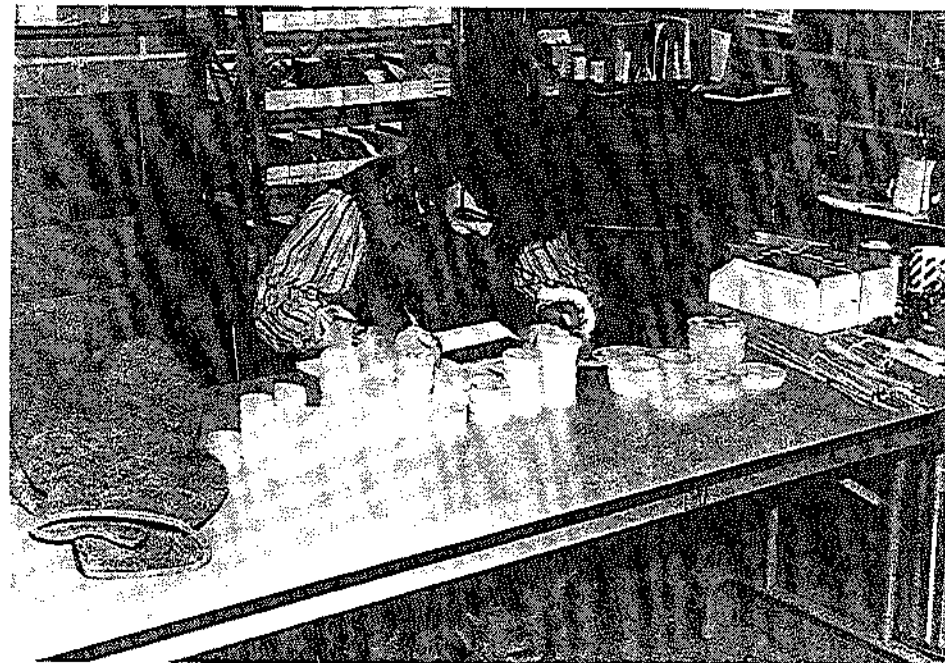
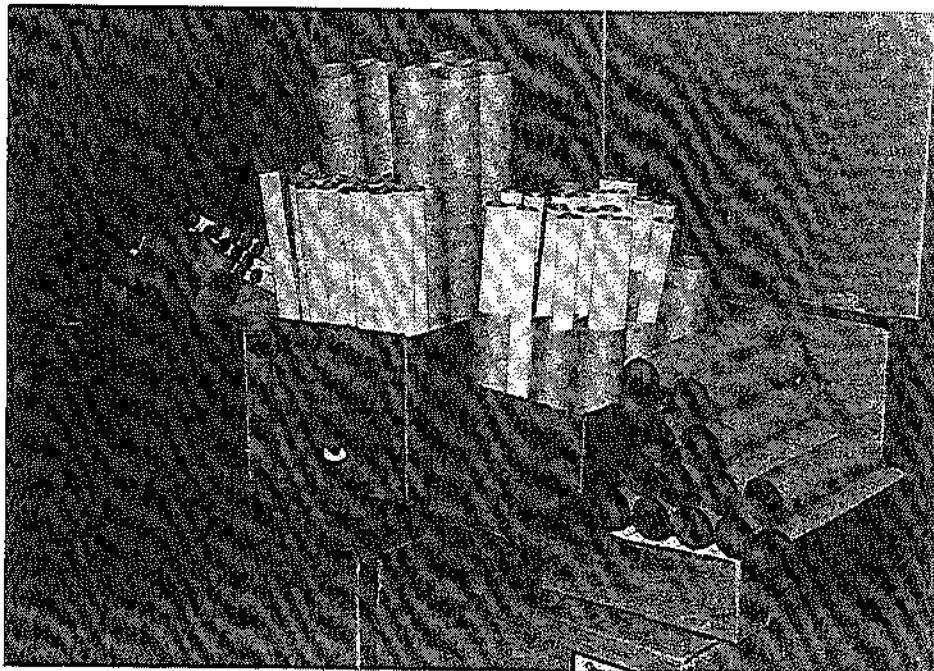
FIGURE 3
"ORTHODOX CHURCH"



Above: Matt Steele stuffing envelopes at the "warehouse".
Below: Body tubes cut to length are stored here until assembled into kits.



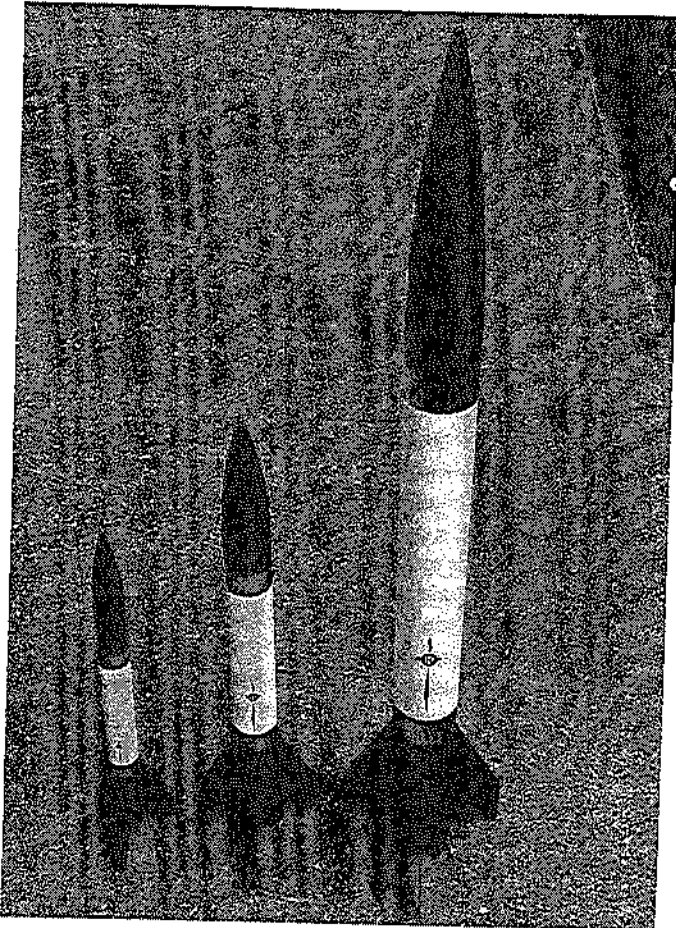
Above: Chris Pearson poses with a week's shipment- please ignore the "This End Up" on the boxes. (Because UPS does, too.)
Below: Heidi fills out an invoice amidst rings of all sizes.



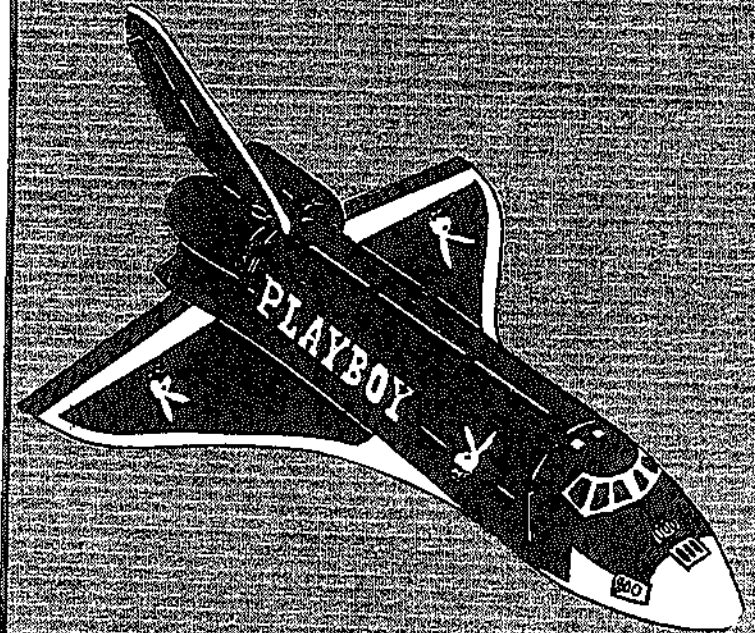


Above: NCR is the largest supplier of plywood rings to high power consumers.

Below: The finished products: Phantom 1800, 2600 and 4000, NCR's most popular line.

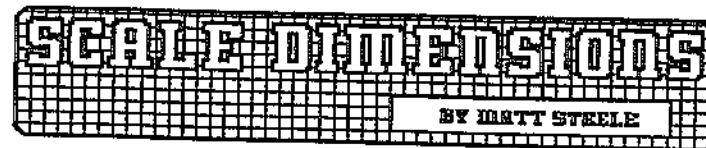


STILL TO COME:



**Publisher Hugh Hefner offers to buy
NASA a new shuttle orbiter...
with one little string attached.**

HIGH BOY 53



SCALE DATA PACKETS

"In order to build an accurate scale model, one has to understand how the real thing went together" - Jon Randolph

Putting together a scale data packet is one of the most unique aspects of scale modeling. In many cases, the detective work involved in assembling such a base of information becomes a crusade in itself. Many people claim that they won't start on that particular model until they get that "last little bit of data" that will make the packet complete. And yet, scale data is the most over-rated facet of scale modeling.

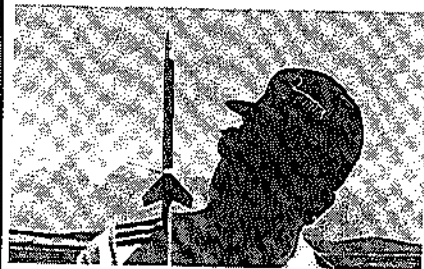
For most modelers and their scale modeling skills, the most readily available data is adequate to construct a complete winning scale model. Many people invest more time and effort in collecting scale data than they ever put into constructing a model. A quick check of the Pink Book reveals the basic numerical dimensions and color data necessary to enter a packet in scale; most of it is relatively easy to get. Typically, the two stumbling blocks are obtaining the prototype fin thickness and getting a series of photographs that pertain to a specific prototype. With a little bit of planning, these can be obtained.

The opposite of this case is the situation of obtaining so much data that it all can't possibly be used on a model. Even world class models don't need the depth of detail that some people have uncovered. For example, many years ago, the MIT section supposedly obtained over 125 pounds of data on the Argo D-4 Javelin (This data was to be eventually published, but ten years later, it has yet to be seen. Anyone know where it is? Is it ever going to get published???) While most of this data is nice to have in helping to understand how the Javelin went together, it isn't necessary for most modelers.

Look carefully at the scale data requirements in the Pink Book before putting together a scale data packet. The Pink Book data requirements are relatively straightforward and not exorbitant. A good idea is to make a page that lists the minimum data requirements. Then list the data for both the prototype and your model next to those requirements. One can then easily see that it doesn't take a lifetime of research to build a quality model.

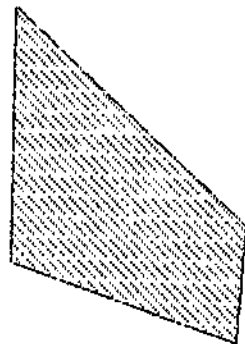
As a rule of thumb, when assembling a data packet, photographs are more desirable than drawings. A minimum number of drawings are required, of course, to flesh out the basic dimensional data. However, a large number of drawings is not necessary. If you have the choice (which may be possible in some cases), photographs of a specific round are preferred to drawings. Drawings often show the construction of fine details, but most people find it easier to visualize parts from a photograph. Additionally, photographs reveal paint and texture data that

A SD Record Holder
162 seconds
June 22, 1986
by Matt Steele



50 lb. Squid Line Shock Cord

Full Size Fin Pattern



CMR NC-52P

Streamer:
4" x 40" Micafilm
1/2" folds for top 24"



Shock line attaches
from Center with
1/2" wide Mylar strip.

8" CMR RB-52

1.75" RB-50 Motor Tube

1/2" Wide Mylar

N22067

1/32 Ply Fins

One pitfall to avoid is the problem of different configurations of different rounds. Often, a particular vehicle will vary from flight to flight. The ASP is a good example of this; at NARAM 20, more than one person modeled the wrong round to go with their scale launcher. It is very important to insure that the model you build corresponds to the drawings and photographs that you have. It is quite easy to collect a large amount of scale data on a particular prototype, especially if it was one that was produced in a large quantity. When it comes to select the prototype, pick out all the data that pertains to that particular vehicle only. The other data can be used to reference various details, etc., that may be similar from round to round. For example, the Redstone rocket was produced in many versions, including an olive drab version, and a white and black paint scheme. Since the Redstone was a production line vehicle, the exterior details of all Redstones are the same even though the paint schemes may be radically different. So, to model a white Redstone, photos from the olive drab version could be used (in a separate annex of the packet to eliminate confusion) to show various component details. But the main portion of the data packet should show only data on white Redstone photos. Using photos of the green round to demonstrate small paint details on a white Redstone is a no-no. Make sure to model the prototype you have selected, and only that one.

Below: Jeff Vincent relied primarily on the NARTS scale pack for his world class Saturn IB, here being assisted by Chris Pearson and Jerry Gregorek.



A good scale packet should be placed in a high quality spiral binder, with all of the pages placed in document protectors. Loose papers, large drawings, etc., can be placed "pocket pages" for easy access. Remember that a scale judge does not want to spend a lot of time looking for information.

Many modelers spend a considerable amount of time on a model, only to throw together a packet at the last minute. This is often detrimental to the overall point score, and may influence other areas to be judged. Points are awarded to a scale packet, not only for quality of data, but also for the quality of the presentation. Do not submit a jumbled mess of papers that will cause the judges great agony in sorting them out. Instead, present a professional, well organized packet.

The packet should open with a table of contents, to allow easy access to the key portions of the packet. Include a cover page that includes the name and NAR number of the builder, the scale factor, and other introductory information. A brief description of the model's particularly unique aspects should also be incorporated into a "Notes to the Scale Judges" section. Then, include a section with the drawings, photographs, and reduced dimensions. Lastly, incorporate a section for all the miscellaneous data that may be of interest to the judges.

The "Notes to the Judges" section is particularly important. Point out any unusual techniques used in the model, any commercial parts used or modified, and any other considerations that might merit additional points in scoring. For example, one model at a past NARAM featured a nicely done nozzle section that the judges did not see when handling the model. But, upon reading the notes, the judges went back and examined the nozzle, awarding the model extra points. Use the "Notes to the Judges" to sell your model to the judges. Often it will aid in the proper scoring of the model, and answer many of the judges' questions.

A brief description of the prototype is usually helpful, and should be included in the introductory page. Keep it short, but include such information as mission, launch date, launch location, and other pertinent information.

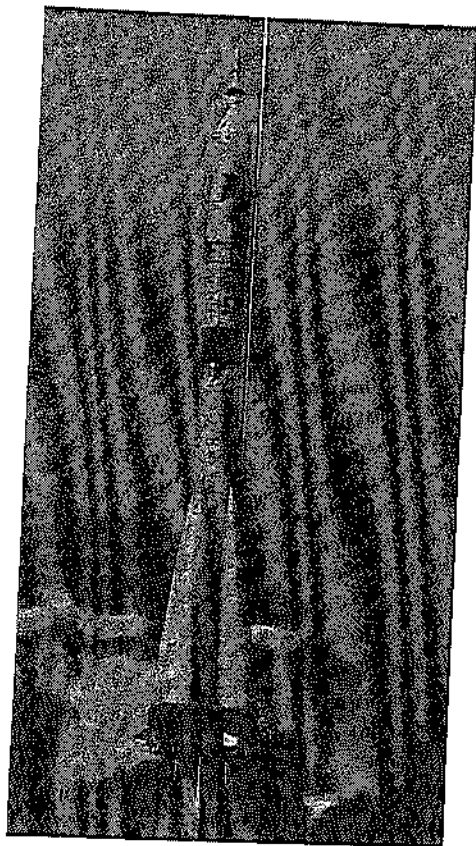
The section with photographs and drawings should be presented in an orderly and logical manner. The scale dimensions and scale factor can be presented in two ways: they can be annotated on each individual drawing, or they can be tabulated on a separate page. If tables are used, arrange the tables so that they can be easily used by the measuring team. I personally like to use the table method, so as to eliminate confusion. In my packets, the table can be taken out of the packet, so the judge can look at the table and the original drawings as well. Color photos are better than black and white, but if a photo shows a significant section of the prototype, don't hesitate to use it.

Lastly, include any other useful information that pertains to your model in some way. This is a good place to put other photographs of different rounds, correspondence with the manufacturer, and articles pertaining to the prototype. A lot of this section will be "nice to have" data that either doesn't pertain to your specific round, or is too general in nature to take precedence in the packet. Use some discretion in this packet. Pick and choose carefully what to include, and don't just throw in "everything else".

Keep in mind that it is the quality, not the quantity, of data that is important. Simply having a large amount of data is no sure way to win, especially if 90% of the information is internal detailing or otherwise unsuitable. Basically, a high quality data packet is one that adequately describes the prototype, shows the majority of detail that is possible to

... and includes enough photographs to illustrate how the prototype was painted and marked. Quality data allows the construction of a model with an appropriate degree of detail. Don't be obsessed with getting data for every nut and bolt on a scale model, when the model will be too small for such detail. Spend some time putting together an easy to use, easy to understand data packet that the judges will appreciate. Then spend the rest of the time working on the model.

Below: The Soviets know where the time should be spent on a model: in the model's construction. The Soviet data packet on the Soyuz is rather simple but contains plenty of details.... the ones you see on their fantastic models.



BULLSHEET

Vulcan is in the process of getting motors certified, and by the time you read this, most of the 24mm and 29mm line will be safety certified with contest certification to follow 90 days later. At last, some competition for Aerotech!

North Coast Rocketry is adding a new kit to its line just in time for LDRS-5 and NARAM-28. It's called the Star Spangled G Bird, and it stands 76" tall and 2.6" in diameter, and is powered by a single F or G motor. It features a special decal sheet and red, white and blue paint scheme. Special introductory price is \$22 until September '85. It will be legal under the new NAR guidelines as of 1/1/87.

NAR membership is expanding! The membership is about 3500, and it may actually hit 4000 by early next year! No one can tell where this may end!

THE FOLLOWING IS A PAID ADVERTISEMENT...

Do you need a recovery aid for your large scale, high power rockets? If so, a new product by TRANSOLVE (with long time SNOAR member John Fleischer as president) may help out. The Rocket Transmitter XMTR-1 is now available to help out. It's small (1.2" x 2.4" x .5") and light (only 6 oz without its 9V transistor battery), with a range of 1000' on the ground and 3000' in the air from its 100 mw transmitter. The beeping tone it emits can be tracked with a CB radio or walkie-talkie. Assembled and tested (minus the crystal, which you'll have to pick up at Radio Shack to insure that your walkie-talkie matches) the unit sells for \$25 for one and \$40 for two (shipping included). With a one year warranty, and John's fine reputation in electronics, it's hard to imagine a better deal. To order, write: Transolve, 1197 Genesee, Mayfield Hts, OH 44124.

Please support your SNOAR NEWS advertiser!

(We intend to flight test one of these in an upcoming issue)