VIEW FROM ZENITH

APOLLO 11 / SKYLAB COMMEMORATIVE FLIGHT PHOTO

JULY 1979

Official Newsletter Of The Zenith Section Of The National Association Of Rocketry

Zenith 2

PRO-JET F45

Photo Page

EDITOR'S SPACE

NARAM is coming fast, and the three of us who are planning on going are pretty busy getting ready, which explains why this issue of the VFZ may look a little thin. Actually, this is our "standard" size issue, so we don't want any complaints (unless they arrive in the same envelope with an article, plan, photos, or other contribution). A few more Ze-Knights are getting into the habbit of sending in material, which we really appreciate, but we would also like to hear from the rest of you. Only a few excuses are acceptable, such as "I sent it in to the Model Rocketeer instead" or "sorry, I died".

Good news! We may be losing Dave Babulski from Zenith Section. That's good news? Sure it is, since Dave and several other Twin Cities area model rocketeers are trying to get their own section formed, and that is great news. There also seems to be another new section forming in Wisconsin called the Regional Aerospace Cooperate. The section will serve Southeast Wisconsin and they already publish a newsletter, the "OMEGA". Things are really starting to move in the upper Midwest.

A few errors were pointed out in the last issue of the VFZ. The photo of the rocket glider taking off at Sky High 4 incorrectly stated that the glider was built by Fat Albert. The bird was actually the work of Dan Wolf who informed us of our error at Zenith 2. Sorry, Dan, but the mistake can be thought of as quite a nice compliment. We were also informed that there are eight members (not seven) who regularly attend Zenith activities, and this group should properly be refered to as the loyal "section eight", a term that fits them in more than one way.

I will close off this month's ramblings with a message from the section treasurer. Donald would like to inform everybody that the section's funds have all been growing smaller and smaller recently and he'd like to see a reverse of this trend. As extra incentive, Donald promises not to fly any more Enerjet or Mini-Max engines if contributions increase enough.

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View From ZENITH Volume 2 Number 7 July 1979

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COVER PHOTO: John Beach prepares to test his new Mercury Dual Eggloft design for NARAM 21. Obviously, John is a very confused rocketeer. Photo by Zenith Humor, Inc.

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NAR NEWS A

TAVARES NAMED AS EDITOR OF MODEL ROCKETEER

Chris Tavares, NAR Trustee and editor of the NOVAAR Free Press, will take over the job of editing the Model Rocketeer starting in October. Mark Bundick will act as temporary editor of the Rocketeer until September.

Chris has had several years experience as editor of his section's newsletter, the NOVAAR Free Press, and his abilities are attested by the fact that the NFP has been the winner of the LAC newsletter award for the past two years (and will probably win it this year). We can all look forward to great things from the Model Rocketeer in the future.

The only unfortunate result of Chris taking over as editor of the Rocketeer is that the NOVAAR Free Press will no longer be published (No Freep?!?! How am I going to find out what is going on in the world of rocketry?). The demise of the Free Press is unfortunate and I suspect it means that the View From ZENITH will have to take over the monumental task of keeping SNOAR News in second place, uh, I mean, of keeping rocketeers informed. Seriously, a better choice of editor could not have been made. Besides, I am looking forward to seeing the cover of next February's Rocketeer (come on, Chris, do it!).

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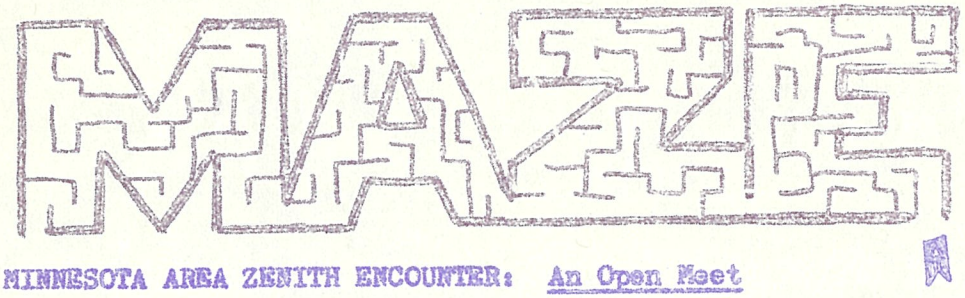


MINNESOTA AREA ZENITH ENCOUNTER: An Open Meet

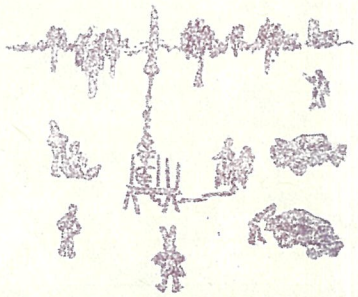
Yes, friends, listen carefully because we are not going to change it again. MAZE will be an Open Meet (not a Regional Meet as reported last issue). This decision makes the most people happy and better fits the list of events. The meet will be held at the Mankato Old Airport and will run from 7:00 am to 5:00 pm, with the morning reserved for timing events and the afternoon for altitude. Duration events may also be flown in the afternoon if enough help is available.

EVENTS:
- ¼A Parachute
- ½A Streamer
- ½A Helicopter
- ½A Boost Glide
- A Rocket Glide

- B Eggloft Altitude
- B Superroc Altitude
- Predicted Altitude

CONTACT: Tom Beach
315 Common Street
Waterville MN 56096

ENTRY FEES:
- A Division: Free
- B Division: $1.00
- C Division: $2.00



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ZENITH II, ETC

ZENITH 2 was scheduled as Zenith's second section meet of the year, but since we still had not seen a new pink book, it was decided to hold the contest as an unofficial competition. Also scheduled for that day was a fun launch for the 4H kids and an Apollo 11 / Skylab Commemorative launch. The weather was good, although slightly windy, and five Ze-Knights, a dozen 4H people, four NAR members from the Twin Cities area, several interested spectators, and one newspaper photographer showed up for the event. Not too shabby.

The range was set up by 1 o'clock and the 4H kids got a chance to fly the models they had built that Wednesday at a workshop put on in the Mankato Mall by Tom Beach and Dan Lundquist. After all the kids got in a few flights, most of which were complete successes, an impromptu spot landing contest was started. Everyone competed, and the contest was won by Zenith member Jim Whitehead, with Teddy Buehler in second place, and three 4H kids taking the rest of the places. The fun flying ceased by 3 o'clock and we set up for the Apollo 11 launch. First a brief review of the space program was flown starting with Dan Wolf's "Sputnik", John Beach's Mercury Redstone, Dan Lundquists Gemini Titan, and then came the Apollo launch. Dan Lundquist had prepared a seven minute edited tape presentation on the Apollo 11 flight which started with President Kennedy's speech to Congress and culminated with the Apollo 11 countdown. As the count reached zero, John Beach's Saturn V with an E20 lifted off with the roar of the real Saturn coming over the PA system. As the Saturn ejected its chutes and drifted in, the tape played the Apollo 11 moon landing sequence. A short discussion of the future of space travel lead into a count down for Dan Lundquist's Space Shuttle, and the tape ended with some words of Wernher von Braun. A nice presentation.

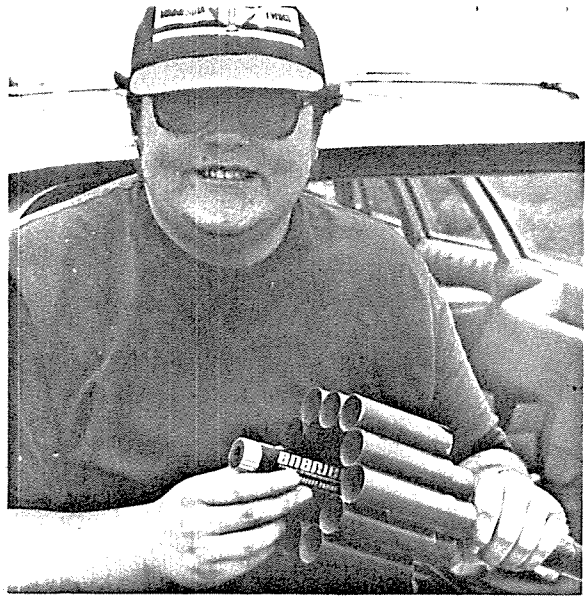
The rest of the day was spent flying the unofficial contest, and anyone was allowed to enter. Several people found out the advantages of the new pink book's modified return rule by losing their first flights to the wind god and still qualifying with a substituted junk-roc. Most of them found out it was just a pain since they HAD to fly a second time if they expected to win.

We will not list all the results since it's unofficial anyway, but suffice it to say that John Beach took the blue ribbons in B B/G, ½A PD, ¼A SD, and while Donald Miller took first in A MD, Teddy Buehler won first in ¼A B/G. Most Zenith rocketeers put forth little effort in competition, which was expected.

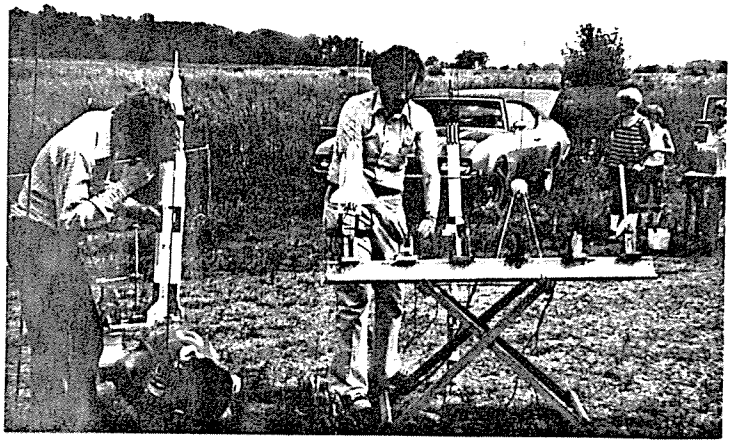
The day ended with a special Memorial Flight for Skylab, which had bought the farm just 11 days before. But what rocket would be a fitting tribute to the great tin can? The "Incendiary Saturn!" (gasp!). Tom Beach's Saturn V had meet up with an Estes D12 cato special several years earlier which had blasted out the interior tubes and engine mount from the model. With a little corrective surgery and a 19 (that's right) engine cluster, the Incendiary Saturn was born. The 19 engines consisted of 2 B14-7, 5 B14-5, 4 B6-4, 6 B4-4, and 2 A8-5 motors, which filled the four ounce propellant weight limit. The model was set up with a mass of flashbulbs in the tail and put on the pad after most of the spectators (and the newspaper photographer) had left. At ignition, 19 flares shot out of the rear of the model and the bird lept into the air. Anyone standing within 20 feet of the pad was showered with dirt, and half the people down wind succumbed to smoke inhalation. The boost was very impressive, but the recovery system failed and the Incendiary Saturn did a fairly good imitation of "Skylab Recovery". We are informed that this was NOT intentional. The Saturn was demolished.

A very fun day for all, and I just can't wait for 1989 when we can do it all over again!

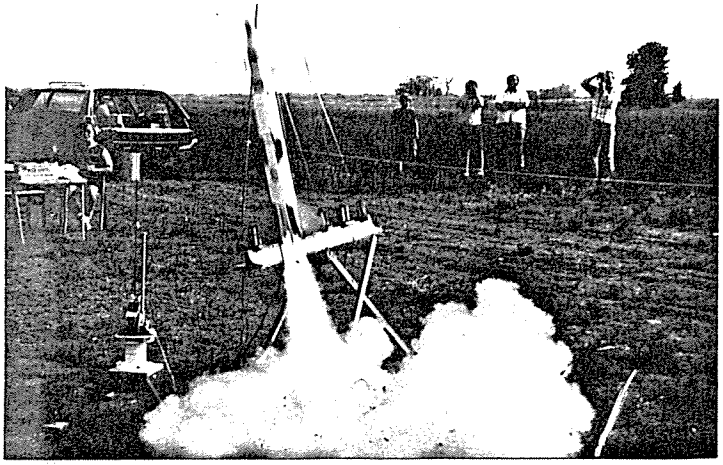
PHOTO PAGE



Donald "F-man" Miller shows his lack of respect for old engines and his love for impulse. As engine collectors watched in utter horror, Donald launched an Enerjet F engine and a Mini-Max F94 (right).
Photos taken (under protest) by Tom Beach



The ZENITH 2 unofficial contest was held along with several other activities: Left, a few of the 4H kids getting their first taste of rocketry. Right, John Beach and Dan Lundquist set up models for the Apollo 11 Commemorative launch.
Photos by Tom Beach and Donald Miller



In memory of Skylab, Tom Beach launches his "Incendiary Saturn" with a 19 engine cluster of assorted B's and two A engines (four ounce limit on propellant). The boost was fantastic (all 19 engines fired) but the recovery system failed.
Photos by Dan Wolf and Donald Miller

WORDS FROM THE WOODS: SAFETY

by Matt Odenbrett, Ze-Knight of the North

How many of you readers believe that model rocketry is in grave danger? How many of you know of the great number of young people who are breaking the safety code of model rocketry and therefore risking their lives? Most of you probably would not believe how many accidents and reckless misusage of model rockets there is. I know of certian young people from the ages of 10 to 14 who have a disregard for the safety code, and who need some kind of guidance and organization to keep them safety minded. Let me give some examples:

Two youngsters launch a model rocket in the dry grass at the airport. In their excitement to recover the model, both chase after it, not noticing grass set alight by the still hot igniter after it was shot out of the motor. The fire spread, and by the time fire-fighters put out the blaze, several acres had been burned.

Several youngsters launched a clustered egglofter - one of the engines had been soaked in gasoline. They told me how the model blew up in mid-thrust with a "Kaboom!".

Another youngster couldn't wait for the glue to dry on his staged model kit before he launched it on its maiden flight. Predictably, the model did a very interesting and not at all safe strip tease during boost. The reckless youngster explained what happened to me, "The engine rammed its way through the model and out the nose while all the fins fell off." The model had been launched near some "kindling wood" buildings and a pile of hay. The fire danger is apparent.

There are other horror examples which run along the same line. Although some of these kids were the naiive type who glue in the empty casings included in Estes kits (making their models useless), others deliberately broke the safety code for fun. I even know of a science teacher (who is going to blow his hand off some day) who uses Model Rockets as a project for his classes. He launches the students models using two 6 volt batteries and two 2 foot long pieces of wire. That's right, no ignition system, no switch of any kind. I hope he has a good insurance policy.

It's obvious that eventually this continued disorganized activity will lead to a very bad accident, one that will lead to a bad public opinion of model rocketry and perhaps to tight government control of the production and sale of model rocket supplies. We cannot let an accident involving model rocket products happen, and it is our responsibility to prevent it. The best way to prevent these new "basement bobmers" is to get around to all youth groups - 4H, Boy Scouts, etc - that have some kind of rocketry project and explain to them the dangers of breaking the safety code, and the fun they can have within it. Other ways include traveling to schools where there are rocketry programs and explaining what can be done and what should never be done with model rockets. Better yet, get around and organize groups of rocketeers to teach them respect for the safety code. The point is that we must get in contact with as many rocketeers as possible and set them straight before one of them blows a hand off or starts a house on fire!

Minnesota is one of the "frontiers" of NAR organized rocketry. If we are ever going to "settle" this area, then we, Ze-Knights, must do some pioneering. In a future article I'll tell you how I am trying to tame these "savages" of the North woods. In the mean time, what are you doing?

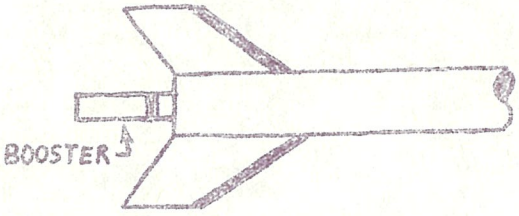
CHAD* STAGING

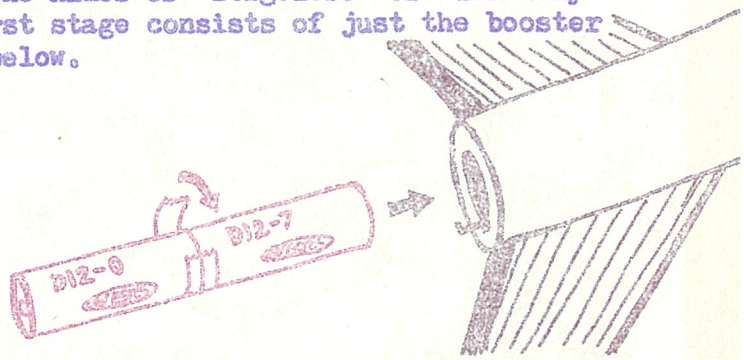
6

*CHeap And Dirty

Would you like to see your Maxi Alpha <u>really</u> move or see your Mean Machine go almost out of sight? Would you like to see this without having to spend great amounts of money buying big engines like your hero "F-man" Miller does? Would you be interested in a method of doing this that involves absolutely NO modification to your model at all? Then try CHAD Staging!

CHAD Staging is not a new idea at all, and if you have been around long enough you may have run accross it under the names of "stageless" or "uni-body" staging. The idea is very simple: the first stage consists of just the booster engine, with no airframe around it. See below.

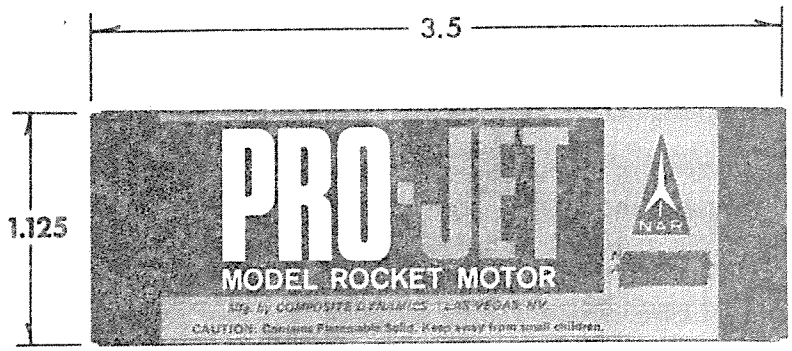




The model is very easy to prep. Simply use a single wrap of cellophane tape to tape the engines together (in normal staging manner) and insert the upper stage motor into the body as normal. If the upper stage uses an engine hook, just let the hook rest on the booster engine casing, as it will snap down into position when the booster engine leaves the party. Launch the bird as you normally do. When the booster engine burns out, the upper stage ignites and the booster casing tumbles in. This arrangement has the advantage that if the casing lands in nasty tall weeds or a lake or whatever, you lose only a worthless casing and not a first stage you spent good money on. Please note, however, that this is not an excuse not to recover the casing. The engine should be recovered when possible since we don't want the things laying all over the launch field. You will probably be suprised that it is just as easy to find the lower stage casing as it is to find a first stage, mainly since the casing drops straight in, usually into the clear area we launch from and not somewhere out in the weeds. So far we have recovered all but one of the casings we have used in this manner.

Important: This method will not work for all models (and can't be used at all during competition, where falling casings are prohibited). CHAD Staging will work on any model that is stable with the extra casing taped on the rear. Most models that are overly long or have too much fin area will fly successfully this way. In case you are not sure, either swing test the bird, or check its stability by using Centuri technical report TIR-33 (you do know how to use TIR-33, don't you?). Some models that we found work quite well are: a Mean Machine with D12-0/D12-5, a Maxi-Alpha with D12-0/D12-5 (both of those also work well with D12-7, and both will probably work with D12-0/D12-0/D12-7 but check stability first), a Maxi-Brute Honest John on a D12-0/D12-5 combo, a Cobra 1500 with a D12-0/C6-7 (just shove the D12 around the C6 casing). Most of the larger Estes or Centuri models are designed with stability to spare and are good candidates for this. Give it a try, it works!

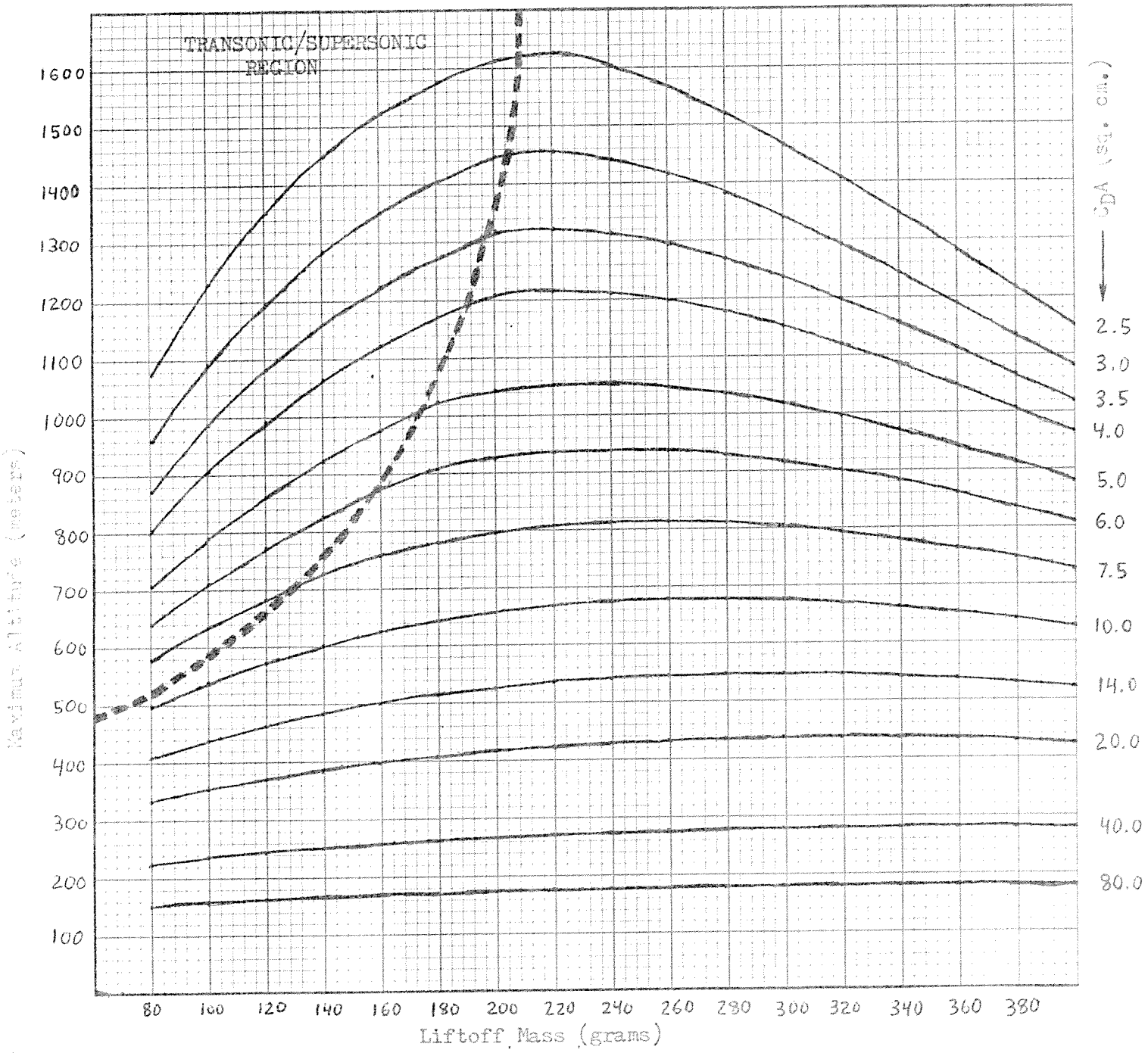
PRO-JET
CORE BURNERS T.M.
by COMPOSITE DYNAMICS



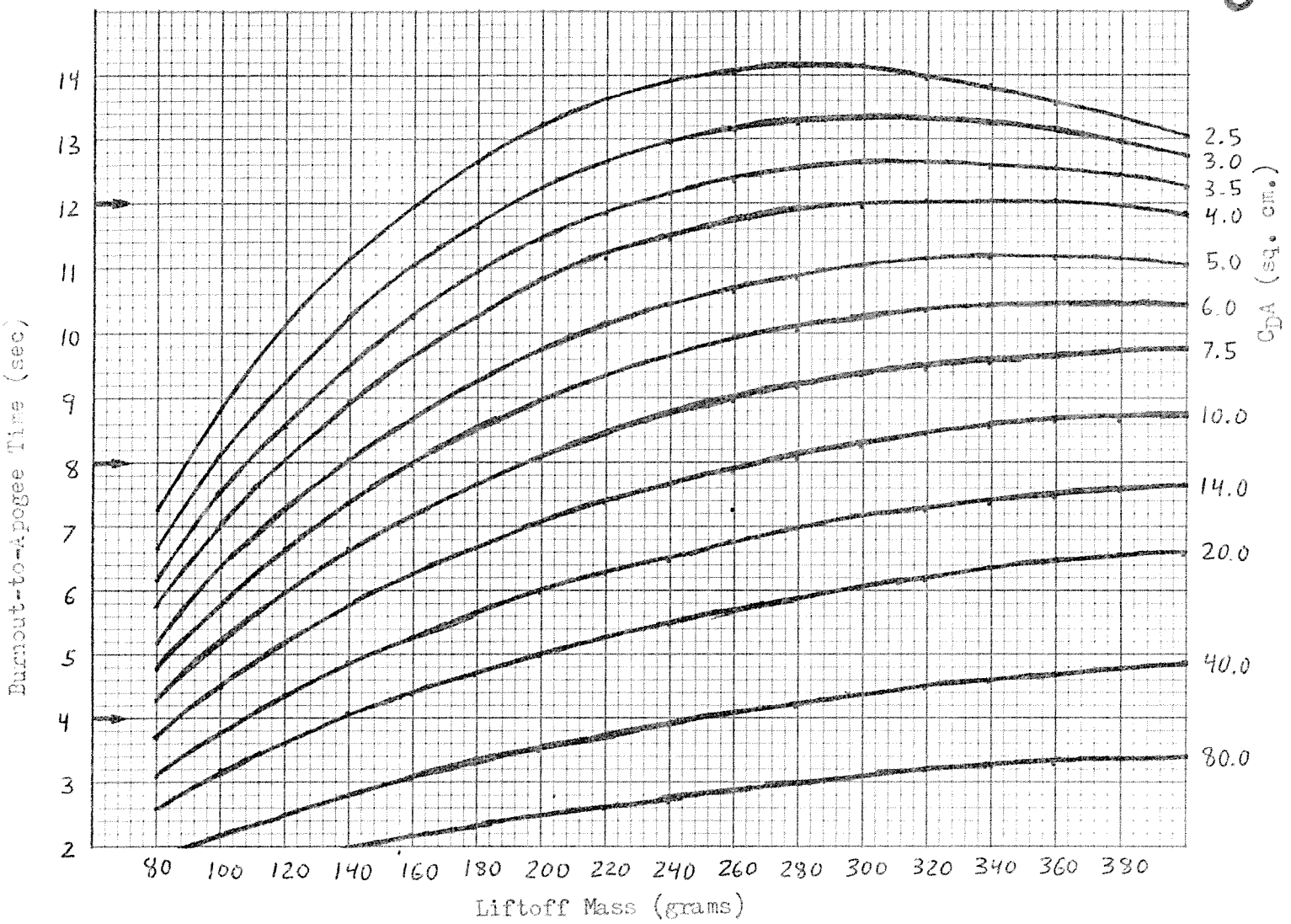
F45

Soon to be available (so we are told), so here's the data:

MAXIMUM ALTITUDE CHART



F45 BURNOUT-TO-APOGEE CHART



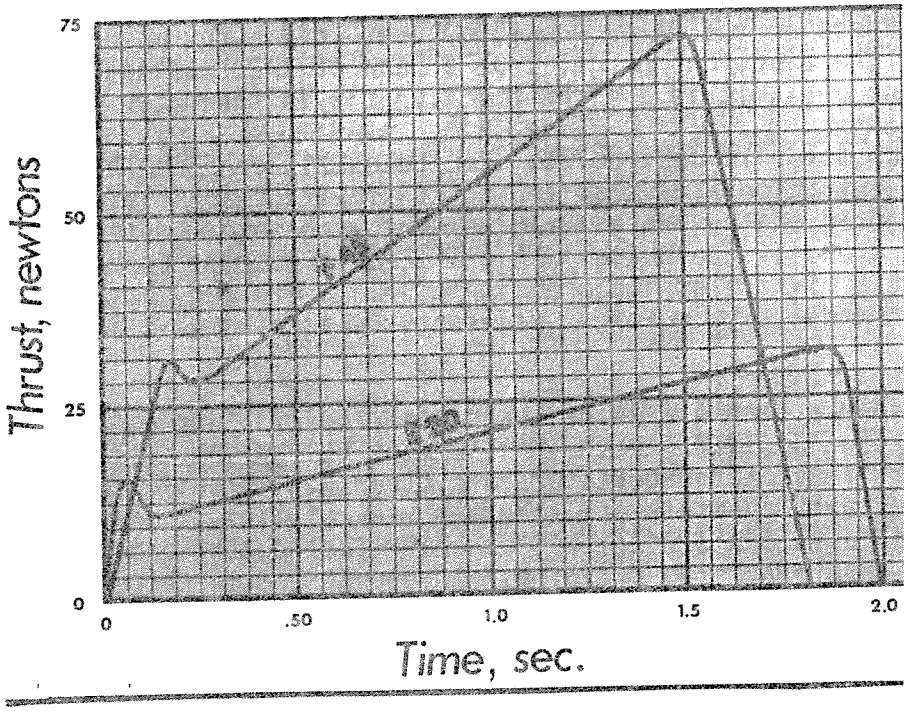
PRO-JET ROCKET MOTOR SPECIFICATIONS

Catalog No. NAR Code	Total Impulse lb-sec	N-sec	Thrust Duration
F45-4 F45-8 F45-12	17.9	80	1.8 sec

Initial Weight oz	g	Propellant Wt. oz	g	Delay Time
2.96	84	1.5	42	4 8 sec 12

CONPOSITE DYNAMICS
P.O. BOX 4337
North Las Vegas, NV 89030

Typical Time-Thrust Curves

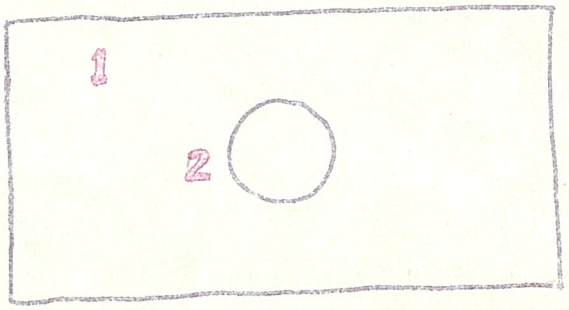


TIPS

A SUBSTITUTE FOR CHUTE WADDING

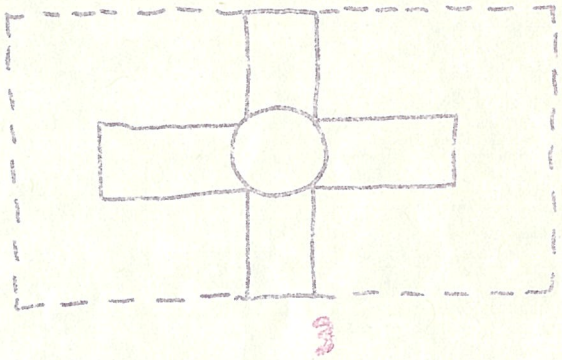
by Dave Babulski NAR 29716

The recent truckers strike has taken its toll in recovery wadding! A search of all hobby shops in the Minneapolis-St. Paul area showed none in stock. Not wishing to fly without wadding (melted chutes are not my bag) I began a search for a substitute. While rummaging through shelves, I came up with some old aquarium filter material. A-ha, I thought, I bet this will work! A check with a match showed that the spun nylon material would melt. However, by providing a masking tape cap for protection, the melting problem can be solved. Several static tests and flight tests showed no melting of the filter material and negligible damage done to the masking tape cap. The wadding assembly provides an efficient gas seal for protection of the recovery device and flight tests have showed that the assembly works well. The following is a step by step procedure for making the recovery wadding assemblies:



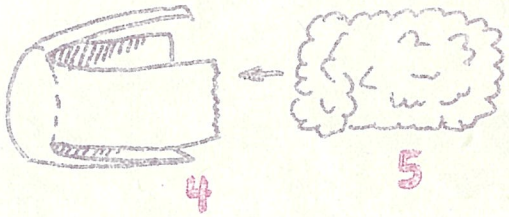
STEP 1: Lay out a four inch length of two inch wide masking tape on a smooth, flat, clean surface.

STEP 2: Using a body tube as a guide, draw a circle on the center of the tape.



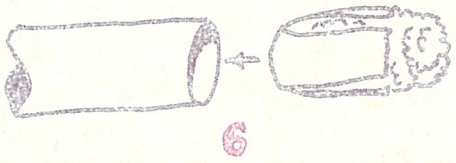
STEP 3: Cut away tape to create a cross with the body tube circle in the center.

STEP 4: Carefully peel the tape cross from the work surface and form it into a cup.



STEP 5: Place a small wad of aquarium filter material in the masking tape cup.

STEP 6: Insert the wadding assembly in the body tube with the tape 'cap' facing the engine compartment.



If anyone tries this method, write and let me know how it works for you. -DB

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RANDOM ACCESS

WORKSHOPS FOR CUB SCOUTS AND FOUR H

In the past month Zenith members haveassisted the Waterville Cub Scout pack and the Mankato 4H in introducing their kids to the world of model rockets. The workshops for the Cub Scouts was run by John Beach and over 20 scouts built Estes "Wizard" kits. The following week, John and Tom Beach supervised a contest for the scouts where they flew streamer duration and spot landing.

The building session with the 4H was arranged by Dan Lundquist and was held in the Mankato Mall. A dozen 4H youngsters built alphas in front of the crowds of shoppers as part of an overall 4H activity week in the Mall. Those kids that wanted to were given the chance to fly their birds that Sunday at the ZENITH 2 contest/fun launch. A spot landing competition was held for the group and some of them entered a few events in the ZENITH 2 contest.

Arranging a workshop for this type of youth group turns out to be fairly easy and quite enjoyable. The models that the kids turned out were quite nice, with some of them being excellent. All it takes is having someone close at hand to answer questions and spots mistakes before the glue sets. One 4H leader commented that she was amazed at the fact that the kids actually sat still for over two hours. Not many things can hold their interest that long.

COMPOSITE DYNAMICS SPEAKS

Gary Rosenfield of Composite Dynamics looked over the casing that had the interesting failure at Sky High 4. The E20 engine had suffered from low thrust for a long period of time and had completely burned through the casing ahead of the nozzle, burning the engine in two pieces. Mr. Rosenfield says that it was a case of the igniter being installed incorrectly, and that it had apparently slipped to the rear of the motor before ignition. He reports that they have had similar results from engines that they deliberately ignited incorrectly. It seems that the very thin casing of the E20's will not take the wear of uneven combustion, so it is very important that you make sure your igniters are all the way up into the chamber. Install the igniter properly and tape it securely in place to make sure it stays there.

LAC NEWSLETTER AWARD

We have learned from Doug Kushnerick, chief judge of the LAC newsletter contest, that only six newsletters have survived the contest year putting out regular issues. The six are: Cal*Star, Midwest Rocketeer, Orbital Report, SNOAR News, NOVAAR Free Press, and the View From ZENITH (cheer!). A high quality nieghborhood, and we can be proud of any place we take in it.

FSI D20 BLUES

We have recently had all of our FSI D20 engines giving us trouble. The D20 is supposed to have a thrust curve that looks like a single, sharp spike. What we have been getting instead, is a sharp spike followed by a long burn of sustainer thrust (two or three seconds). This resulted in some really nice prangs (for those who actually like prangs) and you may want to keep this in mind when you shove an FSI D20 in your model.

******** SECTION SCHEDULE ********** SECTION SCHEDULE ********** SECTION SCHEDULE **********

AUG 5-10	NARAM 21	Houston Texas. If you don't know about this by now, you can forget it.
AUG 16	Meeting	NARAM report. Butterworth slide show. Great fun.
AUG 19	Z.A.M.	Annual section meet. Old Airport 1:00 o'clock EVENTS: Sport Scale, C Eggloft, B Superroc, ½A Altitude, C Altitude, Predicted Duration
SEPT 1-2	SHOOTING STAR 4	Tomah WI. Regional Meet. Zenith will attend. EVENTS: D R/G, A SR Duration, A SD, ½A SD, ½A PD, A Int B/G, ½A B/G, B EL Duration, Pre.Duration CONTACT: Scott Zingler, 324 W. Milwaukee St, Tomah WI 54660
*** SEPT 8	MAZE	Minnesota Area Zenith Encounter. Open Meet. Old Airport 7:00 am CONTACT: Tom Beach EVENTS: ½A SD, ½A PD, ½A HD, ½A B/G, A R/G, B Eggloft Alt, B Superroc Alt, Predicted Alt
SEPT 30	MORT	Minnesota Open Record Trials. Any event you want to try. Entry Fee: $1.00

Section meetings are held in the basement of the Mankato Law Enforcement Center at 7:00 pm until 9:00 pm every third Thursday of the month.

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View From
ZENITH
315 Common Street
Waterville MN 56096

CHRIS TAVARES
8468 FALLING LEAF ROAD
SPRINGFIELD VA 22153

Subscription Backlog

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CONGRATULATIONS TO THE NEW EDITOR OF THE ROCKETEER! A BETTER CHOICE COULD NOT HAVE BEEN MADE. LET US KNOW IF YOU WOULD LIKE ANYTHNG IN PARTICULAR SUBMITTED FOR PUBLICATION (USING THE V.F.Z. AS A GUIDE OF WHAT WE HAVE TO OFFER). SEE YOU AT NARAM!

— TOM