



JANUARY/FEBRUARY 1985 VOLUME 8, NO. 1
WINNER OF THE 1984 LAC NEWSLETTER AWARD

### **EDITORIAL**

by NIRA's Newest Editor

Hi! I'm Larry Mika, the new editor of the Leading Edge. I just want to take some space to thank Ric Gaff for doing a wonderful job on the club's newsletter for the last six years. Many people don't realize how difficult it is to produce a two-time LAC award winning newsletter. Believe me, it's hard! Ric has given the Leading Edge direction. I plan to keep the same basic format, but I would like to hear some ideas for new columns and stories. Remember, this is your newsletter, and you only get out what you put in.

We will have a new advice "Dear column called Know-It-All". (Great. Rocket J. Squirrel is a good friend of mine. - Bunny). I will be answering all your questions from basic on anything building tips to advanced modeling, glider construction and competition strategies. Just give me your questions. I won't print your name if you don't want it printed.

Ric has greatly helped me getting started, but I need your input to keep producing a quality, informative newsletter. Don't forget to thank Ric for a job well done!

Larry

# T minus 1

MONTHLY NIRA MEETING Mar. 1 G.E. Civic Center 7:30 PM

Final planning for Park District classes. Plans for 1985 flying season, including contests.

ROCKETRY CLASS #1 Mar. 23 Main Street Rec Center,1-4 PM 501 Hill Avenue, Glen Ellyn

TOPICS: Basic Construction, Designing Your Own Rockets

ROCKETRY CLASS #2 Mar. 30 Main Street Rec Center,1-4 PM 501 Hill Avenue, Glen Ellyn

TOPICS: Basic Finishing, Plastic Model Conversion

MIDCON III Apr. 12-14
Warren, MI (Detroit area)
A fun model rocket convention
for all!! Contact: Woody
Woo, 24001 Moritz, Oak Park,
MI 48237

ROCKETRY CLASS #3 Apr. 20 Main Street Rec Center,1-4 PM 501 Hill Avenue, Glen Ellyn

TOPICS: Recovery Devices, Scale Modeling

ROCKETRY CLASS #4 Apr. 27 Main Street Rec Center,1-4 PM 501 Hill Avenue, Glen Ellyn

TOPICS: Designing Your Own Rockets, Competition Models

NOMID-85 Contest May 4-5 Fenton, MI EVENTS: C ELA, B SD, A RG, C BG, B HD, SP SYS, PRED ALT. More info upcoming.

### **ELECTION RESULTS**

With 100% of the princents reporting, here are the results of the January 4, 1985 NIRA club elections.

PRESIDENT

Mark Schmitt - 10 votes Tim Marcy - 5 votes

VICE-PRESIDENT
Tom Pastrick - 10 votes
Tony Lentini - 5 votes

SECRETARY-TREASURER

Bob Kaplow - 12 votes Tony Lentini - 1 vote Pat Peterson - 1 vote Garfield - 1 vote

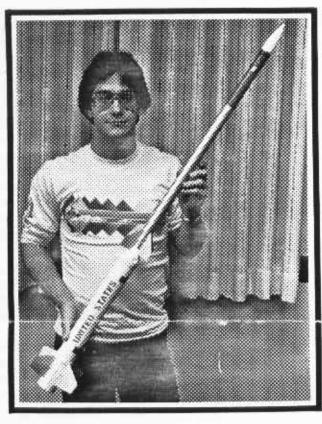
Congratulations to the winners, and thanks to Bunny for doing a wonderful job as our President over the past five years. The club wouldn't be the same without his efforts. How about a round of applause for the Wabbit?

### CONTEST NEWS

by Larry Mika

Well, it looks like this is to pounce on our year PULSAR. Our competition schedule, still tenative, bunch of basically a NARAM-27 events. NOMID-85, May 4-5, will be flown for club points; events are: Pred. Alt., C ELA, B SD, A RG, C BG, Space Systems. We are also flying three Open Meets, May25-26, June 8-9, and June 22-23. The events are: A RG, B HD, B SD, C SRA, D ELA, 1/2A BG, A PD. Try to get out and fly these meets!!! The scheudle is much lighter than last year's, so you don't have to build as much.

# MODEL OF THE MONTH WINNERS



The Model of the Month Winner for November is Larry Mika and his large Nike-Tomahawk scale model. Congratulations, Larry!



The Model of the Month Winner for December is Larry Mika and his plastic model SPEV. Congratulations, Larry!



THE LEADING EDGE

COVER PHOTO: Curtiss Jameson readies his SR-71 Blackbird.

is published bimonthly by and for members of the Northern Illinois Rocketry Association, NIRA, NAR Section #117, and is dedicated to the idea that Model Rocketry is FUN! Membership dues are \$3.00 per year and include a one year subscription to the Leading Edge. Non-member subscriptions are available for \$5.00 per year. All membership and subscription fees should be sent to: Bob Kaplow, 1628 Waterford Lane, Palatine, IL 60067. Articles, plans, other newsletters and news items of interest should be sent to Larry Mika, 7903 Iroquois Court, Woodridge, IL 60517. Any material published in the Leading Edge may be reprinted by non-profit groups if proper credit is given.

### **CONTRIBUTORS**

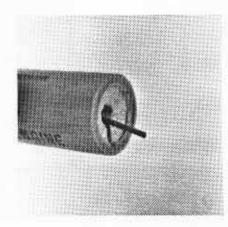
BUNNY RIC GAFF LARRY MIKA LEADING EDGE STAFF

EC!TOR - Larry Mika
PUBLISHER - Ric Gaff
HALFTONES - Tom Pastrick
TYPIST - Bunny

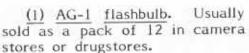
### FLASHBULB CLUSTER IGNITION

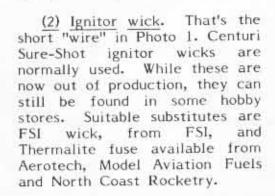
Gettin' 'Em All To Go by Ric Gaff

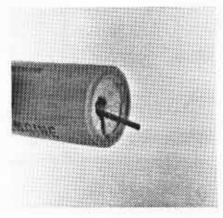
(3) Two 6 inch lengths of 22 gauge stranded wire. It's a good idea if they are different colors, e.g. red & black or black & white. This will cut down on confusion later. Both ends should be striped, 3/4 inch off one end and 1/4 inch off the other.

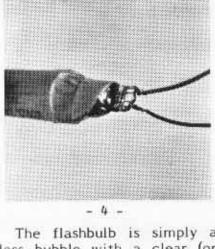




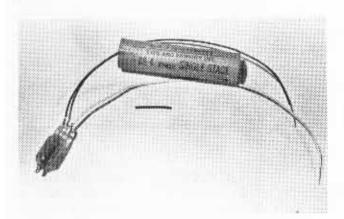








The flashbulb is simply a glass bubble with a clear (or blue) plastic coating to keep it from shattering when it is fired. At one end of the bulb are a pair of electrical contacts. Each contact is in the form of a bent over loop of wire. Unbend the loops so that they stick straight out from the bottom of the flashbulb. The short striped end of the stranded wire is then inserted into the loop. The wire is bent tighty around the loop and then crimped with a pair of needle nose pliers. Crimp tightly but carefully. Photos I, 3 and 4 show a finished flashbulb. Soldering can be done, if done carefully, but is not really necessary. generally like to sit down and crank out a bunch of flashbulb ignitors for future use rather then waiting until I need them.



Four feet of rip-snortin'

rocket sits on the pad. At zero, there is a bright flash under the model. For a heart

stopping moment, nothing else

happens. Suddenly, with a

roar and billows of smoke, the model blasts into the sky

on its cluster of 3 D12's. It's

the most impressive model

you've ever seen, but in the

back of your mind is the

question "How did he get 3

motors to fire at the same

time?" Then you remember

bulbs to ignite engines is an

old and well established

technique. First introduced in

1971 by John Langford, I saw

my first use of it at

NARAM-15 (1973, Columbus,

Ohio) where it was used to

fire a 30+ engine cluster of

mini engines. Thirty

engines! Not good for

anything, but it did show how

well flashbulb ignition could

work and very dramatically,

too! Since then, flashbulb

ignition has revolutionized

clustering, turning a clumsy,

often dangerous technique into

an engine is somewhat more

difficult then using a Solar

ignitor, but not too much

more. To make your first

FBI you'll need the following

Using a flashbulb to ignite

a very reliable one.

parts:

The use of photoflash

the bright flash...

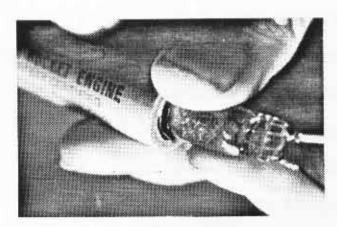


Photo 2 shows the next ep after all the bulbs are wired. Simply place ignitor wick into the nozzle, put a flashbulb against the wick and push it into the nozzle as far as it will go (Photo 3). Wrap a piece of masking tape spirally around the end of the engine and over the flashbulb (Photo 4). This will hold the bulb to the engine as a single unit. Put the motors into your model (Photo 5) and twists the bare ends of same colored wires together. You will then have two electrical contacts (no matter how many motors you use) to which you can hook your launch controller and blast-off!

One word of caution when checking continuity, DON'T!! Flashbulbs are sensitive and need very little power to fire. This is, of course, why they work so well for Many launchers clustering. can set off flashbulbs when checking continuity. Until you're certain whether or not your launcher is flashbulb safe, it's better to play it safe and expect your ignite model to when continuity is checked.

Clustering is an exciting and useful technique, as well as a lot of fun, in our hobby. Try it sometime!

### ROCKETRY CLASSES APPROVED

by Bunny

The Glen Ellyn Park District has given tenative approval for our rocketry classes. They are quite happy to offer this, and are even willing to experiment! So, let's show our appreciation to the Park District by running a super set of classes.

We had to be somewhat flexible on dates, so things will get a bit busy in our schedules. The dates for the classes are March 23, March 30, April 20 and April 27. All classes will be held at the Main Street Rec Center, 501 Hill Avenue, Glen Ellyn. Classes will run from 1 to 4 PM.

Fees will be \$5 per person for all four classes. The fee will cover the rental of the rec center, and some finishing supplies. Beginning rocketeers should bring a Skill Level 1 or 2 kit; advanced rocketeers; a Skill Level 3-5 model.

The Park District will be advertising this class to their folks at the beginning of March, Those members living in Glen Ellyn may want to watch for the Park District's regular brochure around then.

Topics will be split between beginner and advanced. The subjects picked are listed below in the order they will be taught. Topics selected were:

BEGINNER TOPICS: General Construction, Basic Finishing, Recovery Devices, Designing Your Own Rockets.

ADVANCED TOPICS: Designing Models, Plastic Model Conversion, Scale Modeling, Competition

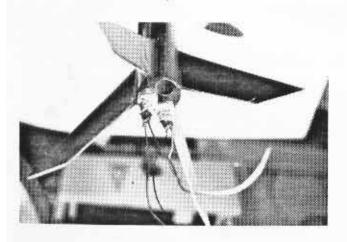
Don't miss out on this opportunity to get the "scoop" on how-to's from the club's Jedi Knights. See you on March 23rd.

### DEAR MR. KNOW-IT-ALL

Q: Dear Mr. Know-It-All: How can I fill those nasty body tube seams easily?

A: Well, Bullwinkle, go to a True Value Hardware store and get some "Hi-Q Spray Enamel", No. 1341. Make sure you get "Flat White", because other colors won't work. Give the seams two heavy coats, sand and repeat. This paint is easily sanded with 220 Wet-or-Dry sandpaper. and is compatible with Testor's enamel paints.

Remember, boys and girls, to send in your questions!





Only four members showed for this freezing fall flight day. We prepared in our cars and only got out to fly and recover our models.

Curtiss Jameson flew an originally designed payloader. Henry Veldenz launched his now famous "Potato Salad".

This was supposed to be the day to fly "Sillycon I", so Larry Mika and Tim Marcy brought their "Uglyrocs". Tim's looked like a Quaker Oats container with cardboard fins and a long bamboo fishing pole for a nose. His motor choice was unusual, a D20 booster to an E5. The the model D20 propelled straight up , but the E5 The smoldering detonated. scraps littered the launch site. Larry shot his uglyroc next with a two D12 cluster. It was barely under the weight limit, and it arced over to complete its "flight" horizontally. A split second after ejection, it landed in a tree.

Tim tried his A Heavyroc, made almost entirely of Lego blocks. It only got about 5 feet off the ground. Larry had his FPSM Astrocam on





hand (and an E60 in the other!). Earlier in the day, it withstood a D12 cato and for some reason, the E60 actually worked. The shock cord snapped, the Astrocam was recovered, but the booster was eaten in a black hole.

Remember, we'll fly Sillycon I for real in the spring! Bunny has the prizes ready, so be there!







Never, never do this.

Tom Pastrick checks his "Sea Venom".



. . . the launch!!!



Presto! It's back in kit form.

### DECEMBER CLUB LAUNCH

A few more members came out of hiding for this launch than the last November effort. Tim Marcy and Curtiss Jameson made some decent flights with SR-71's. Larry Mika flew his FPSM Astrocam with a bunch of motor combos; D12's, CHAD-staged D12's and an E60.

Ric Gaff decided to His actually launch. "Pyramid" made its standard, laughable flight. Tom Pastrick flew an unusual BG (I wasn't aware Tom had any other kind of BG. - Bunny), and an oddroc that looked like an orange with four dowels for stability. members were involved with a school R&D project on the relationship between rocket length and duration.

Tom tried his "Sea Venom" plastic model again. I think it actually worked once, but this time it pranged on the gravel. There is a serious plastic model tip to be learned out of this. Pick a model and stick with it. It might auger in a few times, but eventually you'll learn all the tricks of getting it to fly correctly.

Build a plastic model and bring it to the next club launch. Join the exclusive Plastic Model Prangers Association of NIRA! See you in the spring.

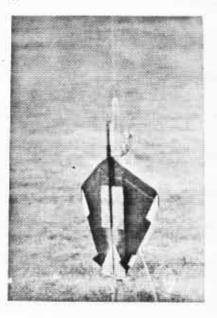




Larry Mika's E60 powered FPSM. Look for the "fire and smoke" plans in this issue.



Ric Gaff gets mesmerized by pyramid power.



Tom Pastrick's unusual BG.

Army By 1957, the Ballistic Missile Agency was studying the prospects for future U.S. missles. One of these missiles, known "Missile D", was planned to cover ranges of between 80 and 800 miles. In 1958, the Wilson Memorandum forbidding U.S. missiles to exceed 200 miles range was rescinded, and the whole project was at once launched (so to speak). Pershing, as Missile D was named, was handed over to the Martin Company, now Martin Marietta.

original form, In its Pershing I comprised a neat two-stage missile deployed as a "Fire Unit" on four tracked One carried the vehicles. erector/launcher and missle body, another the programmer test station and power station, another the radio terminal set and the fourth, the nuclear warhead and azimuth laying equipment. Assembled, the missile was raised vertically, the erector arm lowered, and the birdie fired remotely. Guidiance of the first stage was by three and three fins rectangular wedge fins on the second stage skirt. The re-entry vehicle incorporated new technology in sharp cone ablation.

In 1967, production switched to the Pershing IA. The same missile was matched with a new set of wheeled vehicles. The whole system was now transportable by C-130 aircraft, making Pershing a cross-country weapon. In 1976, European units got a new advance: the ability to fire up to three missles in rapid order from an unsurveyed launch site.

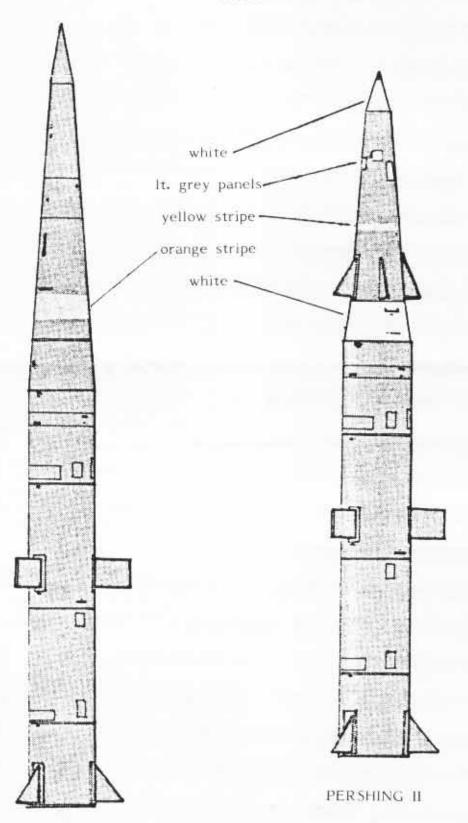
### SPORT SCALE DATA

for the Pershing I and II

by Bunny

Pershing I Data Length: 34' 9 1/2" Diameter: 39 1/2" Weight: 10,141 lbs.

Both are overall olive drab.



PERSHING I

Pershing II, a frequent opic in today's press and sore irritant to the Russians, is an advanced missile, with new radar correlation equipment. former 400 kiloton warhead has been replaced with one of lower yield because of the increased accuracy. Pershing II is now operationally deployed Europe. Big time competitor and NAR member Matt Steele used to service these things when he was in the Army. Mixing business and pleasure, eh, Matt??

Now you can fly your old Estes Maxi-Brute in Sport Scale. Hope you don't prang like the real ones do!

### "BULLET BOB SEZ"

Can you detect the minor detail errors on Larry's 1:100 scale Saturn V? Probably not. And scale judges won't notice either. That's because you can get away with using a 2-liter bottle for an Apollo capsule, an F-86 Saber plastic model for fins, any old body tubes, toilet paper for roll patterns, and cigarette butts for corrugations. Also twenty color "New Wave" camaflague will usually pass for white. Why can you build your scale model this way? Because and experienced modelers know the Golden Rule of Model Rocket Improvisation:

### ATTENTION NIRA MEMBERS!

If you have anyting you wish to sell trade, give away, or if you have a service to provide, you can still advertise it in the Leading Edge's Unclassified Ads. There is no cost to ye as a NIRA member. Ads may be run as long as necessary. To place an ad, contact Larry Mika, Editor.

### QUOTABLE QUOTES FROM NIRA MEETINGS

Ric Gaff wins the "Mr. Awareness" Award for sitting through an entire meeting before noticing an old NIRA member present. He then remarks, "Is that Pat over there? I'll be damned!"







## PARTS IS PARTS

**FPSM** This model can handle any by Larry Mika

legal motor D through F suitable with a adapter. The best flights are from an E60-8, F100-10 and composite core burners. Assembly is pretty much self explanatory, so I only hit the highlights.

RB-120 tube the Wrap with 3/4" wide masking tape as shown. Install an engine block and Titebond in place. Then cut three 3 1/2 x 1/16 slits in the BT-55. Squirt Titebond through the slits and install the fins. When dry, fillet heavily several times. Repeat until the slits are filled and the fins look like to attached they're outside of the tube.

Glue the NB-55 into the Install 6" payload section. the screw eye and six feet of 1/4" wide elastic shock cord. Make sure the shock cord mount is secure on the inside of the tube. (Gauze or cloth with epoxy is a good way to go for strong shock cord mounts. - Bunny) Attach the launch lugs in the positions shown.

For recovery, use a large cloth streamer, 72" x 6". Bright colors are best. Paint the model fluorescent orange for ease of recovery.

A High Power Payloader

PNC-55 OR ASTROCAM

> BT-55 NB-55

> > ALUMINUM

LUGS

If you use the FPSM for an Astrocam booster, extend the shutter cord so it will fit around the NB-55. It also helps to cut a small guide slot in the NB-55, similar to that in the Astrocam base. If you fly the bird with more than a D, use lots of tracking powder. By the way, this model is stable enough to fly with CHAD staged D12's.

Build the FPSM, and be some bring to sure binoculars!

18" BT-55 TAPE

RB-120

FULL SIZE MAKE 3 1/16 PLY WOOD

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# NIRA MEMBERSHIP LIST

COMPILED BY "BULLET" BOB KAPLOW



Larry Mika 7905 Iroquois Court Woodridge, IL 60517



