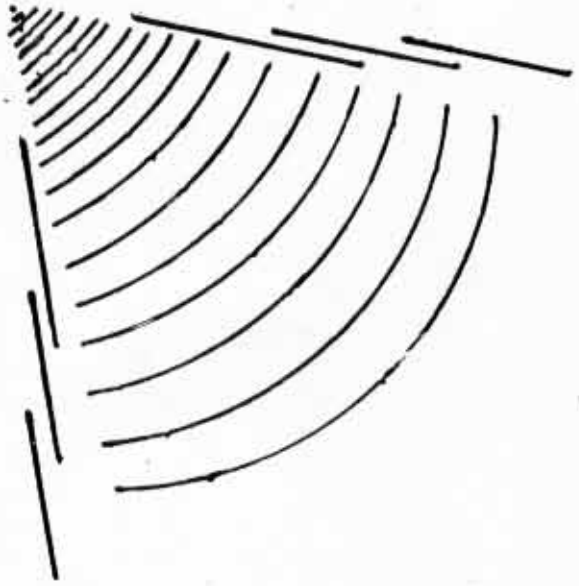
VOLUMN THREE, NO. SIX
NOV./ DEC. 1980

THE LEADING EDGE



Mark Schmitt and his impressive Saturn-V

LABOR DAY

George Riebesehl Jr. posing with a custom-design model.

LAUNCH

Mark Schmitt's Saturn-V roars into the air while a Ch.7 cameraman tapes it.

T minus 1

MONTHLY NIR MEETING Nov. 7 7:30PM

Glen Ellyn Civic Center.

CLUB LAUNCH Nov. 9 2:00 PM

Ackerman (North) Park. Certain to be the last launch of the year

MONTHLY NIR MEETING Dec. 5 7:30 PM

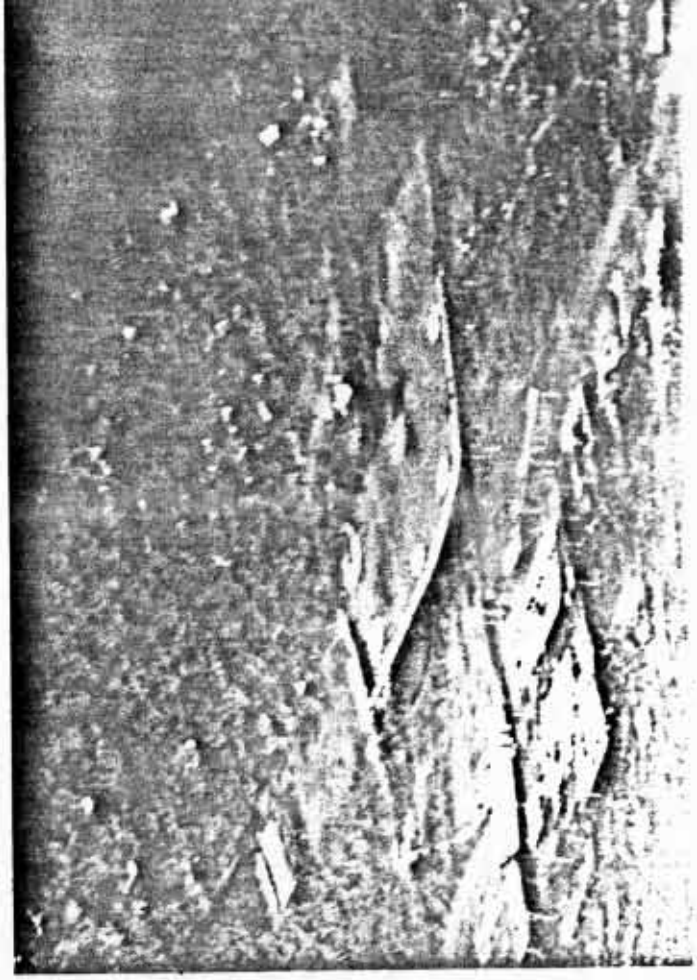
Glen Ellyn Civic Center

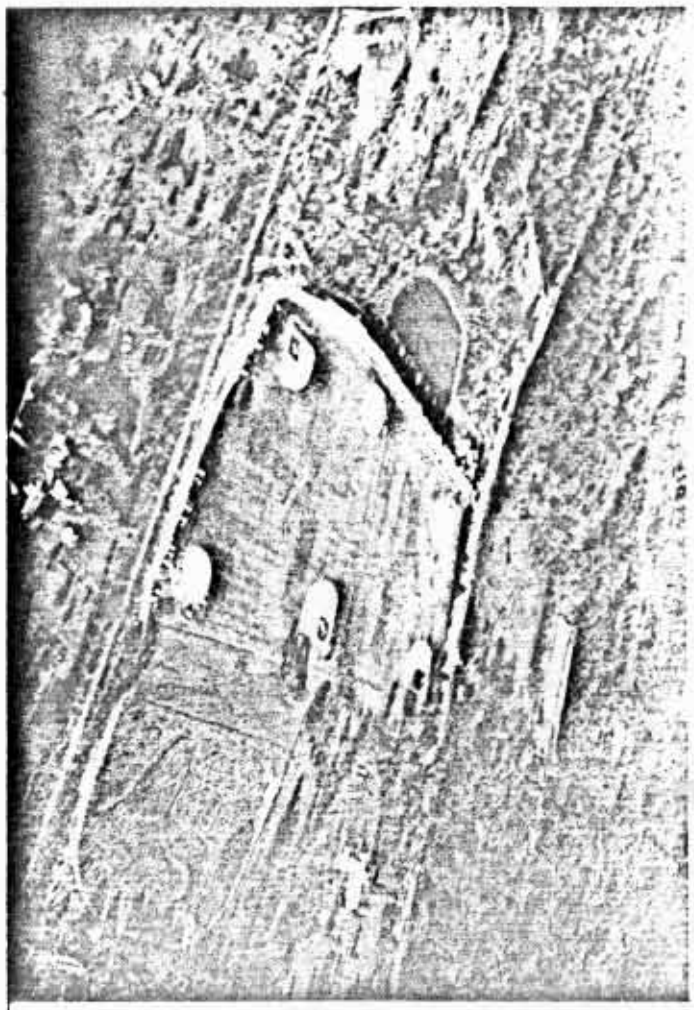
CONTEST CALENDAR

NARAM-23 August 10-14, 1981

1/2A Int. SD
1/2A PD
A R/G
1/2A B/G
A HD
B Payload
B Altitude
R&D
D Scale Altitude
E B/G- A div. only
E B/G with HC- B & C only
E B/G without HC- B&C only

Don't forget to vote, early and often.





"MORE "WHO NEED AN ASTROCAM?" PHOTOS BY MATT AND MIKE HARRIS

Model of the month WINNERS

The Model of the Month winner for September is NIRA's youngest TV star, Nathan Baker. Nathan's model is an Estes Multi-Roc. Congratulations Nathan!

The Model of the Month winner for October is Mark Schmitt shown here with his well built Estes Mercury-Redstone. Congratulations Mark!

DON'T FORGET TO ENTER YOUR MODELS!!

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The Leading Edge is published bimonthly by and for the members of the Northern Illinois Rocket Association (NIRA), section 117 of the National Association of Rocketry and is dedicated to the idea that Model Rocketry is fun.

Articles, plans, newsletters and other items of interest should be sent to the editor: Ric Gaff, 331 third St., Northfield, Ill., 60093.

CONTRIBUTORS:
Mark Bundick, George Riebesehl Jr., Pat Peterson, Ric Gaff

All NIRA members are encouraged to give the editor their suggestions for articles and plans. Contributions are encouraged! We are trying to keep NIRA members informed about club and member activities, so we would like to hear from you.

September 1, 1980

NIRA'S 17TH ANNUAL LABOR DAY LAUNCH

Article and photo's by Ric Gaff

NIRA's 17th Labor Day Launch was a complete success! Over 100 models were flown in a span of about 2 hours to the delight of several hundred spectators.

A continuous stream of models were kept in the air by the smooth efficient operation of the 4 person launch crew. Cheri Ruben ran the model check-in and pad assignment and during most of the launch kept each pad 6 or 7 models deep. Bob Kaplow did an excellent job of keeping the spectators informed, entertained and properly chastised (when they moved to close) with his nearly non-stop model-by-model commentary. Braxton "TV Star" Miller was busy keeping the launch pads loaded, but not so busy to keep from scrambling an egg. Dale Toberman, fourth member of the crew, supplied the launch equipment and his services as launch control officer.

A wide variety of models were flown; Maxi-V-2's, Saturn V-1b's, Astrocam's, Canaroc, even goony birds. Some of the more interesting models include Mark Schmitt's Saturn-V, Tom Pastrick's D12 & D20 powered V-2's, and Bunny's Millennium Falcon (which flew away on a 1/2 A). In addition to the large or otherwise interesting models, a hobbystore full of models were flown. Fortunatly most of the models performed properly, but as sometimes happens when flying a lot we had our share of failures. The worse was probably my own Estes Saturn-1b flight. It tipped off the pad and crashed between the crowds, fortunatly no one was hurt.

Our launch also got quite a bit of publicity; an article in the Chicago Sun-times before and one in the Chicago Tribune after the launch, but the best was the coverage ch.7 gave us on their 6 & 10 o'clock news on Labor Day.

Ric Gaff's Saturn-1b takes off under 4 C engines. Notice the tip-off.

With out a doubt our 17th annual Labor Day launch was quite successful, a lot of great models were flown and a lot of people enjoyed themselves. I'd like to thank all the NIRA members who helped to make the Labor Day Launch a success.

CANAROC

STARSHIP ANTARES
KIT REVIEW

BY: GEORGE RIEBESEHL

A new model rocket company by the name of Canaroc has hit the market. Located in Canada, Canaroc has a complete line of kits and engines. Most of these models look really nice. With composite Canaroc engines these models fly as high as their price.

The " Starship Antares" was my first experiance at building a rocket with directions written in French. But don't worry, English directions are included.

The Antares is a unique looking model. The kit comes with 5 body tubes and 3 nose cones that assemble into a 94 cm. (37") rocket. Assembly is fairly simple. The only problem is cutting the body tubes at a 45 degree angle. This is tough to do, but it makes for a neat effect. My only advise is to use a sharp knife to avoid tearing the tube. The body tubes should also be sanded smooth before they are glued together.

The 3 nose cones in the kit I assembled look like gobs of plastic. After hacking away all the flash, nose cones will appear. The balsa wood fin stock in this kit was also of low quality and just big enough to fit the patterns on. Building from here on out is simple. If you follow the instructions you should have no problem.

The finished model looks impressive. It flys well as seen at our Labor Day launch. If you are interested in Canadian rockets, write to Canaroc at:

CANAROC SPACE MODELS
43 HANNA AVE.
TORONTO, ONTARIO
CANADA M6K 1X6

BIG TIME MODEL ROCKETRY

BY: GEORGE RIEBESEHL

What is the National Association of Rocketry? Well, it is model rocketry's national organization that offers many benefits to rocketeers.

Less than half of all the NIRA members are NAR members. This is very sad. Those who are not NAR members are loosing out on many benefits. For example, the NAR prints a monthly journal called the Model Rocketeer. Inside are pictures, plans, and the latest model rocket news. They also offer training programs such as NARTREK to help rocketeers develop their skills. Even our own club is sanctioned by the NAR.

The NAR also holds contests that any NAR member can compete in. Many of these contests are regionals that are held nearby. Some of us NIRA members are heavily involved in competition. Perhaps you have read the contest reports in the Leading Edge and wanted to compete. Well, joining the NAR is your first step.

Some NIRA members are serious about competition. So serious that NIRA,at the current time,is the number one competing section in the nation. But, in order to stay number one we need your help. The only way NIRA can be national champ section is if more NIRA members join the NAR and compete. If you are interested contact me at 894-4739.

If you want to join the NAR write to them at:
P.O. Box 725
New Providence, NJ 07974
Ask for a membership application.

With your help NIRA can be national champ section. If there are enough people interested we will discuss competition at our next meeting.

THE MODEL ROCKET WORLD COMES TO AMERICA
by Bunny

Since 1976, American rocketeers have dreamed of hosting a world championship. Reality struck them squarely in the face in Lakehurst, N. J. on September 8. A simple opening cermony featured some speaches, a flag rasing and a salvo of Estes Patricts. With the ABC TV Olympic theme playing in the background, the Fourth World Spacemodeling Championships was on!

Monday was set aside for test flying and the unofficial event, A RG. The RG's were pretty standard affairs: slide wings, and the like. Most Europeans chose not to compete since the event wasn't an official one. Greg "Fat Albert" Stewart won with 3 maxes from his 45 sq. in. auto-elevator.

Tuesday morning was overcast for A SD's flying. Most rockets were lightweight, swept finned models with 4X40 streamers. The streamers were folded in a variety of ways to increase their drag in descent. The US Team quickly showed their ability to pick air, maxing eight of nine flights. It then took two flyoff rounds for Phil Barnes to beat fellow American Randy Ringner by but 15 seconds.

E BG was supposed to provide an American sweep and a triumph for RC. Instead, the Bulgarians won the event with 600 sq. in. mylar flexwings. (Happy, Pat?) Their models were very consistent while the RC crowd had minor problems with boost and recovery and major problems dealing with the air god. Phil Barnes was brutally swatted in Round 3. America's flexie man, George Gassaway, had a DQ in Round 2 keep him out of the flyoff. Aside from the Americans and Bulgarians, the rest of the teams were never in the running.

Wendesday provided light wings and good sky for C Payload and C Scale Altitude. The trackers overcame some minor equipment problems to post an 80+% closure rate. (My thanks to these guys; Alan Jones, Terry Lee, Pat Mc Carthy and Jon Rains on the scopes, and Jim Wilkerson and Bullet Bob at the range control.) Americans were clearly superior in engine and launcher technology and went 1-2-3 in both events. Chris "Poot Face" Flanigan won both events, a first in any FAI sponsored World Championship. Dave Cook, flying after the close of the event, set a new World Record of 668 meters in Payload. He used a 5' tower and a 2' piston, something he didn't try in the regular competition due to bad sky at about 575 meters.

Thrusday closed out the meet with A PD and Scale. PD featured some of the week's toughest competition; it took the Spanish winner two flyoff rounds to beat a Pole and America's Charlie Sykos. Recovery was a big problem as the Polish and US Teams both ran out of rockets.

In Scale, it was the Bulgarians' turn to go 1-2-3 and rightly so. Their Soyuz models were excellent. The inter-stage structures and escape towers were good, but the antennas and weld lines were better! The birds flew well on 40 Nt.-sec. motors. The Polish had flight problems with their Saturn 1B's, but apparently plan to stick with them. They traded furiously for 1B data after the contest. An English Nater, a Nazi rocket plane, did a nifty loop on its second flight. The best US placing was John Langford's Athena and fifth. It was the same model John flew in Bulgaria in 1978.

The closing cermonies were as simple and as impressive as the opening cermonies. The Award's Banquet was excellent, too. As you might have guessed, the US walked away with most of the loot; 3 team gold and 3 team silver medals, and 3 individual gold's, 4 silvers' and 2 bronzes'. After the banquet, there was considerable trading between US participants, both range crew and team, and foreigners. Expect to see lots of foreign engines around at contests and conventions. Some foreign models also found new homes on this side of the Atlantic. The big winner of all this bartering was Wheaton's Jim Wilkerson. Jim finished the meet with his floppy hat covered with foreign pins, each different!

Overall, CD Howard Kuhn and his wife, Betty, pulled off the meet without a hitch; housing, food, awards and range operations were excellent. For the participants, it was a once in a lifetime experience. And for the US Team, it set a record tough to equal in 1982.

Flexies!

by PAT PETERSON

I'd like to start out my article by knocking out some fallacies about flexwings. First of all, flexwings are not strange triangular parachutes. They are gliders. The flexwing is supported by rigid members. This wing produces, by its shape, an aerodynamic lifting surface which sustains it against gravity. None of this applies to parachutes.

Secondly, a flexwing does require a great deal of care in construction. You can't just "throw it together", as some people think. Improper building is the reason why many flexwings fail to work. I believe that if proper care in workmanship is used, the flexwing will be just as consistent a performer as any solid-wing glider.

For a flexwing to work properly, it must be able to fold up inside the body tube of your booster rocket. At ejection, the flexwing should spring open and glide. For this to occur, you must first have a good spring system. For a good workable spring design, see figure 1, it can be made from any thin music wire. After the spring is built, you must make sure that the dihedral on it is correct. If one side is higher or lower than the other, it could seriously affect the glide.

The next step in building is making and attaching the spars. They can be cut out of 1/8" thick balsa, about 1/4" wide. The length really depends on how big you wish to make your flexwing. Generally, the larger it is, the more stable it is. Anywhere from 12" and up is good, less than 12" could cause problems. Don't do it unless it is for very small engines.

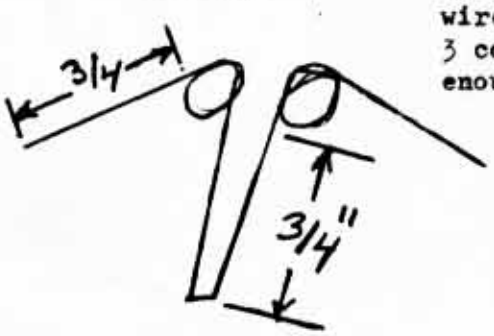
The spars can be attached to the spring fairly simply as shown in figure 2. After they are solidly glued, the angle of the two outer spars should be cut down by tying them in with thread (see figure 3). To test the working condition of your spring fold the spars inward they should spring out to the full stretch of the thread when you let go.

Now, the "ribcage" of your model is complete, the next step is to cut out the wing. whether it is made out of mylar or polyethylene, it should be no thicker than 1/4 millimeter (cleaner bag material is generally 1/4 mil poly) . For the correct shape and size, see figure 4.

In gluing the wing to the spars, super-glue can be used. However, you must be very careful not to glue the wrong things. Start at one edge of the wing and glue it little by little along one of the outside spars. After this is complete, you can glue the center spar, make sure that it is a perfect line down the center of the wing.

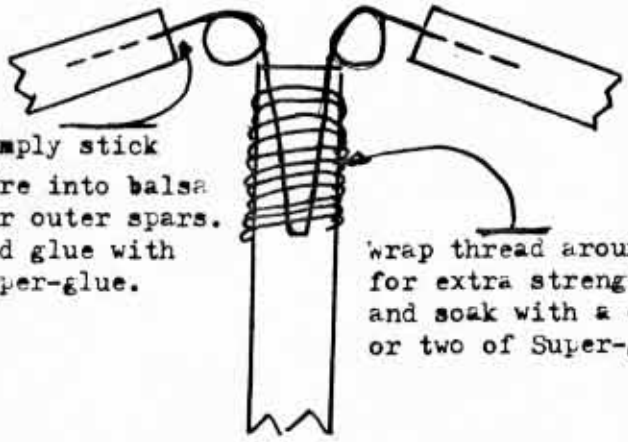
Continued on page nine.

FIGURE ONE



To make coils, wrap wire around pencil 3 coils should be enough.

FIGURE TWO

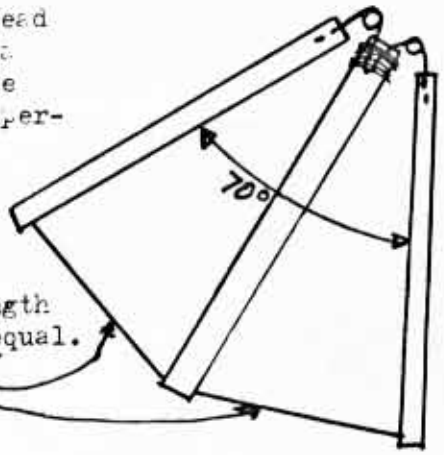


Simply stick wire into balsa for outer spars. and glue with Super-glue.

Wrap thread around for extra strength and soak with a drop or two of Super-glue.

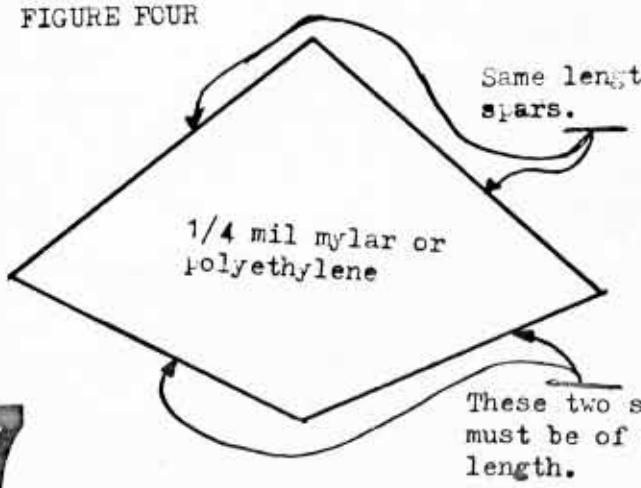
FIGURE THREE

Tie thread to balsa and glue with Super-glue.



These length must be equal.

FIGURE FOUR



Same length as spars.

These two sides must be of equal length.

PHOTO PAGE LABOR DAY

Braxton Miller keeps the pads full

Cheri Ruben checks-in another model in a seeming endless stream of rockets.

Bob Kaplow in a rare moment, he's not talking! Dale Toberman as NIRA's top button pusher.

George Riebesehl Sr. as NIRA's coke connection at the Labor Day Launch.

FLEXIES continued from page 7

Next, simply repeat the procedure for the final spar.

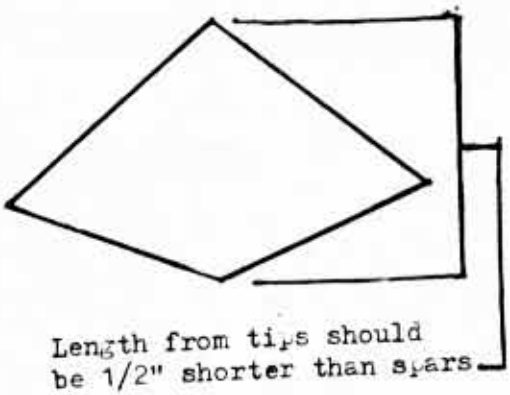
Now the model is basically complete, as far as construction is concerned. However, careful trimming must be done before flight. Watch closely every move your model makes during hand launches. Even if 1 out of every 15 tosses spiral dives and the rest are perfect, you have a problem. Add weight to the back tip of the outer spar which is opposite the dive. Don't be afraid of stalling in the model, as this is less damaging in flexwings than in solid-wing gliders. If your bird simply refuses to glide no matter what you try, think back over your steps of building. Chances are you did something wrong.

I believe by following these steps in building a flexwing, you should be able to get good results from them.

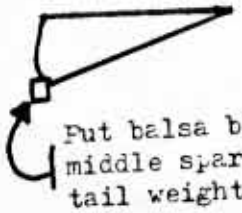
The booster you choose for your flexwing can be anything you want, as long as it is able to fit inside.

If anyone has any questions, comments or criticism about this article, please direct them to:

Patrick Peterson
R.R.1 1840 Roselle Rd.
Schaumburg, Ill 60172
Phone- (312) 529-3037



Length from tips should be 1/2" shorter than spars.



Put balsa block on middle spar for tail weight.

NORTHERN ILLINOIS ROCKET ASSOCIATION

MEMBERSHIP/ SUBSCRIPTION FORM

Please fill in completely, print or type

NAME_____ DATE ___/___/19___

ADDRESS_____

CITY_____ STATE_____ ZIP_____

NAR NUMBER_____ EXPIRES_____ AMA NUMBER_____

(1) How long have you been involved in Model Rocketry?_____

(2) List your favorite type(s) of rockets._____

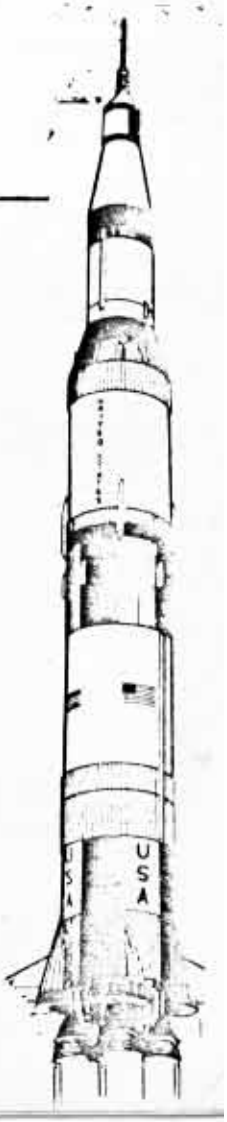
(3) How did you first learn about NIRA?_____

(4) List any other interests besides Model Rocketry._____

Membership in NIRA- $3.00 per year (includes subscription to Leading Edge)

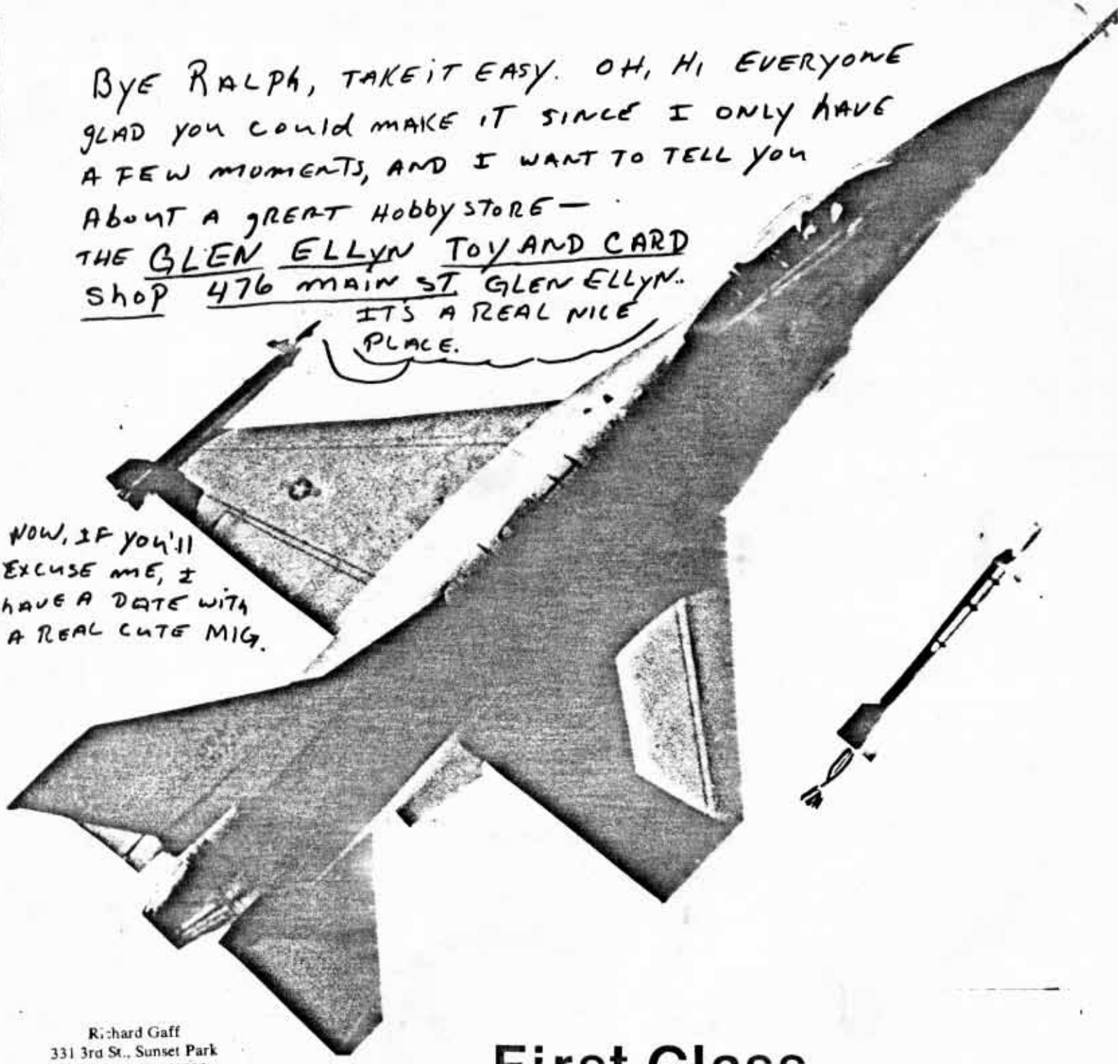
OR

Subscription to Leading Edge along (6 issues)- $2.00
Please make checks payable to the Northern Illinois Rocket Association



BYE RALPH, TAKE IT EASY. OH, HI EVERYONE GLAD YOU COULD MAKE IT SINCE I ONLY HAVE A FEW MOMENTS, AND I WANT TO TELL YOU ABOUT A GREAT HOBBY STORE— THE GLEN ELLYN TOY AND CARD SHOP 476 MAIN ST GLEN ELLYN.. IT'S A REAL NICE PLACE.

NOW, IF YOU'LL EXCUSE ME, I HAVE A DATE WITH A REAL CUTE MIG.



Richard Gaff
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First Class