

THE LEADING EDGE

VOL.4 NO.1



# T MINUS ONE

JANUARY						
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MONTHLY NIRA MEETING Jan. 2 7:30PM

Glen Ellyn Civic Center. Election of officers.

WINDOW DISPLAY Jan. 3 10:00 AM

Set-up of window display at Glendale Heights Public Library.

WINDOW DISPLAY Jan. 31 10:00 AM

Removal of window display.

MONTHLY NIRA MEETING Feb. 6 7:30 PM

Glen Ellyn Civic Center.

## COVER PHOTO CAPTIONS

Top- Al Neinast and Bunny in a friendly comparison of swing and slide wing gliders.

Center- Jim Murray preps his giant "Teen Angel" Eagle (40 nt sec) B/G.

Bottom- Flexies

Photos by *Bob* Bob Kaplow

I'd like to remind all NIRA members of the window display we are putting together at the Glendale Heights Public Library Jan. 3rd. We could use your help and your models. Need I mention that if you don't show it could be (dare I say it? YES!) a CAT-tastrophe!



## BEGINNING BOOST GLIDERS

a series of articles by Bunny

NIRA members seem to be interested in gliders, but don't know where to begin. I'm going to try and explain basic glider terms and building tips. We've also included the "Wasp" plans for you to work on. The "Wasp" is a fun glider that's easy to build. My last one did over 3 minutes on an A engine before flying away.

First, let's talk about glider parts. (1) Wings: The big balsa jobs near the nose. They supply lift to keep the glider in the air. They must be shaped to an airfoil for best results, though rounded wings will sometimes work. Notice the wing is cut in half and re-glued at an angle. This is dihedral and keeps the glider from rolling. (2) Stab: Also called the stabilizer or tail, it's the smaller balsa part at the rear of the glider. Usually 1/3 to 1/4 of the wing size, it keeps the wing aligned in the airflow. (3) Rudder: The smallest surface on the glider, it is glued at right angles to the stab and keeps both wing and stab aligned. Rudders can be warped to provide turns but this can lead to spiral dives, too. (4) Boom: The long skinny piece that everything else gets glued to. It's usually made of hard balsa or spruce. (5) Pylon: The balsa part glued to the body tube. It raises the engine exhaust above the wings and stab so they won't be burned. It also balances the lifting force of the wing and the thrust of the engine during boost. (6) Piece X: A small hook cut out of the front of the boom, it is glued to the rear of the pylon. The hole in the boom where "X" was cut out gets covered with small balsa side plates. When everything is dry, "X" will fit back into the cavity, and pod and glider are hooked together. "X" must be carefully cut out and sanded. If it is too loose, the glider will fly off at take-off. Too tight, and the two will never separate. Next time, we'll talk more about the flight terms used when discussing gliders. In the meantime, get started on your "WASP"! Thermals!

*Bunny*



# Model of the month WINNERS



The Model of the Month winner for November is Mark Schmitt (again!!) and his Estes Orbital Transport. Congratulations Mark!



The Model of the Month winner(s) for December are Tom and Dave Ewoldt with their beautifully finished Estes Avenger and clones. Congratulations Tom and Dave!

VOLUMN FOUR, NO. ONE  
JAN/FEB 1981

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: Pat Peterson, Bob Kaplow, George Riebesehl Jr.

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.

by Pat Peterson

On August 30, 4 NIRA members took to the highways for Shooting Star- 5, a regional meet held in Tomah Wisconsin.

Saturday morning rain halted competition, so the Saturday night auction was held early. Scott Zingler's "going out of rocketry sale" were the only thing on the auction block, which managed to produce quite a pile of ehh, stuff which is a nice way of putting it. A lot of old rockets and range supplies as well as un-built kits and other odds and ends were sold.

By the time afternoon arrived, the skies had cleared and the flying began. 1/2A EG, 1/2A Int. SD, and 1/4A PD all had to be flown Saturday. 1/4A PD was up to it's usual mediocre performance with George Jr.'s 2 min. 37 sec flight the only one to get any thermal action, most flights being under a minute. 1/2A Int. SD was not much better with only one person getting a max and most contestants in the 30 to 50 sec range.

1/2A E/G were impressive; most notable were Bob Kaplow's proxy flown "Fish n Chips", and John Beach's beaker with times of 2:37 and 2:09 respectively on single flights.

Sunday's weather wasn't too great, heavy cloud cover and a chance of rain. Al Neinst lost 2 C SD birds and a D HD model to the clouds. Other modelers had the same problem, although many were lucky and had their models appear after about 30 seconds. Most flights were in the min. to min. and a half range with Jim Zingler's 3:13 being the top time.

C Eggloft Duration flights varied. Holy Handgrenades fared well as John Beach took second in B div. and Tom Beach took first in C div. Tom Pastrick and Chuck Hoffman also produced good flights. However, many modelers succumbed to typical mistakes; chute failures, seperations and broken eggs.

B R/G had it's share of good flights, A div had a real dogflight with Dave Enos edging out Pat Peterson by 4 seconds. Al Nienast (4:46), George Riebesehl Sr (3:48), George R. Jr.(2:25) had the best times. Swing and slide wings were the most commonly used, not to surprisingly.

E F/G produced a variety of prangs, shreds, catos, and yes, even good flights. George Sr.'s Maxi-beaker won Cdiv. with 1:57 and Ric Gaff took second with 1:33, both were single flights. George Jr.'s RC model pranged, but he bounced back to take first in B with a parasite glider.

Despite an engine cato, Pat Peterson's flexwing managed to get out of the rocket and glide, giving him first in A div. Other notable ~~flights~~ flights were Tom Pastrick's and Al Nienast's swing-wings, which failed to deploy their wings despite good boosts. Tom Beach had an outstanding flexie flight (2:57) which unfortunatly was not returned.

NIRA finished with a clean sweep! Pat Peterson took first in A div- 771 pts., George Jr. was first in B div.- 722 pts., and George Sr. won C div. with 396 pts. Overall NIRA won over 2400 points to take section champ. WWAR did an excellent job running the meet, and much thanks to the Skogens for the use of their field.

# SHOOTING STAR



PAT PETERSON 771 pts. A div. meet champ.  
1st 1/2A SD 1:58, 1st 1/2A E/G 1:16, 2nd  
1/4A PD :25, 2nd B R/G 1:36, 2nd C SD 2:05,  
1st C Egg Dur. 1:03, 1st E E/G :32.

GEORGE RIEBESEHL JR. 732 pts. B Div. champ.  
1st 1/2A SD 2:03, 4th 1/2A E/G :39, 1st  
1/4A PD 3:03, 2nd D HD 1:51, 1st B R/G 2:25,  
4th C SD 2:24, 1st E E/G 1:27.

GEORGE RIEBESEHL SR. 396 pts. C Div. champ.  
4th 1/2A E/G :43, 2nd B R/G 3:48, 2nd C SD  
3:23, 1st E E/G 1:57,

RIC GAFF 255 pts.  
1st 1/2A SD 1:44, 4th C Egg Dur. 1:38,  
2nd E E/G 1:33.

BOB KAPLOW 195 pts.  
1st 1/2A E/G 2:37, 2nd 1/4A PD 1:39,

MARK BUNDICK 117 pts.  
3rd 1/2A SD 1:20, 3rd 1/4A PD 1:08, 4th  
B R/G 1:25.

NIRA's total points 2466

There many different things you can do with a Centuri UFO kit. This \$5.50 paper rocket is really only a one time investment. Built properly, the UFO is practically indestructible. (Believe me, I tried)

When you build your UFO build it STRONG. Use plenty of glue and epoxy. Reinforce the engine supports with 1/64" plywood available at a good hobby store.

The engine used in the UFO is a single "c". But, this engine is really too small. Instead of using the engine tube in the kit, use a chunk of BT-50 or other large tubing so that you can use a variety of engines. If you want to use a smaller engine, just wrap it with tape untill it fits. (This is known as a CHAD engine mount) This sure beats having to peel down a large engine to fit into a smaller tube.

As far as flying the UFO, the possibilities are unlimited. One option is staging. This is when you stack a UFO onto another UFO with a booster engine. This can be done up to three stages. CHAD staging is also possible. This is when you just tape another booster engine onto the UFO.

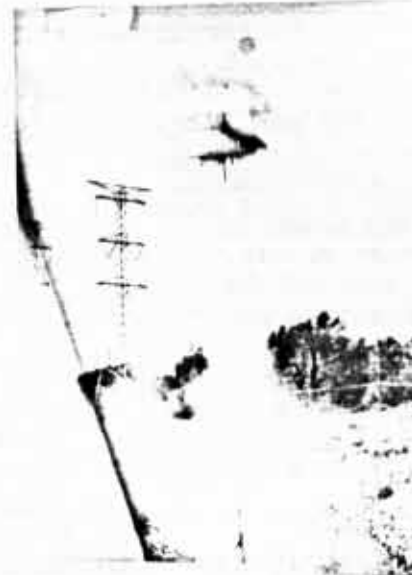
Among the engines I have flown in my UFO are C's, D-12's, D-20's, D-18's, E-5's, D-6's, A-4's, and combinations of all of the above engines in different staging combinations. Some of the results were interesting. (Ask Bunny or take a look at the burn marks on the roof of his car) All of these engines were flown in my RB-90 tube UFO. (?)

The UFO is one of the most enjoyable rockets to come along in a long time. So, go ahead and blow \$5.50 on a worthless stack of fiberboard, and turn it into a launch time delight.(or terror)

Photos by Bob "Roy to Tavares" Kaplow



Bunny hooks up the Riebesehl-Gaff two-stage UFO.



Great lift-off!!



Upper stage crash lands on Bunny's car.



Physical evidence of encounter with a UFO-burn mark on roof! (sorry about that Bunny!)

# WHAT'S NU

MANUFACTURER'S NEWS by Pat Peterson

**CANAROC:** How many of you have ever heard of Canaroc? Not to many I see. Well, Canaroc, as the name implies, is a Canadian rocket company similar to our Estes Inds. but on a smaller scale.

Canaroc offers a variety of kits and engines, most of which, unfortunately, are at rather high prices. For those of you who are willing to pay a little extra though, Canaroc has some interesting kits to offer. Scale models of three Black Brants (a Canadian sounding rocket) look particularly good as do the unusual looking (some might say bizarre) futuristic Star Fleet models, one of which was reviewed in the last issue of the Leading Edge. Most of Canaroc's kits are fairly simple skill level 1 & 2 kits several of which are capable of using D12's.

While the kits are interesting and worth the extra bucks you will pay for them the engines are not. With the exception of the A2-2 & A2-4 all of Canaroc's engines are duplicates of Estes motors. The main difference between them is that Canaroc uses a composite propellant instead of black powder as Estes does. Since Canaroc engines are approx. one third more than the Estes version it does not seem like a very good deal.

A Canaroc catalog is available for \$1.00 from:

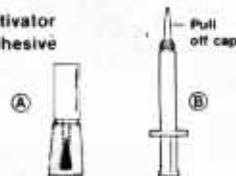
Canaroc Space Models  
Irwin Toy Ltd.  
43 Hanna Ave.  
Toronto, Ontario  
Canada M6K 1X6

**CENTURI:** Centuri's supply of Sure-Shot ignitors has been depleted and has been replaced by Sure-Shot 2 ignitors. The new ignitor bears a striking resemblance to the Estes Solar Ignitor.

**ESTES:** Estes announced that they would be dropping all 1/4A size mini-engines, but nothing has been said about other mini-engines.



A - Activator  
B - Adhesive



## DEPEND ADHESIVE

Adhesive .16 fl oz (4.8ml)  
Activator .12 fl oz (3.5ml)  
Price \$2.44

A product review by Ric Gaff

One year ago this issue a new adhesive called Depend, was announced as being available "soon". It is finally on the market and I've had a chance to try it, unfortunately it was not worth the wait.

First of all, what is Depend? Depend is a 2 part adhesive similar to epoxy but unlike epoxy it requires no mixing. Depend is simple to use, you simply apply the adhesive to one part e.g. a fin and brush the activator on to another part e.g. a body tube, stick the parts together hold for a minute and it bonds. Well this is pretty spiffy, so what's the problem? Two things mainly, the price is astronomical and it doesn't work very well. Depend is in the same "family" as other household adhesives such as Foxyepoxy or Crazy Glue, that is to say, a small quantity of glue attractively packaged and unattractively priced and Depend is very attractively packaged. The adhesive is in a spiffy little plastic syringe applicator. The activator is in a cute little spill-proof bottle with a brush applicator in the cap.

# SSRS

## EAGLE 200

A product review by Bob Kaplow.

The Eagle 200 is an impressive looking bird which stands 200 cm tall. While the kit is relatively easy to build, the instructions that I got with my kit leave much to be desired. They seem to be "boilerplates" to be used with any SSRS (or anybody else's!) kit. Nonetheless, the building is relatively straightforward. The only points worth noting are that no epoxy less than 24 hour epoxy should be used on the model, and you better have a power sander if you expect to airfoil the 1/8 inch plywood fins.

Stickers of the Eagle logo and a high visibility reflective pattern are provided. Although mine has not flown, its performance would be impressive with the recommended P67-8 except that even unpainted, mine is over 1 pound with any engine except the E30-6. This makes the weight section of minimal value. Maybe I used too much epoxy! Perhaps the stuffer tube can be eliminated; the nose and bulkhead hollowed, and more airfoil sanding into the fins to lower the weight somewhat. At any rate, I definitely recommend the kit to any of you power fans. (Delete note)



Braxton Miller with Bob Kaplow's Eagle 200 at the 17th Labor Day launch this past Summer. Three attempts to launch it failed, better luck this Summer (preferably at Bong!).

## SMALL SOUNDING ROCKET SYSTEMS

P.O. Box 341 - Mountlake Terrace, Washington - 98043

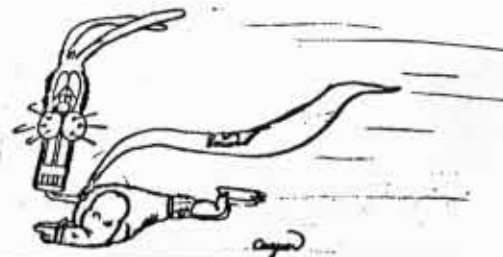
DEPEND ADHESIVE continued

For my money I would have preferred a Depend and less fancy packaging. To be completely honest the applicator surface Depend very easy to use.

I tried Depend on a number of material combinations common to Model Rocketry: balsa to cardboard, balsa to balsa, plastic to plastic etc. and reached these conclusions. Depend sets every bit as fast as claimed, within 1 minute a solid, though mushy, bond was formed a bond very much like hot melt glue. Unfortunately even after 24 hrs. the bond was still mushy and flexible on all materials. I then pulled my test samples apart and while I do not have any quantitative data on bond strength my "calibrated fingers" tell me that the bond is not as good as a white glue bond.

My tests also indicate that Depend works better in wide surface area applications than in the narrow area applications common to a fin to body tube joint. I think Depend could be used to attach small surface details and wrappers replacing the contact cement commonly used, but then so could epoxy or Hot Stuff!

Frankly I don't think this stuff will ever be as useful to model rocketry as the glues already commonly in use.



# WASP



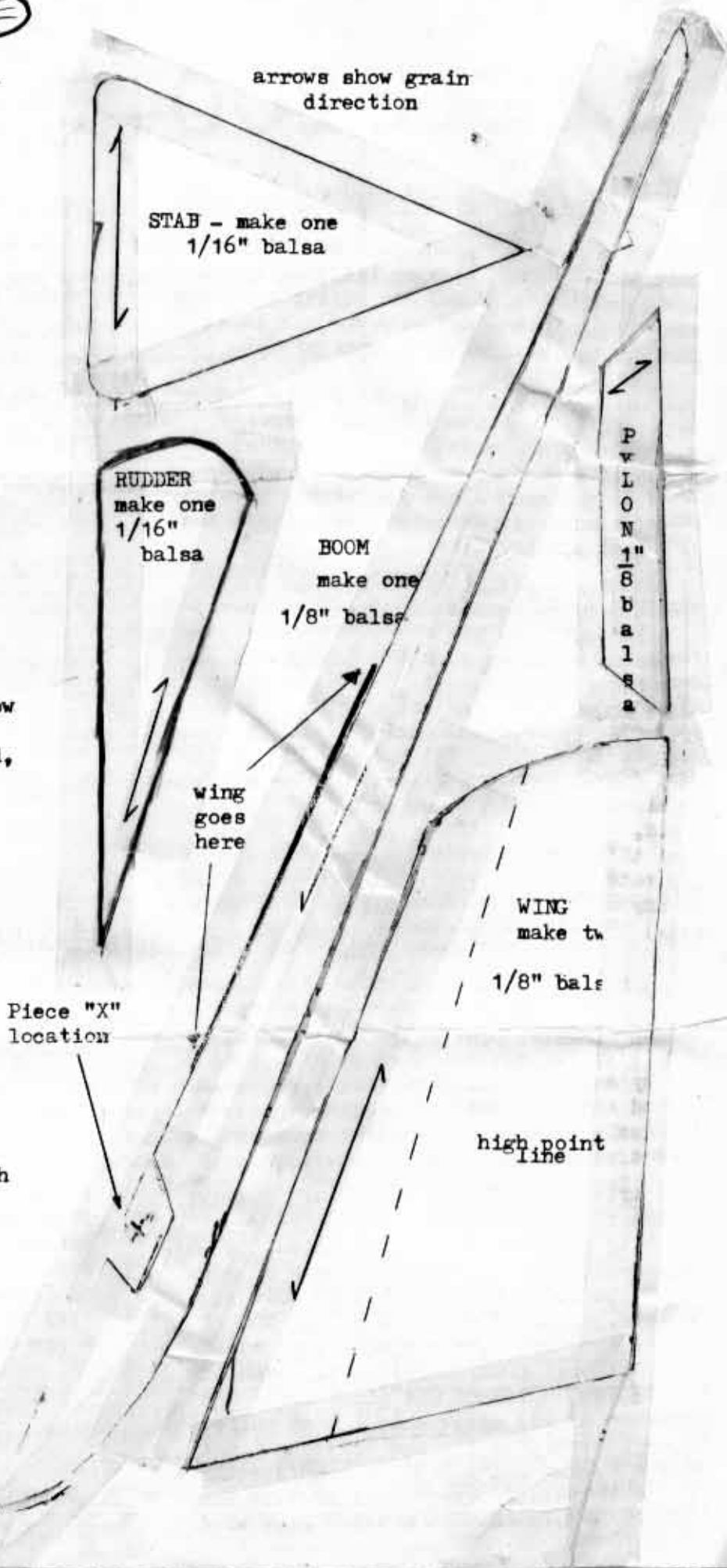
A Beginner's Boost Glider  
from 12/70 Model Rocketry

Begin by cutting out all parts. Round edges of rudder, stab and pylon. Sand an airfoil on wings, making sure you have a left and right wing. Bevel root edges of wings. Leave one wing flat on table, prop other wing tip up 2" and glue. This provides the right dihedral angle. Build a pod from 5" of BT-5, engine block, launch lug, recovery system (6" streamer) and pylon. CAREFULLY cut out "X" and glue to rear of pylon. Cover the hole in the boom with two  $\frac{3}{8}$ " x 2" pieces of  $\frac{1}{16}$ " balsa. Glue stab to rear of boom, leaving the last  $\frac{1}{8}$ " unglued. When dry, put a "shim" under the stab to raise the trailing edge up  $\frac{1}{16}$ ". This helps the Wasp pull out of dives. If you use too much, the model will loop under power, so be careful. Glue the rudder to the boom just under the stab. Cut a shallow "V" notch in the boom where the wings go, then check the fit. When satisfied, glue on the wings.

Check the fit of Piece "X". The glider should just barely stay on when held upside down. Sand "X" until you get to this point.

Trim the glider by adding clay to the nose. Add or subtract clay until a flat smooth glide is obtained. You can get a turn by putting clay on a wing tip, but you'll have to take some off the nose to compensate.

Recommended engines are the Estes  $\frac{1}{4}$ A3-2t and A3-2t. If you reduce all wood sizes a bit, you can also fly with the  $\frac{1}{4}$ A3-2t.





# CONTEST CORNER

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  
 B B/G- A div. only  
 E E/G with RC- B & C only  
 E E/G without RC- B&C only

A close encounter of the ludicrous kind!!  
 The Super Riebesehl-Gaff UFO!!

*Happy New Year  
 to you all!*

*Ric Gaff  
 Editor*

Gaff gets his just deserts.

## 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. \_\_\_\_\_

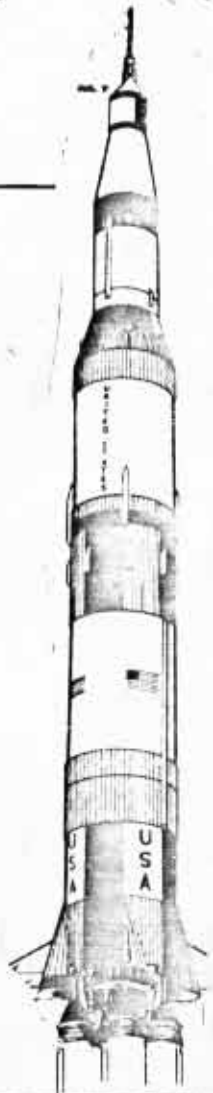
Membership in NIRA- \$3.00 per year (includes subscription to Leading Edge)

OR

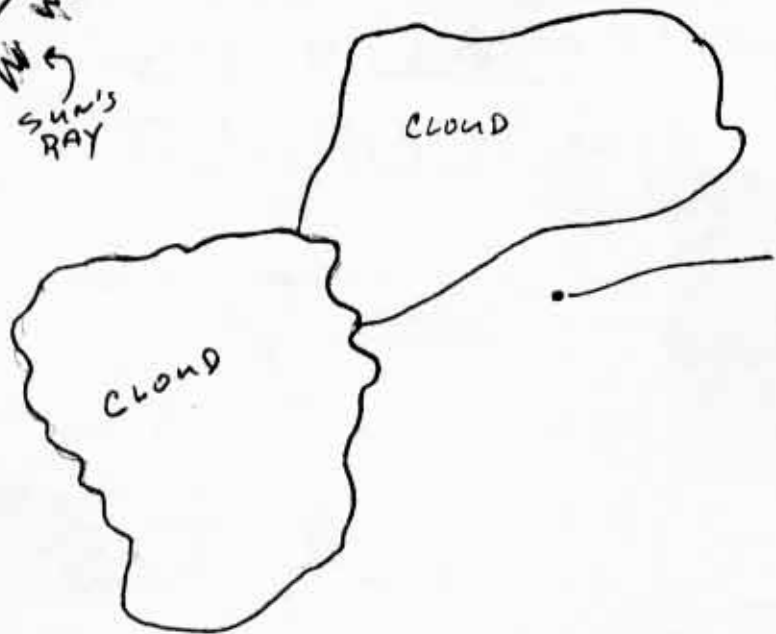
Subscription to Leading Edge along (6 issues)- \$2.00

Please make checks payable to the Northern Illinois Rocket Association

9



Sun  
I A A W W W  
SUN'S RAY



Hi! I'm BOB KAPLOW'S  
SUPER SLICK ALTITUDE MODEL  
AND THERE'S NO WAY I'LL  
BE TRACKED! SO BEFORE I  
DISAPPEAR FOREVER LET  
ME TELL YOU ABOUT A  
GREAT HOBBY STORE,  
THE GLEN ELLYN TOY +  
CARD SHOP 476 MAIN ST  
GLEN ELLYN

SPECIAL DEAL!  
STARS NOT NORMALLY  
SEEN DURING THE  
DAY!

347

R8

SOMETHING  
I DIDN'T  
DRAW.

RAY'S SON

DUST  
SPECK

HOPELESSLY BEFUDDLED  
TRACKERS

SORE  
NECK

Richard Gaff  
331 3rd St., Sunset Park  
Northfield, Ill. 60093

First Class

