

1
2
3
4
5
6
7
8
9
10



ISSUE 119

May/ June 1997

6 Cluster Motor Model
Construction Notes

Patterns For:
Conical Oblique Fairings
for the Cluster Rocket

Membership Directory
Hidden Igniter Winner

Northeast Meets
Southland Contest
rescheduled for May 31st

FUNTEST '97 News

and

Much

Much

Much

More

Editor's Block Laments



The Launch Rack

The Official Publication of The
Garden State Spacemodeling Society



MAY/JUNE 1997

ISSUE 119

The **Launch Rack** is the official publication of the *Garden State Spacemodeling Society* (Section 439 of the National Association of Rocketry) and is published for the enlightenment and entertainment of its membership.

Others interested in receiving this publication may do so for the annual subscription rate of \$7.50 for 6 issues. Overseas subscriptions are \$17.50. Please send this money payable in USD to **Arnold Klein, 2 Oneida Avenue, Rockaway, NJ 07866.**

The Editor invites and encourages all to submit articles, photographs, plans, letters to the editor, etc., for future publication. In addition to articles, the Editor welcomes and encourages constructive feedback on each an every issue. Please send all material to:

Jack Sarhage
875 River Road
Piscataway, NJ 08854-5549

Non-copyrighted material published in **The Launch Rack** may be used by other publications provided proper credit is given to the original author and this newsletter.

LAUNCH WINDOW:

Anyone wishing to attend any GSSS activity should call the GSSS hotline (908) 658-9417 the morning of, to verify the event is still on. If the event is cancelled, the recording will be updated at 9AM.

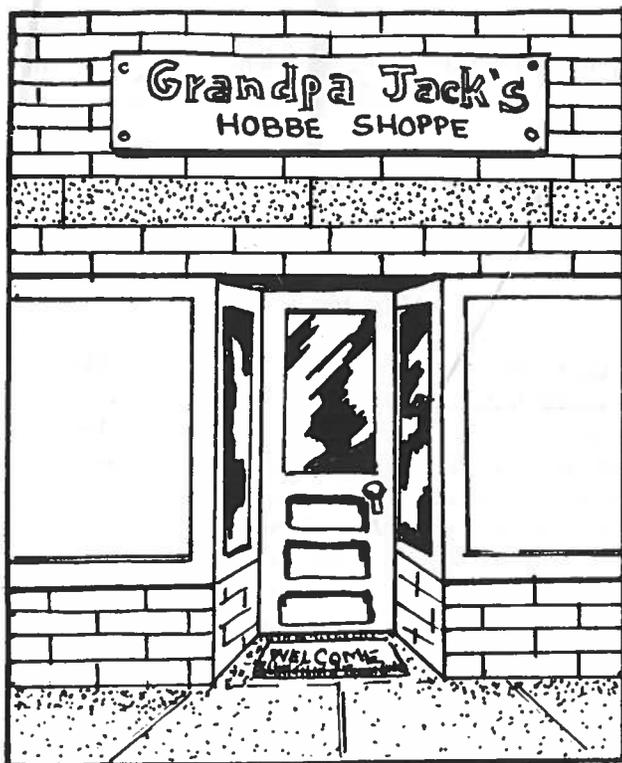
A NOTE ON NORTH BRANCH PARK. Please keep in mind that the park and weather conditions dictate what we allow to fly. Just because a rocket is under the one pound limit, do not assume it is an automatic launch. If the RSO does not feel the model can be safely flown or recovered within the park's boundaries, it will not be flown regardless of the weight or impulse. If some other activity shows up and starts using the adjoining fields, the RSO will reduce impulse for all flights. So, bring some small stuff just in case. **REMEMBER, WE SHARE THE PARK.** We do not pay a fee and most of us are not a resident of that county. Rocket flying fields in New Jersey are in short supply, and we are protective of the fields we have. If you're unhappy with this limitation, then we invite you to help us in gaining legal access to privately owned, large, open fields.

<u>Sat., May 31, 1997</u>	<u>Sat., June 28, 1997</u>	<u>Sat., July 26, 1997</u>
10:00 am - 3:00 pm	10:00am - 3:00 pm	10:00 am - 3:00 pm
Northeast Meets Southland	Sport Launch	Sport Launch
Open Meet	Funtest '97: A PD	Funtest '97: C Egg-loft
Funtest '97: A Ping-Pong Ball		

ALL OF THE ABOVE LAUNCHES WILL BE HELD AT NORTH BRANCH PARK

ON OUR COVER: If you attend GSSS' Sport Launches on a regular basis you know that these guys are usually in attendance. The photo on the left is that of Arnie Klein with his well used Flying Saucer. I would like to have a buck for each flight it has made. On the right is Ted Rebetje and his "home made" scratch built Mars Lander style craft.

NOTE: DEADLINE FOR NEXT ISSUE IS JUNE 15!!!!



(Special Note: The opinions expressed in this column are those of the Editor and not necessarily the Garden State Spacemodeling Society or its Board of Directors.)

Well here we are again, sort of. Due to a bad case of Editor's Block, also known as bad attitude, coming from the fact that no one seems interested in being a part of this publication, there isn't much in it. If you are unhappy about this situation, blame yourself and then do something about it....like submit something.

NORTHEAST MEETS SOUTHLAND: This NAR Sanctioned contest was to be held on March 22 and 23. However, due to very high winds, like sustained 30 with gusts up to 45 it was cancelled. It was agreed upon by those present that we would reschedule it for May 31 and change it to one day for the four events.

Those events are 1/2A Helicopter Duration (1/2AHD), A Superroc Duration (ASRD), Open Spot Landing (OSL), and Sport Scale. Due to the one day format **ALL SPORT SCALE MODELS MUST BE TURNED IN FOR JUDGING NO LATER THAN NOON!!!** All flights can be made as soon as your model has been judged. Remember, you must be an NAR member to compete in this contest. I would like

to thank those of you that turned up for the "winded out" date; Bob Zabriskie, Ted Rebetje, Glenn Feveryear and son. If I missed anyone I am sorry, BUT two months in a long time, lately.

FUNTEST '97 EVENTS: To recap the upcoming events...May 31 is A Ping-pong Ball Duration. You may use any model rocket that has a diameter large enough to hold a regulation Ping-pong ball and launch it with and A rocket motor...June 28 is A Parachute Duration open to any model, any size parachute launch with an A rocket motor...July 26 the always fun event, C Egg-loft Duration. You may use any egg-loft model with any size parachute. It must be flow using a C rocket motor. The idea is to launch the RAW EGG, recover same without breaking it. Try it, if you dare. This challenge is directed mainly to those of you that think you know everything about flying rockets and includes you high-power folks. **ALL MODELS IN ALL EVENTS ARE TIMED FROM LAUNCH TO LANDING.**

HIDDEN IGNITER CONTEST: For several months now The Editor has offered various prizes to those of you that located the hidden igniter and sent in a post card. The cards were placed in a container and one drawn out to award the prize to. Last time the igniter was located on page 9. Four out of 50-plus members sent in cards. Apparently the other 40-plus members couldn't find it, the prize wasn't a good one, OR you don't like this contest.

WELL, we will try one more time. Again, the igniter has been "hidden" on one of the pages of this issue. If you find it, send a post-card with the page number and your name and address to the Editor at the address on page 2. The prize this time will be a model from my collection of oldies but goodies. OH! Bob Zabriskie was the lucky winner of the neat poster. **DEADLINE FOR THIS CONTEST IS JUNE 15.**

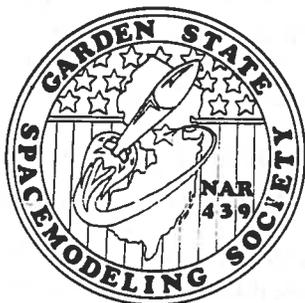
HERB DESIND MEMORIAL SCHOLARSHIP FUND: Known throughout the model rocket world as "Mr. Cineroc" Herb was admired and loved. He did more to promote the hobby to kids, being a teacher, than anyone else that I know of. He understood that the future of the hobby, space exploration, of our country was up to the generation in our school systems. He believed that model rocket was a valuable tool in teaching our youngsters, math, science and

Celebrating Our Fifteenth Year

good values. When he died a special scholarship fund was set up. The scholarship awarded annually to a student to help toward their college education. We have received word that this scholarship fund can use some refueling. To help meet this, I am going to choose ten of the model rockets kits from my old time collection. These will be sold by mail auction to the highest bidder. These rockets are not available and I will include one of my Centuri kits. If you are interested in bidding and thereby helping this fund send me a SSAE for the information and bid sheet. I will make the donation in the name of the Garden State Spacemodeling Society.

"Keep 'em flying."

SECTION NEWS



Club Patches

We have a new shipment of patches in. If you would like one they cost \$5.00 to members and \$7.00 to non-members. These will be available at all club launches.

We also working on the possibility of transfers to be used on T-shirts of a 15th Anniversary Design by Dr. Bob! Kreutz. More information next time.

Sorry, we do not have a Treasurer's Report this issued.

REMEMBER, the most wanted activities the members voted for were:

- Sport Launches
- NAR Competitions
- Newsletter
- Permanent launch site
- Monthly meetings

grab your "elected" Board of Directors and make these happen. It's all up to YOU.

1997 is also an election year. Now is a good time to begin thinking about who you would like to govern the club. HOW ABOUT YOU!!!

SKY WATCH

Contributing Editor: Bob Zabriskie

May and June

Mercury: In the morning twilight in late May and early June is not placed for good observing.

Venus: Is to the lower right of Comet Hale-Bopp in evening twilight early May. Viewed with difficulty until late June.

Mars: Months after its closest approach to earth, Mars is unmistakable with its Golden Orange glow high in the southern sky most of the night.

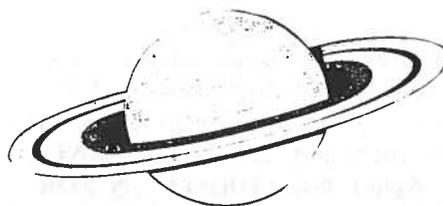
Jupiter: At the beginning of May it "rises" around 2:30am. By the start of June it rises about midnight. It is best placed for observing around dawn when it is high in the southwest sky.

Saturn: Rises in the east around dawn in early May. Won't be viewable until mid-June.

Uranus and Neptune: Are binocular objects to the west of Jupiter.

The Moon: On the morning of May 4th the thin crescent moon will occult with the planet Saturn.

Comet Hale-Bopp: Has put on quite a show these past few months (Boy! I'll say-Ed Note). However by the end of May the show could be over. I have seen many comets and Hale-Bopp was one of the best.



6 Cluster Motor Model General Construction Notes

By Tim Van Milligan

The six "C" motor cluster altitude event at NARAM looks to be very interesting. Many people have been chewing over how to make the model, so I've created some neat paper shrouds that would work to minimize drag and weight. The shrouds; for the 18mm dia. side pods, blend into the core tube of the model. They are oblique cones, and the imaginary point of the cone would be inside the model. Because of this, you could use them to vent the ejection charge of the "pod" motors into the core tube of the model.

The 5 piece shroud pattern set also includes a tube marking guide for the 18mm core tube. This marking guide has the vent ports cut-outs on it; if you choose to vent the ejection charge internally.

The model shown on the patterns is incomplete. It doesn't say anything about the length of the model nor the external motor pods. This is left up to the modeler to design their own stable model. What I wanted to contribute was the hardest part of the model; the blended nose fairings.

Making the blended fairing pods is hard. I would rank this as a skill level 4 project. But the advantages of the fairings may make it worth it. For starters, they reduce the drag of the model by keeping the frontal area low. Second, since the fairing are made out of paper, they are light weight, which should also increase the altitude of the rocket. Finally, the completed model looks really neat; you'll get lots of compliments from others about the design.

Here are some suggestions that I have that may make assembly easier. The material of choice is light weight card stock; i.e., index paper. Take the patterns down to a local photocopy center and manually insert the heavier paper into the bypass to transfer the patterns. The exception is the tube marking guide. For it, use regular 20 lb bond paper.

First, cut all the pod tubes to the desired length. DO NOT glue them to the core tube until you have glued to cones to the top of the individual tubes. Before you start any assembly, you should draw two lines on exact opposite sides of the pod tubes to aid in aligning the parts during assembly. I leave this up to you to do.

Cut the individual patterns from the sheet using a sharp hobby knife. The first step is to carefully roll the parts into a cone shape. The lines on the patterns indicate the direction toward the imaginary point of the cone — so use them as a guide. I'd start by rolling the paper around the handle of a hobby knife. Then use a 1/8 inch diameter wood dowel to curve the "point" of the cone. Do some testing of the cone to see how the glue tab lines up with the rest of the cone.

Next apply a very small amount of glue to the tab section, and glue the ends together. I'd do all the cones at the same time before gluing them to the tubes.

To glue the cones to the tops of the pod tubes, you need a lip on the tube to keep the edges aligned properly. For this, I'd use a 18mm centering ring or tube coupler. If you are worried about weight, you can peel out the inner layers of paper from the centering ring. Glue the ring into the top of the tube, but let it extend out the end by 1/32 inch (about 1 mm). Now test fit the cone on the tube.

Before you glue the cone to the tube, lay the pod tube next to the core tube, and align it so that one of the pencil lines on the pod tube is against the core tube; try to be as exact as possible. To hold it in place, use tape. DO NOT glue them together. Now test fit the cone to the top of the pod tube. Reposition it as necessary so that the cone mates correctly with the core tube, and the pencil line on the tube aligns with the centerline of the cone. Make sure there are no gaps where the cone intersects the core tube. Remove the cone, apply the glue (use wood glue, not CyA), and refit the cone. At this point, you are gluing the cone to the top of the pod tube, and not to the core tube. After the glue has set, remove the tape holding the two tubes together, and set the pod tube aside until the glue has dried. Now repeat the procedure for the other tubes.

If you want to have the pods vent their ejection charges into the core tube, you'll have to cut the openings into the core tube. The tube marking guide has the correct sizes for the cut-outs, but you must cut inside the perimeter by 1/32 inch so that the edges of the cone have something to glue against. NOTE: It may or may not be advantageous to have the tubes vent into the core tube; this is for you to decide!

Using the tube marking guide is fairly straight forward, so I won't go into it. If you want to have the vent ports, you'll have to position the marking guide so the bottom edge is at the top edge of the pod tube location. Draw a line around the perimeter of the rocket at this point to make sure you line all the tubes up correctly when you go to glue them on. If you decide, cut out the vent ports as indicated.

Gluing the pods to the rocket is a hard and tedious task. Start by placing a line of glue around the mating surface of the nose cone. To speed assembly, I put one small drop of CyA glue on the aft end of the pod tube. This will hold the pod on the centerline of the rocket while you fuss and reposition the cone to mate with the core tube.

Once the glue on the cone has fully set, you can run a bead of glue along the joint between the two tubes to hold them together. Then run another thin fillet of glue around the perimeter of the nose cone where it intersects the core tube. This will fill any small gaps. Allow the glue to set before starting the next tube.

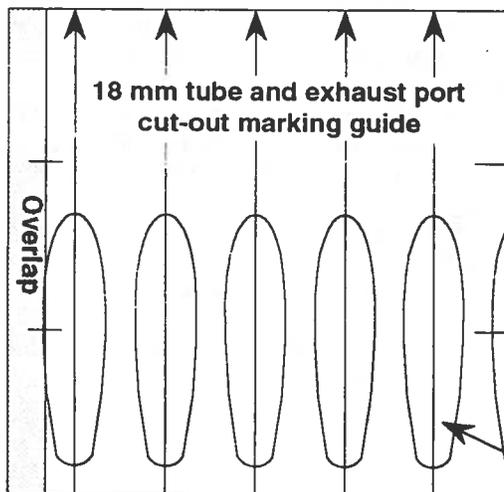
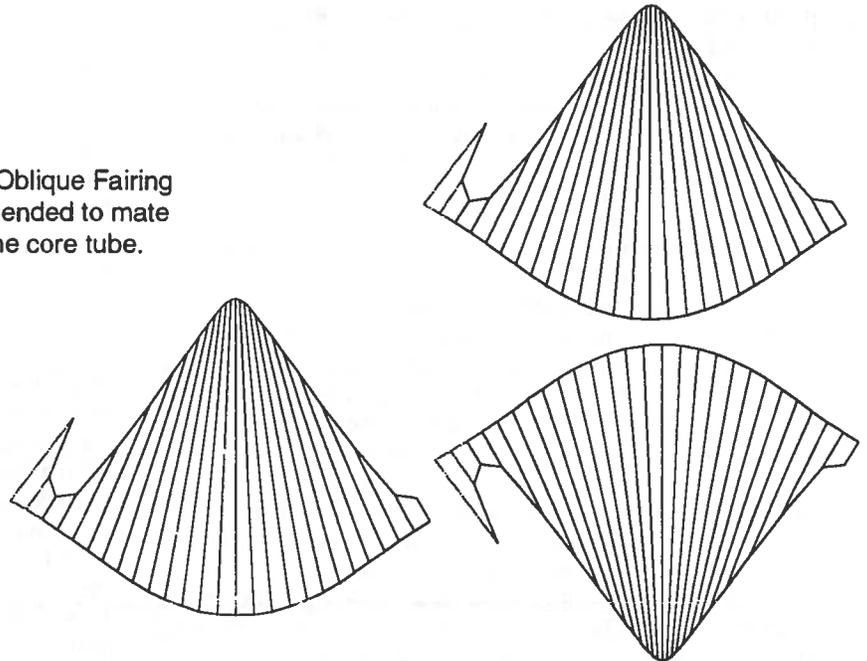
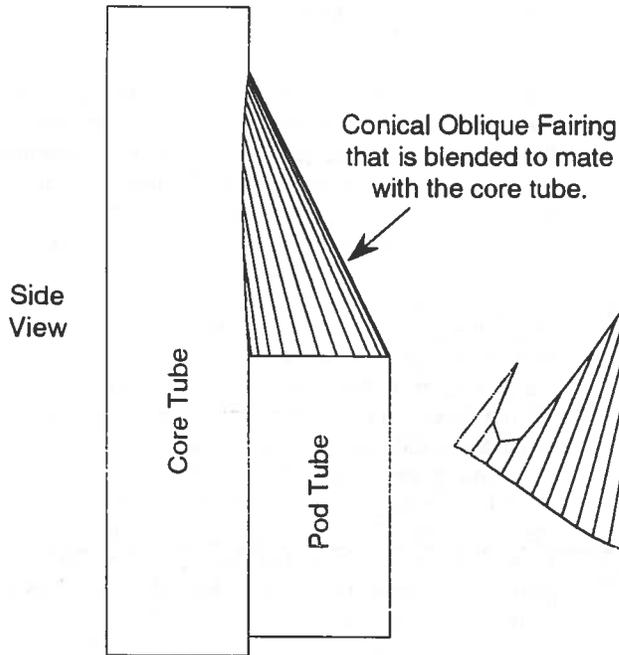
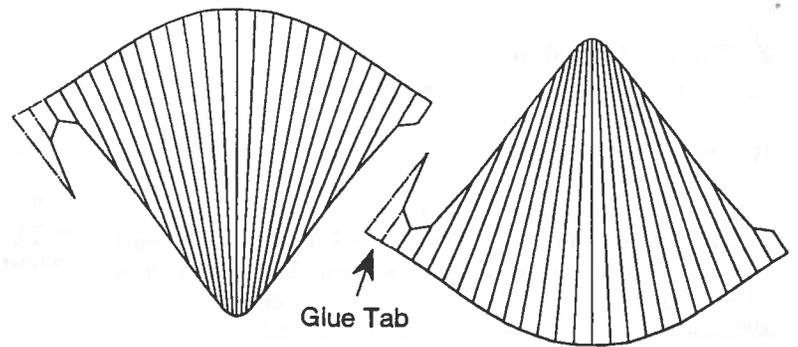
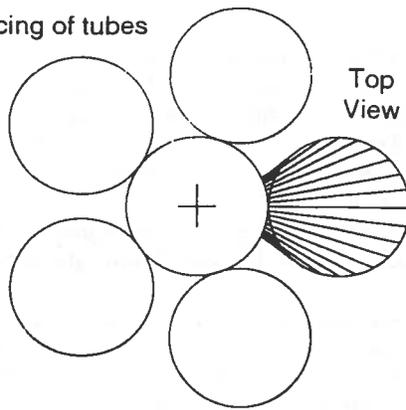
After you have all the tubes in place, you can add your fins. You have two choices for locating them. You can go either between the tubes, or on the outside of the pod tubes. If you go between the tubes, it will provide additional strength. If you decide for the outside of the pod tubes, it will be more efficient, and less fin area (and weight) will be added to the rocket. But it is your design, so you can make a decision.

Note: The 6-C cluster altitude event is not included as part of the \$500 Apogee Challenge contest.

For a catalog of products from Apogee Components, send \$1 to:

Apogee Components, Inc.
1431 Territory Trail
Colorado Springs, CO 80919-3323
USA

72° spacing of tubes



Align this edge with top of pod tubes
(draw line around perimeter of tube)

Optional Vent ports --
Important: cut out
inside the perimeter of
the lines by 1/32 inch.

6 Cluster Motor Model Rocket Using a Conical Oblique Fairing that is Blended to Mate with the Core Tube.

Fairing Designed by Tim Van Milligan 2-20-97

If you enjoyed the paper fairings in this model, try out the "Designer's Resource Pak" from Apogee Components. It has a lot of different shapes you can use to create your own unique model rockets.

For a catalog of products from Apogee Components, send \$1 to:

Apogee Components, Inc.
1431 Territory Trail
Colorado Springs, CO 80919-3323
USA

RAMTEC-5

(Regional Aerospace Meet to Encourage Competition)
NAR Sanction No. 1011-97R

Hosted by **SPAAR #503** - Southern Pennsylvania Area Association of Rocketry.

Dates: Saturday, June 14 and Sunday, June 15, 1997

Location: Allentown College in Center Valley, PA

Events: 1/2A Streamer Duration, A Rocket Glider, A Super Roc Duration, A Payload Altitude, D Helicopter Duration

Awards: Trophies for 1st place in each event (divisions A, B, C and Team) and certificates for 2nd thru 4th place.

The range will be open Saturday from 9AM to 6PM and Sunday from 9AM to 2PM. Events may be flown either day with the exception of A Payload Altitude, which must be flown on Saturday. NAR standard payloads will be provided. They will made of BT-20 tube, 2.75 long. You may bring your own payload but they will have to be weighed before flight. The range is open for sport flying all day, both days.

All contestants must present, on request, their current NAR card as proof of membership. Models will only be launched at the contest range by the designated launch officer. *Sport flights are welcome*, but will be subject to flight clearance by the Range Safety Officer and/or Launch Control Officer. Insurance is not required to fly or compete. We will not have a special waiver this year. However, we will make notification to the proper authorities to fly up to the NAR safety code limits. Allentown College may not be suitable for some high performance models, so use your discretion.

The attached application should be completed and returned as soon as possible with payment in full, **deadline is May 30, 1997, if you will be using on campus housing.** I need to notify the College, 14 days, in advance of the minimum number of persons needing rooms. The signature of a parent or guardian is required on the medical release, below, and a separate CB-1-70 (NAR registration form) for applicants under 18. Any under age contestant that does not submit a CB-1-70 with parental signature on the day of the meet will not be allowed to fly. *Observers are welcome.* They should fill out an application for room reservations. No other fee is required for observers.

The team fee covers all team members and only needs paid once. Each team member must fill out a separate application. Please remember to indicate your team name and number on your application.

Housing is available in the college dormitories for all who attend RAMTEC whether flying or not. The dorms are located adjacent to the range. **Bring your own sheets, pillows, blankets and towels.** Please indicate your housing requirements and rooming preferences on the application. The rest of the arrangements will be made for you. College food services will not be available, but there are numerous establishments in the area.

Detach and Return _____

Application for **RAMTEC-5** (Please print clearly)

NAME _____ NAR # _____ ROOM CHARGE \$ _____

ADDRESS _____ INDIVIDUAL FEE:

CITY _____ STATE _____ ZIP _____ Division A, B: (\$10) \$ _____

TEAM NAME _____ TEAM # _____ *or* Division C: (\$15) \$ _____

AGE _____ PHONE NO. _____ *or* Division T: (\$18) \$ _____

Room reservation: _____ Fri _____ Sat _____ *or* Sport Flying: (\$5) \$ _____

_____ SINGLE Occupancy (\$20.50 per night)

_____ DOUBLE Occupancy (\$15.50 per person per night)

ROOMMATE PREFERENCE _____ TOTAL ENCLOSED: \$ _____

MAIL APPLICATION WITH PAYMENT, PAYABLE TO: Glenn Feveryear, RD 1 Box 1-C, Delta, PA 17314
Questions?, call: 717-456-5570

Medical release: I (undersigned), a parent/guardian of _____, a minor, in the event of injury or illness occurring to him/her during his/her stay at Allentown College, Center Valley, PA do hereby consent to whatever emergency medical treatment is considered necessary by responsible medical personnel and will assume financial responsibility for any treatment.

Signed: _____ Name: _____

Phone: _____

**DIRECTIONS TO NORTH BRANCH
PARK LAUNCH SITE**

North Branch Park is very near the traffic circle junction of NJ Routes 22, 28, 202, and 206, near Somerville. Follow 202 South from the circle for 2 miles, past Ortho Pharmaceutical and Harris Corp. under railroad trestle marked "4H is Tops", to right turn onto Milltown Road. Make first left after firehouse and 4H Center on right; follow path to open field. Monthly launches from 10-4.

FROM NORTH
NJ Turnpike South to Exit 10, 287 North to Exit 13, 202/206 South to Circle

FROM SOUTH
202 North to Milltown Rd.; or 206 North to Circle

FROM EAST
287 North to Exit 13, 202/206 South to Circle

FROM WEST
Rt. 78 or Rt. 80 East to 287 South to Exit 13, 202/206 South to Circle

GSSS MEMBERSHIP APPLICATION

Name _____

Address _____

City _____ State _____

Zip _____ Birthdate _____

Phone Number _____

NAR number _____ GSSS number _____

Membership Category (Check One)

() Junior (Under 16)\$5.00

() Leader (16 through 20)\$7.00

() Senior (21 or over)\$10.00

() Family Plan (Deduct \$2.00 for each additional family member, only one Launch Rack will be sent.)

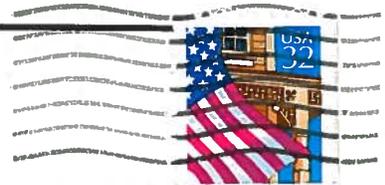
I pledge to abide by the NAR/HIA Safety Code and GSSS Constitution and Bylaws in all my non-professional rocketry activities.

Signed _____ Date _____

Send this application along with check for dues payable to: Arnold Klein, 2 Oneida ave Rockaway N.J. 07866

GARDEN STATE SPACEMODELING SOCIETY -- NAR SECTION #439

Robert Zabriskie
3 Peachtree Road
Basking Ridge, NJ 07920



OUR 15th YEAR!

TO:

Robert Nee

222 Willow Avenue - 2A
Hoboken NJ 07030

THE LAUNCH RACK

NEWSLETTER OF NEW JERSEY'S SPACEMODELING SOCIETY

