



# Team Pittsburgh

Newsletter of the Pittsburgh Space Command NAR #473



Volume 13, Issue 5

#98

Sept/Oct 2001

## In This Issue:

Mort's Column  
Starting on Page 3

John Pace  
Reviews  
NARAM-43

Pages 1, 5-10

Also, don't miss the  
article about  
"Rod's Flexie"  
P.10

PSC  
COMPETITIVE  
SCHEDULE  
2001

PAGE 13

"NOTES FROM  
THE PREZ"

PAGE 11

Dragon's Fire  
Schedule & Info  
Page 12

## NARAM - 43 REPORT

By John Pace NAR #49785

naram-43



geneseo, ny

4 - 10 august, 2001

In the past, articles about NARAM have been written as seen from the eyes of the author. Since this is only the second NARAM that I have attended and the first one away from home, I decided to tell you not only about the happenings each day but also some of the lessons I learned about flying competitively at a NARAM event, some of the hurdles I encountered and what I would do differently next time in an effort to improve my performance relative to the other competitors.

First of all, if you are serious about attending and competing at NARAM as I was, you need to start planning and building as soon as the events are published. Don't procrastinate and put off building until later. By planning, I mean identify what models you plan to build for each event. This can be done by researching old space modeling or model rocketry catalogs, getting ideas from other section newsletters, checking products offered by model rocketry suppliers such as ASP, Apogee, Ring Rocketry or Qualified Competition Rockets (QCR) or by purchasing NART booklets on competitive model designs. Once you have identified what you plan to build, determine the number of models you feel you should take and either pick up or order the parts and pieces necessary from the suppliers to construct the quantity of models you plan to take for each event. Also, be sure to order extra materials for your range box (es). You don't want to be at the field with a model that needs a particular part or piece only to find out you don't have one in your range box. Next, purchase your motors. Since I also compete at the regional level, I try to buy my motors all at once, typically over the winter. By buying your motors early, you eliminate the chance of backorders and having to substitute another motor for a particular event which may not give you the performance you were expecting.

### Sunday - DAY 1:

I left my house for NARAM around 11:30 am Sunday only because my brother was visiting from out of town. It is best to leave on Saturday. It gives you time to visit the field, do some sport flying, flight test a last minute model, or just meet new people. You'll find out that once the competition begins there is little time for any of these activities. I tried to plan to bring everything that I

Continued on Page 5

**TEAM PITTSBURGH**  
is published bi-monthly  
by the  
**Pittsburgh Space Command**  
**NAR Section #473**

Uncopyrighted material  
appearing in  
**TEAM PITTSBURGH**  
may be reprinted  
provided proper credit is  
given to the author and to  
**TEAM PITTSBURGH.**

**AD SPACE** in  
**TEAM PITTSBURGH**  
is available free to  
members in good standing.

**Yearly dues:**  
17 - under — \$4.00  
18 - over & family — \$8.00  
(Membership includes  
Newsletter Subscription)  
NL subscriptions only —  
\$4.00

Send dues to:  
Steve Foster  
RD 1, Box 2722  
Leechburg, PA 15656  
(Checks payable to  
Steve Foster, NOT PSC)

**Pittsburgh Space Command**  
is dedicated to the  
advancement of safe model  
rocketry.

**Editor: Dick Freed**  
**NAR #24586 L1**  
Please submit articles to:  
**Richard Freed**  
179 Bank St.  
North East, PA 16428

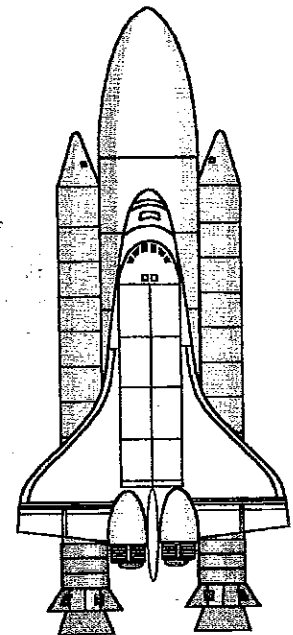
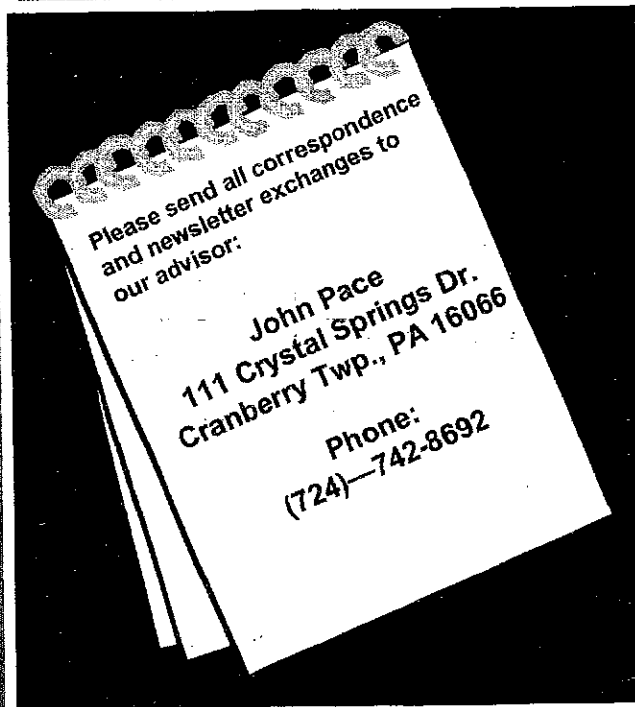
or: RichFreed@aol.com

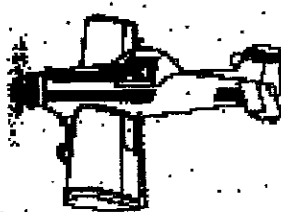
**PSC Officers for 2001:**

**President:** Rod Schafer  
**Vice President:** Mort Binstock  
**Treasurer:** Steve Foster  
**Advisor:** John Pace

**Newsletter Publisher:** Richard Freed  
**Webmaster:** Christine Rial

**PSC Web site:**  
<http://www.lm.com/~crial/psc>





# HOBBY EXPRESS

309 MARS-VALENCIA RD. MARS, PA. 16046  
CORNER OF RT 228 & MARS-VALENCIA RD.  
(724) 625-1550

**HOURS:**  
MON. - FRI. 11-9 SAT. 10-6

**Mort's Column**  
**By Mort Binstock, NAR 27182**

**THANK YOU!:**

I'd like to start my column with a BIG thank you to ART NESTOR & to JOHN BROHM. THANK YOU ART & JOHN! I have been asking for contributions for publication in "Team Pittsburgh" (T.P.). We got some in our last issue.



ART wrote an interesting informative article covering his trip West including his visits to White Sands Missile Range Museum, The Space Center Museum, and Roswell of UFO fame. ART also mentioned visiting his most famous, "All American Alpha".

Starting with the next issue I plan to revisit several old articles that I think should be republished. I think that ART's "All American Alpha" is such a candidate for republication. It is of historical interest & I suspect many of our newer members are not familiar with ART's "All American Alpha" project.

ART, thanks for last issue's BIG article. For an encore how about dusting off your old "All American Alpha" files and sending them in for republication.

JOHN BROHM wrote a most interesting article detailing his introduction to NAR model rocket contests. It takes experience to win contests! JOHN, thanks for sharing your experiences. I found them most interesting! Good luck on your next contest entries.

Again, guys, thanks for your interesting contributions.

**SPORT ROCKETRY:**

I was fortunate to have not one, not two, but three articles published in the NAR's May/June 2001 issue of, "Sport Rocketry". These articles were a review of JOSEPH PEKLICZ's "D"izzy monocopter, a review of a surgical quality #11 X'acto type knife blade, and a revisit to our club's most famous Saint Louis Arch.

**RESPONSES TO THIS COLUMN:**

FRANCIS GRAHAM sent me a short note indicating that he enjoyed my column in the last issue of T.P. Thank you FRANCIS!

Last month DALE BEIGHEY told me that he enjoyed my column & read it first. This month DALE sent me a letter noting light heartedly, "Sorry MORT - I didn't read your column first this time, ART took top honors this time". WAY TO GO ART!

How about a new contest. Send PSC your articles & try to win the coveted DALE BEIGHEY, "I read it first" contest.

DALE, thanks for your contributions in this and in our last issue.

**FINDING LOST ROCKETS USING AN AIRPLANE - SERIOUS SEARCH & RETRIEVAL:**

My column in the last issue indicated that BILL SIEGE planned an aerial search for a lost rocket. BILL either didn't search or his search was unsuccessful. BILL never contacted DALE BEIGHEY with the rocket's location.

However, DALE did inform me that he once had a lost rocket located by an airplane. According to DALE, "This would not be the first time this has happened of search being done by aircraft. Last year, at my church's annual picnic, I decided to launch some rockets. One rocket that was sent skyward was my "Black Brant". Beautiful lift off and flight until it came for the ejection charge. That dreaded Estes shock cord broke (I have come to realize that the ejection charge gases and/or heat are very hard on the elastic cord making it brittle and weak. This started my pursuit of a better shock cord). Needless to say that I had to place my hat over my heart and wave good bye to the nose cone and parachute as it floated off into the sunset.

A week later, a friend (who was also at the picnic) showed up at my door with my nose cone and parachute in A-1 condition. (I would like to have seen my expression). As I found out, apparently my friend owned an Ultra - Light and after the picnic, he went on his own Search and Rescue. He flew out of Zelig airport, went to the approximate 'last sighting' and saw the familiar purple and white parachute in a corn field. He made some visual reference marks, returned to the airport, and returned to pick up my wayward nose cone."

DALE, thanks for the interesting report. Anyone else know of a similar or an unusual search & rescue recovery? Write in & let us all know.

**DALE BEIGHEY'S SHOCK CORD:**

I covered in the last issue of "T.P." DALE's most innovative shock cord. DALE sent in some additional information.

First, clarifying my column, a loop is made ONLY in one end of the shock cord. A standard Estes shock cord mount is used to secure the shock cord to the body tube. I think that the double loop in my sketch might be appropriate for a higher powered rocket.

SPM material to make these shock cords is available in large 10' x 50' rolls. DALE has loads of SPM material & is willing to share. Contact DALE if you need some.

**LAUNCH DEFLECTOR UPDATE:**

DALE BEIGHEY is now using the same SPM material to cover his metal launch plated. He cuts a circle the same size, punches a hole in the center for the launch rod. According to DALE, "This eliminates all problems of the Alligator clips shorting out on the plate".

**Mort's Column  
(Continued)**

**MODEL ROCKET POWER:**

Have you ever wondered how much power a model rocket motor produces? Most motors we own or read about are rated in horsepower. Examples of motors rated in horsepower include automobiles, lawn mowers, furnace motors, etc. All these motors are rated in horsepower.

Piston powered airplanes motors are also rated in horsepower, yet a jet airplane or model rocket motor is rated in thrust. Even the engines of the top secret Pittsburgh Space Command (PSC) corporate 747 jumbo jet (PSC 1) motors are rated in thrust. Use of PSC 1 is reserved for use by club officers & contributors to this newsletter.

So, what is the relationship between thrust & horsepower? The relationship is interesting! Thrust is simply the "pushing" force from our model rocket motor. Horsepower is more complex & requires work to be done. Something must be moved by the force. The amount of movement and time for the movement are also important.

Thrust is simply measured as a force. Typical thrust units include the Newton or pound. Horsepower is more complex. Horsepower requires the measurement of force, distance, & the time period. An example of horsepower's units is, (foot pounds)/minute.

There is an interesting relationship between a model rocket motors rated thrust and horsepower. This relationship is dependant on the speed of the model rocket. No speed (stuck on the launch pad), no work, therefore no horsepower. A "magic" number quantifying the relationship between thrust & horsepower occurs at 375 miles per hour (mph). At 375 mph one pound of thrust equals one horse power. At half that speed one pound thrust equals a half horsepower & so on. The relationship is proportional.

A simple table providing the horsepower (hp) of a model rocket motor as a function of speed is:

ENGINE SIZE	THRUST NEWTON	HP@90 MPH	HP@180 MPH	HP@375 MPH
B	6	0.32	0.65	1.35
C	6	0.32	0.65	1.35
D	12	0.65	1.29	2.70
E	15	0.81	1.62	3.37
F	25	1.35	2.70	5.62
F	50	2.70	5.39	11.24
G	40	2.16	4.31	8.99
G	80	4.31	8.63	17.98
H	90	4.85	9.71	20.22
I	250	13.48	26.97	56.18

A model rocket's speed can be determined from various available computer programs.

I picked most of the above tables values as they relate to

common model rocket motors. The H & I motor values were calculated to satisfy my curiosity. Many years ago I launched a 24 picture per flight motorized 110 camera rocket using a H90, A 10 shot per flight Polaroid using an I250. The speed of both rockets approached the "magic" 375 MPH mark. Their horsepower at burnout was a whopping 20 & 56 horsepower. That's a wow!

Knowing a model rocket's approximate horsepower adds to the fun and makes for interesting conversation. A model's horsepower can be compared with other motors we own.

**GLUE TUBE TRIVIA:**

Have you ever opened a tube of glue or epoxy with a metal seal. Do you know the cap is designed to break the seal. The cap's reverse side has a dimple. Reverse the cap then press unto the tube. The dimple will neatly & cleanly puncture the seal. Works every time!

See you at the next launch!

Mort Binstock NAR 27182



Steve Foster prepares his four engine cluster Apollo Capsule Abort Test Rocket for launch at NARAM43 Sport Scale. Steve took home the 4th Place Trophy for this event.

needed. Unfortunately, in some cases I brought too much of some things and not enough of others. I didn't find this out until I arrived at the field, which was too late. I arrived at the hotel around 4:00 PM, immediately unpacked the car and organized my stuff in the room.

#### LESSONS LEARNED:

- 1) *Make a sheet of what you need to bring to the event. Some key personal items are hats, sunglasses, allot of water, sunscreen, a tent to sit under while prepping your rockets, trash bags, WD-40 to clean launch rods and the rails on your tower, a chair, a table and a big cooler for food and drinks.*
- 2) *Rocket items that are a must include the pink book, CA and accelerator, spare tubes of all sizes, some balsa, basswood and waferglass material, nose cones for each model, couplers, kevelar (a minimum of 2 strengths 28-30 pound and 100 pound, epoxy, wood glue, streamer and parachute material in case you want to build one at the last minute to meet the flying conditions of the field.*

Sunday night brought with it two activities, a competitor debriefing session and scale model check-in. During the debrief, we were given handouts of information from the pink book and our assignment schedule. I was a timer and assistant tracker. In addition, the RSO's and contest jury were identified. Some typical questions asked concerned what is and is not a DQ?, what construction materials would be allowed in B super-roc? When is a red baron boost glide flight acceptable? The size of the tracking area for rule 10.4, and where daily results would be posted. Following the debrief it was time to check in my scale model. I built an AGM-114A Hellfire Missile. I was very apprehensive about entering the event. However, after seeing some of the other models being entered, I realized I would not be one of the best but I was also far from being the worst.

#### LESSONS LEARNED:

- 1) *Read and understand the pink book, especially as it pertains to the events you are participating in.*
- 2) *Understand when you have range duty and plan your days accordingly. It may not seem difficult at first to get off 4 flights in a period of 8 hours, but when you consider that two of those hours are spent each day at range duty, another couple of hours tracking, chasing and hopefully finding your rocket to get a qualified flight, and then there's the time spent standing in line to check in your rocket, standing in line to get a pad assignment, prepping your rocket at the pad, getting in and out of the Queue due to misfires, helping your fellow teammates and maybe getting a quick bite to eat. As you soon find out, the time available to get off four flights per day is much less than you originally imagined.*

- 3) *Don't be afraid to ask a question. It could mean the difference between a qualified and DQ'd flight.*
- 4) *Don't be apprehensive about entering the scale-modeling event. I can assure you there will be models that are not as good as yours. Also, plan the selection and construction of your model early and by early, I mean eight to twelve months ahead of time. You're going to need allot of time sanding, sealing, painting and detailing your model. Proper planning will prevent a last minute all nighter (just ask Rod) and the possibility of the model not being exactly as you would like it to be for display room at NARAM. Also, start planning your booklet early. Get facts, figures and pictures from the Internet, the library, Peter Always scale data books or other sources of rocketry information that you may be familiar with. Finally, make your booklet and model look professional. Take the time to build a nice looking stained stand for your model and if you have the time and money, have a brass plate made for the stand that lists the name of your rocket, your name, NAR number and section. Put a nice cover sheet on your booklet. A picture of the rocket you scaled and some pertinent data about yourself may be appropriate.*
- 5) *Look over all other scale models entered to get an idea of what you may want to build for your next scale project.*

#### Monday - DAY 2:

At the recommendation of Rod and Steve, I got up early so I could be at the site by 7:00AM. Flights scheduled were ½ A Flex Wing and ½ A Boost Glide. Since the morning was sunny, calm with little or no wind I decided to launch my Flexie in an attempt to keep this one in the field so I could fly the second one away later in the day. After hand tossing about 6 models I selected the one I felt would give me the best results. Rod, Steve and I arrived at the competitors area together. Rod and Steve launched first, posting times of 118 and 114 seconds respectively. Unfortunately, I was not as fortunate. Although I received a qualified flight, my time was a dismal 25 seconds. The reason for the poor results turned out to be the lack of adequate dihedral in the spars of my flexie. After adjusting the angle of my spars and waiting for the winds to calm down, I launched my 2<sup>nd</sup> flexie just after 4:00 PM achieving a time of 100 seconds. This time, although low compared to other competitors was due to the high winds which pushed the rocket away from the flying field and out of range of the timers. Other notable PSC flexie flights were Richard Freed's 141seconds on his 2<sup>nd</sup> launch which was the second best time posted by a PSC

member and Rod's 186 seconds on his second flight that flew away over the SUNY college campus and won him a 3<sup>rd</sup> place finish. More on this story later in another article.

½ A-Flexie PSC Results:

Competitor	Flight 1	Flight 2	Total	Place
Rod	118 sec	186 sec	304 sec	4th
Steve	114	92	206	9th
Richard	63	141	204	10th
John	25	100	125	15th
Mark	31	NG	31	27th

The second event on Monday was ½ A boost glide. Many of the competitors used deltie boost gliders only to have the pod become entangled with the glider resulting in a DQ. Many of the PSC members, including myself, had models patterned after Steve's design from the March/April newsletter. All of us hand tossed our gliders and were happy with the results. Unfortunately, hand tossing was not representative of the wind conditions that day or the planes ability to glide. In an event that is typically dominated by Steve and one where PSC was counting on at least one top 4 finish, we didn't even finish in the top 10. Mark and Richard achieving a 14th and 21st place respectively turned in the best results by a PSC member. In my case, more test flights were needed to determine pod and glider stability. In both my flights, I was DQ'd. The first was for a red baron where the pod gets entangled with the booster and the second was due to a lack of stability.

½ A-Boost Glide PSC Results:

Competitor	Flight 1	Flight 2	Total	Place
Mark	9 sec	49 sec	58 sec	14th
Richard	38	8	46	21st
Rod	11	DQ	11	33rd
John	DQ	DQ	—	—
Steve	DQ	DQ	—	—

Lessons Learned:

- 1) *Understand the design and glide characteristics of a flexie. Be sure the dihedral is steep enough to give you a good glide rather than one that comes in slightly less than 45 degrees as mine did on my first flight.*
- 2) *Build several sizes of flexies 12", 14", etc. using different coverings. Be sure you have between 4 or 6 models for each flexie event.*

- 3) *Use a material for the flexie that is easy to see from afar. Metallic seems to work best due to its reflectivity.*
- 4) *Take advantage of the morning calm when flying flexies.*
- 5) *Use time during monthly sport launches to test fly both your flexies and boost gliders. Also, if possible get to the NARAM sport range on Saturday and Sunday to conduct last minute tests on your gliders.*
- 6) *Come to NARAM with at least 2 or 3 different boost glide designs that perform different under varying weather conditions.*
- 7) *Build turning into your flexie or boost glider so that it stays in the launch site and is visible to your timers.*
- 8) *Have a member of your team stand by the timers assisting them in spotting your rocket or glider.*
- 9) *Understand thermals. How do they occur? Where to best find them? Etc.*

DAY 2 – Evening:

Attended the NAR town meeting. Most discussions centered on membership growth. Issues such as interest among pre teens and teens, the idea of high school rocket competitions to stimulate interest in the hobby, the born again rocketeer and the affect high power is having on the growth of model rocketry were some of the hot topics. Other discussions included the financial stability of NAR, the NAR scholarship program and the AFT issue surrounding motors and the potential hazards associated with them and what we should be doing as a group and as individuals to let our opinion be known to our state representatives.

Tuesday - DAY 3:

Since I had the morning shift in the range, I decided to arrive at the site around 8:00 AM which in hindsight was probably a mistake. The events for the day were D-Helicopter duration and A-streamer duration. Only 4 PSC members participated in D-Helicopter. Rod had a very interesting model named the beast. It was designed with 3-foot rotors, the largest rotor design by anyone at NARAM. As you will see from the results, the design proved successful giving Rod a first place finish. Not to be outdone was Steve with his design that not only netted him a second place finish with a combined time just 4 seconds behind Rod but also a new national record. Congratulations Steve! In my case, I hurt myself and my chances of placing in this event by only bringing two models. The first model was a success with a time of 141 seconds. Unfortunately, the rocket was lost in the adjoining cornfield and not found until 5 minutes after the close of the contest range. My second model and one I have

used in the past with limited success utilized a molded hub for rotor attachment. While positioning the rocket in the tower, the hub broke into 4 pieces preventing me from making a second flight.

**D Helicopter PSC Results:**

Competitor	Flight 1	Flight 2	Total	Place
Rod	127 sec	153 sec	280 sec	1st
Steve	200 *	76	276	2nd
John	141	DNF	141	8th
Richard	DQ	DQ	—	—

In A-streamer, the main objective is to maximize streamer size around a width to length ratio of 1:10 while deploying the streamer at apogee without kicking out the motor. Model designs vary using vellum, phenolic, kraft body tubes and in most cases either balsa, 1/64" plywood or waferglass fins but the key factors are streamer size and rocket altitude. The day saw allot of separations, no streamer deployments and kicked motors. Some of the PSC members including myself experienced these problems. When the event was over, once again, PSC was out of the running for a trophy. The best our section could muster was a 13<sup>th</sup> place finish by Rod. Results by individual for this event are as follows:

**A-Streamer PSC Results:**

Competitor	Flight 1	Flight 2	Total	Place
Rod	75 sec	69 sec	144 sec	13th
Richard	45	DNF	45	30th
Steve	DQ	24	24	36th
Mark	143 NR	DQ	0	—
John	DQ	DQ	—	—

**Lessons Learned:**

- 1) *If you are serious about competing in both altitude and duration events especially in the small engine sizes, it is imperative that you build yourself a good tower and piston launcher. I am convinced that the combination of these two items can make the difference between finishing in the top 10 or at the bottom of the list.*
- 2) *If available, use the rock-sim program to help you determine the motor that will yield the greatest altitude for your design.*
- 3) *Use packaging filament tape to hold your engine in place.*
- 4) *Don't try to stuff too large a streamer into a rocket. A couple of suggestions are to build you rocket with a 10.5mm engine tube and transition*

*it to a larger size tube say 13mm where the streamer is packed.*

- 5) *Use plenty of powder to assure that you streamer does not burn which could possibly prevent proper deployment at ejection.*
- 6) *The most common tracking powder is chalk dust, which you can find at almost any hardware store. But if you want the best most effective tracking powder use epoxy filler especially in a neon pink color. This material is lightweight, does not absorb moisture which can add to the rockets weight and stays in a cloud long after its ejection from the tube.*

**Day 3 – Evening:**

Tuesday was a long day with the picnic followed by the auction. The picnic took place at a local park not far from the hotel. The meal was good and the time spent there was both relaxing and enjoyable. Since Rod and Steve felt that we were not worthy to sit with event winners and might jinks them in their quest for trophies in future events, Mark, Richard and I had dinner with some first timers from Bucks County, PA. Ed Romani had joined NAR 3 weeks before the event and he along with his wife Merri had decided to make the 6 hour trip from southeastern, PA to the Rochester area. Ed and Merri became companions of ours for the rest of the trip visiting with us while we prepped our rockets, helping out with launch and recovery and just having fun. If it hadn't been for Ed, I don't think I would have ever gotten my Egglofter back on Thursday. More on that later. After the picnic, we rushed back to the hotel to attend the annual NAR auction, which is in memory of Mr. Cannon with the proceeds donated to the NAR Scholarship Fund. Some of the interesting items auctioned at this event included the following:

- 1) 4<sup>th</sup> Edition of Model Rocketry
- 2) Early 80's models of Estes starship Enterprise and Klingon Ship
- 3) 1<sup>st</sup> edition of Scale Model Rocketry autographed by Peter Alway
- 4) Estes Saturn B1
- 5) E9-4 Estes engines in a white pack.
- 6) 1981 Estes & Centuri Catalogs plus 4 other catalogs from the 90's.
- 7) George Always scale drawing of the space shuttle.
- 8) A large bag of balsa nose cones.
- 9) Estes Evil Kenevel rocket kit
- 10) USS America Rocket kit
- 11) Estes Mars Lander – I bought this
- 12) Estes Little Joe II kit.

Mark was furious when the Little Joe kit was auctioned off to kids under 18 only. Mark tried to bid on the kit saying he had just turned 18 but the auctioneer didn't buy it.

**Wednesday-DAY 4:**

Day 4 came and still no trophies for either Mark, Richard or myself. Fortunately, that would change for at least one of us (no it wasn't me). The events of the day were B Super-Roc Altitude and An Altitude. Since Mark and I were working the late shifts, we decided to get a B super-roc flight up early to see if our models were competitive and then fly a second flight if necessary to get into the top 4 slots. We also knew that Rod and Steve were working the tracking stations that morning and might need some assistance in the afternoon since they were both competing for a top spot nationally. We decided to take advantage of Rod's new tube launcher. An 8-foot tube with rails to guide the rocket and a piston launcher on the end. It was the talk of NARAM-43 and a concept I am sure will be copied by other competitors for future Naram's. I believe the idea is to minimize the effect of wind drag during liftoff and in the case of B super-roc's eliminate the opportunity of having wind gusts send your rocket horizontal or into loops during flight. The piston provided that extra burst at liftoff that is not attainable otherwise. Mark had built a standard 13-mm B super-roc using standard Estes tubing, a transition section and 10.5 mm tubing on the upper end. A 13-mm engine adapter for 10.5-mm engines was also used. In my case, I had built a maximum length B super-roc using a 10.5mm lower section out of Ring Rocketry's orange tubing and then a balsa transition to a PT-6 body tube with a custom built nose cone on the end. Richard, Rod and Steve used similar materials and in some cases vellum for transitions. You could say that the PSC crew had models that ranged from the ultimate use of the most advanced rocket materials to basic Estes components. Mark's initial flight netted him 193 meters(38,600 pts) and 1<sup>st</sup> place. Once again, after a great flight to apogee, I was unfortunate and kicked out my motor resulting in a DQ. Richard flew later that morning reaching 137 meters( 20,687 pts). As the day progressed, the winds got stronger causing many of the more sophisticated models to be DQ'd for loop and instability. By the time Rod and Steve were ready to fly the winds were strong at 10 to 15 mph. Steve's first model DQ'd for instability. Rod was able to get an altitude of 301 meters but on a model that was less than the max. for this event resulting in only 30,401 points. As the day progressed Mark's flight held onto 1<sup>st</sup> place but in the afternoon he was overtaken by several contestants including Steve Foster requiring him to make his

second flight to see if he could once again capture 1<sup>st</sup> place. Mark's second flight was excellent reaching an altitude of 230 meters (46,000pts) and recapturing 1<sup>st</sup> place. There was only one contestant left that could beat his point total and that was Chad Ring. After prepping his rocket and waiting for the right conditions, Chad launched his super-roc model. When the results came in Chad had reached an altitude of 244 meters but since his rocket was not built to the maximum length for this event, his point total was only 45,384 or approximately 620 points short of Mark giving him first place. The overall results for the PSC group are as follows:

**B-Super-Roc PSC Results:**

Competitor	Flight 1	Flight 2	Best	Place
Mark	38600 p	46000 p	46000 p	1st
Steve	DQ	39000	39000	5th
Rod	30401	DQ	30401	13th
Richard	16910	DNF	16910	23rd
John	DQ	DQ	—	—

In A altitude, Rod and Steve after returning from range duty immediately put up their rockets and moved quickly to 3<sup>rd</sup> and 4<sup>th</sup> place with altitudes of 361 and 352 meters respectively. Mark, Richard and I also made successful flights but at altitudes far less than the leaders. The 4 PSC members made successful second flights in attempt to catch the competitors at the top and although most of us managed to better our first altitude flight we did not more up in the standings. The results of A altitude were:

**A Altitude PSC Results:**

Competitor	Flight 1	Flight 2	Best	Place
Rod	361m	351m	361m	3rd
Steve	352m	283m	352m	4th
Mark	298m	311m	311m	10th
John	298m	303m	303m	12th
Richard	193m	283m	283m	17th

**Lessons Learned:**

- 1) *Have a good, long working surface for prepping your models especially those in super-roc.*
- 2) *If possible, fly your super-roc models when the winds are calm to maximize altitude or duration depending on the event.*
- 3) *Use packaging filament tape to hold your engine in place.*
- 4) *Be sure to plan for a safe recovery especially in*



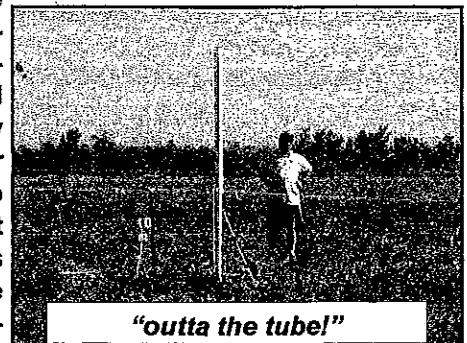
- super-roc altitude, otherwise you risk the chance of a DQ. Some contestants had two part streamer recovery, others took a chance with tumble recovery and some used a small single parachute*
- 5) *Study the DQ habits of the RSO's and try to fly when the most lenient one is on duty.*
  - 6) *Use plenty of powder to assure proper tracking. Again, I recommend using epoxy filler.*
  - 7) *Take pictures of unique rockets in each event or make sketches for yourself. Identify any new materials used that you feel gave that competitor an advantage over the rest of the group.*
  - 8) *Build yourself a tube launcher for super-roc flights.*
  - 9) *The best technology doesn't always guarantee you the best results. The key is to build several rockets designed around varying weather conditions. Marks super-roc was made from standard materials but it was the right rocket design for the conditions that day. Once again, have 4 to 6 models available to fly and as for super-roc you may want to consider building a long, medium and short model.*

### Thursday - Day 5:

Due to an unexpected death in my family, this would be my last day at NARAM. I was sad to be leaving but happy to have spent 5 days with a great PSC group which I feel is one of the best sections in NAR even though we have never one the section of the year award. One thing I have found about rocketeers is that they are some of the most caring, helpful and honest people you'll ever meet.

The event on Thursday was C-Egg Altitude. I have always enjoyed the egglofting events and although I wasn't expecting to place, I planned to give it all I had in an attempt to take at least a fourth place. In addition, Rod needed all of us to place in this event to keep Chad out of first place in the overall point standings. Once again the winds were calm in the morning and gradually increased as the day progressed. The PSC designs were all very different. Rod and Steve flew conical vellum tubes with their eggs placed in balloons for protection during the flight. Richard also flew a conical paper tube with an egg nose cone. Mark flew standard 18mm tubing with a Pratt Hobby egg cone. For me, I had two designs one similar to mark to fly off a C10-4 engine and a second model built to carry a C6-4 13mm apogee motor (see drawing). All PSC members but Rod has successful first flights and very similar results but none of our altitudes were good enough for a top 4 finish. Realizing that this was my last attempt to take home an award, I decided to use my 13mm design, I

felt its lightweight and aerodynamic design might get me a few extra meters. I had destroyed my 18" mylar parachute on the first flight and was concerned about using a 15" chute on this flight and cracking the egg resulting in a DQ, so I decided to use a 20" mylar chute with a large hole in the top. What a mistake! I flew out of my tower and after waiting for what I felt was the right conditions and help from Mark who was working the range that shift, I decided to launch. Unfortunately, the control box to the launch pad fell off pulling over my tower and cracking the egg. I had to now get a new egg, check the fins and tube for any damage and try again. After a slight delay I was ready to launch and I guess it was worth the wait. The rocket soared to an altitude of 301 meters putting me in second place. Due to the size of the chute, the altitude achieved and the winds that time of day, the rocket moved downwind quickly and at times seemed to rise in the thermals. I kept an eye on it and tried to use landmarks to track it into the college grounds. After walking around for about 30 minutes in 90+ heat, I had decided to give up. Fortunately, Ed Romani, the guy we had met at the picnic, came to my rescue with his van and some water. After driving down a couple of streets, we finally found the rocket lying on the edge of the road. The question was, was the egg cracked DQ'ing me from the event? We drove back to the site and went immediately to the return table where all the PSC members gathered to see the state of the egg. After stripping off the seal around the nose cone and removing the tape from the bag that held the egg, it was approved as a qualified flight, the egg had not broken. The altitude held late into the day. The only contestant that had a chance of overtaking me was, you guessed it, Chad Ring. Although I didn't see his flight, I happened to be at the return table when he checked in his egg. His altitude, 287 meters. I had managed to hold onto second place. After a disappointing week of poor designs, DQ's, lost models, and not enough models for some events, I finally had something to cheer about. It was funny, that one top four finish wiped away all the earlier disappointments of the week making me more eager than ever to get back to another NARAM and the opportunity to meet new people in our hobby, learn from some of the best designers and competitors in model rocketry (many who are from our own section), to compete against other sections throughout the US and to just en-



*"outta the tube!"*

joy the time with fellow rocketeers. The results of the event were:

**C Egg Altitude PSC Results:**

Competitor	Flight 1	Flight 2	Total	Place
John	245m	301m	301m	2nd
Rod	DQ	252	252	11th
Mark	237	NR	237	12th
Richard	237	235	237	12th
Steve	235	NR	235	13th

**Lesson Learned:**

**1) Never Give Up!**

Although I was not their get the static scale model scores or to watch PSC members fly their scale models for mission control points on Friday, the following are the results posted:

**Sport Scale Model - PSC Results:**

Competitor	Prototype	Static	Flight	Total	Place
Steve	Apollo Capsule	713	90	803	4th
Rod	Jayhawk	680	90	770	5th
Richard	Black Brant II	530	100	630	16th
Mark	Pershing I	690	DQ	—	—
John	AGM-114	490	DNF	—	—

**Searching for Rod's Flexie, a PostScript by John Pace**

For those of you who know Rod, you know he is an expert in Flexie design and flying. In fact, Rod currently holds 2 national flexie records in 1/4A and B. Rod has had some flights where the Flexie hits a thermal and keeps going up landing who knows where. Rod felt that in order for him to determine how far his flexie traveled from the launch site, he needed to include his name and telephone number on the flexie along with an incentive for the person finding the rocket to call him. He felt that a case of pop or beer would be enough and he was hoping the flexie would fly into another state thus giving him an idea of how far these balsa and plastic models can fly. At NARAM-43, Rod needed a good second flight if he was going to get into one of the top 4 spots. The model had to stay in the field for as long as possible so that the timers could easily view it before flying away. Rod was able to modify his flexie to do exactly what he had planned. The rocket left the field and appeared to fly over SUNY college about a mile from the site. The next day, when Rod returned to

his hotel room after competing in D-Helicopter that he won and A streamer where he finished 13<sup>th</sup>, Rod received an unusual phone call from a Mr. Michael Hunt. Mike told Rod that he found his glider in his back yard which was just above the college campus, he then called Rod's wife, Marilyn in Pittsburgh where he got the telephone number for Rod's hotel and then called Rod to let him know he had found his glider and wanted to cash in on the case of beer. It had been a hot week of 90+F each day and the guy was probably looking forward to a cold one. Rod and Mike had decided to meet the next day at the launch site where Mike would give Rod his flexie for the case of beer. That evening as we were returning home for dinner, Rod had me stop at a local convenience store so he could pick up a case of beer for Mike. The beer cost Rod around \$9.00 a pretty steep price for a flexie but Rod being the honest man that he is was going to keep to his agreement with Mike. The next day was very busy and the national standings for first place were on the line. Mike had planned to meet Rod at the site around 1:00PM. However, when Mike arrived Rod was in the mist of a very important A-Altitude flight against Chad Ring his #1 competitor. Since Rod was busy, I met with Mike and found out he was a janitor for the college and lived just above the school. Mike was in his early 50's and seemed to enjoy the activity surrounding our competition. However, Mike had stepped away from work to come to the field and needed to get back so that he would not get in trouble with his supervisor. He said he felt bad about taking a case of beer for such an insignificant little wood and plastic glider and told me he didn't want the beer and gave me Rod's model. Since none of the PSC members drink beer\*\*, Rod gave it to Steve Humphrey a NJ competitor Rod had met during our NARAM and the person that had given Rod the idea for the tube launcher. Rod felt bad that he did not have the opportunity to meet Mike Hunt and personally thank him for finding his glider. But who knows, maybe that brief encounter may be enough to attract Mike to our hobby giving the MARS section a new member and one that Rod may see at future NARAM's as a competitor. As for Rod flying his Flexie far from the site and possibly to another state, that vision will have to wait another day or at least until the next competition. Who knows the upcoming E-Flexie competition at Smoke & Trail<sup>1</sup> maybe the perfect event where Rod can achieve his goal? I just hope the people of West Virginia know the difference between a UFO and glider and don't start looking for little green men.

**Editor's notes:**

\* Steve's Helicopter flight —New NAR Record! 200 sec.

\*\*No one asked Richard!!!!

**Notes From the Prez  
by Rod Schafer  
President, PSC**

**1. Once Again... PSC's Annual Picnic "Rocket & Relaxation 7" A Huge Success!**

The attendance was great! There was lots of food! and the weather pretty much cooperated until 5 PM when Mother Nature decided to let go with soaking downpour! Before the rain came though, PSC members and returning Rocket Camp attendees launched into the sky 115 flights! After everyone had lots to eat, Team Pittsburgh editor and Rocket Camp Leader Richard Freed had the honor of presenting the rotating "Schafer Cup" to the 2001 PSC Points Champion- Rod Schafer. I then thanked everyone for attending the picnic and gave a recap on NARAM-43. I then made a special PSC President Member Recognition Award to Christine Rial for her many contributions of time and effort to the club over the past year. Christine received an Estes OOP Explorer Aquarius kit. Finally, the event that everyone was waiting for took place, the Rocket Raffle ticket drawing for a picnic table top full Rocket items! The raffle raised a whopping \$220.00 for PSC's treasury!! A new record amount! A big Thank You to those that donated to the Rocket Raffle!

**2. Election Of Officers For 2001**

Nominations are now being accepted for club officers for 2001. All current officers have said they will run for office in 2001. If you would like to nominate a PSC member or yourself for an office (President, Vice-President, Treasurer, Section Advisor). Please email, phone or send your nomination to Rod Schafer. Deadline for nominations will be September 8, 2001. Ballots will then be mailed out for voting and the results announced on PSC's webpage and by the PGHRocketry list group on September 29, 2001.

**3. Steel City Smoke Trail 1 & Dragon's Fire XXIII Upon Us!**

Don't miss this one! It will be the biggest Pittsburgh launch of 2001! So far Rocketeers are attending from the states of New Jersey, New York, Maryland, Virginia, West Virginia, and good ole Pennsylvania. See PSC web site for more info.

**4. Winter Activities To Return For Winter 2002!**

The January Video Night and February workshop will take place in 2002. Anyone interested in presenting a topic for the Feb. workshop, please contact me so the details can be worked out. More info on the winter activities will appear in the Nov. - Dec. issue of Team Pittsburgh.

Until Next Time...

Fly'em High,

Rod

**Competition Corner —  
Upcoming Competitions sponsored  
by PSC**

Contest Events For 2001-2002

**Steel City  
Smoke Trail 1**

**10/20/01 & 10/21/01**

**Events:**

- 1/2A Parachute Dur.**
- 1/2A Streamer Dur. (MR)**
- A Payload Alt.**
- C Rocket Glider Dur.**
- E Flex-Wing Dur.**

**Location:**

**Dragon's Fire HP Launch Site, Charleroi, PA  
Start Time: 9:00 AM (Both Days)**

**New Address or Phone Number?**

Please inform Mort Binstock of any address or phone number change or let him know at one of our monthly launches. Mort will then update the PSC database that he maintains for mailing labels for the newsletter.

**Mort's Address and Phone Number:**

**1150 Windermere Street  
Pittsburgh, PA 15218-1144  
(412) 244-1332**

# Dragon's Fire Launches

## Dragon's Fire Launch information:

All Dragon's Fire launches will be conducted according to following guidelines:

FAA waiver: 5,000 ft AGL

Flyer's fee: \$8.00 (per flyer or \$8.00 per family)

Set-up: 8:00 AM

Flyer's meeting: 9:00 AM (range opens following meeting)

Range closes: 5:00 PM

Only Tripoli or NAR certified motors may be used.

Up through I-range motors permitted without advance application.

J-motor flights require advance application/approval, subject to launch day flying conditions.

Contact Prefect Ken Good to apply for J-motor flights.

Important Note: Due to the launch site's proximity to an interstate highway, the RSO will reserve the right to lower the permitted motor range and/or limit launches as required by conditions.

## Dragon's Fire 2001 Launch Dates

# September 8 October 20-21

More Dragon's Fire information can be found on the Tripoli Pittsburgh's web site:

[http://www.rimworld.com/Tripoli\\_PGH](http://www.rimworld.com/Tripoli_PGH)



Rod Schafer's Jayhawk takes to the sky in the NARAM33 Sport Scale event.

**Map to Dragon's Fire Launches At Jonestown Site**

**FROM I-79:** Take I-79 south to Washington, PA. Take exit for I-70 East (Toward New Stanton). Continue for approximately 20 miles to Exit 13.

**FROM PA TURNPIKE:** Get off at Exit 8, New Stanton, and follow I-70 West for approximately 23 miles to Exit 13.

**AT EXIT 13:** Follow route 481 for 0.2 miles to Grange Road. At this point, look for signs that will direct you to the launch area that will be used for the day.

**Rockets & Relaxation — a Great Time!**



By Richard Freed, Editor, Team Pittsburgh  
NAR #24586

Threatening skies didn't keep a large group of Pittsburgh area rocketry enthusiasts and their families from attending the annual R & R launch & Picnic. The afternoon provided plenty of fun (and some frustration due to the southeast wind which kept blowing rockets toward "the great Balsa Forest"). Winds were kind at times allowing for many launches of various types, up to G motors in some large birds.

After a couple of hours of sport launching, it was time for the picnic and raffle. The picnic was highlighted by a feast that was provided by those attending who "brought a dish to share". No one left hungry! The annual raffle netted more than \$200 for the treasury. Thanks to all who contributed items to the auction.

Following the auction, the Schafer Cup was presented to Rod Schafer, who had the most pre-NARAM points in PSC. Rod then highlighted the recent NARAM competition which was attended by 5 members of PSC, in Geneseo, NY. Rod also received the trophy for 2nd place National Champion at the meet banquet.

The rains held off until around 5 p.m., which was the advertised ending time for the event. Although this dispersed the crowd quickly, all had a great time and look forward to R & R VIII in 2002.

**PSC  
Launch Windows 2001**

**Lutherlyn:**

**Sept. 16 Sport Launch**

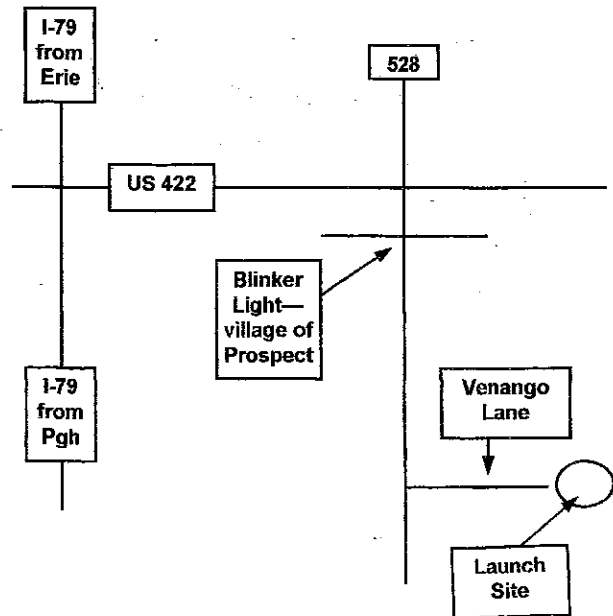
**Oct. 20 & 21 Competition**

**"Steel City Smoke Trail I" Regional  
(Held at Jonestown "Dragon's Fire Site")**

**Nov. 11 Sport Launch**

**Dec. 9 Sport Launch**

**Map to Camp Lutherlyn  
PSC Launch Site**



**FROM 422 —**

Get off at Prospect exit (528) and head south. Continue to blinker light about 0.3 miles from exit. Go straight through this intersection. Continue south on 528 for approximately 3 miles — look for a sign on the east (left) side of the road which says "Lutherlyn Rustic Retreat Center". Turn left onto dirt road and continue approx 1/4 mi to the launch site.

# NARAM 44 — MACGREGOR, TEXAS!

## AUGUST 4-9, 2001

B ALTITUDE

E EGGLOFT ALTITUDE

1/2 A PARACHUTE DURATION

C HELICOPTER DURATION

B EGGLOFT DURATION

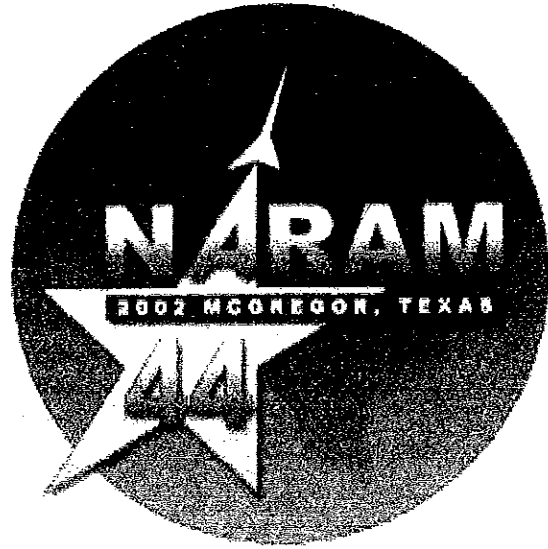
B BOOST GLIDE DURATION

C ROCKET GLIDE DURATION

SPORT SCALE

R & D

PRO SPORT SCALE (DEMO EVENT)



[WWW.NARAM2000.ORG](http://WWW.NARAM2000.ORG)

### **Team Pittsburgh**

*Pittsburgh Space Command*

*Richard Freed, Editor*

*Send returns to:*

*Mort Binstock*

*1150 Windermere Drive*

*Pittsburgh, PA 15218-1144*

