



Team Pittsburgh

Newsletter of the Pittsburgh Space Command NAR #473

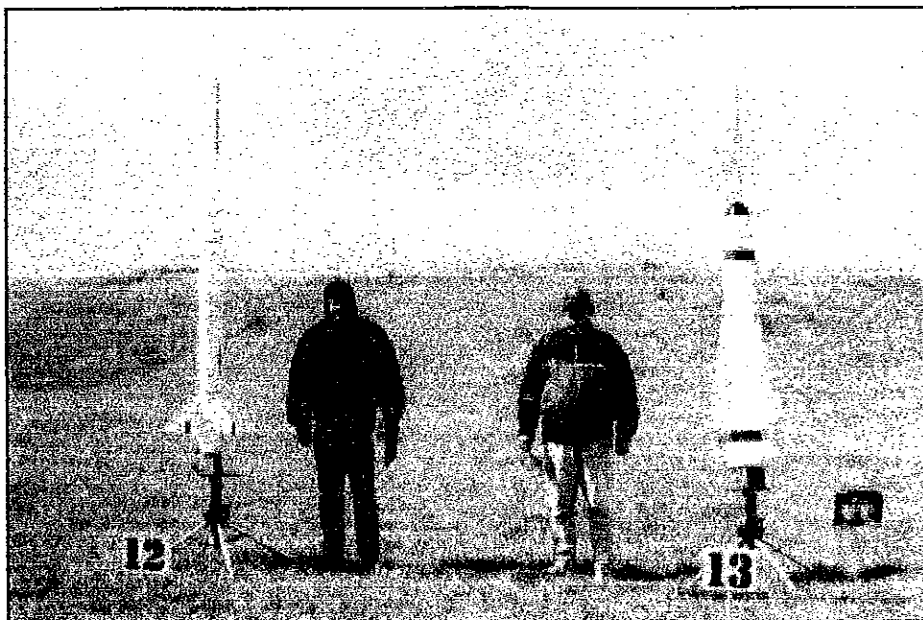


Volume 14, Issue 3

#102

May/June 2002

Spring Has Finally Arrived!



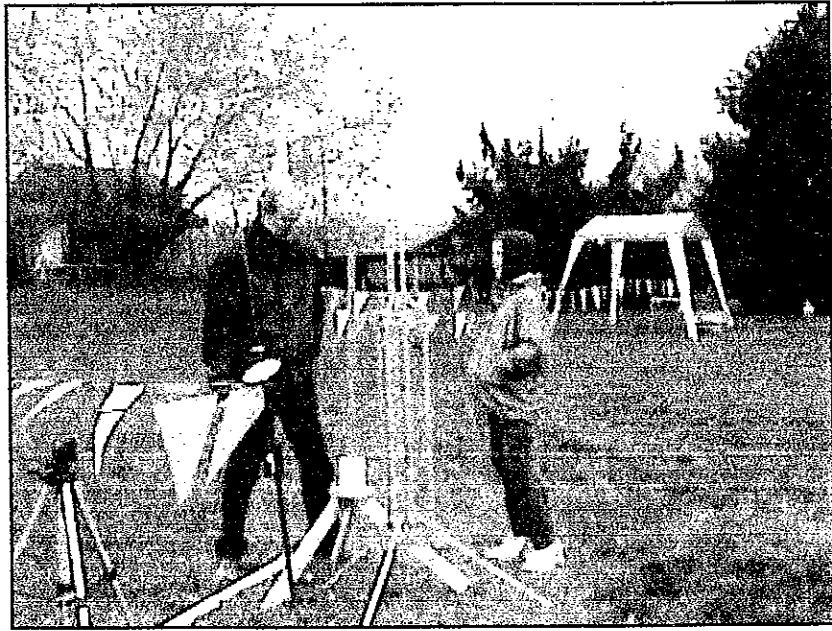
PSC members have ushered in the Spring Rocketry season with two big events in April...

Left:

Dragon's Fire XXII at the Jonestown High Power Launch Site, PSC in cooperation with Tripoli Pittsburgh

Below:

Rocket into Spring VIII —PSC regional competition.



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

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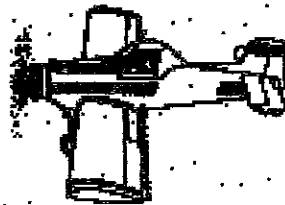
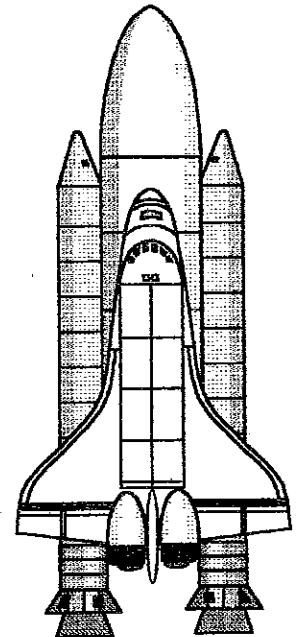
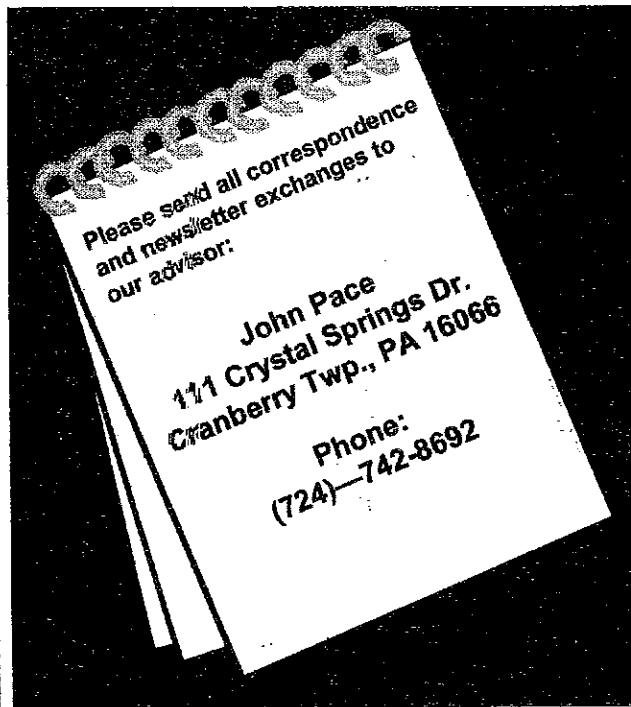
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Vice President: Mort Binstock
Treasurer: Steve Foster
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<http://www.psc473.org>



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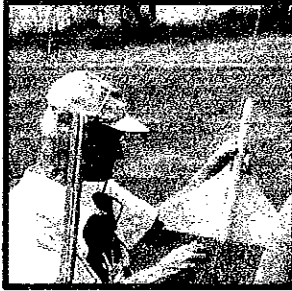
Mort's Column

By Mort Binstock, NAR 27182

THANKS!:

Thanks ART NESTOR for your informative AND most interesting second installment of your article, "The History of the Pittsburgh Space Command". I look forward to reading and enjoying your third installment.

Thank you ART for your initiative and effort to research the history then write it up for "Team Pittsburgh" (TP). Articles like this continue to make TP a great newsletter and interesting.



STYRO - F.O. 3D:

Also congratulation to Ohio member JOSEPH PEKLICZ for having a review of his Styro - F.O. 3D published in the recent March/April issue of, "Sport Rocketry." JOSEPH is a most skilled and prolific designer of rockets. You can purchase from JOSEPH well designed kits for his various flying saucers and monocoverters.

I successfully flew this published article's 3D flying saucer at our March launch. As you might imagine a 3 "D" engine flight, the flew fast and high!

HOLD THE FOAM:

JOSEPH's flying saucer is made from two styrofoam soup bowls glued together. I initially glued them together using foam safe Elmer's white glue. This white glue parted on the first flight when an engine catoed. I glued the two halves back together the second time using foam safe odorless CA. I experienced the same cato & separation on flight two.

The third time I glued the halves back together with a very strong glue called, "HOLD the FOAM" manufactured by Beacon. This glue looks like tooth paste, white & thick. It is water based and takes about 24 hours to cure. The glue is tacky, holding the two halves together when applied. "HOLD the FOAM" cures almost transparent and is very strong.

I purchased my "HOLD the FOAM" from the craft store, Michael's. It is expensive, about \$4 for a tube.

SURGICAL BLADE UPDATE:

I wrote a previous tech tip article concerning, when a very sharp knife blade is desired, substituting a surgical number 11 blade for a X - Acto number 11. The problems using the surgical blade arise from its poor and difficult insertion into the X - Acto handle which compounds the blade's easy breakage.

I recently purchased mail order from Micro Mart a handle designed to hold this surgical blade. The slot in the blade where the breakage occurs is used by this handle to hold the blade in place, consequently reinforcing the blade. As I recall the handle costs only several dollars.

CIRCLE CUTTER:

This is not a tech tip but covers a circle cutter/ saw for sale at a JoAnn fabric store. If you should purchase and try this circle cutter, a review would be appreciated.

Circles are not easy to accurately cut. Circles are used in model rocket construction for centering rings, partial circles (arcs) for shrouds. The tool I saw at JoAnn's is very similar to a hand operated compass. A blade is installed instead a pencil.

THE END OF THE ROAD OR CHRISTINE, SAY IT ISN'T SO:

I have written several articles using a marvelous Radio Shack ear phone plug and jack. I use these as a clever on - off switch, battery charging jack, etc. These work so well that I recently republished in TP one of my previous articles using these items.

Unfortunately, I believe that Radio Shack has discontinued, after all these years, the jack. I believe that the plug is still made, but with out the jack it would not be usable in our applications.

Perhaps PSC member and Radio Shack manager CHRISTINE RIAL would investigate the jack's availability and advise. Thanks in advance CHRISTINE.

DETERMINISTIC VERSUS PROBABLISTIC:

I promised in my last column to cover this issue. I promised in my last column to explore a "deterministic" rather than "probablistic" replacement to shear pins. Shear pins are used to secure a rocket for two stage parachute operation. This exploration should provide the basis for more reliable two step drogue then main parachute stagings.

Before I retired, one of my jobs was the design of very high tech automated control systems. Good and reliable automated control systems are difficult to design properly. I is difficult to anticipate or replicate every human control behavior; to sense every human input. This is why a car is still driven a person rather than by a computer.

I believe that a properly designed control system is better than human control as the automated system's actions are repeatable, reliable, and not prone to an occasional error. These occasional human errors result in accidents, some serious.

Better automated control designs use a deterministic problem solving approach rather than an often easier probablistic solution. A simple example of probablistic problem solving in model rockets is friction fit motor retention. Friction fitting is simple, lowest cost, and does work. The motor is, when necessary, wrapped with enough masking tape to securely hold it in place, yet allow insertion then subsequent removal. Friction does work!

Its design conflict or compromise occurs balancing a tight enough fit to withstand the ejection forces against a loose enough fit required to allow insertion and removal. Because of this compromise, friction fit provides an iffy solution that sometimes does not work. When the fit is too loose, or the ejection charge too strong, or the nose cone fit too tight, or???, the motor ejects rather than parachute.

This motor ejection or error can result in damage or destruction of the rocket. A deterministic retention, though more expensive and complex, is better because it is more reliable. Examples of deterministic retention include a simple Estes style motor clip to more complex screwed motor clips seen on some high powered rockets. A properly designed clip is not subject to random type errors due to a poor fit, change in ejection charge strength, too tight a nose cone, etc.

I plan to apply this deterministic criteria to a high power rocket shear pin as well as an Alka SeltzerTM tablet controlled release device. It is not my intention to build and debug working models, but to inspire others to follow up and develop a working design.

Details of this design concept will be covered in my next column. Shear pin technology is similar to friction fit motor retention. A too weak shear pin will fail when overpowered by too strong ejection forces. A too strong shear pin will not separate when the ejection forces are too weak. A very iffy solution! Improvements over shear pin technology should provide more reliable drogue/main chute deployment, minimizing the loss of a high powered rocket due to drifting.

Development/ refinement of an Alka SeltzerTM tablet release mechanism (including Professor FRANCIS GRAHAM'S most interesting recent experiments) should allow a simple and safe rocket release from a tree or power line. Safe release from a power line might become an important issue at the Dragon Fire launches. The cost to Tripoli at the last launch to have the power company retrieve a

Mort's Column (Continued)

high powered rocket hooked on a power line was in the neighborhood of \$400.

Until then, I look forward to flying with you at the next launch!

Mort Binstock NAR 27182

Sci-Tech Festival Report by John Pace

On the weekend of April 13th, several members of PSC participated in the Sci-Tech festival held at the Carnegie Science Center. We were given three large tables and a great location just left of the entrance to the science center. Across from us was the Tripoli Group. Tripoli Pittsburgh had several large rockets that immediately caught the eye of young and old alike. They also had a TV and VCR that played videotape of an LDRS launch that showed spectacular launches and a few interesting failures. Not to be outdone and in an effort to draw attention to our Club we displayed sport, competition and scale model rockets. In addition, Mike Harbodey did an excellent job creating a flash presentation about model rocketry and our club that ran continuously during the two-day show on his PC. We also had a tri-fold display that told about the sport of model rocketry as well as the function of our club. The tri-fold showed pictures of members, actual launches and showed sketches of a typical model rocket and the launch system used to activate the propellant in the motor. Finally, to assure ourselves that people would come and visit our booth we ran a daily raffle giving away five model rocket kits over the two-day event. A special thanks goes out to Harry and Hobby Express for donating a big bertha rocket to this very worthwhile event. Based upon the number of entry forms filled out for the raffle over 400 people came to our booth and almost 200 or nearly half of them asked to receive a copy of the upcoming newsletter about our club. Our presence at this year's festival was such a positive experience that we have been invited back next year. In addition, we have been asked to hold demonstration launches throughout the day.

Although the days were very long, I enjoyed the opportunity to spend some time with members of the club away from the launches. It also gave me a chance to learn some new competition construction techniques from Rod and Steve. Although I brought along some streamer and parachute material with the intention of maybe working on my recovery systems for the April regional competition, the activity at the booth was for the most part non-stop preventing me from doing anything outside greeting those that walked by. I want to offer a special thanks to John Brohm, Steve Foster, Mike Harbodey and Rod Schaffer for giving up their weekend to man the PSC display booth. If an award were to be given to the number one salesperson for the club, I would have to give it to John Brohm. John was a true salesman for PSC almost to the point of dragging people into our booth as soon as they got to within 5 feet of it. Also, if they wanted to stray over to Tripoli's booth, John would try to find a way of keeping them at ours. I remember John giving us a lesson on how to keep a potential customer from the competitors (Tripoli's) booth.

As I look back at the Sci-Tech Weekend, the one moment from the show that had the greatest impact on me would have to be the expression on the kids faces as they turned the corner and saw the PSC and Tripoli booths and the number of rockets on display. Many times I would overhear a parent, typically a father, saying, "when I was your age I use to build and fly these same rockets", and in some cases I could see a born again rocketeer starting to emerge after years in hibernation.

Hey... Where's Part 3?

Art Nestor stated in Part 2 of "The History of Team Pittsburgh" that as the installments progress in time, they become more difficult to research and write. Therefore, Part 3 is still in progress and Art hopes to have this installment ready for the next issue of Team Pittsburgh!

—Editor

Rocket Into Spring 8 Regional Contest Results April 21 & 22, 2002

1/4 A Streamer Duration

Place/Div	Name	Score	Points
1-C	Steve Foster	84 sec	240
2-C	Rod Schafer	36 sec	144
3-C	John Pace	20 sec	96
4-C	Michael Hardobey	19 sec	48
5-A	Michael Humphrey	18 sec	24
6-C	John Brohm	17 sec	24
6-C	Steve Humphrey	17 sec	24
7-C	Al Garcia	16 sec	24

1/4 A Parachute Duration

1-C	Steve Foster	175 sec	210
2-A	Michael Humphrey	65 sec	126
3-C	Rod Schafer	43 sec	84
4-C	Steve Humphrey	19 sec	42
5-C	Michael Hardobey	18 sec	21
6-C	Al Garcia	14 sec	21
7-C	Mark Cassata	13 sec	21
7-C	John Pace	13 sec	21
8-C	Bruce Hicks	10 sec	21

1/2 A Flex-Wing Duration

1-C	Rod Schafer	222 sec	510
2-A	Michael Humphrey	208 sec	306
3-C	Steve Humphrey	177 sec	204
4-C	John Brohm	155 sec	102
5-C	Steve Foster	140 sec	51
6-C	Al Garcia	91 sec	51
7-C	Michael Hardobey	79 sec	51
	Mark Cassata	DQ	0
	John Pace	DQ	0

1/2 A Super-roc Duration

1-C	John Pace	6300 pts	390
2-C	Steve Foster	3900 pts	234
3-C	Michael Hardobey	3551 pts	156
4-C	Steve Humphrey	2700 pts	78
5-C	Al Garcia	2200 pts	39
5-C	Rod Schafer	2200 pts	39
	Michael Humphrey	DQ	0

A Boost Glider Duration

Place/Div	Name	Score	Points
1-C	Rod Schafer	161 sec	540
2-C	John Brohm	109 sec	324
3-C	Steve Humphrey	108 sec	216
4-C	Michael Hardobey	45 sec	108
5-C	Steve Foster	44 sec	54
	Mark Cassata	DQ	0
	Al Garcia	DQ	0
	John Pace	DQ	0

B Egglofting Duration

1-C	Michael Hardobey	139 sec	510
2-C	Steve Humphrey	90 sec	306
3-A	Michael Humphrey	60 sec	204
4-C	John Pace	42 sec	102
5-C	Rod Schafer	40 sec	51
6-C	Steve Foster	13 sec	51
	Al Garcia	DQ	0

Total Points

		Sect #	
1-A	Michael Humphrey	Ind	660
1-C	Rod Schafer	473	1368
2-C	Michael Hardobey	473	894
3-C	Steve Humphrey	Ind	870
4-C	Steve Foster	473	840
5-C	John Pace	473	609
6-C	John Brohm	473	450
7-C	Al Garcia	473	135
8-C	Mark Cassata	Ind	21
8-C	Bruce Hicks	Ind	21
	Pittsburgh Space Command	#473	4296
	Independent	—	1572

Steve Foster writes an interesting launch report about the *Rocket Into Spring 8* regional contest summarized above. This article appears on page 6 of Team Pittsburgh.

CONTEST REPORT
Rocket Into Spring – 8
 By Steve Foster

Being 6 months or more for the opportunity to get in some competition, despite weather conditions that were more winter like PSC members gathered for Rocket Into Spring –8 eager to get back into the competitive spirit. We also welcomed Steve and Michael Humphrey who came all the way from New Jersey to compete with us.

We'll start with the event most people decided to fly first **1/2A Flex Wing Glider**. Michael Humphrey started the day with a 199 second flight (First ever Flexie Flight) which could have set a National Record in A division if he could have returned it, he later got his return flight on a CATO flight which qualified under the rules of the competition. This competition also brought out several other very good flights from novice flexie flyers including Steve Humphrey, John Brohm, Michael Hardobey, and Al Garcia, but Rod Schafer the master of the Flexie was the only one to get two good flights to win the event.

A Boost Glider also brought in some unexpected flights from the competition. Rod Schafer and Steve Humphrey experienced competitors but not known for placing well in the solid wing glider events place 1st and 3rd respectively. This shows their attempt to become more well rounded competitors by working on the events which they are weaker in. John Brohm and Michael Hardobey placed 2nd and 4th despite not having much if any experience in this event.

In **1/4A Streamer** for a change of pace we had asked the competition to use **Micro-Maxx** motors. So this was an event no one really had much experience with. Most competitors decided to try models with about a 10 mm diameter nose cone to try and get a reasonable size streamer in, but with not much lifting air to be found the low altitude flights did not stay in the air for long. Rod Schafer and Michael Hardobey used these types of models to place 2nd and 3rd. I went for a high altitude minimum diameter model the worked better than expected using the wind to carry my little Micro-Maxx model more than 200 yards away. John Pace also used a minimum diameter model for one good flight but was unable to get his second model to deploy the streamer.

We had three events at this meet which required the use of parachutes, so this made for a very frustrating meet in that everyone had some trouble getting their parachutes to open in the damp and cold conditions.

In **1/2A Super-Roc** John Pace was able to deploy (and open) chutes from both is models to take 1st place. I was able to open one chute after losing 2/3 of the altitude my model had achieved to take 2nd place and Michael Hardobey also deployed chute in shorter model to place

3rd. Rod Schafer brought a very interesting model with a egg lofter type base and a long skinny body, which he was able to get a large chute in but had a very slight burn on which caused the parachute to stay folded.

1/4A Parachute may have been the event most affected by the weather, Michael Humphrey and I were able to get some good air during the brief couple of hours of "good" conditions we had late Saturday afternoon to finish 2nd and 1st. Other than those two flights I can only recall one other flight that the chute opened, which was by Rod Schafer to place 3rd.

B Egg Lofting which is a challenging event to begin with was made even more so with trying to prep the models with the weather conditions. But despite this there were several good flights made. John Pace was able to open both chutes in his models early in the day on Saturday but was unable to get the lift he needed and finished in 4th place. Michael Hardobey was able to get one of his models to perform during the best conditions late Saturday afternoon to take 1st. Steve and Michael Humphrey were both able to deploy nice chutes in the cold rain on Sunday morning to place in 2nd and 3rd respectfully.

So despite the weather conditions I think all those that participated had a good time. It was certainly nice to get back into the competitive mode heading into the spring competition season. I think with every throw of the switch you learn something in during our very competitive meets.

Letter to the Editor

In the past few months there have been some major changes in my life. These changes have made me stop and think about things I've done or should have done and things I've said or should have said. With that in mind, I would like to take this time to say: Thanks! First to Mark Cassata for not only introducing me to sport rocketry but for also being the best friend anyone could ever have or wish for. Second to everyone at P.S.C. From the very first launch I attended I was greeted with a smile and a handshake and made to feel welcomed. Everyone has encouraged and given me advise on how I can improve and I greatly appreciate it. I could not have asked for a better group of people to be associated with and I'm proud to tell anyone that I'm a member of P.S.C. So again I say - THANK YOU!

COWBOY BEBOP "Swordfish"

Joseph Peklicz
635 S Zane Hwy
Martins Ferry, OH 43935-1236

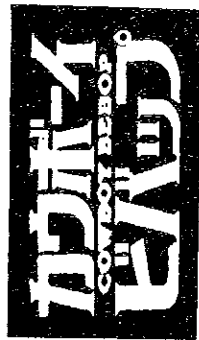
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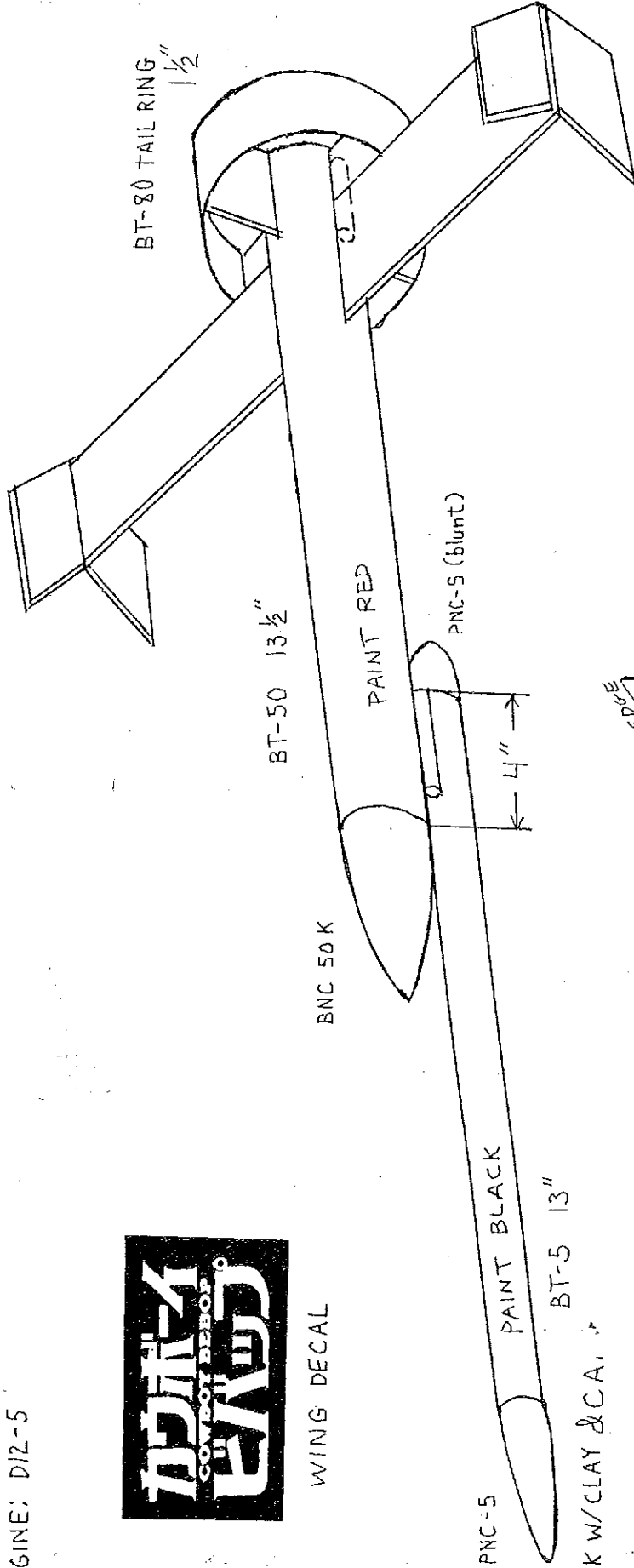
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ENGINE: D12-5



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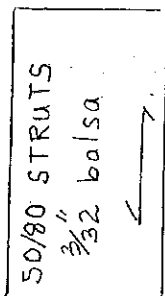
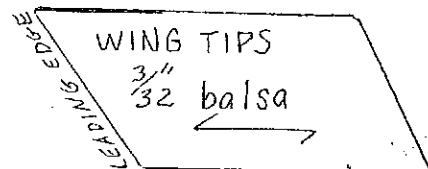
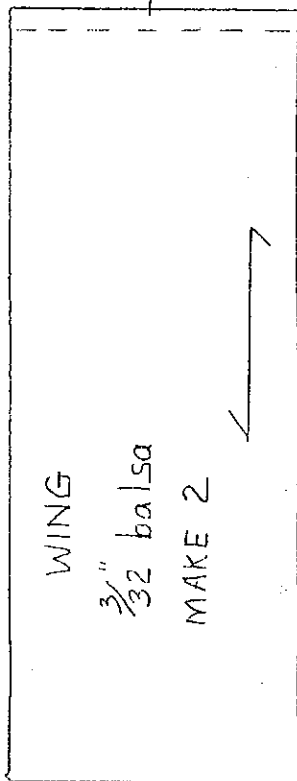
DESIGN & DRAWN 1/17/02



PNC-5

PACK W/CLAY & CA.

FULL SIZE PATTERNS



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

1. SciTech Festival A Huge Success!

On the weekend of April 13 & 14, PSC participated in the Carnegie Science Center's Science & Technology Festival. A big thank you to these members who set-up and manned the exhibit for the weekend: John Brohm, Steve Foster, Mike Hardobey, John Pace, and Rod Schafer. Our booth received a lot of interest and we passed out many flyers. PSC has already been asked to return next year! So if you didn't make it this year, plan now to attend in 2003.

2. Wanted! A Mentor For Team America Rocketry Challenge

PSC has been contacted by the Keystone Oaks High School, who is assembling a team for the TARC competition. They are looking for mentor to help. If you are interested in helping them out, get back to me ASAP so I can let them know. Go to www.nar.org to learn more about the competition.

3. More On Team America Rocketry Challenge

I received this from Chris Kidwell of NARHAMS #139:

I was talking with Trip Barber about the Team America Challenge this weekend. For those not familiar with it, there is a 1-page article in the recent Sport Rocketry, and also a lot of information on www.nar.org.

The flyoffs will be April 12 or 13, 2003 at Great Meadows and will be hosted by NOVAAR, but they are asking for help from surrounding clubs. This is going to be a really big deal, with 100 competitors flying in a single day. There will be national media, NASA Administrator Sean O'Keefe, John Glenn, several local senators and congressmen, CEOs of several aerospace companies, and 1000s of spectators. Trip said this

event is generating a LOT of really good PR for rocketry, so we want this to go off well. Please plan on giving your full support that weekend.

Glenn said that he would solicit support from SPAAR, and I'm also sending this to Rod to forward to PSC.

Chris

I posted this also to PGHRocketry, and Mark Cassata replied back that he is interested. Who else? This is indeed good PR for the Sport Rocketry hobby, especially with the fight in court going on.

Until Next Time...
Fly'em High,
Rod

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:

**Mort Binstock
1150 Windermere Street
Pittsburgh, PA 15218-1144**

(412) 244-1332

Dragon's Fire Launch Windows

The dates for 2002 Dragon's Fire High Power Launches have been released:

- May 18
- August 17
- September 14
- October 5 & 6

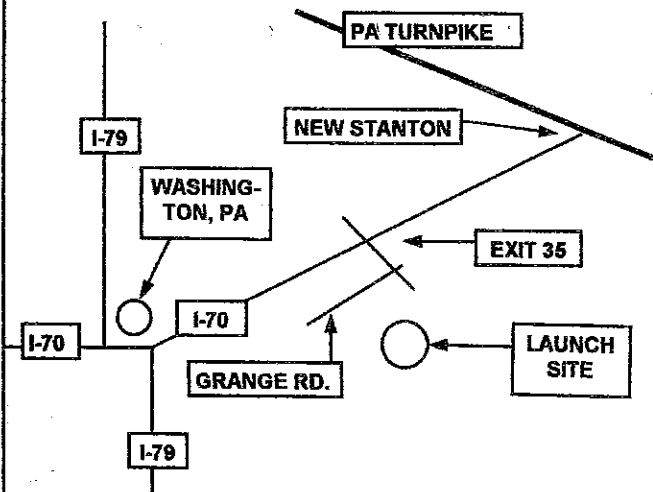
For more information, log on to PSC's web-site at www.psc473.org and follow the links to either *launch calendar* or to *Tripoli Pittsburgh web site*.

PSC Launch Windows 2002

- May 26 Sport Launch
- June 8 & 9 "Reach For The Sky XIV" Regional Competition
- July 21 "Melvin 9" Sport Launch
- Aug. 25 "Rockets & Relaxation 8" Annual Picnic
- Sept. 22 Sport Launch
- Oct. 5 & 6 "Steel City Smoke Trail 2" Regional Competition "Dragon's Fire 28" PSC & Tripoli Pittsburgh co-sponsored launch
- Nov. 17 Sport Launch
- Dec. 15 Sport Launch

ALL SPORT LAUNCHES AT LUTHERLYN BEGIN AT 12 NOON.

Map to Dragon's Fire Launches At Jonestown Site

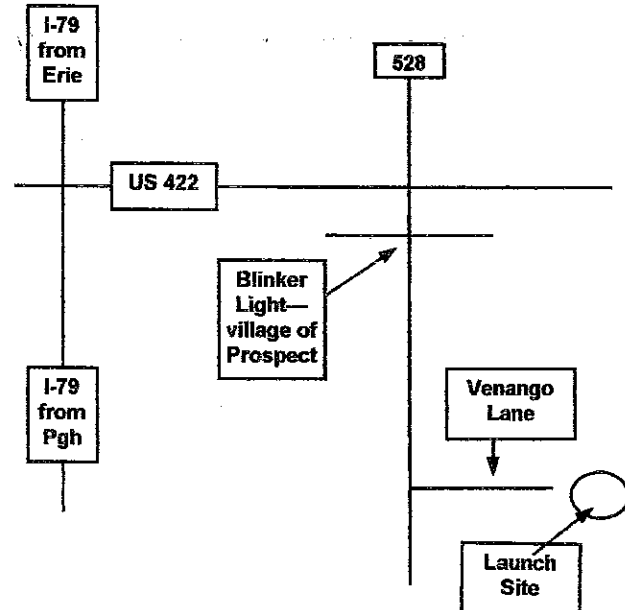


FROM I-79: Take I-79 south to Washington, PA. Take exit for I-70 East (Toward New Stanton). Continue for approximately 20 miles to exit 35 (old exit 13).

FROM PA TURNPIKE: Get off at Exit 8, New Stanton, and follow I-70 West for approximately 23 miles to Exit 35 (old exit 13).

AT EXIT 35: 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.

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.

PSC Regional Contests for 2002

Rocket into Spring 8
April 20 & 21, 2002

RESULTS INSIDE THIS ISSUE
OF TEAM PITTSBURGH
Please See page 5.

Reach For The Sky XIV
June 8 & 9, 2002

- 1/4A Parachute Dur. See note*
- 1/2A Streamer Dur.
- 1/2A Parachute Dur.
- 1/2A Boost Glider Dur.
- A Rocket Glider Dur.
- B Helicopter Dur.

*Note: Although it is not required, it is requested that micro max motors be used by all competitors in the indicated events.

Steel City Smoke Trail 2
October 5 & 6, 2002

- A Streamer Dur.
- A Parachute Dur.
- B Eggloft Alt.
- F Helicopter Dur.
- Sport Scale

For more information go to
www.psc473.org

Naram 44 — Macgregor, Texas!

August 4-9, 2002

Events:

- 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.naram2002.org

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