

Altitude!



South Jersey Area Rocketry Society Official Newsletter
VOLUME 5, NUMBER 1

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NAR Section # 593
JANUARY / FEBRUARY 2003

A Sensational Sunday at Sorbello Spaceport in Swedesboro!

Swedesboro, NJ (Altitude Newswire).

On Sunday, November 24, 2002, SoJARians from all over the Delaware Valley arrive bright and early to SoJARS' largest launch area to date. We dedicate this issue and this front-page article in particular to the Sorbello family for generously allowing us the privilege of using their land for the day.



President Art Treiman arrives and is directed to park by Ed Blair. Note the Porta-Potty to Steve Bastow's left. We went all-out for this event!



John Coles with Apogee Saturn V, Mars Lander, and many other of his finely crafted models.

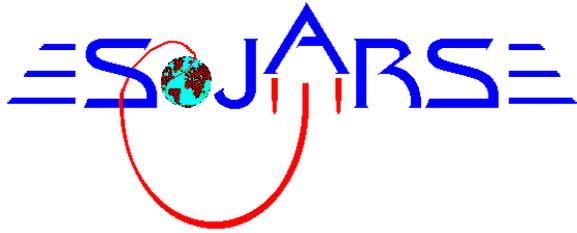


Director of Safety and Range-Ops, Jack Komorowski organizes near and away-pad set-up.



Some hot coffee and comradeire facilitate the unpacking and prep area climate in general.

Continued on Page 4.



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Altitude! is the Award Winning* Official Newsletter of SoJARS, the South Jersey Area Rocketry Society, NAR Section #593. *Altitude!* is published bimonthly for the benefit of SoJARS members. Information contained in *Altitude!* may be used by anyone as long as proper credit is given.

Please visit the frequently updated SoJARS website at <http://www.sojars.org> or call the SoJARS Hotline: 856-424-5905

Email address: SoJARS@rocketryonline.com

* NAR's Best New Newsletter '99-'00; Honorable Mention '00-'01 and '01-'02.

Calendar of Events

SoJARS Meetings

Unless otherwise specified, all meetings take place at the Woodbury Public Library, 33 Deleware Street, Woodbury, NJ, (856) 845-2611. Directions are available on our web site. For 2003, meetings will all be held the 4th Tuesday of the month, 7:00pm - 9:00pm, in the Board Room.

Tuesday, January 28, 2003.

Tuesday, February 25, 2003.

SoJARS Launch Dates

Unless otherwise specified, our launch area is at the Gloucester County College. Directions are available on our web site.

Sunday, January 19, 2003, 11am – 4pm.

GSSS, NAR #439

Launches are usually held on Saturdays each month, 10am - 3pm: Next Launches TBA.

Location: North Branch Park, near Somerville, NJ

GSSS Hotline: (908)-658-9417

Website: <http://www.robnee.com/gsss/>

Garden State Tripoli, TRA #74

Next Launch: TBA.

Location: Cederville, NJ.

Website: <http://www.njtripoli.com/>

METRA, TRA #94

2003 Launches: Apr 5-6, May 3-4, Jun 7-8, & more!

Location: Barron Farm, Wawayanda, NY.

Hotline: 973-694-5695

Web: <http://www.metrarocketclub.org/>

PARA, NAR #520

2003 Launches: Jan 5, Feb 2, Mar 2, 11:00a - 4:00p.

Location: a farm 9 miles north of Doylestown, PA

Phone: You may call Chuck Arkens (215) 855-5599 or David Stoetzer (215) 412-4348 the night before or the morning of the launch for verification.

Website: <http://www.para520.org>

SPAAR, NAR # 503

2003 Launches: Jan 5, Feb 2, Mar 2, & more!

Location: Cocalico High School in Denver, PA

Website: <http://www.spaar.org>

Calendar of Events

Continued

Deleware Tripoli, TRA #106

Next Launch: "DARE 2" originally to be held Oct 4 – 6, is rescheduled for spring, 2003.

Location: Harper Farm, Rhodesdale, DE

Website: <http://www.detrifoli.org/>

Maryland Tripoli, TRA #68

Next Launch: ~~Jan 4 & 5, 2003~~. Cancelled due to flooding.

Location: Higgs Dairy Farm, Price, MD

Website: <http://www.mdtripoli.org/>

Team America Challenge

Around April 2003.

Specific dates and locations will vary by state, but we are hopeful that SoJARS will be called upon to host South Jersey's Fly-Offs.

Altitude! Deadlines

Submissions for publication are accepted continuously by the editor. The Deadline for the March / April 2003 issue will be March 1.

President's Report

By Art Treiman

Well, 2002 is done and now we are in to a new year. Last year was a very good year for SoJARS as well as rocketry in general. We also have several ongoing problems that will remain simmering.

On the good side, we finished out the year with a very successful launch at the Sorbello Farm. Thanks to their generosity, we will now hopefully be able to fly a couple times a year from a very good farm field. This allowed us to go back to flying up to the G motor/3.3 lb limit that we haven't seen at SoJARS in a couple years.

SoJARS continues to attract new, enthusiastic members as well as continue to remain interesting for our "old-timers." Launches in the past year seemed to be a bit smaller than in previous years, but we were hampered by pretty mediocre flying conditions in general (anyone remember the gorgeous sunny, windless, 70 degree October thru December launches of our first couple years?).

We do face many challenges. The field at the college has become noticeably busier the past year or two, as has Tanyard Road. We had to contend with ballplayers and others only once or twice in our first

two years, while the past year it seems to be a monthly occurrence during the season. This forces us to limit what we can fly, occasionally unacceptably. I don't have any easy answers. A limited field is better than no field, but please, everyone please keep looking. If your local school has a comparable field, look into what it takes to fly there. My sense is that the situation at GCC will only get worse. I ask everyone to continue to be understanding when we can't fly or have to restrict what we do. I don't like it any more than anyone else, but we have no choice at present.

Rocketry has also been hit by regulatory burdens. Our case against the ATF has progressed slowly. Recent new regulations by the ATF as well as new anti-terrorism legislation will make the high power end of our hobby even more difficult to take part in. Zeppelin Hobbies, New Jersey's only high power vendor, recently announced they will stop selling high power rocket motors. On other fronts, suburban sprawl continues, and we likely will need to look farther and farther away for open space to fly as the years go by.

On the up side, the Team America challenge has been a spectacular success by the NAR so far. Almost 900 teams with several thousand high school students will be spending the winter building and flying rockets. There is a team of SoJARS members and SoJARS members are helping at least one other team as "mentors". Also, this year the National Sport Launch will be held in Pennsylvania this May (Memorial Day Weekend) only three hours away from us! Finally, Aerotech will hopefully soon be producing motors again, so we'll all have motors to burn in Swedesboro!

Well, here's to 2003!

Art

Editorial

By Joe Libby

In this issue front-page honors go to our collective excellent experience at the Sorbello's farm. Thank you, thank you, thank you to the gracious Sorbello's for allowing us to use their beautiful, wide open spaces. Jack sent a launch report, Bob Ross compiled stats (Back Cover), and I received *so many* pictures I put a bunch together into a story.

In the Member's Forum we have emails between Barry and Homer Hickam – yes, the real life Rocket Boy. We also have an update on the Egg Harbor Township PAL, who are participating in the Team America Challenge, by Jim Szypula.

New this issue is Contest Corner care of Russ Mozier. Russ tells of some upcoming, nearby contests and also explains what Contest Factors are all about. Thanks Russ.

Sorbello Spaceport

Continued from Page 1



From left to right, continuing from top to bottom: cabanas and rocketeers in the prep area, RSO table (middle of top / left of bottom), then cones leading to low-power pads, then more cones and caution-tape to mid-power/away pads. The homes in the distance are over 1500 feet away.



From left, Jack, Art, and Bruce show a team effort in setting-up Art's SR-71 R/C RG.



Up she goes!



Cruising over the Cover Crops...



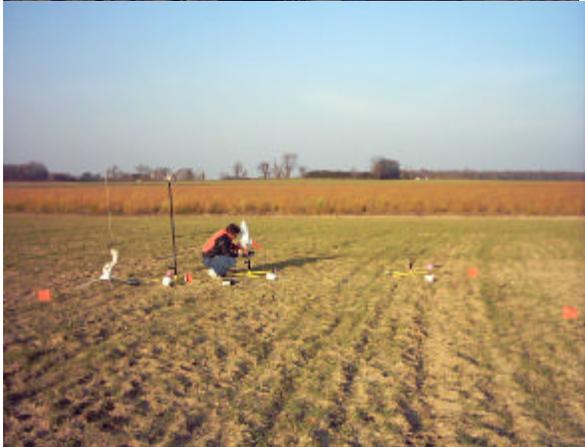
...to a safe landing. Great flight Art!



The SoJARS Trailer, re-built by Steve Bastow, and hitched to his van.



...and recovers it - mostly. Ouch!



John Coles preps his Big Mars Lander...



No, we don't do this routinely! Ed Blair's PML Phobos, up on an F52, invades the prep area but is handily caught by Jeff Gage, resulting in no damage

to rocket or persons. A fun end to a great day of flying. Hope to be out there again soon!

Launch Reports

22 September 2002

Photos Submitted by Ed Blair



Pre-Launch briefing... "Who's doin' LCO first?"



Kevin Blair's "Flyin' Toilet Seat."



The moment of ignition!

20 October 2002

Photo Submitted by Ed Blair



The Blair Family Cabana, at the October Launch and Open Skies 2002 Contest. See last issue for details of Contest results.

24 November 2002

By Jack Komorowski

Sunday, the 24th of November, was a bright sunny and chilly day with winds that reached up to 20mph, (according to our wind meter). Now, do you really think that this was going to stop a bunch of rocket enthusiasts from flying, especially after some traveled more than a hour to get to the site? Uh huh, guess again. Unless we had really high winds, rain, hail, sleet *and* snow, we were going to fly at "our new field," a 600 acre farm, courtesy of the Sorbello family. They were *most* kind to let us use their field in the off -season. We really *thank* them.



We had some really good flights that day, but what sticks out in my mind was the sheer joy of the flyers who could finally get to burn some AP up to the "G" class. One club member in particular, (I won't mention Steve B's name), had not really flow anything bigger than the Estes stuff. He had a bunch

of F20's, and was putting his Airspike up for multiple flights. He was more than enjoying himself, including the long walks to recover it.



We lost a few rockets in the trees and the “ditch,” which was a miniature grand canyon with a stream at the bottom. The ditch was about 35-feet deep and 80-feet wide, filled with stickers and other assorted stuff, including fallen tree trunks. The water was cold too, with swampy areas. How do I know this? Well, the second launch of the day I put up my Maniac on an Apogee E6-6, a 7sec burn engine. Now those of you who know me know I love those long burning engines, and that I lose about half of my flights when they are of the smaller rockets. This Maniac was a veteran of about 15 flights. This was its last, as it went out of sight, picked up at ejection, and on a 9 inch ‘chute, proceeded to drift away towards yon treeline, and way out to some towers, me in pursuit. I crossed that “ditch” and the water, and did it all over again when I came back. I was hoping that that there were people still flying when I got back.

Jim Szypula and Darren Wright showed us how to use the dual deployment method using altimeter controlled apogee and main chute deployments. You talk about spectacular. These two never really had to walk far as they had it down to a science. Darren was flying some “heavy” G’s, like G104’s, and had some great flights off that monster rail of his.

For those of you not familiar with Darren, he’s really into EX (experimental rocketry) and makes and mixes his own propellants and motors. His biggest? Try an “O” class motor, with a successful burn - no cato!

Doc Berman *finally* got to launch his Barbie rocket, that is a rocket with Barbie in it. She had her own flight suit and a clear tubing payload bay to look out of. What is even better is that she had a most spectacular lift off and recovery for a good flight. Way to go Doc and Barbie!



Not to be out done, club pres Art Treiman flew his camera rocket, which should get some interesting photos as it flew almost horizontally when it weathercocked. (I wonder if it caught a photo of Art, receding into the background as it flew away from him?) The good news is that Art got the rocket and camera back. Art further showed his abilities when he flew an SR71 R/C rocketglider and not only did it have a great boost, but Art did a really outstanding job of “flying” it on R/C and bringing it in for a safe landing. Everyone enjoyed that flight, and I think Art surprised himself, not to mention had a grand time of it.

Alas, we had our share of lawndarts, and failed recovery systems. The most dynamic display of recovery boo-boos was James Duffy’s launch of his “Barbinator” XP-1. Yep, you guessed it, another Barbie doll launch! This Barbie had her own cockpit and she had an ejection seat! (no, Linda S, I will *not* get tongue tied!). This was a really cool set up, that unfortunately did not work as planned. The rocket had an unusual boost as it went *with* the wind, and did not get as much altitude as it should have. Everything should have worked, except for the recovery harness, which failed. Barbie is spending some very cold nights, (without Ken), in a tree, where her parachute, that worked, landed her. James, she’s gotta be ticked off!

We also had an unofficial contest going on between a couple flyers to see who could burn up the most igniters without sending up the rocket. Comments from you guys? *%#@ igniters!!

Comments of the day.

Steve B to Jack K, RSOing: "Yeah, Art is gonna fly that and he doesn't have a pilots licence!"

Jim S, RSO'ing, watching an Estes Phoenix hung up on the pad after burnout and ejection: "'chute's out!"

Pete C to Jack K out at the lanch pad with a 6ft launch rod: "We short people..." (I lost it right there).

Jack K watching Joe L walk away with a deflated Dude: "Joe couldn't get his rocket off the pad; needed more Viagra."

Member's Forum

Barry's Barbie Buddies

Email Threads Submitted By Barry Berman

From: doc4kidz@comcast.net
To: "Homer Hickam"
Enclosure: Barbie2.jpg
Subject: Flying Barbie
Sent: 11/03/2002

Dear Mr. Hickam:

I am a fan of your writing, a member of the Heinlein Society (I used to be the Blood Drive Committee Chairman), and a designer and flyer of model rockets. Recently, on a whim, my 9 year old daughter Katie and I designed and built a model rocket to boost a Barbie doll into "LEO" (VERY low, that is). It clusters three "D" size motors, and Rocksims to about 800 feet or so. One of my buddies sent me a copy of your Barbie doll article from last spring as inspiration, so I thought you'd enjoy this photo of the rocket just before flight Sunday at a farm here in South Jersey. Note the "Astronaut Barbie" visible in the clear cockpit, and that it's unpainted. I always fly new designs unfinished for the first flight. A silly superstition, I suppose. Despite one motor not firing, the rocket had a nice stable +/- 600 foot flight and safe recovery on an 18 inch parachute. Now Katie and I are ready to paint it. Pink and purple, of course. After all, it's Barbie.

Barry Berman, MD

www.sojars.org (South Jersey Area Rocketry Society)

www.heinleinsociety.org (The Heinlein Society)

From: "Homer Hickam"
To: doc4kidz@comcast.net
CC: "Frank Stewart"
Sent: 11/26/2002
Subject: Re: Flying Barbie

Dear Barry:

I have forwarded your photo on to Frank Stewart in Montana so that he might be inspired to build a better Barbie rocket. He likes clustering engines, too (I go for simplicity myself - one rocket, one engine but, hey, it's the way I was brought up). Barbies have been bounding ballistically all over Bozeman since Frank and I made our first attempt but I think you have may have lapped the field with your design. Although Frank has been making Barbie a payload the last couple of years, he doesn't have your cool transparent portion. I'm certain he will now get to work to add a "Barbie window" so that she might have a great view before being exploded into the stratosphere for her daring sky dive back to Planet Earth (or Montana, which is similar). Here's to Bounding Blast-off Barbies Bouncing Ballistically into the sky forever!
Homer Hickam

Dear Dr. Berman:

Homer forwarded your Barbie rocket email to me. Your window idea is certainly slick. The last version that Homer and I built did have an internal space for Barbie, but we hadn't thought of a window. Homer rigged Barbie with a parachute and ejection system, and she free-floated down separately from the rocket sections. My part in the project was the propulsion system, and I used three G engines in a cluster. I think we exceeded your flightpath length, but our maximum altitude was around 100 feet or so. The total flight time was somewhat less than anticipated, but the acceleration and corkscrew shape of the flight were real audience pleasers. Luckily, the uninhabited open spaces and snow cover surrounding our Montana launch site provide a large margin for error.

I am planning to try again with larger fins and more power, but Homer is sort of hinting that he has seen enough of the cluster approach, so I suppose I'll have to go with a larger motor or multiple stages.

Good Luck and Happy Flying,

Frank Stewart

Local Team America Update:

By Jim Szypula

The EHTPAL (Egg Harbor Twp Police Athletic League) sponsored team from Egg Harbor Township is constructing their 2-stage rocket. Besides 2 eggs and the Adept A1 altimeter, the sustainer will carry an Adept stager ES231 for composite motor ignition and altimeter ALTS25 for dual deployment. 2.1" airframe x around 5'.

They're really keeping me on my toes with questions. Good info sources have been the forums (ROL, rocketryforum, Compuserve), the books (Stine, VanMilligan, Pratt) & mags (NAR, HPR), newsletters (Altitude, Leading Edge, NOVAAR), and the club

websites. Another team is keeping their website up with their project: www.sunsetrocketry.org. We've been watching.

Russ' Contest Corner

By Russ Mozier

Regional Meets

Reach For The Sky XV

May 3 – 4, 2003

Camp Lutherlyn (near Butler, PA)

Host section: PSC - www.psc473.org

Contact: Rod Schafer - cd@psc473.org

Events:

- A Helicopter duration
- 1/4A Boost Glider - multi round
- B Parachute duration
- C Egg Loft duration
- Open Spot Landing
- Random duration

ECRM-30

May 17 – 18, 2003

Middletown, MD (near Frederick, MD)

Host section: NARHAMS - www.narhams.org

Contact: Jim Filler - zog43@starpower.net

Picnic Sunday after awards

Events:

- Peanut Sport Scale
- 1/4A Boost Glider
- A Helicopter duration
- Set Altitude - 150 meters
- Random Altitude
- Open Spot Landing

NOVAAR Regional

June 21 – 22, 2003

The Plains, VA (about 30 miles west of DC)

Host section: NOVAAR –

www.geocities.com/capecanaver/8561/

Contact: Jim Brower - jbrower721@earthlink.net

Events:

- 1/4A Boost Glider
- A Altitude
- D Helicopter duration
- C Egg Loft duration
- 1/4A Parachute duration - multi round

NOTE: The above is the best information I have to date. If you plan to compete or attend one of these events I suggest you verify all information on that section's web site. Pre-registration will most likely be required. All three regionals include 1/4A Boost Glider as one of the events. This event as well as several of the others are ones being flown at

nationals, a great chance for test flights as well as to check out some of the competition.

Contest Factors

By Russ Mozier

In model rocket competition a Contest Factor (CF) is a value assigned to a meet. The purpose of CF's is to limit the number of meets an individual, team or section can participate in in a Contest Year. A Contest Year goes from July 1st to June 30th. The number of CF's allowed in a Contest Year for either an individual, team or section is 12. Section and Local Meets have a CF of 1, Open Meets have a CF of 2 and Regional Meets have a CF of 3. NARAM is not included in the allowed CF's. An individual, section or team can participate in any combination of meets as long as they do not exceed the 12 CF's.

An individual can enter meets as an "Independent" in order that his entry does not accumulate CF's for the section. Reasons for entering as an Independent may be that there are only a few section members entering that meet and the section wants to save their remaining CF's for meets like Regional ones where a greater number of points are possible or the section has accumulated 12 CF's and the individual has not.

Two or more NAR members may enter competition as a team. Teams must be registered with the Contest Board each year and the membership of the team cannot be changed or added to during the contest year. Points are earned as a team and do not affect one's individual points. The team also has a limit of 12 CF's. Individuals who are members of teams cannot enter the same meet as both an individual and a team. A team entry in a meet adds CF's to the section's CF's affecting the 12 CF limit.

F.Y.I

Philadelphia Area Space Alliance (PASA)

Submitted by Joe Libby

I've been a member of the National Space Society (NSS) for some time, but haven't gotten around to joining the local section in Philadelphia. However, I have been to their website (<http://pasa01.tripod.com>). Below is some info about their meetings and an upcoming event I thought you'd find interesting.

PASA has a regular business luncheon/formal meeting from 1-3 pm on the 3rd Saturday of every month at the Liberty One food court (2nd level), 16th & Market St. Go toward the windows, then to the left. There is public parking in Liberty on 17th.

Always verify meeting dates with the President or our Public Relations POC before attending.

NEXT MTG JAN 19, 2003

Meeting location:

Liberty One food court (2nd level)

16th & Market St.

Philadelphia, PA

Earl Bennett (President)

Phone: (215) 633-0878

E-mail: EarlBennett@erols.com

Mitch Gordon (Public Relations POC)

Phone: (215) 625-0670

E-mail: mfgordon@excite.com

Next Event:

For Family Fun, It's the NJ State Museum's 23rd Annual Super Science Weekend! Saturday and Sunday, January 11 and 12, 2003

Various shows, presentations, hands-on activities and more are planned, including "Dino-Safari for Kids," "Mr. Fish's Phenomenal Physics," "The Wizards of Chemistry," and more. For additional Super Science Weekend information, please call the State Museum's Bureau of Education at (609) 292-6310, weekdays between 8:30 am and 4 pm. Also you can go to the State Museum's website: www.newjerseystatemuseum.org/public/family.html and scroll down to Super Science Weekend 2003.

The New Jersey State Museum, a division of Cultural Affairs within the Department of State, is located at 205 West State Street, Trenton. Admission is free, and parking is available in the Capitol Complex parking building. The Museum is open from Tuesday through Saturday, 9 am to 4:45 pm, and on Sunday, noon to 5 pm. The Museum is closed on Mondays and state holidays.

Rocketry History

December 2002 marked the 30th anniversary of man's last trip to the moon. On December 11, 1972, shortly after midnight, Commander Gene Cernan, Pilot Ron Evans, and Geologist-Astronaut Harrison "Jack" Schmitt launched into space and history on Apollo 17. By that time (actually by mid-1970) Apollo missions 18 - 20 were cancelled. Scientists knew this would be their last chance to get good data and samples from the moon for some time - I wonder if any of them imagined at the time that even 30 years later we'd not have returned (just yet, I hope).

Landing in a lunar valley called Taurus-Littrow, Schmitt and Cernan spent 3 days exploring, including traveling more than 20 miles in their lunar rover, collecting over 250 pounds of rocks and soil and setting-up experiments. In fact, the camera on the Rover was used to televise and record the Lunar Module's ascent. Apollo 17 turned out to be a most scientifically productive mission, providing clues to the origin of the moon.

Cernan's famous last words still choke me up with mixed feelings of pride, sadness, and hope: "Here man completed his first exploration of the Moon, December 1972 A.D... This is our commemoration that will be here until someone like us, until some of you who are out there, who are the promise of the future, come back to read it again... And, as we leave the Moon and Taurus-Littrow, we leave as we came and, God willing, as we shall return, with peace and hope for all mankind. Godspeed the crew of Apollo 17."

Meeting Minutes

27 November 2002

Submitted by Ed Blair

Present: B. Berman, E. Blair, P. Blair, R. DePasquale, J. Powell, B. Canino, R. Mozier, J. Libby, and E. Romani.

1. Open - Barry Berman
2. Review and approve previous minutes.
3. Treasurer's Report- N/A
4. Future Launch Dates- Dec 15th & 22nd
5. Launch Failure and Debriefing - We had a great Launch. Hats off to Mr. And Mrs. Sorbello for the use of the field. No major crashes. Even with the wind, it turned out to be a great day. There was a discussion after the launch about the use of rails and the use of dual deployment for Level One and Two. Also where to place the High Power Pad.
6. Newsletter - Joe Libby - Try to have all articles in by the end of Dec. Also Russ talked about adding a "Contest Corner" in the newsletter.
7. Web Site Update - Art still working on it.
8. Design of the Month - We ran out of time to vote. Joe Libby presented a video of the Sunday Launch. Great job Joe we all enjoyed your fine work!! There were some Great Looking models there. We had a bit of a discussion on two and three stage rockets. The Do's and the Don'ts of how to do it and some new idea's.
9. Field Search - Keep looking for new places.
10. Outreach - The Scout outreach had been cancelled due to bad weather.

11. Contest Committee – Russ is looking for future dates and talked of starting a Contest Corner in the newsletter. Randy also talked of starting a Team America in his High School. Ed Romani talked about the progress of working with students in his area working on, The Team America Challenge.

12. T-Shirts – Joe still has T-Shirts left for Sale.

13. Elections – Looking for a vote master. Also looking for nomination's. We need an election date. We have no meeting in Dec.

14. RSO Table Redesign – Barry presented a redesign of the RSO table. We discussed how to make it better and more functional. We need more help at launches to do this. Will a sign up sheet work? Everyone needs to lend a hand to make it more enjoyable for everyone.

15. Adjourn.

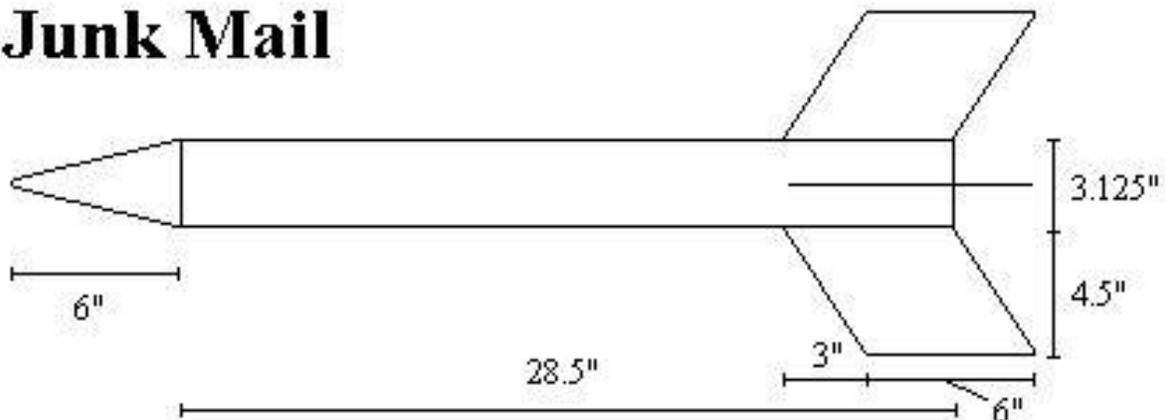
December 2002 – No Meeting.

Plan

Just thought I'd throw this in seeing as there is a bit of room here. My famous (infamous?) first scratch-built rocket, Junk Mail. Made, of course, from stuff-you'd-otherwise-toss-in-the-recycle-bin: a large mail-tube with plastic endcaps, layered cardstock and magazine cover fins, a foam cone wrapped in newsletter pages, a 24mm motor mount, and some fancy stenciling. No copyrights, so feel free to duplicate.

Joe

Junk Mail



24 November 2002 Launch Statistics

Submitted by Bob Ross

Name	A	B	C	D	E	F	G	Total
Katie B		1						1
Steve Bastow						4		4
Barry Berman			1	1				2
Allen Blair	1							1
Phillip Blair		1				1		2
Kevin Blair			1					1
Joyce Blair							1	1
Ed Blair			1		2	1	1	5
Bruce Canino						1	1	2
John Coles				2		2	1	5
Billy Commander			1	2				3
Peter Commander, Jr.		1	2					3
Peter Commander, Sr.			2	1		1	1	5
Kathleen Duffy	1			1				2
Jim Duffy			1					1
Jeff Gage			2	3				5
John Gramick						2		2
Jodie Justice		2						2
Jack Komorowski					1			1
Joe Libby			2		2	1	1	6
Dan McGinnis			5	2				7
No Name			1					1
Jim Plotts	2		5					7
Bob Ross				2	3	1		6
Michael Rossbach				2		1		3
Jim Szypula	1	1		1		2		5
Art Treiman				1	2		2	5
Darren Wright						1	3	4
Totals	5	6	24	18	10	18	11	92

Staged Rocket Statistics

Name	B to A	C to B	D To D	3D to D		
Steve Bastow			1			1
Barry Berman		1		1		2
Peter Commander, Sr		1				
Jim Szypula	1					1
Totals	1	2	1	1		4

The last flight of the day occurred at 15:55 hours. It was Ed Blair's PML Phobos on an F52-5T. It was a great flight and was caught by Jeff Gage getting out of his chair. It was a great save by Jeff with his son next to him. The Phobos triangle G-10 fins were poised to attack, but Jeff saved the day.