

COUNTDOWN

Official Newsletter of SPAAR
THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY



Stephen Knight's Rocket R&D Navy Strike on an Aerotech G64-7W at the September 28th launch. (Burst)

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COUNTDOWN

Volume 10, Issue 5
September/October 1997

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Newsletter

George Beaver, Randy Brust

COUNTDOWN is the newsletter of SPAAR, the Southern Pennsylvania Area Association of Rocketry, NAR Section #503, as well as Tripoli Susquehanna #71. **COUNTDOWN** is published 6 times a year for the benefit of SPAAR club members. Any information contained in **COUNTDOWN** may be used as long as proper credit is given. Please address all correspondence to:

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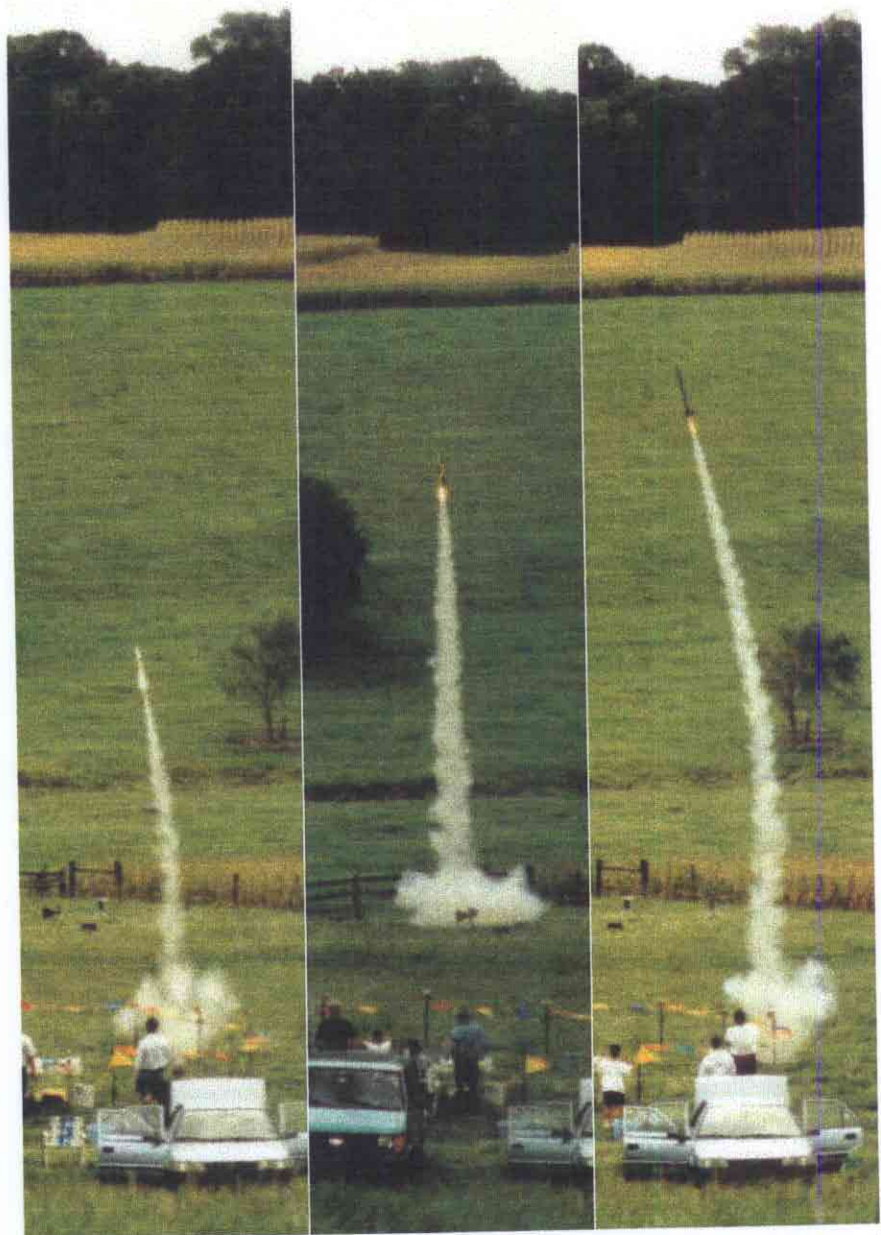
**The Editor's Corner**

This month, thanks go out to Guy DeStefano, Dave Grumbine, Mark Kamide, and Ed Miller for contributing to this issue of the Countdown. Guy submitted the launch report for September 28th. Dave submitted pictures for the August 31st and September 28th launches. Mark contributed the Member at Large Report, Motor Cross Reference Chart, and Winter

Workshop Update. Ed submitted the Area 51 Moves to East Coast story.

If you're interested in the Winter Workshop project, make sure you see page 15. There have been some changes since the last issue.

Also, don't forget to check out this issue in color on the web at: <http://members.aol.com/rcbrustee/index.html>.

Randy

The view from the top. Volunteer for hilltop lookout duty at Kirkwood Farms and you get a pretty interesting view of the launches. (Grumbine)

Section News Notes

by George Beever & Randy Brust

SPAARSPAM-8:

Another reminder not to forget our annual tailgate picnic and launch, to be held on Sunday, November 2, from 1PM to 5PM at Cocalico High School. Bring something tasty to share with others. Bring your own drinks and eating utensils (unless, of course, you don't bother with those things). This year's *event* will be: *Best Rocket Photo from 1997*. The judge will be Randy Brust, who claims the right to print the winning photo in the Countdown.

1998 SPAAR Elections:

Remember, nominations for the 1998 Board of Directors will be taken at the November 21st meeting. Those positions

are: President, Vice-President, Secretary/Treasurer, Member-at-Large, and Section Advisor. The elections themselves are done by written ballot, counted at the December meeting.

Upcoming SPAAR Events:

Friday, October 17th, 1997 - SPAAR Monthly Meeting, 7PM to 9PM, APRIA Community Room, Lancaster, PA.

Sunday, October 19th, 1997 - SPAAR Sport Launch, 9AM to 5PM, Kirkwood Farms, Chester County, PA.

Sunday, November 2nd, 1997 - SPAAR Sport Launch/SPAARSPAM 1997, 1PM to 5PM, Cocalico High School, Denver, PA.

Friday, November 21st, 1997 - SPAAR Monthly Meeting, 7PM to 9PM, APRIA

Community Room, Lancaster, PA.

Friday, November 28th, 1997 - SPAAR Sport Launch, 9AM to 1PM, Cocalico High School, Denver, PA.

Other Upcoming Events:

Sunday, October 12th, 1997 - METRA High Power Launch, 10AM to 5PM, Vernon, NJ. K motors. 5000 ft. waiver. Contact Ted Apke at 201-631-1628.

Saturday, October 18th, 1997 - NOVAAR VACUUM-21, Manassas, VA. BELD, A RG, 1/2A HD, PSL. Contact Jonathan Rains at 301-589-7562.

Saturday, October 25th thru Sunday, October 26th, 1997 - RATS V High Power Meet, 9AM to 5PM at Cedarville, NJ. 15,000 ft waiver. Contact Damian Russo at 609-794-2689. **CD**

Section Meeting Minutes

by George Beever

September 19th, 1997

Present: G. Beever, Glenn & Daniel Feveryear, D. Greene, R. Hackman, M. Kamide, E. Miller, D. O'Neal & daughters, T. Rossi, D. Weinhold, J. Yost.

Committee Reports:

Treasurer: Balance at the end of last meeting: \$196.41. Expenditures: None. Income: \$35.00 in dues. \$135.50 from raffle and auction proceeds. Current balance: \$366.91.

HPR: Ed Miller reported on the preparations for the high power launches scheduled for September 21st, 28th, and October 19th.

Competition: VACUUM-21 to be hosted by NOVAAR on October 18th in Manassas, VA. Events: B ELD, A RG, 1/2A HD, Parachute Spot Landing.

Old Business: Mark Kamide discussed

the Mercury-Redstone Winter Workshop project. He displayed a completed booster section, and described some of the construction details and methods.

Dale Greene discussed the issue of the location of the monthly meetings. At a recent meeting, member Gary Kulp had stated that he would check into the Ephrata Ambulance Association meeting room, however nothing more has been heard. Mark Kamide stated that he had checked into the Ephrata Public Library, but this does not appear to be a viable alternative. The president stated that he personally was happy with the present location, but would not be opposed to a change. Dan Weinhold, who has arranged for our use of the Apria Community Room, stated that he should know the club's plans as soon as possible so that he can make the same arrangements for 1998. The president then stated that the issue should be decided no later than November, preferably by October.

Glenn Feveryear asked for a decision on whether SPAAR, as a club, will support his application to host a future NARAM. This issue was initially discussed at the August meeting. And, if it doesn't, are we willing to lend the club's equipment? Regarding a location, Glenn

stated that he has a meeting scheduled with the post commander at Aberdeen Proving Ground. NAR Vice-president Trip Barber may also attend.

Discussion followed. Support for the idea in general was expressed by most of those attending. However, the same reservations and concerns regarding manpower and commitment that resulted in SPAAR deciding to not pursue hosting a NARAM two years ago appear to still exist. These concerns may be alleviated somewhat by requesting assistance from other clubs.

A motion was made by Beever, second by Yost, to authorize the Section Advisor to make application to the NAR for a sanction to host NARAM within the next two years. Vote: seven yes, one no. Motion passed.

New Business: Mark Kamide reminded those present that September 28th will be "Best Non-Ed Miller Paint Job Day". As always, the judges can be bought.

Ed Miller then discussed some molds and parts that he has fabricated for a 1/4 scale Nike-Apache. Rick Hackman discussed a sport scale Sergeant that he has constructed.

Meeting adjourned at 8:35PM.

Member at Large Report by Mark Kamide

I would like to briefly talk about Mountainside Hobbies, Inc. and the SPAAR relationship. Over the years, I can honestly say that having this club in our own backyard has inspired us and influenced some of our decisions. I no longer remember if it was Rocket Rick Hackman or George Beever who actually brought the club's existence to light, but it's been a great adventure for us. Being welcomed with open arms and accepted as a rocketeer within this fine group has been nothing short of sheer pleasure. Believe me when I tell you, I am very proud to be associated with this fine group of people.

Mountainside Hobbies, Inc. was created with the idea of carrying a small line of rocket kits. Before too long over half the store was consumed by rocket inventory and what a sight it was. For me, my rebirth back into the hobby came during the unpacking of the first boxes of our inventory. It was the Phoenix and Jayhawk kits out of the box first and all I can remember is *wow*. I knew then and there this was something we just had to get into and grow with. As you all know we did, and in a very big way.

All what was is now in the history books as Mountainside Hobbies, Inc. retail sales store no longer exists. I would like to think we made our mark in the rocket community by providing products at prices that scared our competitors. We also made quite a few friends along the way and you all know who you are. I would like to set the record straight on one

thing though, the store may be gone but our name lives on. The winter build project is evidence of our continued involvement.

I would like to end this reminiscing by quoting an old saying, "Behind every good man is a good woman." Many of you know Cindy and I must tell you all, that quote is 100% accurate. Cindy's unquestionable support in this endeavor made it all possible. We are both looking forward to being active members in the club.

Well enough of that, let's get onto the real meat of the article. Since I carry the title *Member at Large*, I thought that it would only be right to contribute to the Countdown in some small way.

Well, the first thing I thought I would do is to share the Estes and Aerotech rocket motor cross-reference chart I made. With the number of rocket kits growing (I think something is up with them, I turned the lights on the other night and heard what sounded like fins scraping across the hobby bench. Then a couple of days later a mosquito kit showed up all by itself. Hmm...), anyway, remembering what motor goes into what rocket is getting to be a challenge. Although getting the right diameter is easy, everything else can become a real mystery. So elsewhere in this issue you will find the chart to store in your launch boxes for easy reference. Time permitting, I will venture onto other manufacturers too.

If you've missed the last couple of club meetings and rocket launches, you need to be aware of our new contests. That's right, we now have monthly awards for different categories. The August 31st

launch featured the *Best Sport Scale Rocket* award. The winner turned out to be Ed Miller, and the rocket, a Mountainside Hobbies, Inc. 2.6 diameter V2. You must believe me when I say, it was Ed's paint scheme on a scale rocket that won the trophy, and not because it was one of my own. Ed, the full scale V2 in the Air & Space museum is not painted as nice. The September 28th launch category was *Best NON Ed Miller Paint Scheme*. (Sorry Ed, but you just can not win them all). The proud winner turned out to be Glen Feveryear and the rocket was a scratch built scale Astrobee 1500 and painted in scale colors of white & black. The October 19th launch will feature a *Best Cluster* award.

Hopefully, we will be able to publish a list of the remaining ideas so we may incorporate them into the launch schedule after a little more discussion. If you have ideas for launch awards, please share them with us. Just to give you a sampling of future awards, here's one. *Rocket Rick's Run For Cover* award?? While I am thinking of it, the stressed Concrete Block House and High Strength Steel Launch Pad for Rocket Rick's launches is under consideration by the club. The main debate seems to be how far away we need to be from Rick and the Rocket. See what you miss out on by not attending the meetings.

Well, that's all for now. Have fun, be careful, and remember the second stage motor nozzle always goes down. If you wish to comment on this first installment, I may be reached by email at mkamide@postoffice.ptd.net. *CD*

Don't forget...

SPAARSPAM 1997

SPAAR's annual tailgate picnic and launch!
Sunday, November 2nd from 1PM to 5PM at Cocalico High School

Be there for rocket launching, food, rocket talk, food, family fun, food, and of course, food! Bring along your own drinks and eating utensils, and something tasty to share with all. And don't forget your rockets and your appetite!

SPAAR Sport Launch

August 31st, 1997
by George Beever

The Continuing Saga of The Children of the Corn - Late August or early September around these parts means one thing: corn. And more corn. Very tall corn. Rocket eating corn. Not a major problem if the breeze is blowing the right way. Right. And just when does **that** ever happen? Certainly not on August 31st, the Labor Day Weekend.

Not everything landed in the corn, however. Most models powered by motors E or under did OK, unless, of course, it was a high performance contest model. See flights 8 and 9 in your handy flight log. Those long burning Apogee C4 motors that Glenn put into his C Streamer Duration models took them out of sight, and right into the standing corn. But, there is a happy ending here. While searching for

his own model, Glenn found Randy Brust's Fat Boy, modified to fly on 24mm motors. He flew it on an F24 reload. Almost lost it, too. He didn't fly it again. Randy did find George Beever's FSI Hercules, also in the corn. Do I hear the strains of "The Circle Will Be Unbroken" somewhere?

Dave Grumbine added to his stable of flying writing instruments with his scratch built "Yellow Magic Marker", not to be confused with the flying Crayola that graced the cover of the last issue. Flew pretty well, too.

Matt Zimmerman found a unique but effective way to beat the dreaded corn. Simply put the clothes pin (aka The Rocketlok) **above** the launch lug, hook 'er up, and let 'er go! The rocket doesn't become corn-bound, everyone gets a nice show, the model doesn't get lost, and Matt takes over First Place in the race for the coveted annual SPAAR Rocketlok Award. Will he win? Stay tuned for January's

Family Dinner!

Didja ever wonder what happens to a Saturn V when it does its imitation of a crash-test dummy? Didja ever wonder why those Aerotech ejection charges kinda don't work only in your favorite models? Didja ever wonder, as said favorite model is hurtling back down, pointy end first, why you didn't take up a less heart breaking hobby like tropical fish? Refer to Flight #4. Well, maybe I can still make a Skylab out of it

It was also Stand-Way-Off-Scale Day, as judged by Mark "I Can Be Bribed Cheap" Kamide. The winner was Ed Miller's Mountainside Hobbies 2.6" V-2. Boy, there's a shocker. It really is a great looking model. But it didn't fly, which brings up that age old debate: is a model rocket really a model rocket if it doesn't fly? The world wants to know. But the award, a trophy no less, was well deserved. Congratulations Ed! **CD**



George Beever's Saturn V is off on its last ride on an Aerotech E18-4W. (Grumbine)



Ed Miller with his winning Mountainside V-2 and trophy for Best Standoff Scale model. (Brust)

Flight Log 8-31

| # | Flyer | Manufacturer | Model | Motors | Result |
|----|------------------|----------------|----------------------|-----------------------|----------------------|
| 1 | George Beever | Estes | Bullpup 12D | Estes C6-5 | Good Flight |
| 2 | George Beever | Flight Systems | Hercules | Flight Systems F100-6 | Good Flight |
| 3 | George Beever | Scratch | Kormoran | Estes D12-3 | Good Flight |
| 4 | George Beever | Estes | Saturn V | Aerotech RMS E18-4W | No Ejection |
| 5 | Mark Beever | Quest | Cyclone | Estes C6-5 | Good Flight |
| 6 | Randy Brust | Estes | Fat Boy | Aerotech RMS F24-7W | Good Flight |
| 7 | Daniel Feveryear | Launch Pad | ASRAAM | Estes D12-5 (2) | Good Flight |
| 8 | Glenn Feveryear | Scratch | C SD | Apogee C4-5 | Good Flight |
| 9 | Glenn Feveryear | Scratch | C Streamer | Apogee C4-5 | 215s-Good Flight |
| 10 | Kathy Gilliland | Estes | MK-109 Stingray | Estes A8-3 | Good Flight |
| 11 | Kathy Gilliland | Estes | MK-109 Stingray | Estes B6-4 | Good Flight |
| 12 | Kathy Gilliland | Estes | Pathfinder | Estes D12-5 | Good Flight |
| 13 | Kathy Gilliland | Estes | Pathfinder | Estes D12-5 | Good Flight |
| 14 | Kathy Gilliland | Estes | Pathfinder | Estes D12-7 | Good Flight |
| 15 | Dave Grumbine | Scratch | Rear Facing Astrocam | Estes C5-3 | Good Flight |
| 16 | Dave Grumbine | Scratch | Red Eye | Aerotech RMS F24-4W | Good Flight |
| 17 | Dave Grumbine | Scratch | Yellow Magic Marker | Estes 1/2A3-2T | Good Flight |
| 18 | Dave Grumbine | Scratch | Yellow Magic Marker | Estes 1/2A3-2T | Good Flight |
| 19 | Rick Hackman | Scratch | Mity Midget 2 | Estes A10-3T (2) | Good Flight |
| 20 | Rick Hackman | Scratch | Thor | Estes B4-4 | Good Flight |
| 21 | Mark Kamide | Quest | Lil-20 | Estes C6-3 | Good Flight |
| 22 | Corey Kline | Estes | Alpha | Estes C6-5 | Good Flight |
| 23 | Corey Kline | Estes | Alpha | Estes C6-3 | Good Flight |
| 24 | Steve Kline | Estes | Fat Boy | Estes C5-3 | Good Flight |
| 25 | Steve Kline | Estes | Fat Boy | Estes C5-3 | Good Flight |
| 26 | Steve Kline | Estes | Fat Boy | Estes C5-3 | Good Flight |
| 27 | Brian Royer | Scratch | Blue Plate Special | Aerotech RMS F52-5T | Good Flight |
| 28 | Brian Royer | Scratch | Mile High | Estes D12-5 | Good Flight |
| 29 | Brian Royer | Estes | Nice Machine | Estes D12-7 | Good Flight |
| 30 | Brian Royer | Estes | Ninja | Estes A3-4T | Good Flight |
| 31 | Brian Royer | Estes | Silver Comet | Estes D12-5 | Good Flight |
| 32 | Brinton Schlegel | Estes | Gemini DC | Estes B4-4 | Good Flight |
| 33 | Brinton Schlegel | Estes | Helicat | Estes C6-5 | Good Flight |
| 34 | Brinton Schlegel | Estes | Sizzler | Estes C6-3 | Good Flight |
| 35 | Jillane Schlegel | Estes | Flash | Estes B4-4 | Good Flight |
| 36 | Robin Schlegel | Estes | Cobra | Estes A10-0/1/2A3-4T | Good Flight |
| 37 | Robin Schlegel | Estes | Mean Machine | Estes D12-5 | Good Flight/Took Rod |
| 38 | John Yost | Estes | Cato | Estes C6-0 | Good Flight |
| 39 | Matt Zimmerman | Scratch | CDR | Estes C6-5 | Good Flight |
| 40 | Matt Zimmerman | Estes | Nova Payloader | Estes C6-5 | Good Flight |
| 41 | Matt Zimmerman | Estes | Nova Payloader | Estes C6-5 | Rocket Lock |

Launch Statistics - August 31st, 1997

Number of Flyers: 17 Weather: Warm, Breezy

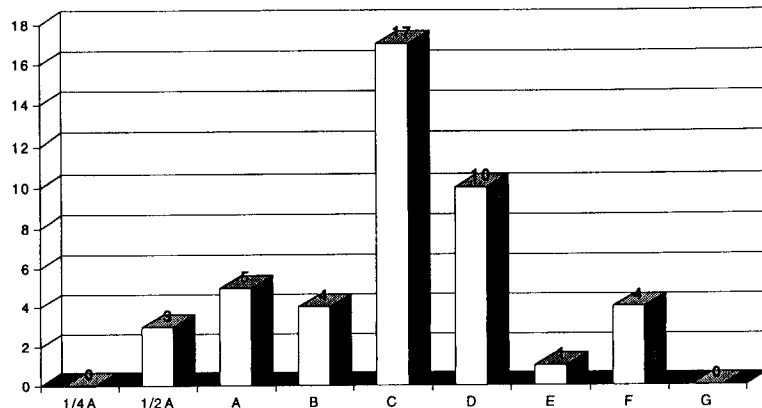
Models Flown:

| | |
|----------------|----|
| Estes | 18 |
| Scratchbuilt | 11 |
| Quest | 2 |
| Flight Systems | 1 |
| Launch Pad | 1 |

Motor Usage:

| | |
|----------------|----|
| Estes | 37 |
| Aerotech RMS | 4 |
| Apogee | 2 |
| Flight Systems | 1 |

Impulse Distribution:



SPAAR Sport Launch

September 21st, 1997
by Randy Brust

Despite breezy conditions, SPAAR kicked off its high power launches at its newest launch site, Kirkwood Farms. The farm is set into the rolling hills of Chester County and is really quite picturesque. Bright sunshine and a deep blue sky prevailed throughout the day, but so did a constant 20-25 m.p.h. wind which made for some loooooong walks. Rocketeers got quite a lot of exercise plodding through pastures, climbing barbed wire fences (ouch!), and plowing through corn fields. With nominal wind conditions, there won't be any problem staying out of the corn since the site has plenty of open area, and

once the corn comes down, there will really be a lot of open space.

16 of 17 registered flyers put up 45 flights ranging from A to I power. For a change, scratch built models and Aero-tech RMS motors were the most prevalent types. There were 11 H and I motors launched, and there would have probably been many more if the wind had died down towards the end of the day.

One of the more interesting flights of the day was Ed Miller's Monocopter G on an Aerotech G12-RCT. This motor is meant for R/C rocket gliders and therefore has a long burn time. It seemed to burn forever as Ed's copter put in a perfect spinning flight. Unfortunately, my son saw the flight and thought it was the coolest thing. Now he thinks my rockets are

boring! Thanks a lot Ed.

Guy DeStefano had a bunch of good flights with one going in the corn. After disappearing into the fields for a long time, Guy emerged with his rocket, and two others as well! I'm sure there were some appreciative rocket owners.

John Yost loaded up his Thoy Falcon with an H128 and entered it in the tree spot landing contest and won hands down. He precisely maneuvered his rocket right into one of only a few trees in the pasture, and even recovered the model undamaged. Not to be outdone, Dale Greene loaded up his Falcon with an H73 and proceeded to land it about 10 yards from a calf who was grazing nearby, scaring the cow patties out of the poor animal. Boy, the things some guys will do to have fun. **CD**



Dale Greene's Thoy Falcon pumping out plenty of black smoke with an Aerotech H73J. (Brust)



Rich Canfield's Public Missles Ariel is off on an Aero-tech H123W. (Brust)

Flight Log 9-21

| # | Flyer | Manufacturer | Model | Motors | Result |
|---|--------------------|----------------------|-------------------|----------------------|---------------|
| 1 | Christopher Balogh | Mountainside Hobbies | V-2 | Aerotech RMS G64-4W | Tangled Chute |
| 2 | Randy Brust | LOC/Precision | LOC IV | Aerotech RMS H128W | Good Flight |
| 3 | Rich Canfield | Public Missles | Ariel | Aerotech RMS H123W | Good Flight |
| 4 | Rich Canfield | Mountainside Hobbies | Sandhawk | Aerotech RMS G64-4W | Lawn Dart |
| 5 | Rich Canfield | Mountainside Hobbies | V-2 | Aerotech G80-4T | Lawn Dart |
| 6 | Rich Canfield | Mountainside Hobbies | V-2 | Aerotech G80-4T | Good Flight |
| 7 | Guy DeStefano | Public Missles | 1/4 Scale Patriot | Aerotech RMS H180W | Good Flight |
| 8 | Guy DeStefano | Public Missles | Callisto | Aerotech RMS G64-10W | Good Flight |

| | | | | | |
|----|-----------------|----------------------|---------------|----------------------------|-------------|
| 9 | Guy DeStefano | Thoy | IBIS | Aerotech RMS F52-7 | No Chute |
| 10 | Guy DeStefano | Scratch | Juice | Aerotech G80-4T | Good Flight |
| 11 | Guy DeStefano | Scratch | Spirogyra | Aerotech G80-4T | Good Flight |
| 12 | Guy DeStefano | Scratch | Spirogyra | Aerotech RMS F40-7W | Close! |
| 13 | Roger Dwyer | Rocket R&D | Robin | Aerotech RMS E28-4T | Good Flight |
| 14 | Roger Dwyer | Rocket R&D | Wasp | Aerotech RMS H97J | Good Flight |
| 15 | Roger Dwyer | Rocket R&D | Wasp | Vulcan G200-10 | Boom! |
| 16 | Roger Dwyer | Rocket R&D | Wasp | Flight Systems F100-4 | Good Flight |
| 17 | Kathy Gilliland | Custom | Equinox | Estes D12-5 | Good Flight |
| 18 | Kathy Gilliland | Estes | Impulse | Estes D12-5(2) | Good Flight |
| 19 | Kathy Gilliland | Estes | Maniac | Estes D12-7 | CATO |
| 20 | Kathy Gilliland | Estes | Python | Aerotech E15-7W | Good Flight |
| 21 | Dale Greene | Aerotech | 1/2 Arreaux | Aerotech G80-10T | Awesome! |
| 22 | Dale Greene | Thoy | Falcon | Aerotech RMS H73J | Good Flight |
| 23 | Dale Greene | Estes | Magnum | Estes D12-0/C6-5 | Good Flight |
| 24 | Rick Hackman | Scratch | Corporal | Estes B6-4 | Good Flight |
| 25 | Rick Hackman | Scratch | F3A Tiger | Estes D12-5 | No Chute |
| 26 | Rick Hackman | Scratch | Jupiter | Estes C5-3 | Good Flight |
| 27 | Rick Hackman | Scratch | Ramjet AA | Estes D12-3 | Good Flight |
| 28 | Rick Hackman | Scratch | Sargeant | Estes A8-3 | Good Flight |
| 29 | Rick Hackman | Scratch | Thor | Estes A8-3 | Good Flight |
| 30 | Peter Kazlouski | Estes | Astra | Estes C6-3 | Good Flight |
| 31 | Peter Kazlouski | Estes | Mongoose | Estes C6-0C6-3 | Good Flight |
| 32 | Peter Kazlouski | LOC/Precision | Stratoblaster | Aerotech RMS F40-7W | Good Flight |
| 33 | Peter Kazlouski | LOC/Precision | Stratoblaster | Aerotech RMS F40-7W | Good Flight |
| 34 | Ed Miller | Scratch | Monocopter G | Aerotech RMS G12-RCT | Good Flight |
| 35 | Ed Miller | Scratch | Tarsis | Aerotech RMS H180W | Good Flight |
| 36 | Ed Miller | Scratch | UFO H | Aerotech RMS H242T | Good Flight |
| 37 | Brian Royer | Scratch | B.A.R.-1 | Aerotech RMS G64-4W | Good Flight |
| 38 | Brian Royer | Thoy | Falcon | Aerotech RMS I161W | Good Flight |
| 39 | Brian Royer | Scratch | Prime Time | Aerotech RMS H97J/D12-7(3) | Good Flight |
| 40 | Brian Royer | LOC/Precision | Purple Haze | Aerotech RMS H238T | Good Flight |
| 41 | Bob Utley | Estes | Fat Boy | Estes D12-5 | Good Flight |
| 42 | Ben Weaver | Mountainside Hobbies | V-2 | Aerotech RMS G64-4W | Good Flight |
| 43 | Les Weaver | Mountainside Hobbies | ADR 4.0 | Aerotech RMS G64-4W | Good Flight |
| 44 | Matt Weaver | Mountainside Hobbies | V-2 | Aerotech RMS G64-4W | Good Flight |
| 45 | John Yost | Thoy | Falcon | Aerotech RMS H128W | Good Flight |

Launch Statistics - September 21st, 1997

Number of Flyers: 16 Weather: Cool, Very Breezy

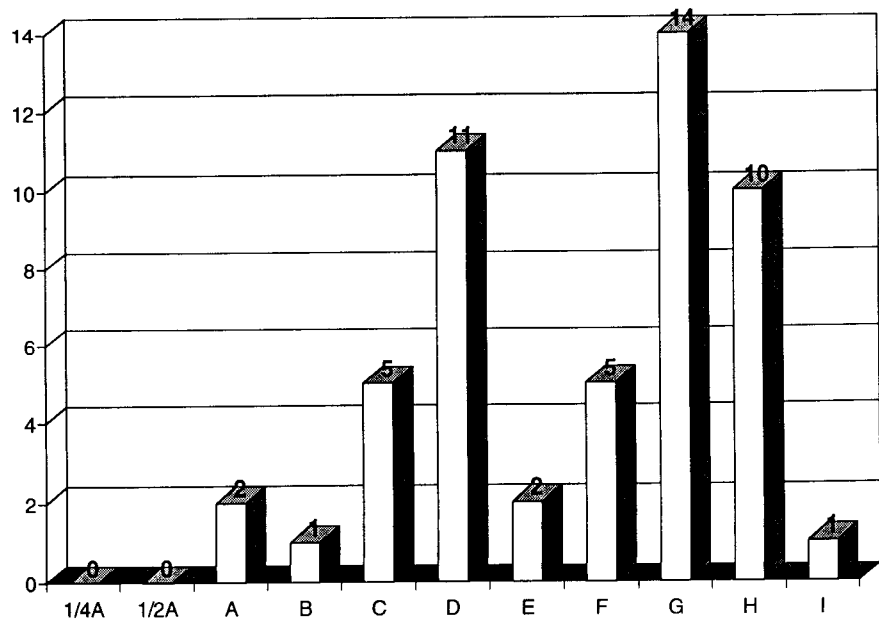
Models Flown:

| | |
|----------------------|----|
| Scratchbuilt | 13 |
| Estes | 7 |
| Mountainside Hobbies | 6 |
| Thoy | 4 |
| LOC/Precision | 3 |
| Public Missles | 3 |
| Rocket R&D | 2 |
| Aerotech | 1 |
| Custom | 1 |

Motor Usage:

| | |
|----------------|----|
| Aerotech RMS | 24 |
| Estes | 19 |
| Aerotech | 6 |
| Flight Systems | 1 |
| Vulcan | 1 |

Impulse Distribution:



SPAAR Sport Launch

September 28th, 1997

by Guy DeStefano

Well, let's see... I arrived at the launch site around 8 AM to meet Roger and Ed to help them set up shop. It was foggy but the winds were calm. According to Mother Nature, a fun filled rocket day needs *wind!* What's bothering her? The winds didn't technically scare the rocketeers but being cautious was a priority. We come from all over and flying rockets was our goal.

There were quite a few beautiful high power launches. Some with not so good

results. Among all of the fire and smoke was Randy Brust with an H180 in his LOC-IV and after two separate trips back to the same field, he came back a winner. He received his share of exercise for the day, plus he saved a lot of money. John Yost certified level 1 with an explosive I357 in his Falcon. Just so John doesn't have a flashback, I won't state the fate of his bird. Ed Miller had the most exciting flight when he punctured the skies with an I435 which is almost a full I. Ed has this thing with long shock cords. Finally, Guy DeStefano stuffed an H238 in his quarter scale Patriot for a 0.8 second burn! Nice

motor for this bird.

If my math is right, about 95% of the flights landed in the corn. You may have thought Denver Void followed us! Hey Roger, let's have a corn cutting party! All that area but we all ended up being *Children of the Corn!* Was that a good movie? Anyway, congrats to Glenn Feveryear for his *Best non-Ed Miller Paint Job* trophy!

We should all thank Ed Miller and Roger Dwyer for their hard work getting the waiver and the launch site. And for those club members who didn't show up for the first two Kirkwood Farm launches, shame, shame, shame. **CD**



Dave O'Neal's Silver Comet on an F12-3J. (Grumbine)



George Beever's Thoy Falcon on a H220SS. (Grumbine)



Aw c'mon guys, rack em' up. Its not that windy. (Grumbine)



Randy Brust's LOC/Precision LOC IV is off on an Aerotech H180W. (Brust)



Roger had a great flight with his Eagle and celebrated with a spectacular fireworks display! (Brust, Grumblin)

Flight Log 9-28

| # | Flyer | Manufacturer | Model | Motors | Result |
|----------|---------------|----------------------|-------------------|-----------------------|---------------|
| 1 | George Beever | Thoy | Falcon | Rocketflite H220SS | Good Flight |
| 2 | George Beever | Mountainside Hobbies | Iris | Aerotech E15-4W | No Chute |
| 3 | George Beever | Scratch | Outlaw | Vulcan H100SS | Good Flight |
| 4 | Randy Brust | Estes | Fat Boy | Aerotech RMS F24-7W | Good Flight |
| 5 | Randy Brust | LOC/Precision | LOC IV | Aerotech RMS H180W | Good Flight |
| 6 | Guy DeStefano | Public Missles | 1/4 Scale Patriot | Aerotech RMS H238T | Good Flight |
| 7 | Guy DeStefano | Scratch | Juice | Aerotech RMS G64-7W | Good Flight |
| 8 | Guy DeStefano | Scratch | Juice | Aerotech RMS G64-4W | Good Flight |
| 9 | Guy DeStefano | Mountainside Hobbies | V-2 | Aerotech RMS G64-4W | Good Flight |
| 10 | Roger Dwyer | Rocket R&D | Eagle | Aerotech RMS H123W | Good Flight |
| 11 | Roger Dwyer | LOC/Precision | Onyx | Flight Systems F100-4 | CATO |
| 12 | Roger Dwyer | Rocket R&D | Robin | Estes D12-3 | CATO |
| 13 | Roger Dwyer | Rocket R&D | Robin | Estes D12-3 | Good Flight |

| | | | | | |
|----|-----------------|----------------------|----------------------|--------------------------------|-----------------|
| 14 | Glenn Feveryear | Scratch | 1/2A HD | Apogee 1/4A2-4 | 67s-Good Flight |
| 15 | Glenn Feveryear | Scratch | 1/2A HD | Apogee 1/4A2-4 | Prang |
| 16 | Glenn Feveryear | Scratch | Astrobee 1500 | Aerotech G40-7W/Apogee B2-0(2) | Good Flight |
| 17 | Glenn Feveryear | North Coast Rocketry | Lance Beta | Aerotech F25-6W | Good Flight |
| 18 | Dave Grumbine | Scratch | Rear Facing Astrocam | Estes C5-3 | Good Flight |
| 19 | Dave Grumbine | Scratch | Rear Facing Astrocam | Estes C6-3 | Good Flight |
| 20 | Dave Grumbine | Scratch | RF Astrocam/Sigma II | Estes D12-3 | Good Flight |
| 21 | Dave Grumbine | Scratch | Yellow Magic Marker | Estes 1/2A3-2T | Good Flight |
| 22 | Mark Kamide | Scratch | Viking 10 | Aerotech G80-7T | Good Flight |
| 23 | Stephen Knight | Aerotech | Arcas | Aerotech RMS G64-7W | Good Flight |
| 24 | Stephen Knight | Rocket R&D | Navy Strike | Aerotech RMS G64-7W | Good Flight |
| 25 | Stephen Knight | Scratch | Soviet MR-20 | Estes C6-5 | Good Flight |
| 26 | Stephen Knight | Scratch | Spear | Aerotech RMS E18-7W | Good Flight |
| 27 | Stephen Knight | Mountainside Hobbies | V-2 | Estes D12-5 | Good Flight |
| 28 | Kurt Lacko | Estes | Broadsword | Estes D12-3 | Good Flight |
| 29 | Kurt Lacko | Mountainside Hobbies | V-2 | Estes D12-5 | Good Flight |
| 30 | Ed Miller | Thoy | Falcon | Aerotech RMS I435T | Good Flight |
| 31 | Dave O'Neal | Estes | Silver Comet | Aerotech RMS F12-3J | Good Flight |
| 32 | Tony Rossi | Estes | Fat Boy | Estes C6-5 | Good Flight |
| 33 | Tony Rossi | Estes | Flash | Estes C6-5 | Good Flight |
| 34 | Tony Rossi | Estes | R2-D2 | Estes C6-5 | Good Flight |
| 35 | Ben Weaver | Mountainside Hobbies | ADR 4.0 | Aerotech RMS G64-7W | Good Flight |
| 36 | Ben Weaver | Estes | Phoenix | Estes D12-3 | Good Flight |
| 37 | Ben Weaver | Estes | Phoenix | Estes D12-3 | Good Flight |
| 38 | Ben Weaver | Estes | Phoenix | Estes D12-3 | Good Flight |
| 39 | Ben Weaver | Mountainside Hobbies | V-2 | Aerotech RMS G64-4W | Good Flight |
| 40 | Ben Weaver | Mountainside Hobbies | V-2 | Aerotech RMS G64-4W | Good Flight |
| 41 | Matt Weaver | Mountainside Hobbies | ADR 4.0 | Aerotech RMS G64-7W | Good Flight |
| 42 | John Yost | Thoy | Falcon | Aerotech RMS I357T | Good Flight |

Launch Statistics - September 28th, 1997

Number of Flyers: 15 Weather: Cool, Very Breezy

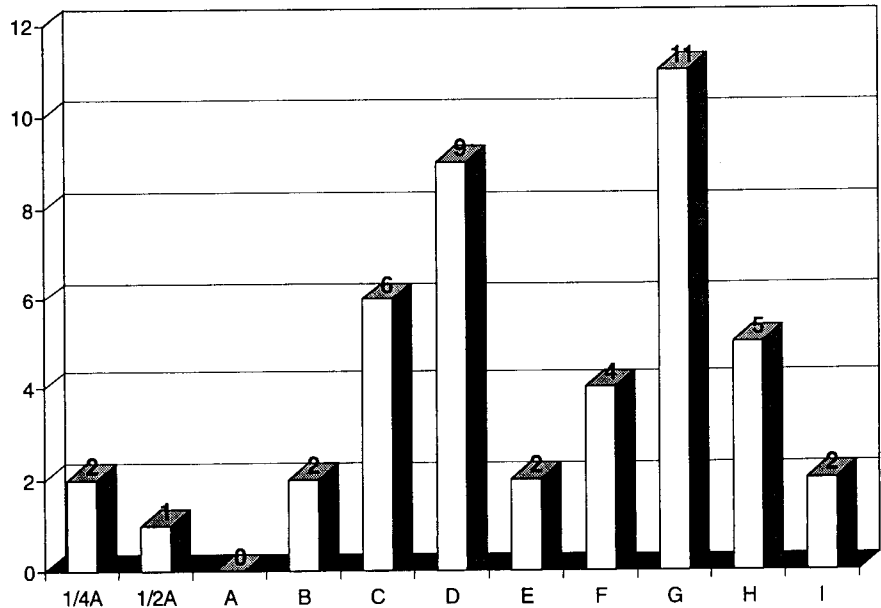
Models Flown:

| | |
|----------------------|----|
| Scratchbuilt | 10 |
| Estes | 7 |
| Mountainside Hobbies | 7 |
| Rocket R&D | 3 |
| Thoy | 3 |
| LOC/Precision | 2 |
| Aerotech | 1 |
| North Coast Rocketry | 1 |
| Public Missiles | 1 |

Motor Usage:

| | |
|----------------|----|
| Aerotech RMS | 17 |
| Estes | 16 |
| Aerotech | 4 |
| Apogee | 4 |
| Flight Systems | 1 |
| Rocketflite | 1 |
| Vulcan | 1 |

Impulse Distribution:



Estes and Aerotech Rocket Motor Cross Reference Chart

by Mark Kamide

Estes

| | | | | | | | | |
|------------------------------|-------------|----------|-----------|----------|---------|---------|---------|------|
| A.R.V. Condor | B6-2 | C5-3 | C6-3 | | | | | |
| AIM-9 Sidewinder | B4-2 | B6-2 | C5-3 | C6-3 | | | | |
| Aplha | 1/2A6-2 | A8-3 | B4-4 | B4-6 | B6-4 | B6-6 | C6-5 | C6-7 |
| Astrocram | C6-7 | | | | | | | |
| Astrosat LSX | B4-2 | B6-2 | C5-3 | C6-3 | C6-5 | | | |
| Athena | 1/2A6-2 | A8-3 | B4-4 | B4-6 | B6-6 | C6-5 | C6-7 | |
| Bail-Out | B4-2 | B6-4 | C5-3 | C6-3 | C6-5 | | | |
| Bandit | A8-3 | B4-4 | B6-4 | C5-3 | C6-3 | C6-5 | | |
| Banshee | A8-3 | B4-4 | B6-4 | B6-6 | C6-5 | C6-7 | | |
| Big Bertha | A8-3 | B4-2 | B4-4 | B6-2 | B6-4 | C6-5 | | |
| Black Brandt II | D12-5 | D12-7 | | | | | | |
| Broadsword | D12-3 | D12-5 | E15-4 | | | | | |
| Bull Pup 12D | A8-3 | B4-4 | B6-4 | C6-5 | | | | |
| Cato | B6-0 | C6-0 | | | | | | |
| Cammanche | up A8-3 | up B4-6 | up B6-6 | up C6-7 | B6-0 | C6-0 | | |
| Corkscrew | A8-3 | B4-4 | B6-2 | B6-4 | C6-3 | C6-5 | | |
| Dagger | A8-3 | B4-4 | B6-4 | C5-3 | C6-3 | C6-5 | | |
| Deep Space Transport | B4-2 | B6-2 | C5-3 | C6-3 | | | | |
| Delta Clipper | D12-0 | D12-7 | | | | | | |
| F-117 Stealth Nighthawk | | | | | | | | |
| F-22 Air Superiority Fighter | B4-2 | B6-2 | C5-3 | C6-3 | | | | |
| Fat Boy | B4-2 | B6-2 | C5-3 | C6-3 | | | | |
| Firebird | A8-3 | B4-4 | C6-5 | C6-7 | | | | |
| Firestreak | 1/2A6-2 | A8-3 | B4-4 | B6-4 | C5-3 | C6-3 | C6-5 | |
| Flash | A8-3 | B4-4 | B6-4 | B6-6 | C6-5 | C6-7 | | |
| Gemini DC | B4-2 | B4-4 | B6-2 | B6-4 | C6-5 | | | |
| Gnome | 1/2A3-2T | 1/2A3-4T | A3-4T | A10-3T | | | | |
| Hijax | A8-3 | B4-4 | B6-4 | C5-3 | C6-3 | C6-5 | | |
| Impulse | D12-5 | D12-7 | E15-4 | | | | | |
| Intruder | A10-3T | | | | | | | |
| Jayhawk | D12-3 | E15-4 | | | | | | |
| Long Shot | up B6-6 | up C5-3 | up C6-3 | up C6-7 | D12-0 | | | |
| Mach-12 | A8-3 | B4-4 | B6-4 | C6-5 | | | | |
| Maniac | D12-5 | D12-7 | E15-4 | | | | | |
| Manta | A8-3 | B4-2 | B6-2 | | | | | |
| Maxi Force | D12-7 | E15-4 | | | | | | |
| Mean Machine | D12-5 | | | | | | | |
| Mercury Atlas | D12-3 | E15-3 | | | | | | |
| Mini Cobra | up 1/2A3-4T | up A3-4T | up A10-3T | A10-0T | | | | |
| Mini Patriot | A3-4T | A10-3T | | | | | | |
| MK-109 Stingray | A8-3 | B4-4 | B6-4 | B6-6 | C6-5 | C6-7 | up C6-7 | C6-0 |
| Mongoose | up A8-3 | up B4-4 | up B4-6 | up B6-4 | up B6-6 | up C6-5 | up C6-7 | C6-0 |
| Mosquito | 1/2A3-4T | A3-4T | A10-3T | | | | | |
| Nike Arrow | 1/2A3-2T | A3-4T | A10-3T | | | | | |
| Ninja | 1/2A3-4T | A3-4T | A10-3T | | | | | |
| Nova Payloader | A8-3 | B4-4 | B6-4 | C6-5 | | | | |
| Omloid | B4-2 | B6-2 | C5-3 egg | C6-3 egg | | | | |
| Patriot | D12-5 | D12-7 | E15-4 | | | | | |
| Pegasus | A10-3T | B4-4 | B4-6 | B6-6 | C6-5 | C6-7 | | |
| Phoenix | D12-3 | E15-4 | | | | | | |
| Python | D12-3 | D12-5 | | | | | | |
| Quark | 1/2A3-4T | A3-4T | A10-3T | | | | | |
| Raider | A10-3T | | | | | | | |
| Rampage | A8-3 | B4-4 | B6-4 | C5-3 | C6-3 | C6-5 | | |
| Reliant | 1/2A6-2 | A8-3 | B4-4 | B4-6 | B6-4 | B6-6 | C6-5 | C6-7 |
| Scrambler | B4-2 | B6-2 | C5-3 | C6-5 | | | | |
| Shadow | D12-3 | E15-4 | | | | | | |
| Silver Comet | D12-3 | D12-5 | | | | | | |
| Sizzler | B4-2 | B6-2 | C5-3 | C6-3 | C6-5 | | | |
| Skywinder | B4-2 | B6-2 | C6-3 | | | | | |

| | | | | | | | |
|------------------------|----------|----------|--------|------|------|------|------|
| Solar Warrior | A3-4T | A10-3T | | | | | |
| Space Racer | A8-3 | B4-4 | B4-6 | B6-4 | B6-6 | C6-5 | C6-7 |
| Space Shuttle | C5-3 | C6-3 | | | | | |
| Sparrow | 1/2A3-2T | 1/2A3-4T | A10-3T | | | | |
| SR-71 Blackbird | B4-2 | B6-2 | B6-4 | C6-5 | | | |
| SRX | B4-2 | B6-2 | C5-3 | C6-3 | | | |
| Star Booster | C5-3 | C6-3 | | | | | |
| Star Trek Enterprise | B6-2 | C5-3 | | | | | |
| Star Trek Klingon | B4-2 | B6-4 | C6-5 | | | | |
| Star Wars R2-D2 | B6-2 | C6-3 | | | | | |
| Star Wars Tie Fighter | C6-3 | | | | | | |
| Star Wars X-Wing | C6-3 | | | | | | |
| Terre/Sandhawk | D12-3 | | | | | | |
| Thunderhawk | A8-3 | B4-4 | B6-4 | C6-5 | | | |
| Tomcat | C5-3 | C6-3 | | | | | |
| Tornado | 1/2A6-2 | A8-3 | B4-4 | B6-4 | B6-6 | | |
| Transwing Super Glider | B4-2 | B6-2 | C6-3 | | | | |
| Turbo Copter | A8-3 | B4-2 | B6-2 | B6-6 | C6-5 | C6-7 | |
| Venom | A8-3 | B4-2 | B6-4 | B6-6 | C6-5 | C6-7 | |
| Venus Probe | C5-3 | C6-3 | | | | | |
| Vicking | A8-3 | B4-4 | B6-2 | C6-5 | C6-7 | | |
| Wizard | 1/2A6-2 | B4-4 | B4-6 | B6-4 | B6-6 | C6-5 | C6-7 |
| X-Ray | 1/2A3-2T | 1/2A3-4T | A10-3T | | | | |
| Yankee | A8-3 | B4-4 | B4-6 | B6-6 | C6-5 | C6-7 | |
| Yellow Jacket | A8-3 | B4-4 | B4-6 | B6-4 | B6-6 | C6-5 | C6-7 |
| Zinger | B4-6 | B6-6 | C6-7 | | | | |

Aerotech

| | | | | | | | | |
|---------------|----------|--------|--------|---------|---------|---------|--------|---------|
| Arreaux | 24mm R/L | D15-4T | E11-5J | E18-7W | E28-7T | F12-5J | F24-7W | F39-6T |
| | 24mm S | E15-7W | E30-7T | | | | | |
| | 29mm R/L | E16-7W | E23-5T | F22-7J | F40-10W | F52-8T | G33-7J | G64-10W |
| Astrobee D | 29mm S | F14-6J | F25-9W | F50-9T | G40-10W | G80-10T | | |
| | 29mm R/L | F40-4W | F52-5T | G64-4W | | | | |
| | 29mm S | F50-4T | G40-4W | G80-4T | | | | |
| Barracuda | 24mm R/L | E11-3J | E18-4W | E28-4T | F24-7W | F12-5J | F39-6T | |
| | 24mm S | E15-4W | E30-4T | | | | | |
| | 29mm R/L | E16-4W | E23-5T | F22-7J | F40-7W | F52-8T | G33-7J | G64-10W |
| Cheetah | 29mm S | F14-6J | F25-9W | F50-9T | G40-10W | G80-10T | | |
| | 24mm R/L | D15-4T | E11-5J | E18-7W | E28-7T | F12-5J | F24-7W | F39-9T |
| | 24mm S | E15-7W | E30-7T | | | | | |
| HV Arcus | 29mm R/L | E16-7W | E23-7W | F22-7J | F40-10W | F52-8T | G33-7J | G64-10W |
| | 29mm S | F14-6J | F25-9W | F50-9T | G40-10W | G80-10T | | |
| | 24mm R/L | E28-4T | F24-4W | F39-6T | | | | |
| Initiator | 24mm S | E30-4T | | | | | | |
| | 29mm R/L | F40-4W | F52-5T | G33-5J | G64-7W | | | |
| | 29mm S | F25-6W | F50-6T | G40-7W | G80-7T | | | |
| IQSY Tomahawk | 24mm R/L | E11-3J | E18-4 | E28-4T | F24-4W | F12-3J | F39-6T | |
| | 24mm S | E15-4W | E30-4T | | | | | |
| | 29mm R/L | E16-4W | E23-5T | F22-5J | F40-7W | F52-8T | G33-7J | G64-7W |
| Mirage | 29mm S | F14-4J | F25-6W | F50-6T | G40-7W | G80-7T | | |
| | 24mm R/L | E11-5J | E18-7W | E28-7T | F12-5J | F24-7W | F39-6T | |
| | 24mm S | E15-7W | E30-7T | | | | | |
| Mustang | 29mm R/L | E16-7W | E23-5T | F40-10W | F22-7J | F52-8T | G33-7J | G64-10W |
| | 29mm S | F14-6J | F25-9W | F50-9T | G40-10W | G80-10T | | |
| | 24mm R/L | D14-4T | E18-7W | E11-5J | E28-7T | F24-7W | F12-5J | F39-6T |
| Strong Arm | 24mm S | E15-7W | E30-7T | | | | | |
| | 29mm R/L | E16-4W | F22-5J | F40-7W | F52-8T | G33-5J | G64-7W | |
| | 29mm S | F14-4J | F25-6W | F50-6T | G40-7W | G80-7T | | |
| Wart-Hog | 24mm R/L | E11-3J | E18-4W | E28-4T | F12-3J | F24-4W | F39-6T | |
| | 24mm S | E15-4W | E30-4T | | | | | |
| | 29mm R/L | E16-4W | E23-5T | F40-7W | F22-5J | F52-8T | G33-7J | G64-7W |
| | 29mm S | F14-4J | F25-6W | F50-6T | G40-7W | G80-7T | | |

Area 51 Moves to East Coast!

by Ed Miller

Recent reports of UFO sightings near Whitakers, North Carolina have been confirmed. Sources report that over the Fourth of July weekend, UFO test flights were conducted from a highly secure cow pasture east of Whitakers.

Our inside source gave us a few details of the UFO's construction. The main

framework is made from a nonmagnetic product of nine layers of cellulose. The aero shell is made of the same material three layers thick. The power plant housing is made of a phenolic impregnated cellulose. The power source is said to be an Aerotech M1939 antigravity reaction unit. Electronic controls consisted of an Adept timer and a Pratt fail safe device. The UFO was reported to have weighed about 50 pounds. Because of its nonmetallic construction, it is probably a prototype of a new stealth aircraft.

One source also said that the first test flight achieved an altitude of about 800 feet. Touch down was controlled by four air braking devices. Supposedly, this craft can be refitted and flown again.

The designer and operator is reported to be Ed Miller who has now achieved his third level of madness.

There were reports of Men in Black questioning the citizens of Whitakers. Also sighted were a pair of black helicopters hovering near the area. These reports, however, have not been confirmed. **CD**



Ed Miller's Flying Saucer leaves the planet on an Aerotech M1939. (Truitt)



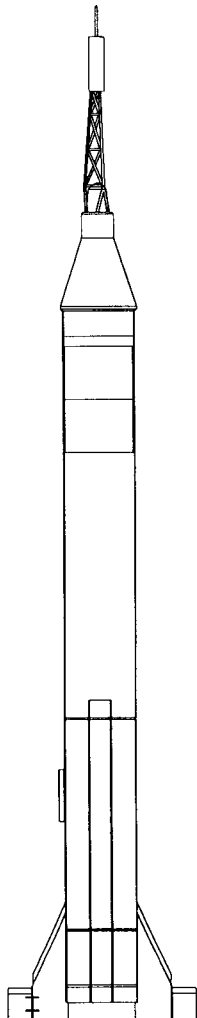
The Flying Saucer continues its successful level 3 certification flight. (Truitt)

SPAAR Winter Workshop Program Mercury-Redstone Update

With winter just around the corner, we have been getting ready for the club's winter build project (January, February, March). This year we are going to be building the famous Mercury Redstone Rocket. The model will be 4 inches in diameter and 57 inches tall. It will fly on 29mm motors and come down on a 36" diameter nylon parachute. It also features through the wall mounted fins.

As previously released in the club newsletter, the order form for this rocket had a few errors on it. The changes are minor with the exception of the capsule cost. The capsule price used was quoted from Balsa Machining Service a long time ago and was outdated. BMS has requoted the cost of the capsule and the new figure has been updated on the order form. To help offset the cost of this and clean out some spare tubes hanging around, only one 4 inch diameter body tube is now required. The upper section, we are donating. The plywood sizing listed on the order sheet for fins was incorrect. The inner fin (main fin) is 1/4 inch thick and the rudder (outer fin) is 3/16 inch thick. The pricing on these items did not change. What this all means is the cost of the rocket went up \$9.00 now totaling \$70.58.

For those of you wishing to build a Little Joe I, please be sure to change the quantities and cost accordingly. The Little Joe I uses 1/8 inch thick fins. This spring, when we have all these Mercury Redstones showing up for a club launch, it will definitely be a sight to see.

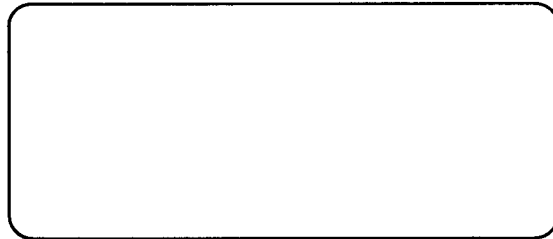


| Parts List | | | | |
|--|---|-----------------------|--------------|--------------|
| Description | Qty. | Size | Cost/Each | Total |
| Body Tube | 1 | 4.00 Dia. x 34" Long | 5.00 | 5.00 |
| Capsule | 1 | 4.00 Dia. | 26.25 | 26.25 |
| Barrel | 1 | 7/8 Dia. x 36 | 0.20 | 0.20 |
| Barrel Support Rods | 1 | 1/8 Dia. x 36 | 0.20 | 0.20 |
| Centering Rings | 3 | 1/8 Thk. x 3.90 Dia. | 1.50 | 4.50 |
| Launch Lug | 1 | 1/4 Dia. x 6.00 Long | 0.30 | 0.30 |
| Fins | 2 | 1/4 x 6.00 x 12.00 | 2.20 | 4.40 |
| Fins | 1 | 3/16 x 6.00 x 12.00 | 2.80 | 2.80 |
| Fins | 1 | 1/16 x 6.00 x 12.00 | 2.04 | 2.04 |
| Fin Dowel | 1 | 1/16 Dia. x 34 Long | 0.10 | 0.10 |
| Steel Shock Chord | 1 | 1/8 Dia. x 36 Long | 1.00 | 1.00 |
| Elastic Shock Chord | 4 | 3/4 Wd. x 36 Long | 0.50 | 2.00 |
| Eye Bolt | 1 | 3/16 Thd. x 1 Long | 0.50 | 0.50 |
| Screw Eye | 1 | 1/4 Thd. x 2 Long | 0.90 | 0.90 |
| Tower Cross Brace | 1 | 1/8 Square x 36 Long | 0.15 | 0.15 |
| Parachute | 1 | 36" Dia. | 11.99 | 11.99 |
| Tube Coupler | 1 | 4.00 Dia. x 6 Long | 2.25 | 2.25 |
| Steel Shock Crimp | 2 | 1/16 Dia. Steel Crimp | 0.25 | 0.50 |
| 29mm Motor Tube | 1 | 1.14 Dia. x 34 Long | 2.50 | 2.50 |
| Decal | 2 | "United States" | 1.50 | 3.00 |
| | | | Total | 70.58 |
| Directions: | | | | |
| Circle the items you DO NOT need and subtract the cost from the Total Cost | | | | |
| Name: | | | | |
| Address: | | | | |
| Phone Number: | | | | |
| Return As Soon As Possible, So Kits May Be Started | | | | |
| Send To: | Mark Kamide Mountainside Hobbies, Inc. P.O. Box 343 Ephrata Pa 17522 | | | |

COUNTDOWN

is the Official Newsletter of SPAAR
THE SOUTHERN PENNSYLVANIA AREA ASSOCIATION OF ROCKETRY

Please make sure your membership is up to date!



SPAAR
PO Box 127
Reamstown, PA. 17567

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