THE UPSTATE ROCKETEER

The Official Newsletter of MARS
NAR Section #136

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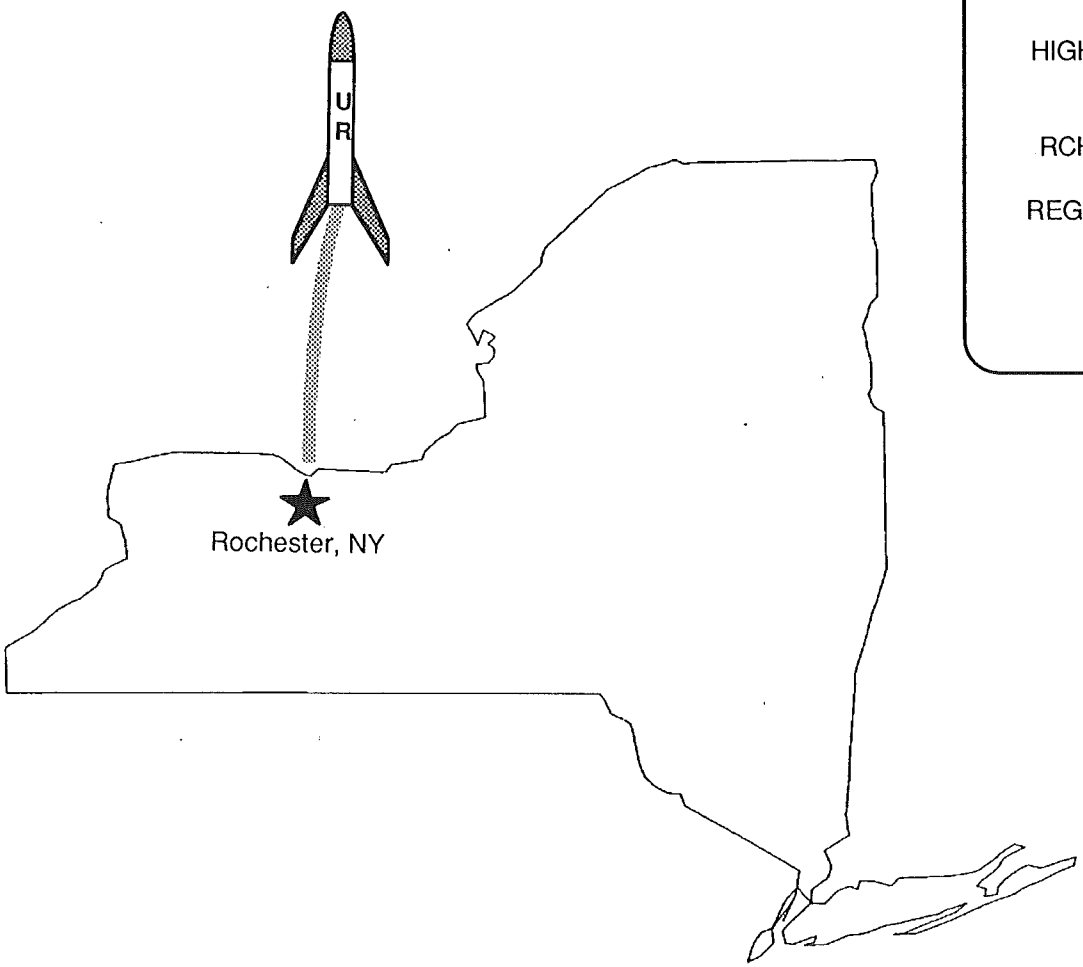

The Upstate Rocketeer

Volume 5, Number 6
December, 1992

The *Upstate Rocketeer* is published six times a year by the Monroe Astronautical Rocket Society as a service to its members and NAR members in Western and Central New York. Subscriptions are $3.00/year. The *Upstate Rocketeer* is edited by Dan Wolf. Send all comments, complaints, letters, plans, subscriptions, etc. to him at the following address:

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MARS Membership - December 1992

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Jeff Ryan - Vice President
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Roy Metz - Senior Advisor

Mike O'Brien	John DeMar
Wayne Foster	Richard Kerr
Merrell Lane	Bud Piscini
Jessica Ryan	John Viggiano
Dan Wolf	Mary Wolf
Sarah Wolf	

Blowin' In the Wind
(Editorial)

Seasons Greetings everybody. The latest issue of *UR* is here, just in time for you to take a few minutes out of your busy holiday schedule and read about what's happening in rocketry in Upstate New York.

It has been a tradition with the December issue of *UR* to offer an "Oddball" plan. This year, in keeping with the theme of the last few years, I had hoped to offer you the "Flying Santa". Hey, what do you expect from the newsletter that brought you the "Flying Elf", "Flying Crayon", and "Frosty the Snow Roc"! I didn't quite have enough time to get it together however. Next year, for sure! I believe that every issue of the newsletter should have at least one plan. Therefore, I will continue to offer these "oddball" plans until somebody else sends something in. So if you are getting tired of them, send in a plan of your own. Heck, I'll even build it if you do.

Anyway, this issue is filled with reports of various club events. MARS was fairly busy this fall, with sport launches and meetings in October and November. In addition, the club made two field trips. One was to PARASHOOT-1, a NAR regional held in Hatfield, PA in October. The second trip was to a Tripoli High Power Launch held in Culpeper, VA in November. Thus we have coverage of these two events including photos.

Also in this issue you will find out what's going on with the regulatory agencies, as well as the latest manufacturer's news from the RCHTA show in Chicago. In addition, we have articles dealing with two new projects that the club will be engaging in as well as announcements of upcoming rocketry events for 1993.

Finally, I have managed to put together a list of club records for the events in the current Pink Book. Since it looks like MARS will be fairly active in competition this year, I thought this would be an appropriate time to do so. In looking over the list, it can be seen that many of the records should be easily broken. In particular, none of the helicopter records are anything to write home about and I am embarrassed to hold all of them as well. On the other hand, there are a few records that stand out as being very difficult to surpass. Specifically, John DeMar's 1/2A Boost Glide and B Super-Roc Duration flights, Dave Pringle's A Streamer record, and my own A Rocket Glide flight, all look to be tough to beat. Most of the others look like they can be broken however and it should be interesting to see what this list looks like at the close of 1993.

Happy Holidays,

Dan

MARS Club News

November Meeting Report
(reported by Jay King)

It was a dark and stormy night....

The meeting was held 20 November at the RIT research center. It was attended by Wayne Foster, Jay King, Ferenc Roka, Jeff Ryan, John Viggiano and Dan Wolf. The "snow warning" kept members from the outlying areas at home. The regular meeting was preceded by a meeting of the contest committee, reported elsewhere in this issue.

Jay brought photos of the November launch, loss and eventual recovery of Dan's LOC Graduator, "Boilermaker Special". The ejection charge on the "G" reload failed to operate. Dan attributes it to having been a little sloppy with the vaseline during assembly.

Dan provided a library list of his rocket videos. They are available for loan. He also handed out blank high power certificates, for those who have had recent high power certification flights or are planning them in the near future.

Dan sent out a letter to several potential launch sites, outlining our needs and possible services, to several schools and to Monroe County Parks.

MARSCON 93 was discussed, details elsewhere in this issue.

Wayne Foster proposes that as a group project, we build a large, payload carrying rocket. We would use the model as an opportunity for more people to try out high power techniques and to provide a payload lofting service for third parties. Wayne, Dan and John Demar are running with the idea, anyone interested in participating should contact them directly.

John Viggiano outlined his R&D proposal. He is developing a mathematical model for predicting flight performance that will eliminate much of the error inherent in systems which require using averages and constants rather than modelling the actual "dynamic" attributes. His presentation was very interesting and he presented the mathematical concepts in terms that we all understood (His description of "a puppy dog chasing it's tail" not withstanding).

Ferenc brought along the latest catalog and a handful of parts from "Shecter Rockets".

The meeting handout included a Sig technical report on balsa wood and an article on construction with composite materials.

After the business meeting, the group watched the video of the Culpeper High Power launch.

Special thanks to John Viggiano for providing meeting refreshments.

MARSCON 1993
(or "The Winter Cabin Fever Reliever")
by Jay King

MARSCON 1993 is planned for March 6 and 7 1993. It is an NAR sanctioned Open Meet and convention. Contest events are: Research and Development, Sport Scale, D Eggloft Duration and B Helicopter Duration.

Convention activities will begin Saturday March 6 at 1:00 PM with a helicopter building session. The contest committee will provide building materials, participants should bring their own tools. Plans for several types of helicopters will be available. R&D reports will be read in the late afternoon and sport scale judged. Dinner will be provided. Other convention activities to be added later.

Contest flights will be made the morning of Sunday March 7. As always sport flyers are welcome. Official activities will conclude by early afternoon.

Ed Lacroix of Apogee Components will be our guest throughout the weekend.

Entry fee is $7.00 for Seniors, $3.00 for Juniors and Leaders.

This promises to be an exciting and enjoyable weekend for all. For more information contact: Jay King 716-288-5945 or John Viggiano 716-359-3869.

Spring Regional Planned
by John Viggiano

MARS has a Regional competition planned for this upcoming April. It's an opportunity for us to practice some of the NARAM events before NARAM, and your reporter can use all the practice he can get. So, when Cabin Fever, that seasonal Rochester ailment, sets in, remember the cure: build rockets!

The events are: 1/2 A Streamer Duration (Multi Round), 1/2 A Parachute Duration (Multi-Round), 3x 1/2 A Cluster Altitude (one cluster of three 1/2 A engines), A Helicopter Duration, B Rocket Glider, B SuperRoc Altitude, D Dual Eggloft Duration, Open Spot Landing.

Strategy for each of these events will be discussed in an upcoming issue of *UR*. The final date are yet to be determined, but a tentative date of 17-18 April has been selected.

Between this event, NYSPACE (in June, most probably), NARAM (in August), and the Open meet to be held in conjunction with our March Convention, there are plenty of great opportunities for exciting competition in and around our region. Plan on attending and participating!

(more Club News on page 12)

THE SPEED BOYS
by John Viggiano

Conversation overheard at a recent meeting of The SPEED BOYS

SPEED BOY 1: Okay, the object is to launch a supersonic rocket . . .

SPEED BOY 2: But supersonic rockets are like bellybuttons -- everybody's got one!

SPEED BOY 1: Yes, but we're doing something a little different here. We're going to demonstrate that our rocket actually goes supersonic. We're not going to base our claim solely on a computer simulation, like RASP . . .

SPEED BOY 3: . . . but we'll run some simulations beforehand, to insure that it's both safe and feasible.

SPEED BOY 1: (rather testily): As I was saying...

SPEED BOY 4: (who is actually a member of the distaff gender): Hey, who picked this sexist name, anyway? Couldn't we call it "The SPEED GIRLS" instead?

SPEED BOY 3: Well, actually, "The SPEED BOYS" was a working name for the group, taken from a section of *Thirty Tons a Day*, a book by Bill Veeck . . .

SPEED BOY 1: . . . and if you want to know what the thirty tons were of . . .

SPEED BOY 2: . . . Well, it was a book about a racetrack. So the name, shall we say, "stuck." Tell me more about how we'll know our rocket broke the sound barrier. Will we hear a sonic boom?

SPEED BOY 4: No, it will probably be too small to generate a sonic boom which could be heard over the din of those smelly composite engines. Instead, we plan to use an on-board accelerometer, and integrate the results afterward. The result will give us velocity.

SPEED BOY 1: Another thing we'll try will be to compare the recorded acceleration curve with the engine's thrust-time curve, and back-out the drag coefficient as a function of time. As the rocket goes transonic, there should be a sharp peak in drag.

SPEED BOY 2: So you have two methods of verifying supersonic flight, but both depend upon the on-board accelerometer. Do you have a method independent of that device?

SPEED BOY 3: We could ask the Missouri Highway Patrol if they'd clock it for us. . . like Lonnie Reese of FSI did a long time ago . . . .

Okay, I lied. This **wasn't** overheard at a meeting of The SPEED BOYS, because there hasn't been a meeting yet. We do plan to discuss this project at regular club meetings, launches, and definitely at our upcoming convention, MARSCON-I (see article elsewhere in this issue). Right now, things are very informal; come on and join the FUN!

Local Source of Scale Data
by John Viggiano

Ed. note: John Viggiano has been doing some scale data research via the local university libraries and found that our own University of Rochester has quite a collection. John's comments from a recent foray into the "stacks" follow.

In keeping with the spirit of the library "catalogs" distributed at recent MARS meetings, I would like to take this opportunity to share with you some scale data I have accumulated. These data are, for now, limited to the NASA publications mentioned in Alway's book. Some of these publications are of only limited value to scale modelers, offering some information on some of the finer details. One in particular, however, is an excellent source of scale modeling data, and I have highlighted this one. I suppose Alway didn't feel he could devote enough pages to the prototype (Trailblazer I) described in this document (TN D-2270) in the first edition of his book; I would imagine that he'll go into much greater detail in the next edition.

Levine, Jack, "Performance and some design aspects of the four-stage solid-propellant rocket vehicle used in the RAM A1 flight test". NASA Technical Note D-1611. Langley Research Center, March, 1963. (RAM A)

You need to add color documentation for the whole vehicle, and dimensions of the Recruit XM19 strap ons (see Alway's data on the Astrobee), and you'll have a very nice set of sport scale data. It would be good enough for regular scale if the dimensions of the fins and lower transition sections were documented.

Lundstrum, Reginald R., Allen B. Henning, and W. Ray Hook, "Description and performance of three Trailblazer II reentry research vehicles" NASA Technical Note D-1866. Langley Research Center, December, 1964. (Trailblazer II)

If you add some color data, this provides sufficient scale data for Sport Scale competition. The drawing features several station numbers, but no diameters, fin sizes, etc.

(continued on page 6)

PARASHOOT-1 Regional Meet
MARS On the Road - Part 1
or
The New Yorkers Strike Back

PARASHOOT-1 was held the weekend of October 10-11 in Hatfield, PA. The Philadelphia Area Rocketry Association (PARA) hosted the meet. Since this was PARA's first regional, we didn't know what to expect in terms of range operations, who would show up, and the venue itself. Since GSSS had an open meet the same weekend, we didn't expect them to be there. However we were a little surprised not to see some people from ASTRE, NARHAMS, or NOVAAR. Actually, Ken Mizoi, a NOVAAR member was there, but Ken doesn't count since he lives in Ithica (Ken, if we had known you were coming we could have picked you up in Binghampton!).

Three MARS members made the trip down, Wayne Foster, Dan Wolf, and our newest member John DeMar. The ride down was not encouraging as it rained during most of the trip. Saturday brought blue skies however, with temperatures in the mid 70s and no wind. To top it off, there was some serious thermal activity throughout the day. It was absolutely fantastic.

The MARS group started out slowly. Wayne had some nice A SD and 1/4A PD flights although he perhaps flew them too soon in the day, before the good thermal activity started. Also, Wayne learned the hard way about Apogee nose cones as he suffered a separation when the attachment piece on the 13mm cone broke. Still, Wayne's models were certainly competitive and it looks like we have another good contest flyer in the club.

Meanwhile Dan and John were busy trying to get all their contest flights in. About the only negative thing about this meet was the fact that there was a total of nine events with 17 flights required to be competitive in all of them. That's a lot of contest flying. Both Dan and John got off to shaky starts in B Super-Roc Duration. Neither was able to get two good flights, although John's second one was quite good (good enough for a club record) after a first flight DQed.

John picked things up after that though. By picking good air to fly the high weighing factor glider events in, John managed to take first in both 1/2A B/G and A R/G. John's second B/G flight was one of the highlights of the meet as the nicely trimmed "Baby Beakers" turned in a nine and a half minute flight while landing in the parking lot near Wayne's van. John found good air for his first R/G flight too, and easily took both events. John wouldn't let Dan use his "pet thermal" and Dan struggled for the most part to find the "good air". Dan's second R/G flight found some lift and netted him second in the event. Both Dan and John were flying Tom Beach's Status-4 design. The Beakers design that John flew is also a Beach design (John Beach, Tom's brother), although John scaled it down from the original. John built both of them by the way, from plans published in this newsletter.

Ken Mizoi blew everyone away in 1/4A PD with a 317 second flight. Again, it was returned easily. The same story repeated in basically every event. To get first place in an event you needed at least one flight and often both flights with good "lift."

In other events, the Hot & Cold team had two good thermal assisted flights in A Streamer to take first. Ken Mizoi had the best single flight in the event with a 3:33 flight but had to settle for second place when the streamer didn't deploy on the second flight. Ken, of course flew a fiberglass model while most other contestants were flying Blackshaft and Waferglass models. There was a large number of separations in the event (too many people used A3-4Ts instead of A3-6Ts), allowing Dan and John to take 3rd and 4th places in the event with two qualified flights each, although both flew it on Sunday when there was less lift.

The Hot & Cold team took first in B Super-Roc Duration with an Apogee/Blackshaft type model with a large red chute. This model was really pretty to watch. Dan managed to sneak into 4th place with two qualified flights.

C Eggloft Duration was a heart breaker for Dan as he finally found a thermal, only to loose the model in a very tall tree south of the school after a 5 minute plus flight. The easter egg capsuled, "Estes Shuttle kit cardboard" shrouded, 45" dry cleaner bag parachute equipped, "2 Minute Egg" model finally met its end after being flown in numerous meets over the past three years. Ken Mizoi found enough lift for first with a 184 second flight. MARS finished out of the money as neither John nor Wayne were able to find thermals for their flights.

Ken found good air on his second B Helicopter flight with a time of 192 seconds on a small Rose-A-Roc type model that boosted quite high and had good rotation. This easily gave Ken first in the event, with a total time almost twice that of 2nd place John Buscaglia. John DeMar could only take 4th place in this event (usually a strong event for John), with a Rose-A-Roc type model of his own, although he missed out on 3rd place by one second to Warren Sisco. John's rotor's were half balsa and half cardboard and did not seem to provide much lift. The most entertaining flights in the event had to have been Scott Tyrell's Tasmanian Devil flights of 5.5 and 6.2 seconds. (Maybe we should add Tasmanian Devil Duration to the Purple Book.)

D Streamer was an interesting event in that it saw a higher qualification rate than A Streamer (in spite of the fact that it has double the weighing factor). Hot & Cold found a good thermal for this one, posting a near 4 minute first flight and a 2 minute plus second flight to take the event. Dan managed to grab second flying a model he "threw" together the day before. Dan took the fins off of his NARAM-22 D Streamer model, a model designed for the smaller diameter FSI D motors. Dan glued the fins on an 18" piece of BT-50 and used a stock Alpha 3 nose cone. Although the model spun rapidly on the way up (due to warping of the 12 year old 1/32" plywood fins), the 8"

wide Micafilm streamer worked well and resulted in two of the four best times of the meet and second place. Ken Mizoi flew a fiberglass model with a mylar streamer to take third. Ken had the thickness calculated perfectly as the fiberglass tube had started to burn through just above the motor mount after the second flight. John DeMar took fourth place despite using an Aerotech D21 on his second flight. The model boosted higher than any other entry but the streamer material John selected was heavy and did not create enough drag. A Micafilm streamer may have been the difference between first and fourth for John.

Open Spot Landing was flown on Sunday. The spot was far enough away to make it a challenge even without any wind. Bob Stott took first with a 41'8" lob while Dan just edged out John for second by six inches with a 52' 6" attempt.

After nine events in a day and a half, it was really hard to know who would come out on top. The Hot & Cold Team, Ken Mizoi, and John had all put up some really good flights. It looked like Dan might have a shot too as he managed to fly all the events without a disqualification except for the no return of his eggloft flight. In the end however, Ken Mizoi easily took first place. Ken managed to not only placed in eight of the nine events (He DQed in Spot Landing!), but he had three 1sts, two 2nds, and three 3rds. John DeMar took 2nd place overall with two 1st places (in the two glider events), one 3nd place and three 4th places. Dan had to settle for third. This was mostly because Dan didn't win any events, while finishing 2nd four times, 3rd once and 4th once. John and Ken got their revenge over Dan after both had poor showings at NYSPACE (the New Yorkers struck back!). Hot & Cold only took fourth place in spite of winning three of the events with one 3rd and one 4th place.

Besides the competition flying, there was a variety of sport flights both days as people took advantage of the good weather. Bob Stott flew an Aerotech Barracuda that was finished like the one in the catalog. Sure looked a lot different than Bud's. A local modeler flew a scratch built 3 D12 cluster model for a nice flight. Another local modeler brought out a Cox Saturn V, ready to fly with a 2 engine cluster. Only one engine ignited, causing the model to tumble over and land hard on the ground about 60 feet from the pad. Then the ejection charge from the one engine ignited the other engine backwards. The heat caused the plastic to melt and it damaged the model severely. Wayne took advantage of the good weather by flying his Aerotech Tomahawk kit five times over the course of the two days, all with his 24mm reloadable motor. All five flights worked well and it was interesting to compare the E11, E28, and F12 flights.

Overall, it was a pretty good weekend and a well run meet. The only improvements that could be made would be to include some altitude and/or craftsmanship events next time. Either way, it seems likely that a MARS contingent will attend PARASHOOT-2. This one was a good "Road Trip" for MARS as we work our way towards NARAM-35. Let's hope for a bigger group next time. A summary of the results can be found on the next page and photos of the meet on the photo page.

Scale Data

(continued from page 4)

Lanford, Wade E., Tom W. Perry, Jr., Hal T. Barber, Jr., and Franklin W. Booth, "Development of a smoke-trail vehicle for application to wind-shear measurements up to 80,000 feet". NASA Technical Note D-2009. Langley Research Center, November, 1963. (Nike-Smoke and related prototypes)

If you thought there was only *one* style Nike-Smoke, take a look at this. In addition to the one with the long, tapered nose cone, there's one with a much shorter one. Did you know what chemicals were used to produce the smoke? Or that there was an "Arcas-Smoke"? There's some scale data in this document, too.

Gardner, William N., Clarence A. Brown, Jr., Allen B. Henning, W. Ray Hook, Reginald R. Lundstrom, and Ira W. Ramsey, Jr., "Description of vehicle system and flight tests of nine Trailblazer I reentry physics research vehicles". NASA Technical Note D-2189. Langley Research Center, April, 1964. (Trailblazer I)

Lots and lots of pictures of the insides. A nice drawing with a few dimensions of what's outside, too. Plenty of pictures of stuff burning up in the atmosphere. (See next citation.)

Brown, Clarence A., Jr., and Jean C. Keating, "Flight test performance and description of a rocket vehicle for producing low-speed artificial meteors". NASA Technical Note D-2270. (Trailblazer I)

This is the one! Full of dimensions, enough to satisfy even the strictest Philadelphia lawyer. I think the authors had scale modelers in mind when they wrote this. God bless 'em!

Ed. Note: John has already donated copies of two of the reports listed in this article to the club library. One of them is NASA TN D-1611. This is the first one John mentions. It covers the RAM A. The other one is NASA TN D-2270. The last one mentioned. As John said, it contains excellent scale data for the Trailblazer I. On behalf of the club, thanks go out to you John for these fine additions to our club library.

NASA Photo Service
by Jay King

I wrote to NASA requesting photos related to our "Goddard" project. They returned the "NASA Photography Index", a LARGE catalog, listing hundreds of photos of rockets, payloads, crews and LANDSAT Earth shots.

NASA has turned this service over to "Bara-King Photographics, Inc., 4805 Frolich Lane, Hyattsville, MD 20781.

Prices are $6.00 for 8x10 B&W prints, transparencies up to 8x10 in size and color prints are available too.

PARASHOOT 1
Oct. 10-11, 1992
Results Summary
Top 4 places plus MARS finishes
(MARS Members in BOLD)

1/4A PD

1	Ken Mizoi	317.2	157.7	474.9
2	John Buscaglia	271.2	50.2	321.4
3	Hot & Cold Team	89.8	164.0	253.8
4	William Nolthenius	90.1	71.7	161.8
8	**Wayne Foster**	**44.2**	**31.0**	**75.2**
9	**John DeMar**	**41.3**	**30.5**	**71.8**
10	**Dan Wolf**	**23.6**	**37.1**	**60.7**

1/2A Boost Glide

1	**John DeMar**	**108.2**	**569.8**	**678.0**
2	**Dan Wolf**	**35.8**	**24.2**	**60.0**
3	Ken Mizoi	NG	42.2	42.2
4	Scott Tyrell	15.2	10.3	25.5

A Rocket Glide

1	**John DeMar**	**169.8**	**49.5**	**219.3**
2	**Dan Wolf**	**50.8**	**124.4**	**175.2**
3	Ken Mizoi	12.5	32.1	44.6
4	Chuck Arkens	13.4	15.5	28.9

A Streamer Duration

1	Hot & Cold	148.7	140.1	288.8
2	Ken Mizoi	213.2	NDP	213.2
3	**Dan Wolf**	**72.5**	**99.6**	**172.1**
4	**John DeMar**	**66.8**	**78.0**	**144.8**
9	**Wayne Foster**	**60.3**	**SEP**	**60.3**

B Super-Roc Duration

1	Hot & Cold	200/105.7	506	200/81.7	482	988
2	Ken Mizoi	200/22.1	422	200/83.6	484	906
3	Scott Tyrrell	189/56.1	434	188/63.8	440	874
4	**Dan Wolf**	**200/20.4**	**420**	**200/38.3**	**438**	**858**
6	**John DeMar**	**DQ-CHU**	**0**	**200/170.7**	**571**	**571**

C Eggloft Duration

1	Ken Mizoi	184.2	-	184.2
2	Chuck Arkens	149.8	-	149.8
3	Joe Maglaty	141.2	-	141.2
4	Hot & Cold	46.1	120.2	120.2
6	**John DeMar**	**68.4**	**DQ-CHU**	**68.4**
8	**Wayne Foster**	**48.3**	**DQ-SEP**	**48.3**
9	**Dan Wolf**	**DQ-NR**	**45.7**	**45.7**

B Helicopter Duration

1	Ken Mizoi	86.4	191.6	278.0
2	John Buscaglia	104.2	37.0	141.2
3	Warren Sisco	75.9	31.6	107.5
4	**John DeMar**	**53.1**	**53.4**	**106.5**
5	**Dan Wolf**	**33.4**	**33.9**	**67.3**

D Streamer Duration

1	Hot & Cold	231.2	135.6	366.8
2	**Dan Wolf**	**166.1**	**147.6**	**313.7**
3	Ken Mizoi	128.8	157.5	286.3
4	**John DeMar**	**83.8**	**105.6**	**189.4**

Open Spot Landing

1	Robert Stott	12.7 m
2	**Dan Wolf**	**16.0 m**
3	**John DeMar**	**16.2 m**
4	Warren Sisco	22.0 m
5	**Wayne Foster**	**22.5 m**

PARASHOOT-1
NAR Point Totals

1	Ken Mizoi	1026
2	**John DeMar**	**666**
3	**Dan Wolf**	**564**
4	**Hot & Cold**	**555**
12	**Wayne Foster**	**45**

Flying Field Status Report

Four letters were sent out the week of November 12th, for the purpose of acquiring a new field for use as a launch site. The letters were sent to the following: Victor Schools, Canandaigua Schools, Genesee Community College, Monroe County Parks. All letters offered MARS services with whatever model rocketry, science classes, etc. programs as a return favor for allowing us use of the field. The letters also spelled out the hobby's excellent safety record and also mentioned that MARS would provide primary site owner insurance. The request to the Parks Department was specifically asking permission to use Black Creek Park again, since it appears to be more or less closed to the general public.

One response has been received to date, that being from Canandaigua. A secretary in the school was given the task of telling us the answer was no. Reasons cited included concern over the school being near a residential area (the school area is large enough that this really wouldn't be a problem). A follow up call to the other sites will be made by years end if no response has been received.

Meanwhile, an effort is being started to secure a private field in the Honeoye Falls area. A land owner in the area has given us the name of a farmer who farms much of the land down there. He will be contacted in the next few days.

In the meantime, the Videk field is still available, at least for the immediate future. It is recommended that we continue to insure this field (the insurance renewal is forthcoming) until a replacement field is found.

On the Road Again...Part II
Battle Park High Power Launch
or
MARS Does High Power

The fall 1992 Battle Park Launch was the latest in a series of high power launches hosted by the Central Virginia Tripoli Prefecture over the past few years. It was held the weekend of November 7-8, in Culpeper, Virginia. MARS members John DeMar, Bud Piscini, John Viggiano, and Dan Wolf all made the trip down. Bud and his wife Carol left Friday morning for the launch while Dan and the two Johns left late Friday afternoon and arrived at the hotel after midnight. Saturday morning Bud and Pat met up with the rest of the group. While Dan loaded up some Cineroc cartridges in the hotel room bathroom, Bud told us about his experiences the night before. Bud was going around the hotel, talking to others who had come down for the launch, trying to find out where to purchase class "B" motors. Bud got very little information and more than one suspicious look because people feared he might be a government agent for the DOT! We all had a good laugh over that one. Anyway, after Dan had the Cineroc cartridges loaded, the group headed for the launch site.

The launch site was about 6 miles south of Culpeper on Rt. 522. It was located in a farmer's field. Although somewhat small, there was more farm land surrounding two sides of it. Other than that, it was a pretty good field except for being a little soggy and muddy in places. The weather was okay, although a bit on the cold side with temperatures in the 30s and 40s. The skies were overcast for most of the weekend but there was little or no wind. This made for nice flights and easy recovery. Most rockets landed within a few hundred feet of the range head.

Turnout for the launch was pretty good, with 49 registered flyers. All told, including spectators, spouses and children there were approximately 100 people present for the launch. Most people were from the Virginia area, although there were several from New York, including groups from Long Island, Albany, and of course Rochester.

Besides "just having fun" and experiencing a high power launch, everyone in the MARS contingent had his own reason for attending. Bud and John V. were there to achieve their NAR "H" certifications. John D. hoped to get his NAR "I" certification. Dan wanted to fly his Phantom 4000HD on an "I" as well as try out his Cineroc for the first time. He also wanted to make his first "H" reload flight.

Dan's first flight of the weekend was with the Cineroc. Mounted to the bottom portion of his F Super-Roc entry from WUBBA-14, the rocket made a perfect flight on an F25-6 but the Cineroc didn't work due to a loose battery connection!

Bud and John V. got off to good starts, with both having successful "H" certification flights. John V. flew his Aerotech Initiator first with an F25 before flying it with a G40. Both flights were perfect. Bud also used a G40 for his "H" certification flight in his (what else?) Aerotech Barracuda. To prove it was not a fluke, Bud made a few more G engine flights with his Barracuda. All flights were successful.

In the meantime, John V. flew an Estes kit, upgraded with basswood fins, with an E30. The liftoff was fast, and the model went high, but the mylar chute refused to open in the cold weather. The model lost a fin when it had a hard landing on launch organizer Mike Showalter's truck. The slight breeze caused many models to land downrange, where the cars were parked. This prompted one observer to ask, "Is it a normal practice to park cars down wind at a high power launch?"

John DeMar flew a scratch built model made from 4" diameter LOC body tube for his "I" certification. John flew it with an H128 reload for a straight and beautiful flight. The descent was pretty too and the model landed standing up!

Dan flew his NCR Phantom 4000HD with an Aerotech I95 expendable. The boost was perfect as the Phantom rode the flame and smoke of the White Lightning motor's four second burn. The delay was a little long but the chute deployed with no problem. Dan also flew his SPEV-HP with an H140, proving that this model, built from FSI parts, could take the thrust and acceleration of a H motor. The 2.25" diameter SPEV boosted quite high however and barely managed to land on the field.

The average newton-seconds per flight for MARS on the first day was 150 ns, which means almost a full "G" engine average per flight. This may seem like a lot, but it was small potatoes compared to what many people were flying.

Several LOC Magnums were flown on Saturday, most with I357 reloads. Although this motor lifts the Magnum okay, the flights all seemed very short with not much altitude. One of the Magnum's flown was Wayne Anthony's "Flame On", featured on the cover of the October 1992 issue of "High Power Rocketry". Wayne flew it with a J180 for a nice flight, but the nose cone came loose and floated down on its own. Another Magnum was flown by Todd Wuchevich on a Kosdon reload. The boost was fast, a trademark of the Kosdon reloads but there was no ejection and the Magnum fell to the ground sideways just south of the range. It was thought that too much grease, used in lubricating the reload assemblies, interfered with the delay train, causing the failure.

Another popular kit at this launch was the LOC Bruiser. A number of them were flown on Saturday with a variety of different motors. One Bruiser was flown with a K1100 reload with 2 D12s. This was a very impressive flight. The liftoff was load and spectacular. The model had triple redundant ejection charges. One charge was on a timer, another was activated by R/C and the third was the motor's own ejection charge. As it turned out, neither the timer or the motor's charge worked, but the R/C activated ejection was successful and the model descended beautifully on an 8 foot plus diameter home made red and black chute. The narration of this flight over the PA system by the model's owner, Lovett Reddick was as enjoyable as the flight itself.

Former MARS member and former Rochesterian Doug Pratt was there and he had a number of interesting flights including a few flights with an R/C activated parachute recovery system he developed. On the first flight, he had the 4" inch diameter chute module mounted to a Phantom 4000. Flying with an H97 reload, the model deployed a streamer at ejection, then Doug deployed the chute at about 500 feet. He flew it again on top of an ASAT, with an I211 reload. There was no signs of ejection from the motor so Doug activated the R/C to deploy the main chute. Doug also flew his Phoenix R/C on a G12 Blackjack reload for an impressive flight. The glider seemed to sit in the launch cradle forever after ignition before it finally lifted off out of a cloud of black smoke. At least that's how it looked from my perspective. Wayne Anthony was standing directly in line with the glider and this is how he described his video of the flight in a message on Modelnet. "The BJ lit. The Phoenix laid in the launch cradle. The exhaust smoke formed an IRON CROSS! And the Phoenix rose out of it! UNBELIEVABLE! DO IT AGAIN!" Anyway, after the liftoff, Doug steered it nicely on boost and the transition to glide. He then had it circle the field several times before landing it back at the launch area.

Another nice glider flight was made by Warren Sisco with a Wasatch Rocketry SST. Powered by a G40, the model had a perfect straight up boost with a nice gentle roll. Although the ejection charge knocked off the nose cone, the model transitioned into a nice glide as it circled the field for a really crowd pleasing flight.

Besides the LOC and other high powered kits, there was also a number of scale-ups of Estes kits. Steve Skubisz of New Jersey had a scale up of the Vega called the "Mega Vega". This 7' tall model featured G10 fins and was flown with an I167. The thrust from this motor was little tough on the Mega Vega as it was stripped of the pod attachments on boost but otherwise it was a nice flight.

Chuck Mund made several high powered flights using composite F and G motors in small Quest and Estes kits. He flew a Falcon on a G300. Words can't describe this liftoff. Chuck also flew an F32 in a Tracer, and an MRC Standard Arm on an E28 staged to an F50 Silver Streak!

Saturday night was spent getting things ready for Sunday, watching the video of the day's launch and most importantly, going to the Modelnet party thrown by Will Safford in his hotel room. At the party, we watched Will and his roomies get ready for Sunday and we watched other peoples videos of the day's launch. We also got to see some videos of the October Danville launch. With all the stuff Will and his roommates Warren Sisco and Wayne Anthony had been flying that day, the smell of AP was ever present in the room. While watching the videos of the rocket launches it was like "smell-o-vision". The highlight of the party was when someone from the hotel made us remove the Class B explosive sign from the door to the room. Seems some of the other hotel patrons were concerned about the safety of staying there and asked that the sign be removed.

Sunday's weather started out better, with the skies being clear for the first couple of hours. It then clouded up again, with the rest of the day being very much like Saturday.

Dan flew his "Xtra Special" with an H180 reload for a nice flight. The "White Lightning" reload made that classic crackle/roar type sound as it lifted the model off the pad. Dan followed that up with a nice flight of his NCR Phantom 4000HD with a Rocketflite G160 Silver Streak. These motors seem to quite popular, as are the F50 Silver Streaks. Jim Nolan flew a scratch built model with a cluster of four Rocketflite F50 motors, two regulars and two silver streaks. The liftoff and flight were impressive but the shock cord burned through although Jim safely recovered both pieces. Someone else flew a LOC Tri-Star with three G160 Silver Streaks. This was an impressive flight indeed. Other Silver Streak flights included some that were air started, also very impressive.

John DeMar flew a Microbrick Primero on an H128 reload. Even though this 2.7" diameter model does not have through the wall fins it flew just fine and really got up there. John did have fiberglass cloth laid into the fillets however. John also flew his 4" LOC parts rocket again. This time it was with an H97 Blackjack reload. Another perfect flight with the model landing less than 30 feet from where John and I were standing.

Other notable Sunday flights included Warren Sisco's NCR Viking on an H140, Wayne Anthony's NCR Redwing ASP on an I160, a successful F100 to F100 staged model, a US Rockets Swarm flown with an I160, 2 F50s, and 8 D12s, and Wayne Anthony's Heavy Metal, a THOY Falcon flown on an H motor. Wayne covered the entire model with a wall covering material that makes the rocket look like it is constructed from pieces of sheet metal riveted together.

The highlight of Sunday was the flight of John Kraieski's scale up of the Estes Mars Lander. This model stood 4 to 5 foot tall, and at the base was 1.5 to 2 foot in diameter. Flown with a J450, the model roared off the pad and then weathercocked into the wind. Ejection was right at apogee and the Lander descended gracefully.

The biggest surprise of the launch was the catoing of Aerotech G80s. Several of them failed. The sound of a typical failure sequence was something like "5-4-3-2-1 Bink" as the nozzle hit the blast deflector. There were a few other catoes as well including an E30 that blew the fins off the model as it remained sitting on the pad. The most popular motor at the launch seemed to be the Vulcan Systems H100 Smokey Sam. Seemed like these were being flown in every round.

In general this was a pretty good launch. Mike Showalter and the other members of the Tripoli Central VA Prefecture (sounds like a Klingon Outpost, doesn't it?) were good hosts and although they weren't expecting a turnout of this size, they did a nice job and lived up to the term "southern hospitality". It was also a very successful launch for MARS with two members receiving their "H" certifications and one his "I" certification. Photos of the launch are elsewhere in this issue.

MARS Club Records
December 4, 1992

Below is a complete list of club performance records for events in the current "Pink Book". This list was compiled starting with the last published list (1974!) and going through all the contest results of contests held by MARS or participated in by MARS members since then. This list is accurate to the best of my knowledge. Please contact me if you have any corrections or additions to this list.

Altitude Events

1/4A Altitude	R. Staehle	171 m	7/18/71
1/2A Altitude	J. King	175 m	6/6/92
A Altitude	R. Staehle	418 m	10/3/71
B Altitude	J. Ryan	156 m	5/13/89
C Altitude	D. Wolf	449 m	5/26/90
F Altitude	D. Wolf	1256 m	8/9/88
A Super-Roc Altitude	J. Ryan	735 pts	5/25/91
B Super-Roc Altitude	D. Wolf	750 pts	7/23/88
C Super-Roc Altitude	J. King/D. Wolf	1162 pts	6/6/92
A Payload	D. Wolf	91 m	6/8/91
B Payload	B. Dowd	267 m	5/28/72
B Eggloft Altitude	D. Wolf	115 m	8/6/91
C Eggloft Altitude	M. Howell	285 m	5/28/72
D Dual Eggloft Altitude	D. Wolf	171 m	5/26/90

Spot Landing Events

Open Spot Landing	F. Roka	1.52 m	10/3/71
Parachute Spot Landing	C. Zettek	.46 m	9/24/72
Streamer Spot Landing	J. Viggiano	11.5 m	8/9/92

Duration Events

1/2A Parachute Duration	D. Wolf	196 s	10/14/90
A Parachute Duration	C. Zettek	210 s	
B Parachute Duration	B. Dowd	55 s	
1/2A Streamer Duration	D. Wolf	60 s	5/29/88
A Streamer Duration	D. Pringle	260 s	10/30/89
B Streamer Duration	B. Arthur	255 s	11/28/71
C Streamer Duration	D. Wolf	173 s	5/27/89
D Streamer Duration	D. Wolf	166 s	10/10/92
1/2A Helicopter Duration	D. Wolf	36 s	6/9/90
A Helicopter Duration	D. Wolf	42 s	8/8/88
B Helicopter Duration	D. Wolf	76 s	5/13/89
C Helicopter Duration	D. Wolf	91 s	8/91
E Helicopter Duration	D. Wolf	24 s	6/18/89
1/2A Super-Roc Duration	D. Wolf	342 pts	5/26/90
A Super-Roc Duration	J. Ryan	450 pts	9/15/90
B Super-Roc Duration	J. DeMar	571 pts	10/10/92
C Super-Roc Duration	D. Wolf	559 pts	6/17/89
F Super-Roc Duration	D. Wolf	543 pts	7/28/90
B Eggloft Duration	D. Wolf	76 s	10/16/90
C Eggloft Duration	J. DeMar	68 s	10/10/92
1/4A Boost Glide Duration	D. Wolf	52 s	6/6/92
1/2A Boost Glide Duration	J. DeMar	570 s	10/10/92
A Boost Glide Duration	D. Wolf	189 s	10/30/89
B Boost Glide Duration	D. Wolf	176 s	6/18/88
C Boost Glide Duration	D. Wolf	67 s	5/28/88
E Boost Glide Duration	E. Vishniac	43 s	10/1/72
1/2A Rocket Glide Duration	B. Arthur	26 s	10/1/72
A Rocket Glide Duration	D. Wolf	282 s	6/18/88
B Rocket Glide Duration	D. Wolf	122 s	5/29/88
D Flex-Wing Duration	D. Wolf	196 s	7/9/88

As the ModRoc World Turns...

(news and rumors heard round the hobby)

Manufacturers News... This month's manufacturers news comes from the RCHTA show in Chicago via attendees who posted messages about what they saw on Modelnet (thanks to Doug Pratt, Bob Sanford & Matt Steele for this info). Leading off on the high power front, **NCR** will introduce their own F and G motors called "Impulse", sometime around April of 1993. The following is from their promo sheet:

"At last, an alternative high power rocket motor designed as much for the pocket book as it is for performance! Compare the price of two Impulse motors, at less than $10, to the competition's single motor price of almost $9!

The Impulse motor line was designed by Matt Steel and Dan Kafun. Matt's experience comes from working at Thiokol as a rocket program manager. His knowledge has evolved from working with the Castor, Aegis, Sidewinder, Atlas, Standard Missile and SLAT programs. He has taken much of this knowledge and used it in the development of the Impulse motor line. The Impulse motor design features a molded monolithic case, developed by Dan Kafun, NCR's Product Development Manager and a master tool and die maker. Dan also developed key processes to improve the manufacturing and assembly of the motors, in turn reducing the final cost.

The Impulse motor will be available in two designations, the F30 and the G50, specifically tailored for NCR kits. Delays will be 4 and 6 seconds for the F and 5 and 7 seconds for the G. Each motor will feature a bright flame with white smoke and dense tracking delay smoke. Each motor also comes with a "Flashpoint" igniter that eliminates the need for a special igniter clip. Prices are two F30s for $9.95 and two G50s for $13.95. Delivery Spring 1993. Regulatory approval is underway."

Also new from NCR is a working scale Shuttle kit with a motor in the ET and a gliding orbiter. Finally, they have an R/C launch system, called the "Freedom Launch Controller" that works from 30' to 100' from the pad.

In other news from the RCHTA show, **Estes** showed the soon to be re-released Maxi Honest John, a Terrier/Sandhawk (Sandhawk similar to the old BT-55 version), and an upgraded version of the old Centuri Jayhawk. The Terrier has a 2 piece fin unit that goes through the body tube and attaches to the engine mount. Price is $29.99. Also, the following Estes kits are to be discontinued: Meteor Starter Kit, Sizzler Starter Kit, America, Scout III, Army Hawk, Prime Number Explorer, Photon Disruptor, Star Rider, Recruiter, Alien Space Probe, Little Joe II, Titan IIIE, SDI Satellite.

Finally from the show, the HobbyLab division of Sport Flyers Association (the people who provide the NAR insurance) showed a scale F-14 R/C Rocket Glider. The wings fold back for boost and fold out for glide. Boost is hands off making it suitable for beginning R/C flyers. It's made from a material recently declassified by the Defense department, a carbon-reinforced thermoplastic. List price is $149 and that includes the launcher, ignition system and two expendable motors. A two channel radio with elevon mixing is required. Look for it in hobby stores in the late winter time frame.

NAR News... Don't hold your breath waiting for the Nov./Dec. issue of *American Spacemodeling* to show up. Due to a cash flow problem with the magazine, the NAR will publish a 16 page "newsletter" in early December followed by a 64-page Jan/Feb issue and 1993 hobby calendar.

The reason for the magazine's cash flow problem apparently is because some advertisers (possibly as many as three) are behind in payments on ads for the magazine (rumors are the total is as much as $7000). Without this anticipated income, there was not sufficient funds for the mammoth Nov./Dec. issue. Then, thanks to a gift out of the blue from the HIA, enough money was available to produce the Nov./Dec. 16 page newsletter. According to Pat Miller, "...the NAR is not hurting for money. The cash flow will be resolved with this adjustment in the publication schedule. There will be six issues in 1993 and the Board will review the finances at its February 1993 meeting in Phoenix. It will also take a long, hard look at the direction of the magazine and what it is that is needed to continue the march toward quality for this key member service."

Regulatory Update... The NAR has formulated its formal response to the FAA on the change in weight limits for model rockets. The NAR's 80 page (!) response to the FAA proposal regarding the changing of the definition of a model rocket in FAR 101 to a 1500 gram limit (from the current 500 gram limit) was apparently to adopt the change as the NAR originally petition it in 1985. Recall that the FAA's proposal was to create a new class of rocket, a "large" model rocket that covers rockets above the old definition up to the 125 gm propellant, 1500 gm weight limit. To fly these large rockets would require that you notify the nearest FAA ATC 24 to 48 hours before the launch. No waiver is required, only notification. The NAR is saying that the studies and investigations to date do not warrant this new class of rocket or the need to notify the FAA ATC. The NAR is now encouraging all members to write to the FAA saying that they support the NAR's position. Unfortunately, the comment period ends on December 9th, 1992 and it is doubtful that many people will be able to respond by then.

On the reload front, no official news as of yet. It has been learned however that the DOT is currently doing testing of various reloadable motors. It is still thought that an announcement may be forthcoming by the end of 1992.

Miscellaneous Items...

NASA Photo Service by Jay King

I wrote to NASA requesting photos related to our "Goddard" project. They returned the "NASA Photography Index", a LARGE catalog, listing hundreds of photos of rockets, payloads, crews and LANDSAT Earth shots.

NASA has turned this service over to "Bara-King Photographics, Inc., 4805 Frolich Lane, Hyattsville, MD 20781.

Prices are $6.00 for 8x10 B&W prints, transparencies up to 8x10 in size and color prints are available too.

The "Vector Board" by Jay King.

If you're any sort of "technofile", and what model rocketeer isn't, you'll love the "Vector Board" BBS. Created and hosted by RF Communication's Amateur Radio club. System operators Jim Lill and Bob Sass have collected an impressive variety of files. The emphasis is on Ham radio and software but there is plenty of spill over into other areas.

Most of the files are compressed in LZH format. This unusual practice was selected because the software LHA.EXE is public domain. Download it from the new user area.
Dial 716-544-1863 or 2645.

TOP 10 REASONS WHY YOU LIKE ROCKETRY
by Michael Platt and Etienne LaVallee

1. You needed an EXPENSIVE hobby to help clean your wallet out.
2. You're wife says you spend to much time with the kids.
3. The Air Force will not let you play with the "real" ICBMs.
4. Where else can you dress funny, smell like sulfur, walk aimlessly in a field and still be accepted?
5. You just can't get enough CA and epoxy fumes inhaled.
6. Someone's gotta keep the kraft paper tube industry in business (you could always revolt and try to make a "Mean Machine" out of Bounty tubes).
7. What other hobby could you loft over $100 into a tree... and do it repeatedly in the same tree.
8. Because you couldn't find a date on Friday night.
9. It's the first group of guys you've ever met who get excited when the drug stores sell their Easter eggs at 50% off.
10. It is more enjoyable than a root canal and less enjoyable than sex... for most rocketeers.

Heard on the Range
(with apologies to
The Leading Edge
&
The Wall Street Journal)

The drive to Culpepper in the middle of the night on winding roads through the Virginia mountains with the windows rolled down to keep everyone awake was described as 8 hours of enforced male bonding.

The NAR safety code's required "minimum distance" of 2 1/2 miles for an "O" engine translates in practical terms into "a lot of zip cord".

October & November MARS Club Launches

Even with the club "field trips" to Pennsylvania and Virginia, in October and November respectively, the club still managed to hold a couple of sport launches in those months. Both were lightly attended, mainly due to the continued lousy weather we've had this year. The October launch was actually one of the better ones, weather wise however. Although overcast and cold, winds were light. Jay King test flew a QCR glider a couple of times which prompted Dan to fly his B R/G, a "Lumb/Duck". All three glider flights worked well. Bud flew his Barracuda and managed to land it on top of the Archery factory while Jay put his Maxi-Streak on the Videk roof. Both were recovered with the help of Videk's extension ladder. John Viggiano had a nice flight of his Aerotech Initiator. On a sad note, Dan Wolf witnessed the demise of his LOC Graduator, aka the "Boilermaker Special" on an F14 reload flight when the ejection charge failed. This was Dan's first LOC kit. Built in 1987, Dan had flown the "Boilermaker" over 25 times in the past five years. Jay found it in the field on the north side of Corporate Drive across from the medical building. The nose cone and body tube were completely destroyed. A "post-mortem" revealed that some vaseline on the delay train and in the opening between the delay train and ejection charge prevented the charge from firing. The good news is that Dan picked up a new tube and nose cone at the Culpeper launch and has already rebuilt it. After the launch, several members retreated to MacDonalds to warm up and talk rockets.

The November launch was postponed from its original November 15th date (at 2:00 that day it was snowing heavily in Rochester) to November 22nd in hopes of better weather. It was about ten degrees warmer, but the threat of precipitation was still in the air. By the time Ferenc showed up, it has already started raining, but that didn't stop him as he proceeded to get off two launches as did John Viggiano. All four flights were completed in less than 20 minutes after which the group retreated to MacDonalds to dry out. Once there, they proceeded to talk rockets for well over an hour.

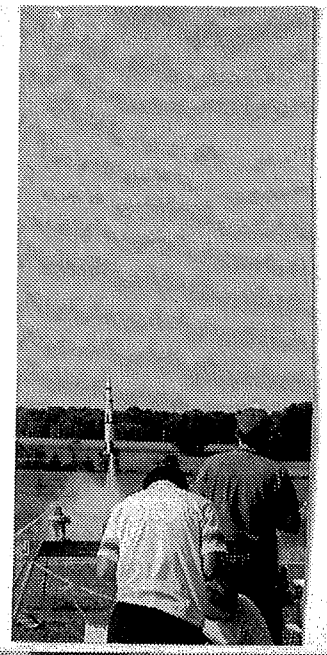
In spite of the weather, both launches were fun and a good time for club members to get together. So even if the weather is bad, come on out to the next launch. The fun, friendship, and rocket talk are always good, even when the weather is not (and with Rochester's weather, that's important!).

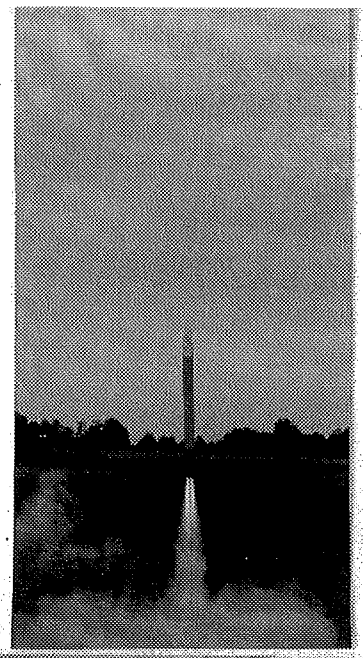
MARS Members Certified as High Power Users

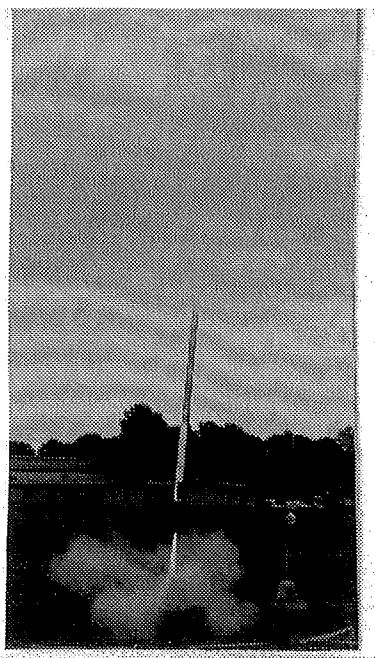
At the Culpeper launch, three club members made flights that raised their high power certification level in the NAR's Interim High Power User Program. Those members and their new certification levels are listed below. Congratulations guys!

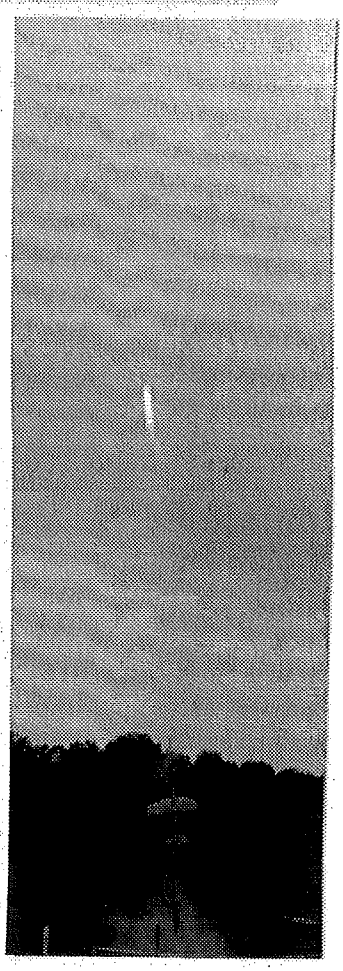
H Certification Level
Bud Piscini
John Viggiano

I Certification Level
John DeMar









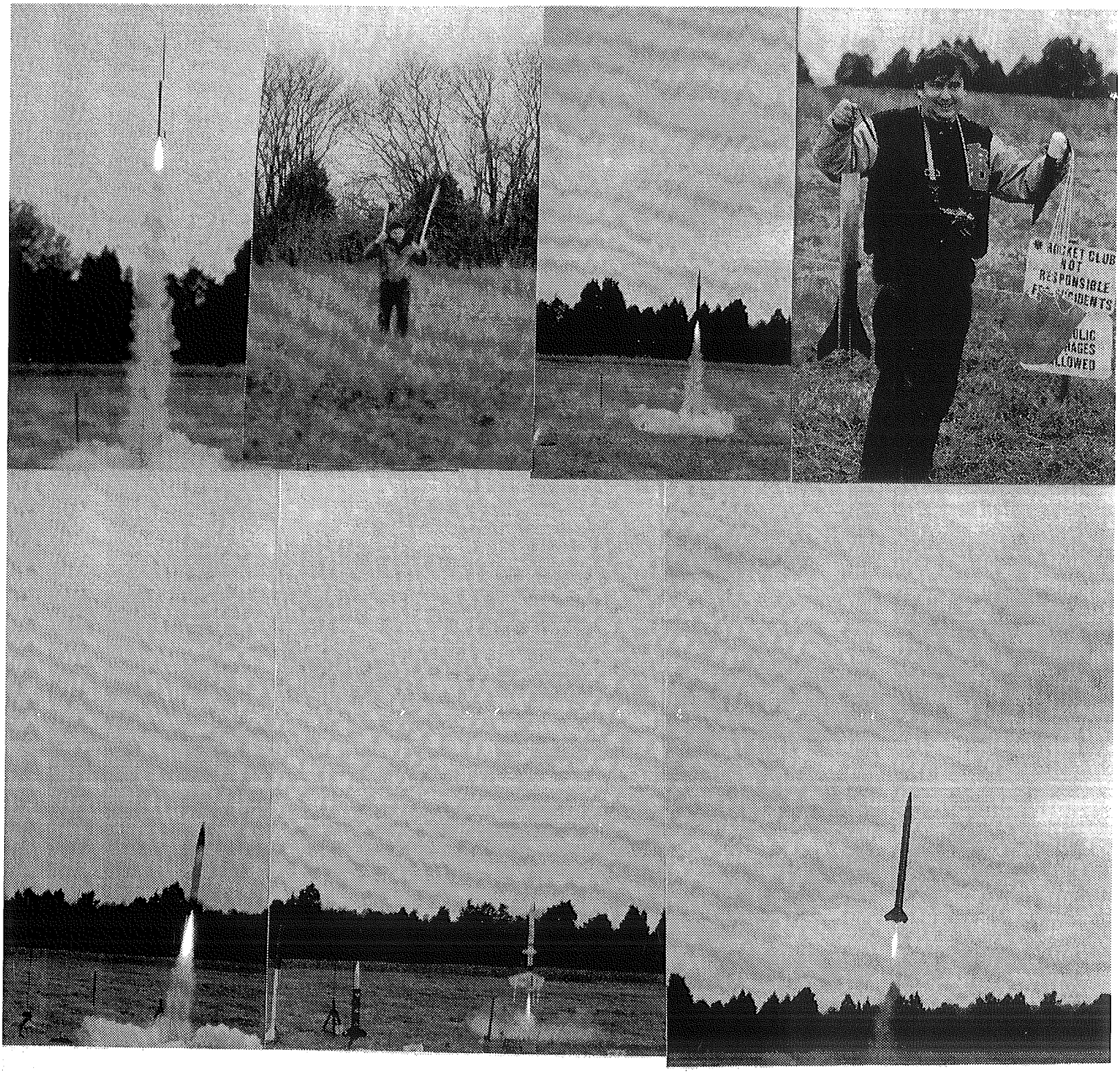
PARASHOOT-1 PHOTOS

Top Row

1. A Cox Saturn V at liftoff and moments before destruction. Note the off center thrust indicating that only one of the two engines ignited.
2. A scratch built 3 D12 engine cluster model at liftoff.
3. This nice looking Pathfinder was one of many sport models flown between contest flights.
4. An Estes Space Shuttle at liftoff.

Bottom Row

1. Wayne prepares his 24mm reloadable motor for one of the five successful flights he made with it over the weekend.
2. Wayne prepares his Aerotech Tomahawk for flight.
3. A picture of a catoing mini A in a rocket glider. The model stayed on the pad while the propellent blew through the top of the glider.



Battle Park High Power Launch

Top Row

1 & 2 Bud's Barracuda at liftoff under G40 power for a perfect flight and recovery.

3 & 4 John's Initiator on its way to a successful certification flight with a G40. A happy John shows us the recovered Initiator coated with tracking powder.

Bottom Row

1. John DeMar's 4" diameter LOC parts model at liftoff with an H128 reload.
2. The "Mega-Vega" at liftoff with an I161.
3. One of several LOC Magnums seen during the weekend. This one lifts off powered by an I357 reload.

Pink Book Quiz

This looks to be a very active year for MARS in terms of competition. Here is a little quiz to test your knowledge of the *United States Model Rocket Sporting Code*, aka the Pink Book. Answers will be handed out at the next club meeting (isn't this a sneaky way to get you to come to the meeting) or consult your friendly neighborhood Pink Book. For those of you who don't have one, every NAR member is entitled to one free. Call or write NAR HQ to have them send you one.

Multiple Choice

1. The maximum total impulse that can be flown in a craftsmanship event is:
   a) 80 ns b) 120 ns c) 160 ns d) up to the contestant's high power certification level

2. If a rocket is deemed unsafe to fly by the RSO, the ruling can be overturned by:
   a) the LCO b) the contest director c) the contest jury d) G. Harry Stine e) no one

3. In which of the following duration events is the entry allowed to separate into more than one piece at ejection:
   a) Parachute Duration b) Streamer Duration c) Boost/Glide Duration d) Eggloft Duration

4. In which of the following altitude events is the entry **not** allowed to separate into more than one piece prior to ejection (ie. no staging):
   a) Payload b) Eggloft c) Super-Roc d) Dual Eggloft

5. Which of the following events does **not** require judges to be NAR members:
   a) Scale b) Sport Scale c) Plastic Model d) R&D

6. Scoring for Super-Roc **Altitude** is as follows, where l = length in centimeters and a = altitude in meters:
   a) l+a b) (l*2)+a c) (l*3)+(a*2) d) l-a

7. Scoring for Super-Roc **Duration** is as follows, where l = length in centimeters and a = altitude in meters:
   a) l+a b) (l*2)+a c) (l*3)+ (a*2) d) l-a

8. Which of the following duration events is **not** scored as the sum of two flights but instead, the time of the best returned, qualified flight:
   a) Eggloft Duration b) Parachute Duration c) Streamer Duration d) Boost Glide

9. Which of the following altitude events is scored as the sum of two flights:
   a) Payload b) Eggloft c) Super-Roc Altitude d) None of the above

10. What is the minimum length to width ratio for streamers in streamer duration:
    a) 1:1 b) 2:1 c) 5:1 d) 10:1

True or False

___11. A Cox Saturn V, since it is all plastic, could be flown in Plastic Model Conversion.
___12. Streamers in streamer duration must have a minimum area of 100 square centimeters.
___13. The body of a Super-Roc model may crimp or bend after ejection.
___14. A model that hangs up on the launch rod during boost is disqualified.
___15. An entry is disqualified after three consecutive misfires.
___16. The lowest engine class for Dual Eggloft is "D".
___17. A "track lost" in predicted altitude on an otherwise safe flight results in flight points only for the contestant.
___18. In the event of a first flight DQ, a second flight is allowed in craftsmanship events.
___19. The lowest weighing factor event is Spot Landing.
___20. The highest weighing factor event is Super Scale.

Events Calendar

Rocketry related events in the Upstate New York area, or of interest to rocketeers of this area, are listed below. If you have an upcoming rocket event planned, send info to the editor.

December 11th, MARS Club Meeting, 7:30 PM.
Regularly scheduled MARS club meeting.
Location: RIT Research Center.
Contact: Jay King 288-5945.

January 1st, MARS Club Sport Launch, 2:00 PM
First Flights Launch.
Location: TBD.
Contact: Jay King 288-5945

March 6-7, Open Meet & Mini Convention
Events: R&D, Sport Scale, B Helicopter Duration, D Eggloft Duration.
Tentative Schedule: Saturday - Mini Convention, R&D Presentation, Sport Scale & R&D Judging. Sunday - Duration Flying, Sport Scale Flying.
Contact: John Viggiano 359-3869 or Jay King 288-5945

MARS Meetings - Usually the 2nd Friday of the month @ 7:30

MARS Sport Launches - Usually the 3rd Sunday of the month @ 2:00 PM

April 18-19, UPSTATE IV, Regional Meet.
Note: Date Tentative
Location: Geneseo, NY.
Events: 1/2A PD(MR), 1/2A SD(MR), 1/2A Cluster Altitude, A Helicopter, B Rocket/Glide, B Super-Roc Altitude, D Dual Eggloft Duration, Open Spot Landing.
Contact: John Viggiano 359-3869

August 1-7, NARAM-35, National Association of Rocketry Annual Meet.
Location: Middletown, MD
Events: 1/2A PD(MR), 1/2A SD(MR), 1/2A Cluster Altitude, A Payload, B Helicopter, B Rocket/Glide, C Super-Roc Altitude, D Dual Eggloft Duration, Sport Scale, Research & Development.
Contact: Tom Lyons, PO Box 1746, Prince Frederick, MD 20678

THE UPSTATE ROCKETEER
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