

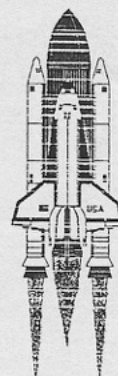
Newsletter of the Huntsville Area Rocketry Association

MAX-Q



Vol. 1 No. 3 June 1987

Serving the Spacemodeling Community of Northern Alabama



HARA ON ASCENT

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- Tricks & Tips
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and much more!!!

Coming Next Issue:

- Report on NARAM-29 in Anaheim, California
- Glider Plans
- Professional Finishing
- HARA/ AIAA Rocket City Classis Preview
- Highlights of the July Rocket City Roundup

HARA To Host NARAM-30

HARA is pleased to announce that it has been selected to host the 30th NAR Annual Meet (NARAM) and the 5th NAR Convention (NARCON). J. Pat Miller, NAR President will make the official announcement in August at NARAM-29 in Anaheim, California. Matt Steele has been selected NARAM-30 Contest Director, with Vince Huegele and Wayne McCain named assistant Contest Directors. The contest, held August 7-12, 1988, will feature the following events:

Monday: 1/2A International Parachute Duration, B Streamer Duration, *Tuesday:* B Eggloft Duration, A Helicopter Duration, *Wednesday:* B Rocket Glide, D International Boost Glide (flexwings & RCs allowed), *Thursday:* Predicted Altitude, F Altitude, *Friday:* Research & Development, Sport Scale (A&B Division), Space Systems (C Division), Parachute Spot Landing. Saturday will be the flyoffs for all those rocketeers interested in trying out for the 1989 U.S. International Team.

July, 1987 is the start of the new contest season, which runs from July 1987 through June 1988. Points accumulate throughout the contest year and culminate at NARAM-30 at which time the National Champion will be selected in A, B and C Division. Those who wish to be competitive at NARAM-30 need to be certain to fly a full contest season beginning with the July Rocket City Classic in Huntsville. (See pg 15 for events) See you there!

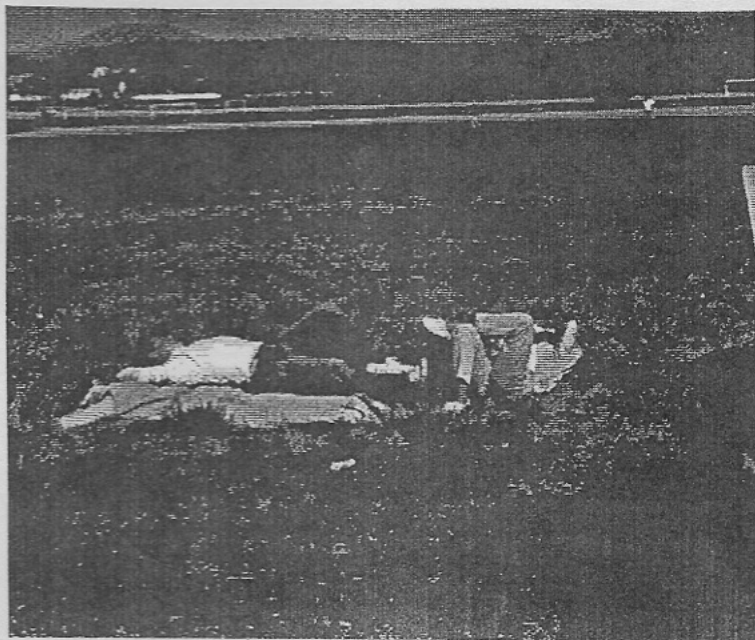
MAX-Q is the official newsletter of HARA, NAR Section #403. Articles, photographs, suggestions, comments, etc. are actively solicited from all members for the MAX-Q. MAX-Q subscriptions are included as part of membership dues of \$6.00 per year. Non-HARA subscriptions are available for \$5.00 per year. Max-Q is edited by Vince Huegele and Robyn Steele and produced and published on a Macintosh SE, Abaton Scanner and Laserwriter+ by Robyn Steele, Graphic Solutions, 555 Sparkman Dr. Suite 1616, Huntsville, AL 35816, (205) 830-6645.

Spring Fling Initiates HARA to Competition

Experienced modelers came out on top in HARA's first NAR sanctioned competition on April 18th. The infamous Zunofark team (consisting of George Gassaway of Birmingham, Matt Steele of Huntsville and Chas Russell of Ft. Worth) won C Division and Lee Olyniec of Scottsboro won the combined A/B Division. Vince Huegele and Barbara Moser in the C division and William and Samantha Moser of A/B division were the respective second and third place winners. (See Spring Fling Contest results on page 11)

"It was a great contest," said Spring Fling Contest Director, Matt Steele. "Everyone flew orderly and intelligently. This was a very impressive performance for so many in their first NAR competitions." Matt also praised the attendance. "We had 18 participants in a local open competition. I've seen less than that number at a regional contest that includes people from several states!"

Veteran flyers took the advantage. The Moser family, all the way down from Kingston, Tennessee, dominated the ranks by flying five family members in al-



The Reasoners take a much needed break from the hectic flying and timing they were doing at the Spring Fling.

most every event. George and Lee had also flown in contests before and knew how to have winning strategies. For most HARA contestants, it was their first sanctioned meet—to hold or to fly in. "We've learned a lot today," said Dana McCain.

Predicted duration started the day with Vince Huegele and Wayne McCain hitting their predictions right on the nose to share first place in C division. Wayne Hendricks was behind them only three seconds off. Samantha, William and Aaron Moser were one, two and four seconds off to rank respectively in A group. Marty Williams led B division with a nine second differential.

Separations and disqualifications plagued many of the various duration entries. For B streamer, Lee was the lone survivor in his division. Barbara Moser's second flight lasted 288 seconds to give her that win. The A division all had close times under a minute.

Parachute duration had its moments. Samantha posted a time of 330 sec. for her 1/2A model. On the other hand, Wayne McCain had his engine cato.

The glider events had flights ranging from red barons to shreds to no glides to glides falling off boosters during ascent to the Zunofark RC spectacle. George's D boost glide was no contest really as he won with total times of 11:10, well ahead of the other places that were barely over 2:00 totals. Wayne McCain rated sec-

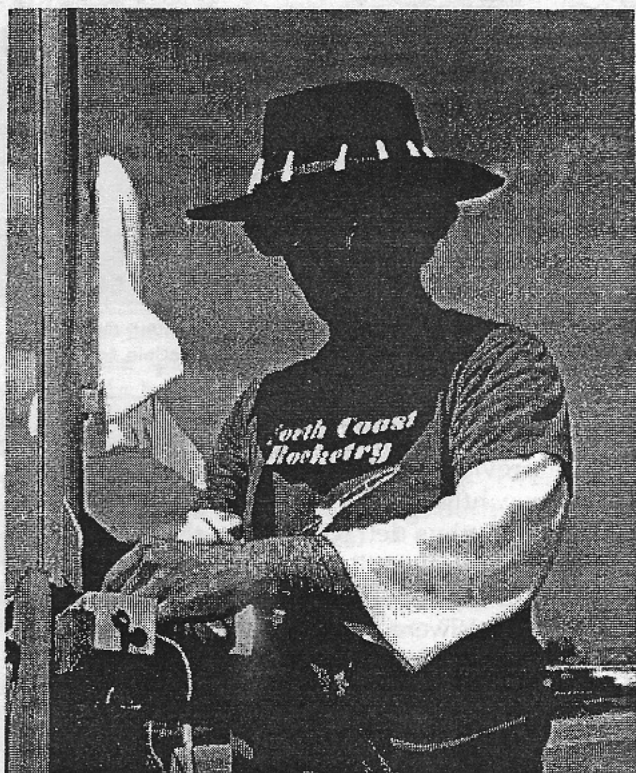


The Joneses, with the help of Wayne Hendricks show their Saturn model, which flew quite impressively.

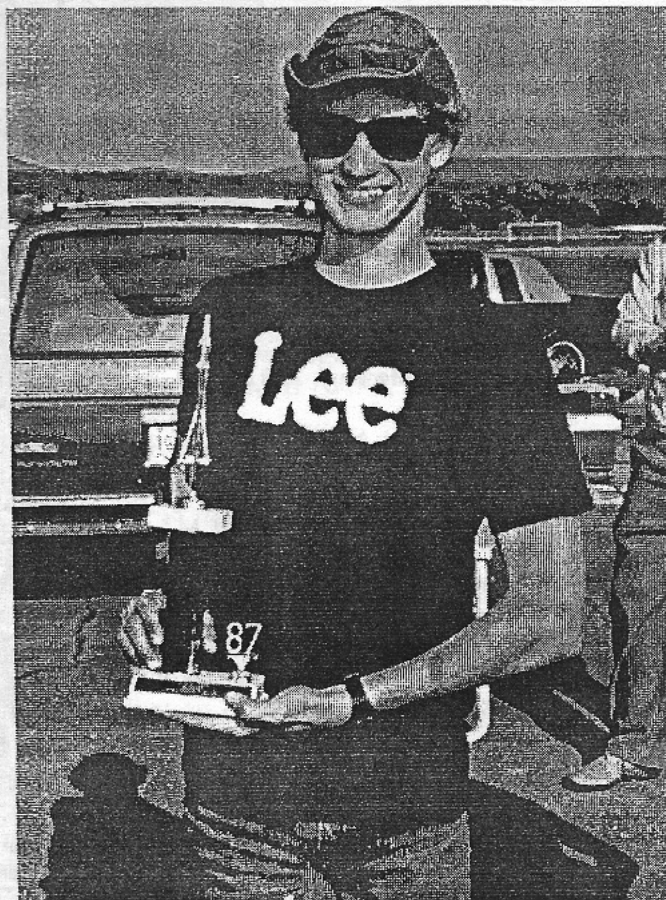
ond with his orbiter boosted on a *Mean Machine*. Vince's *Terradactyl* had an excellent boost and a satisfying single two minute glide that took the model to what appeared to be the far side of the city landfill. In an extended search in the forsaken wilderness, Vince found the remains of a crashed model airplane, a baby doll head, several snakes (bad news!), but no glider.

The 1/2A category was more competitive with many *Dragonfly* models seeing action. A division was all Mosers and B division was captured by Katie Stubblefield. Lee's flexie attempts failed. The adults saw George lead the pack by three minutes in a flexie with most other glides 60 seconds or less.

Spot landing closed out the day with a good number of



"Crocodile" Wayne Hendricks readies his D Boost Glide model for competition.



Lee Olyniec of Scottsboro shows his 1st place trophy for A/B Division.

rockets landing within actual measuring distance of the Spot. David Moser had the closest of the day placing a streamer at 18 ft as well as a parachute at 22 ft to win those events for C. Colin Reasoner was also a double winner in A division streamer and open spot landing. B division saw Katie, Marty and Lee each with a win in the three events. UFO's were popular in spot landing, with Wayne Hendricks bouncing his in to win there.

Throughout the day, the competition was complemented by various sport launches. Byron Papa put up an original *Mars Lander* which did indeed land on its feet.

As the Spring Fling concluded, ten NAR members had flown in their first contest. Judging by their enthusiasm, it won't be their last.



The Zunofark Team of George Gassaway and Matt Steele display their 1st place C Division trophy.

Countdown

1987 Hara Calendar

- JUNE:** 13 June; *June Jam '87*
NAR Competition
18 June; Meeting 7:30 P.M.*
- JULY:** 11 July; *Rocket City Roundup*
NAR Competition
16 July; Meeting 7:30 P.M.*
- AUGUST:** 2-7 August: *NARAM 29*
Anaheim, California
15 August; Sport Launch**
20 August; Meeting 7:30 P.M.*
- SEPTEMBER:** 7-14 Sept.; *7th Annual World
Spacemodeling Championships*
Belgrade, Yugoslavia
17 Sept.; Meeting 7:30 P.M.*
19 Sept.; Sport Launch
- OCTOBER** 3 October; NAR Contest TBD
15 October; Meeting 7:30 P.M.*
24 October; *HARA-AIAA Rocket
City Classic #6*
- NOVEMBER:** 19 Nov.; Meeting 7:30 P.M.*

*All Meetings will be at the Alabama Space and
Rocket Center Auditorium

**Launch Dates subject to change,
however advance notice will be given.
Launch site- Old Airport

If you build static scale models of aircraft, armor,
ships, cars, trucks, figures or any other subject- you
should be in the Huntsville Plastic Modelers' Society.

HPMS meets the first Wednesday of each month at
the First American Federal Savings and Loan Bld. at
4008 University. Members exchange information and
techniques and share a common interest in the fine
scale model.

For more information call: Dan Thompson 852-3781

Transportation Problems?

If you are having problems attending the meetings or
the launches because of lack of transportation,
(especially the A and B Divisioners) please contact
one of the club officers at least 24 hours in advance
and we will try to arrange transportation for you.

Vince Huegele- 881-2904

Matt Steele-883-6020

Wayne McCain-536-2241

Moments in May



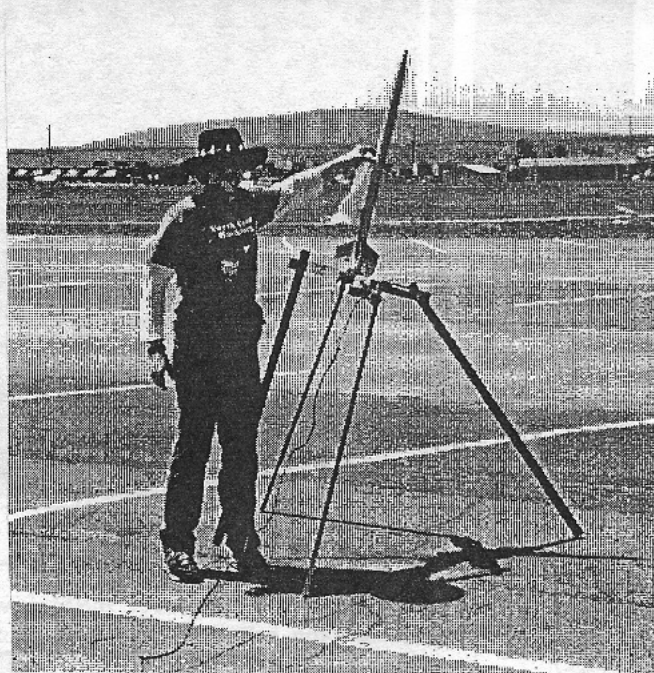
Fred Herrmann (MSFC) and his 3 daughters prep their model
at the May Sports Launch as Dana and Matthew McCain look
on.

The meeting and sport launch in May was much more
low key than previous HARA activities. Due to this
year's calendar configuration, Memorial Day was on
the third weekend, thus detracting from that month's
flying. Attendance was still good at both functions
with fifteen at the meeting and a few more at the
launch. Scale models were discussed and tips given for
the next contest. Dave Dooling found a more comforta-
ble place for HARA to convene away from the Space
Camp activities but still at the Space and Rocket Cen-
ter.

Flying day was hazy, humid and as calm as the old
airport ever gets. The visibility was terrible, but with
no wind, models reappeared in the sky very close to
the launches. The mood was more casual with mem-
bers making only a few flights apiece and spending
most of the time talking and watching Matt and
George.

Alabama's delegation to the International Space-
modeling Competition (held in Belgrad, Yugoslavia in
September) were practicing with gliders and small alti-
tude models. George explained one strange configura-
tion on the pad. "International rules require the boost-
er of a two stage to have a recovery system. So you
have to figure a way to make the streamer come out."
Matt was busy with the altitude tracking stations.
"We got one B model close to 1000 feet," he said.
"We're refining our technique on what we need to do
for our best flying."

HARA Celebrates Summer With June Jam!



"Crocodile" Wayne Hendricks readies his D Boost Glide model for launch. "Crocodile" took 3d in C Division with his 3 flights.

While Alabama and the Oak Ridge Boys performed in Ft. Payne to a crowd of 30,000, HARA's other June Jam was attended by a scale of 1/1000. Despite rain in the morning that answered the prayers of farmers and laid up some great mud in the recovery area, Contest Director Matt Steele gave the go ahead to begin jamming on schedule. "Real Men don't let a little rain stop them," said Real Man Steele. "We've had people come from too far away to cancel."

As it turned out, the heavy air and overcast skies gave way to sun and broken clouds. The wind rotated 180 through the day from north in the morning to south at sundown sending rockets to the golf course or the ball stadium respectively. Umbrellas that deflected rain in the morning were used to block the raging June sun in the afternoon.

Local modelers may have been discouraged by the early threatening clouds and stayed home, since there were more out of town contestants than HARA fliers. Guest gladiators included:

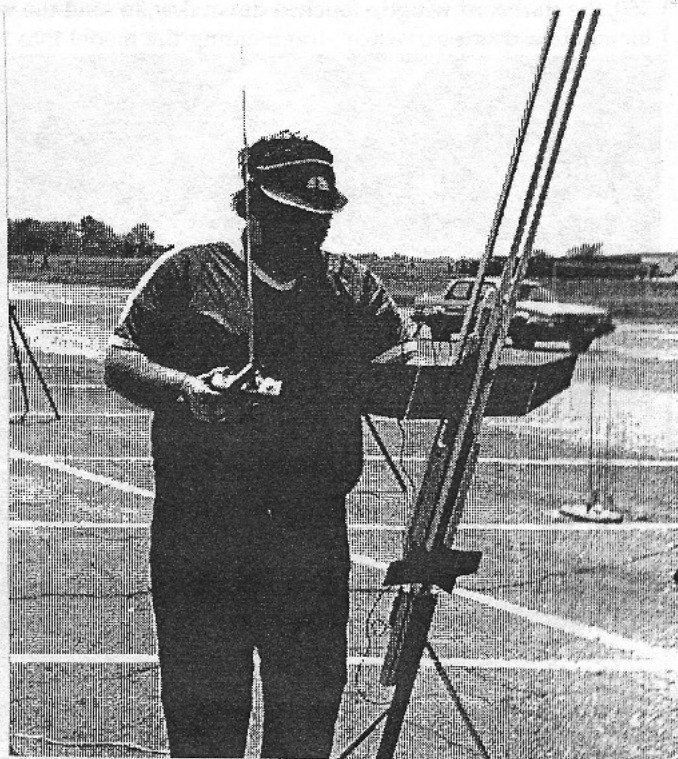
- SNOAR Team of Bob Ferrante & Dan Kafun from Ohio
- Mutt & Jeff Team of David and Tim Babulski from Snellville, Georgia
- Elton Karm of Columbus, Georgia in his first NAR contest
- The Moser tribe of David, Barbara, William, Samantha and Aaron from Kingston, Tennessee (Thank heavens the two youngest Mosers don't fly rockets yet!)
- Randy Kelling and George Gassaway of Bamrocs in Birmingham
- Lee- no I guess we'll consider Lee Olyniec of Scottboro

one of our own.

Being the second contest, HARA members were more familiar with procedures and range duties, so the pace was less hectic. Wayne McCain forewent flying to be range officer for the day. Robyn Steele shuffled flight cards and recorded results so Matt could fly. Dana McCain and Gloria Johnson did an admirable job as the primary timers for duration events at the cost of strained necks and eyes. Other contestants and spectators took their turns at the various duties—often without being told—so that everyone's job was easier, particularly the Contest Director.

Predicted Duration was a tight race. Wayne "Crocodile" Hendricks and David Moser tied for first in C Division by being 1 second off their guess. Behind them was Vince Huegele, off by 2 and Elton Karm by 7. Other flights were only 3 or 4 seconds off the time. The only perfect prediction was Lee Olyniec of B Division.

B International Streamers filled the skies with eleven contestants making the three flights each. David and Barbara Moser took the top places (the first time David has beaten Barbara in this event!) with some times close to 2 minutes. Vince had a good time on his second flight but watched in horror as a Carrier air-conditioning truck ran over his model and the entire length of streamer. (Economic retaliation to



George Gassaway readies his RC/BG for launch in his unique tower. George won D Boost Glide with 3 maxs as he prepares for international competition in Yugoslavia this fall.

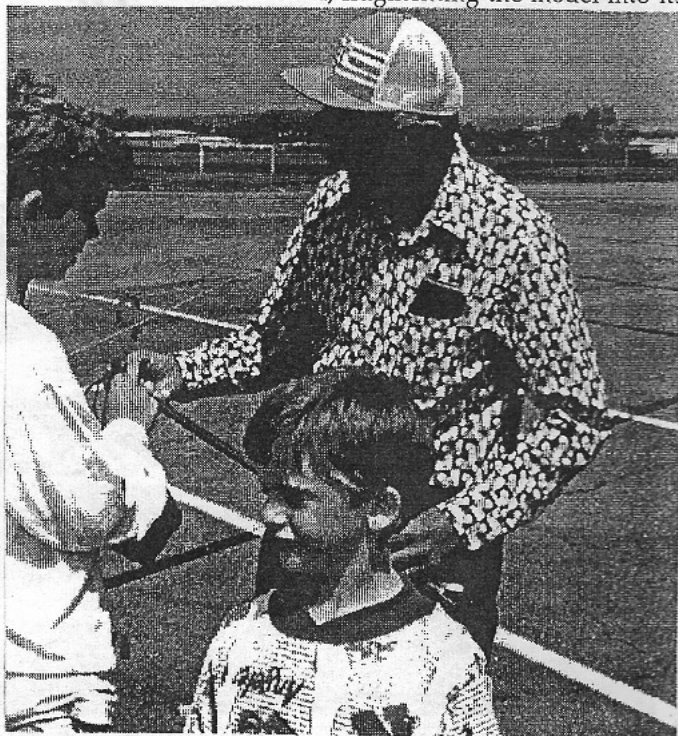
this company is optional.) Vince got the ragged rocket back in the air for a third flight, but not enough to qualify. Lee had similar problems when his model came down in a swampy drainage ditch, but was recovered.

Heavy, humid air helped hold up the the 1/2A parachutes. William Moser took A division with 2 flights lasting 222 seconds, but the C division winner, Zunofark Gassaway has 234 seconds on just one flight!

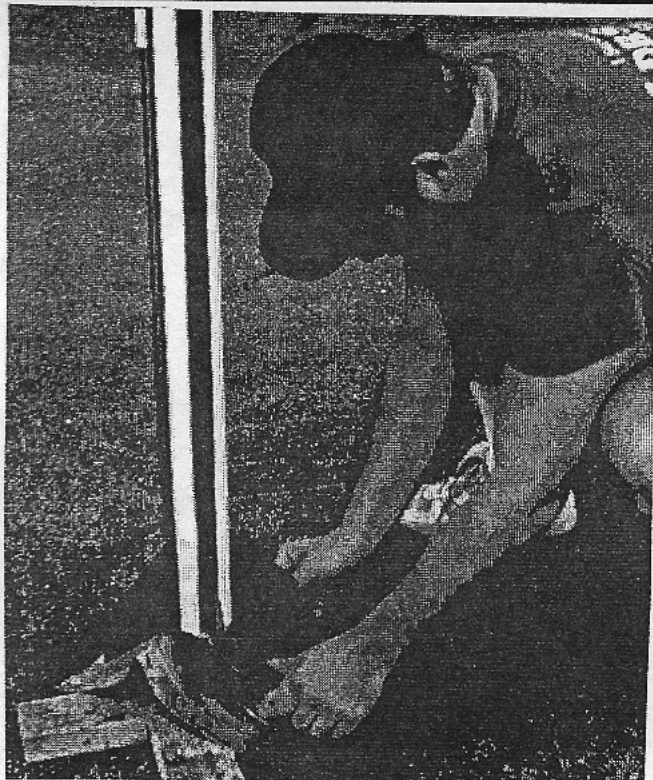
A lot of *Dragonflies* were flown in the 1/2A Boost Glide, but it was the flexies that won. Lee and George gave the timers fits with their plastic gliders that were still in the air when they thermaled out of sight. Most *Dragonflies* were up about 30 seconds, but Vince caught a small thermal that took one flight to 52 seconds and 2nd place. David Babulski got 55 seconds on a *MiniDactyl* flight, but DQ'd the other. Folks must like gliders, as there were 13 entries in this event.

D Boost Glide had a lot of action. George took his world class RC/BG model to three easy maxes in the steady air. Other contestants were not as successful. Vince recovered his *Terradactyl* after 110 seconds, but the second launch refused to glide. His third flight caught some good air but timers lost it at 228 seconds. "I was with it up to the road," said Vince of the model casually making its way to Hartselle, "but these !#@* birds came by and I couldn't follow which one was the glider." This model presumable mated with the other *Terradactyl* he lost in the April contest. (Look for *Terradactyl* and *MiniDactyl* plans in the next issue of MAX-Q)

Ole' Crocodile Hendricks took third place with a parasite shuttle glider. After separation, the glider circled in formation around the descending booster parachute, providing a spectacular sight. The "Heartbreak" award goes to the SNOAR Team of Bob Ferrante and Dan Kafun in their glider landing tragedy. Their conventional design came down with an excessive right turn. On final approach to runway 360, the starboard wingtip touched down first, to send the vehicle into a death cartwheel, fragmenting the model into its



Ed Stuka of Teledyne Brown & grandson Michael Thomas ready their sports model with the help of John McCain.



Matt Steele hooks up the ignitors to his NCR Star Spangled G Bird prior to a spectacular sports launch.

component parts. But before the day was over, the bird was up in the air again and doing better. (Only flight points though.)

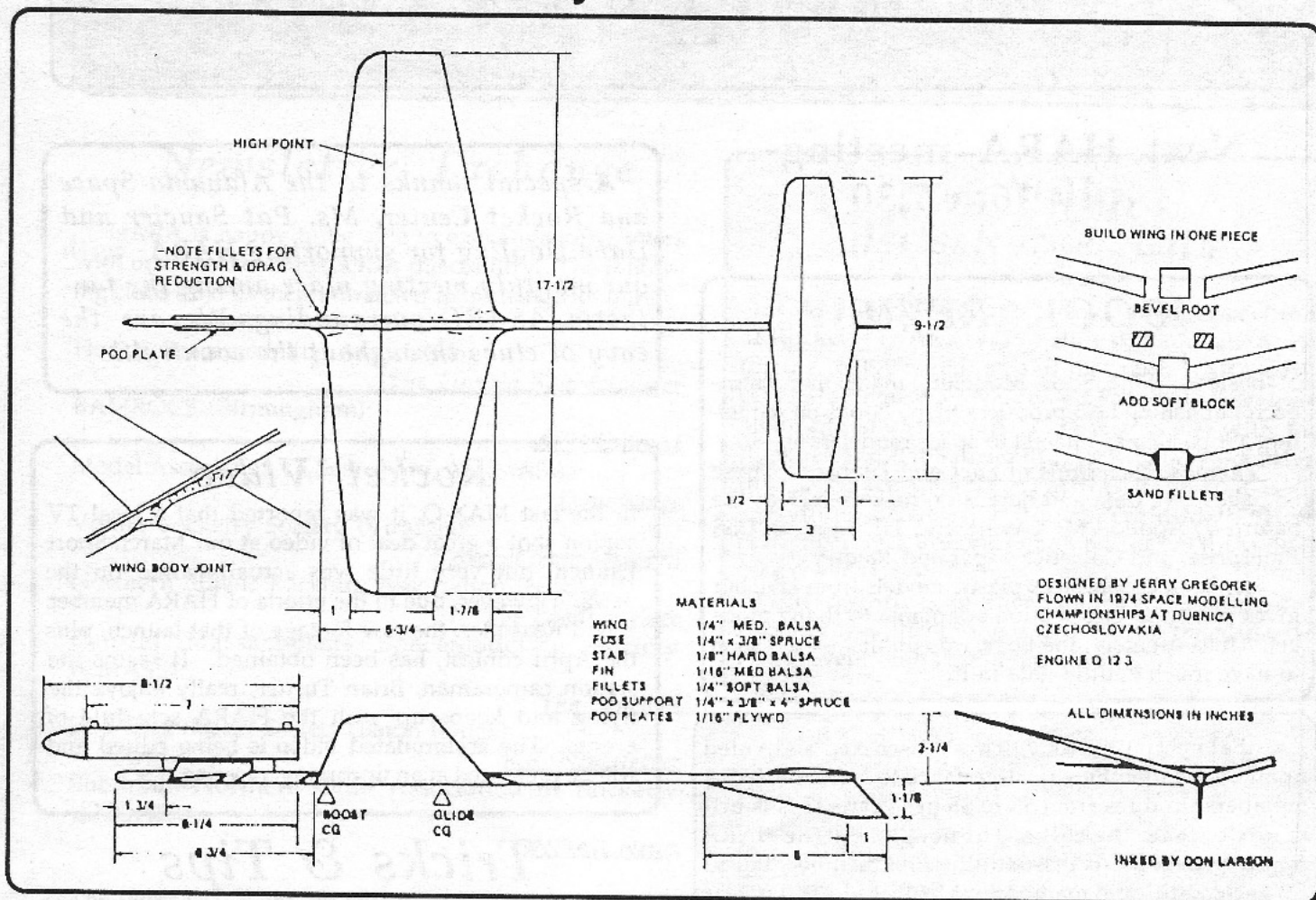
The altitude event introduced HARA members to the joy of tracking powder. "It is devil dust," said George of the red chalk. "Once you get it on you, it doesn't come off." Several tinted nosecones subsequently confirmed this. Colin Reasoner was the master of this event with the best days height of 307 m (921 ft). David Moser led C Division at 270m and most other flights in the low to mid 200m. Several tracks were not closed or lost, suggesting tracking powder does make a big difference. (Red is preferable to black because it is easier to spot.)

Finally, contestants were able to show off their craftsmanship in sport scale. Of three Nike Apaches entered in A Division, Colin's was the best and took second place. William Moser's Sandhawk won the top A division spot.

In C Division, the E powered Zunofark Juno-1 stood alone in appearance and performance. The Juno-1 is a four stage version of the Jupiter-C reentry test vehicle with a Redstone first stage that launched the first U.S. satellite, Explorer I. (Someone asked why that rocket had so many names. Now you know.) Randy Kelling came in second with his Chaparal (See the July AmSpam for part 1 of Randy's article on modeling the Chaparal) David Moser was third with his Mercury Redstone. Vince lost points when his V-2 parachute fouled and shared fourth with the Mutt & Jeff Team and their Side-winder. The show was completed with Wayne's Scout and Barbara's D Region Tomahawk. Big thanks to Bob Ferrante and Dan Kafun for serving as the Sport Scale judges!

As the awards were given out, (See totals on pg 12) modelers gathered to scrape off the mud and cringe in their sunburn. Then they collected the worn remains of their rockets and themselves and packed it up until next time.

Easy Rider IV



Remember- The July Rocket City Roundup , July 11th, is the start of the new contest season. If you intend to fly at NARAM-30 in Huntsville in Aug. 88 you need to fly a full contest season. In addition, your points go toward the club total to help HARA compete against other clubs in the NAR. Plan on being there!

The Rocketry Adventures of Calvin and Hobbes



Wadding Scraps

Next HARA meeting-
July 16th 7:30

BOOK REVIEW

Besides "Fine Scale Modeler" magazine, Kalmbach Publishing also produces many books on modeling. Of particular interest to space modelers is

Famous Spaceships of Fact and Fantasy. These 88 pages give data and details on rockets such as the Saturn V, Apollo LM, X Wing and TIE Fighters, USS Enterprise, and Galactica Viper and Raider.

The book emphasizes plastic models from kits, but gives plenty of information adaptable to flying models. Unfortunately, the book was published too soon to have much shuttle data in it.

At the meeting in May, it was discussed and voted upon by the members in attendance to increase HARA membership dues from \$3 to \$6 per year. This is primarily to cover the cost of our newsletter. The HARA family plan consists of \$6 for the first member, and \$3 for each additional member not to exceed \$12 per year per family. One newsletter per family will be sent to those on the family plan. To those who have recently joined and paid the \$3, we would ask that you contribute the additional \$3 to bring your membership dues to \$6 and help support the MAX-Q. Additional dues should be given to Treasurer Wayne McCain.

Recent expenditures by HARA include newsletter expenses, a new battery for the club firing system and a canopy to cover tables in the range area and provide some shade from the sun. Judging by the enthusiastic response at the June Jam, it looks like it will prove to be one of our best investments.

A big round of thanks to all those who helped out with the timing and range duties at both the May and June contests. We cannot run a contest without timers and range officers and we had some especially good help. Those worthy of special thanks include Gloria Johnson, Dana McCain, Wayne McCain, David and Colin Reasoner, Tim Babulski (from Atlanta) Steve Belcher of CAP and numerous others. Big, big thanks folks. Keep up the good work!!

A special thanks to the Alabama Space and Rocket Center, Ms. Pat Saucier and Dave Dooling for supporting HARA with our monthly meeting place among the fantastic ASARC surroundings. We are the envy of clubs throughout the country!!!

Rocket Video

In the last MAX-Q, it was reported that a local TV station shot a great deal of video at our March Sport Launch, but very little was actually aired on the news. However, due to the efforts of HARA member David Reasoner, the raw footage of that launch, plus the April contest, has been obtained. It seems the station cameraman, Brian Turner, really enjoys the flying and keeps up with the HARA schedule of events. The accumulated video is being edited and will be presented at an upcoming meeting.

Tricks & Tips

A Snappy Idea

Tired of your shock cord breaking? Had enough of your nose cone floating away while your rocket body free falls into a crumpled heap?

Serious modelers don't use those wimpy solid rubber cords, but have made the move to fabric elastic. Available in sewing stores and departments (such as in Wal-Mart), this stuff can do more than hold up your underwear. For less than the price of an engine, you can get enough in 1/4" or 1/8" widths to outfit four rockets.



This elastic will not break under ejection forces, and the woven fabric resists melting. Avoid criticality one failures and insure reliable recoveries. Use fabric elastic for shock cords, in your best models, at least!

and more Wadding Scraps

Newsletter Exchange

HARA is happy to be able to exchange newsletters with other rocket clubs across the country. The following clubs send us their newsletter in exchange for ours:

Florida Spacemodeling Association:

The Florida Spacemodeler

BAMROCS (Birmingham):

APU Exhaust

Model Association Of Scottsboro, AL (MASA):

Downrange

Viking Rocketry Society (Virginia):

Ascent from Midgard

Northern Illinois Rocketry Association (NIRA):

The Leading Edge

Central Massachusetts Spacemodeling Society (CMASS):

The Sentinel

Red Stick Rocket Society (Baton Rouge):

R.S. Newsletter

Suburban Northern Ohio Association of Rocketry (SNOAR):

SNOAR News

The latest issues are brought to the monthly meetings for your inspection. Check out what the other guys are doing!

Rockets in HATS

Wayne McCain reports the application for HARA to join the Huntsville Area Technical Society (HATS) has been accepted. "This will give us tremendous exposure in the community," Wayne said. "HARA and NAR will be alongside other professional organizations like AIAA, IEEE, TVA, UAH as well as industry representatives. We'll be in good company." Its objectives include coordination of local activities and promotion of goodwill among Huntsville's many societies.

HATS meetings are usually held the same day as HARA's (third Thursday) but at 5 pm. If you are interested in learning more about HATS or in attending HATS meetings, please check with one of the HARA officers. We look forward to a very beneficial association with HATS.

Pat Miller visits Rocket City

J. Pat Miller, President of the National Association of Rocketry (NAR), was in Huntsville in late April for the NFPA meetings and met with HARA officers. Matt and Wayne updated Pat on the development and status of HARA. Pat also met with Ed Buckbee and Pat Saucier of ASARC and got a brief tour of Space Camp. "Pat was impressed with everything he heard and saw," said Matt. "He's ready to give Huntsville the nod for NARAM-30." (See cover story)

G. Harry Stine, another famous name in model rocketry was also in town with Pat for the National Fire Prevention Association meeting.

NASA Now Has Videos

Want to liven up your next club meeting? Why not show a NASA video? Many of NASA's best documentary films are now available on VHS format, so that you can view them on your own 'home' equipment. Rental is free; you pay only postage and insurance. Ask for the 20 page catalogue (its free too!) "NASA Film and Video List" that describes titles and topics of all aspects of the space program and history. Write to your nearest NASA center Public Affairs office at the following addresses. Tell them you're part of a rocket club. They can do a lot for you.

NASA Goddard
Public Affairs 130
Greenbelt, MD 20771

NASA Ames
Public Affairs 204-12
Moffett Field, CA 94035

NASA MSFC
Public Affairs CA20
MSFC, AL 35812

NASA KSC
Public Affairs PA-EP5
KSC, FL 32899

NASA Langley
Tech Library 185
Hampton, VA 23665

NASA Lewis
Film Service Dept 22
21000 Brookpark Rd
Cleveland, OH 44135

NASA JSC
Film Distribution Library
Houston, TX 77058

HARA Members

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• Clark, Al & Chris 124 Liza Lane, Madison, 35758	772-8466	• Papa, Byron 6508 Whispering Pines Trail, 35805	837-1206
• Dooling, Dave Alabama Space & Rocket Center, 35807	837-3400	• Rabb, David 2123 Gladstone Dr., 35811	536-9195
• Halbritter, Markus 9016 Cannstatt Dr., 35802	883-5299	• Reasoner, David & Colin 3103 Holly Hill, 35802	883-7629
• Hall, Chuck 3120 Andros Dr., 35805	883-6369	• Shulz, Eric 1013 Riviera Ave., 35802	n/a
• Hendricks, Wayne Box 4922, 35815	n/a	• Sias, Mathias 871 Moontown Rd, Brownsboro, 35741	852-8771
• Hitt, Bill & David 1115 Hermitage Ave, 35801	536-4135	• Steele, Matt (HARA VP) & Robyn 13011 Branscomb Rd., 35803	883-6020
• Hoffman, Luke 6509 D Whispering Pines, 35805	837-6467	• Stluka, Ed & Thomas Michael 2802 Brett Rd, 35801	852-3850
• Huegele, Vince, (HARA Pres.) 1028 Antietam Rd., 35803	881-2904	• Street, Troy (HARA Sec.) & Jonathan 10127 Dunbarton Dr., 35803	883-8318
• Johnson, Chris RT 1 Box 519, Lacey Springs, 35754	n/a	• Stubblefield, Katie 1714 Sandlin Ave., 35801	534-5359
• Johnson, Lester & Gloria PO Box 5491, 35814	837-3640	• Tygielski, Mark 406 Green Acres, 35804	837-7486
• Jordan, P.R. & Adam 3614 Greenbriar Dr., 35810	852-5649	• Williams, Marty & Jimmy 3203 Fairacres Rd., 35803	539-4801
• Kmetz, John L. Rt2 Box 468 Lacey Springs, 35754	883-7378	• Williams, Ron 5637 Crestview Drive, Hixon TN 37343	n/a
• McCain, Wayne (HARA Treas.), Dana, John, Scott and Matthew 4209 Nolen Ave., 35801	536-2241	• Wingate, Jason 2908 Azalea Circle, 35805	539-6707
• Moser, David, Barbara, William, Samantha & Aaron 1468 Shady Lane, Kingston, TN 37763	(615) 376-3653	• Yeager, Carl & Jeff 4316 Shelby Ave. 35801	539-2839
• Nolin, Damon & Derek 10001 Willow Park Dr., 35803	880-8197		

Please check this list for correct spelling of your name, correct address & phone number etc. If you are a HARA member and your name is not on this list, please contact Robyn Steele 883-6020 or 830-6645(W).



Major Casey Muller, CAP examines an NCR Thunderbolt with Matt Steele after a recent CAP meeting on model rocketry.



Lt Steve Belcher, CAP and a cadet examine the NCR Thunderbolt after a May meeting on model rocketry presented by Matt Steele.

APRIL SPRING FLING '87 CONTEST WINNERS!

Name/Event Performance NAR Points

Predicted Duration (Prediction/Actual) %

A Division		
1) Samantha Moser	(40/41) 2.4%	100
2) William Moser	(53/51) 3.9%	60
3) Aaron Moser	(36/32) 12.5%	40
4) Colin Reasoner	(59/51) 15.6%	20
FLT) Derek Nolin	(41/29) 41.3%	10
John McCain	DQ	
Adam Jordan	DQ	
B Division		
1) Marty Williams	(36/45) 20%	100
2) Katie Stubblefield	(40/53) 24.5%	60
3) Lee Olyniec	(30/45) 33%	40
C Division		
1) Wayne McCain	(41/41) 0% (TIE)	100
1) Vince Huegele	(43/43) 0% (TIE)	100
2) Wayne Hendricks	(35/32) 9.4%	60
3) Barbara Moser	(41/35) 17.1%	40
4) Dana McCain	(31/38) 18.4%	20
FLT) Zunofark Team	(42/34) 23.5%	10
FLT) David Moser	(42/56) 25%	10

B Streamer Duration 1st Flt/2nd Flt= Total

A Division		
1) William Moser	47/45 = 1:32	120
2) Colin Reasoner	44/41 = 1:25	72
3) Aaron Moser	42/42 = 1:24	48
4) Derek Nolin	40/30 = 1:10	24
FLT) Samantha Moser	67/DQ = 1:07	12
FLT) Adam Jordan	19/35 = :54	12
FLT) John McCain	33 :33	12
B Division		
1) Lee Olyniec	80/73 = 2:33	120
Marty Williams	DQ/DQ (Separations)	
Katie Stubblefield	DQ/DQ (Separations)	
C Division		
1) Barbara Moser	89/288 = 6:17	120
2) Zunofark Team	62/64 = 2:06	72
3) Vince Huegele	DQ/94 = 1:34	48
4) David Moser	60/DQ = 1:00	24
FLT) Wayne Hendricks	30/29 = :59	12
FLT) Dana McCain	29/26 = :55	12

1/2A Parachute Duration

A Division		
1) Samantha Moser	330/19 = 5:49	100
2) Aaron Moser	20 :20	60
3) Scott McCain	9 :09	40
William Moser	DQ (190/191; no return)	
John McCain	DQ/DQ (no deployment)	
B Division		
1) Lee Olyniec	105/24 = 2:09	100
2) Katie Stubblefield	28/21 = :49	60
3) Marty Williams	19/15 = :34	40
C Division		
1) Zunofark Team	119/132 = 4:11	100
2) Wayne Hendricks	183/26 = 3:29	60
3) Vince Huegele	37/24 = 1:01	40
4) Dana McCain	21/11 = :42	20
FLT) Barbara Moser	27/DQ	10
David Moser	DQ/DQ (Separations)	
Wayne McCain	Cato (no relight)	

1/2A Boost Glide Duration

A Division		
1) William Moser	15/20 = :35	200
2) Samantha Moser	07/26 = :33 (TIE)	120
3) Aaron Moser	33 :33 (TIE)	120
B Division		
1) Katie Stubblefield	24/31 = :55	200
2) Marty Williams	19/21 = :40	120
Lee Olyniec	DQ/DQ (no glide)	
C Division		
1) Zunofark Team	89/169 = 4:18	200
2) Vince Huegele	35/27 = 1:02	120
3) Barbara Moser	17/43 = 1:00	80
4) David Moser	58/00 = :58	40
FLT) Wayne Hendricks	21/DQ = :21	20
FLT) Dana McCain	11/9 = :20	20

D International Boost Glide

A/B Division (Combined due to only 1 B division entry)		
1) Lee Olyniec	:49 = :49	280
2) William Moser	DQ/DQ/5 = :05	168
Samantha Moser	DQ (shred)	
C Division		
1) Zunofark Team	Max/Max/130 = 11:10	280
2) Wayne McCain	59/78 =2:17	168
3) Vince Huegele	120 = 2:00	112

4) Wayne Hendricks	31/45/36 = 1:52	56
FLT) Dana McCain	28/26/31 = 1:25	28
David Moser	DQ (shred)	

Parachute Spot Landing (ft from target)

A Division		
1) Samantha Moser	42' 0"	40
2) Colin Reasoner	52' 5"	24
3) Derek Nolin	Far, Far Away	16
3) Aaron Moser	Far, Far Away	16
3) William Moser	Far, Far Away	16
B Division		
1) Katie Stubblefield	37' 2"	40
2) Lee Olyniec	Far, Far Away	24
2) Marty Williams	Far, Far Away	24
C Division		
1) David Moser	22' 4"	40
2) Barbara Moser	49' 10"	24
3) Vince Huegele	Far, Far Away	16
3) Wayne Hendricks	Far, Far Away	16
3) Zunofark Team	Far, Far Away	16

Streamer Spot Landing (ft from target)

A Division		
1) Colin Reasoner	34' 5"	40
2) Aaron Moser	35' 0"	24
3) William Moser	95' 8"	16
4) Samantha Moser	Far, Far Away	8
4) Derek Nolin	Far, Far Away	8
B Division		
1) Marty Williams	46' 9"	40
2) Lee Olyniec	57' 11"	24
3) Katie Stubblefield	67' 4"	16
C Division		
1) David Moser	18' 10"	40
2) Barbara Moser	22' 2"	24
3) Zunofark Team	43' 5"	16
4) Vince Huegele	93' 7"	8
FLT) Wayne Hendricks	Far, Far Away	4
FLT) Dana McCain	Far, Far Away	4

Open Spot Landing (ft from target)

A Division		
1) Colin Reasoner	35' 0"	40
2) Aaron Moser	51' 8"	24
3) Samantha Moser	69' 6"	16
4) John McCain	Far, Far Away	8
4) Derek Nolin	Far, Far Away	8
4) William Moser	Far, Far Away	8
B Division		
1) Lee Olyniec	23' 3"	40
2) Marty Williams	84' 8"	24
3) Katie Stubblefield	Far, Far Away	16
C Division		
1) Wayne Hendricks	26' 2"	40
2) Barbara Moser	56' 10"	24
3) David Moser	64' 10"	16
4) Dana McCain	79' 0"	8
FLT) Zunofark Team	96"	4
FLT) Vince Huegele	99' 9"	4

POINT TOTALS

A Division		2) Vince Huegele	448
1) William Moser	584	3) Barbara Moser	322
2) Samantha Moser	396	4) Wayne Hendricks	268
3) Aaron Moser	332		
4) Colin Reasoner	196	4) Wayne McCain	268
5) Derek Nolin	66	5) David Moser	170
6) Scott McCain	40	6) Dana McCain	112
7) John McCain	20		
8) Adam Jordan	12		

Section Points:

HARA	3496
Independents	1008

Thanks for coming
out! See you in
June!!!

B Division	
1) Lee Olyniec	628
2) Katie Stubblefield	392
3) Marty Williams	348

C Division	
1) Zunofark Team	698

JUNE JAM '87 Contest Results

Name/Event Performance NAR Points

Predicted Duration

(Prediction/Actual) = %

A/B Division

1) Lee Olyniec	(30/30) 0%	100
2) Samantha Moser	(59/63) 6.3%	60
3) Colin Reasoner	(55/49) 12.2%	40
4) William Moser	(35.5/30) 18.3%	20
FLT) Aaron Moser	(52/65) 20.0%	10

C Division

1) Wayne Hendricks (48/47)	2.1% (TIE)	100
1) David Moser (49/48)	2.1% (TIE)	100
2) Vince Huegele	(48/46) 4.3%	60
3) Elton Karm	(140/147) 4.8%	40
4) Team SNOAR	(30/33) 9.1%	20
FLT) Randy Kelling	(30/34) 11.8%	10
FLT) Zunofark Team	(36/31) 16.1%	10
FLT) Barbara Moser	(32/42) 23.8%	10
FLT) Mutt & Jeff Tm	(55/98) 43.8%	10

B International Streamer Duration

1st Flt/2nd Flt/3rd Flt = Total

A/B Division

1) Lee Olyniec	178/62/71 = 311	120
2) Samantha Moser	DQ/87/81 = 168	72
3) Colin Reasoner	43/47/49 = 139	48
4) William Moser	DQ/DQ/70 = 70	24

C Division

1) David Moser	86/116/113 = 315	120
2) Barbara Moser	118/80/69 = 267	72
3) Zunofark Tm	73/85/92 = 250	48
4) Vince Huegele	79/113/DQ = 192	24
FLT) Wayne Hendricks	60/52/47 = 159	12
FLT) Mutt & Jeff Tm	56/40/42 = 138	12
FLT) Elton Karm	38/30/24 = 92	12

1/2A Parachute Duration

1st Flt/2nd = Total

A/B Division

1) William Moser	92/130 = 222	100
2) Samantha Moser	96/30 = 126	60
3) Aaron Moser	51/16 = 67	40
4) Lee Olyniec	27/25 = 52	2

C Division

1) Zunofark Team	117/234 = 351	100
2) Wayne Hendricks	107/105 = 212	60
3) David Moser	48/35 = 83	40
4) Mutt & Jeff Tm	DQ/76 = 76	20
FLT) Vince Huegele	DQ/71 = 71	10
FLT) Team SNOAR	48/DQ = 48	10
FLT) Barbara Moser	15/13 = 28	10

1/2A Boost Glide Duration

1st Flt/2nd = Total

A/B Division

1) Lee Olyniec	54/150 = 204	200
2) Aaron Moser	22/28 = 50	120
3) Samantha Moser	19/17 = 36	80
4) William Moser	4/8 = 12	40

C Division

1) Zunofark Team	62/310 = 372	200
2) Vince Huegele	38/52 = 90	120
3) Barbara Moser	38/37 = 75	80
4) Randy Kelling	33/36 = 69	40
FLT) Mutt & Jeff Tm	DQ/55 = 55	20
FLT) Elton Karm	22/22 = 44	20
FLT) Wayne Hendricks	14/24 = 38	20
FLT) David Moser	12/DQ = 12	20
FLT) Team SNOAR	6 = 6	20

D International Boost Glide

1st Flt/2nd Flt/3rd Flt = Total

A/B Division

1) Lee Olyniec	46/DQ/37 = 83	280
2) William Moser	21/21/17 = 59	168
3) Samantha Moser	44 = 44	112

C Division

1) Zunofark Team	Max/Max/Max = 810	280
2) Vince Huegele	110/DQ/228 = 338	168
3) Wayne Hendricks	86/DQ/46 = 132	112
4) Mutt & Jeff Tm	14/112 = 112	56
FLT) David Moser	24/65/DQ = 89	28
FLT) Team SNOAR	31/DQ/DQ = 31	28

B Altitude

(1st Flt/2nd Flt = Best Flt)

A/B Division

1) Colin Reasoner	307/LT = 307	60
2) Aaron Moser	279/243 = 279	36
3) William Moser	NC/235 = 235	24
4) Lee Olyniec	226/231 = 231	12
FLT) Samantha Moser	LT/219 = 219	6

C Division

1) David Moser	NC/270 = 270	60
2) Wayne Hendricks	252 = 252	36
3) Zunofark Tm	Cato/251/DQ = 251	24
4) Vince Huegele	238/239 = 239	12
FLT) Elton Karm	165/177 = 177	6
FLT) Barbara Moser	LT/LT	6
FLT) Team SNOAR	DQ/LT	6

LT= Lost Track NC= No Close, error > 10%

Sport Scale

Prototype/Points

A/B Division

1) William Moser (Sandhawk)	725	200
2) Colin Reasoner (Nike Apache)	695	132
3) Lee Olyniec (Merc-Redstone)	685	88
4) Aaron Moser (Nike Apache)	635	44
FLT) Samantha Moser (Nike Apache)	605 22	

C Division

1) Zunofark Tm (Juno-1)	855	220
2) Randy Kelling (Chaparral)	795	132
3) David Moser (Merc-Redstone)	710	88
4) Vince Huegele (V-2)	700 44	
4) Mutt & Jeff Tm (Sidewinder)	700	44
FLT) Wayne Hendricks (Scout)	655	22
FLT) Barbara Moser (D-Region)	630	22

POINT TOTALS

A/B Division

1) Lee Olyniec	(HARA)	820
2) William Moser	(KYNAR)	659
3) Samantha Moser	(KYNAR)	412
4) Colin Reasoner	(HARA)	280
5) Aaron Moser	(KYNAR)	250

C Division

1) Zunofark Team	(HARA)	882
2) David Moser	(KYNAR)	456
3) Vince Huegele	(HARA)	438
4) Wayne Hendricks	(HARA)	362
5) Barbara Moser	(KYNAR)	200
6) Randy Kelling	(BAMROCS)	172
7) Mutt & Jeff Tm	(IND)	162
8) Team SNOAR	(SNOAR)	84
9) Elton Karm	(IND)	78

Section Points:

1) HARA	2782
2) KYNAR	1914
3) BAMROCS	172
4) SNOAR	84

Isn't Life Interesting?

by Robyn Palmer Steele

Two years ago, living in Salt Lake City, (and very happy to be doing so, I might add) I had never even heard of the sport of model rocketry. I was living a full, productive, happy life in spite of this, (although now, I can't possibly imagine how).

Then Matt Steele walked into my life. (Actually, he walked into the office of the apartment complex that I was managing and rented an apartment, but that's another story.) If you know anything about Matt, then you know that model rocketry is a major portion of his life. Between competing, being a NAR trustee, editing SNOAR News and owning North Coast Rocketry, there wasn't much left of his spare time. It quickly became obvious that if I wanted to spend any time with him, I was going to have to learn about model rocketry.

I began by attending the WARP (Wasatch Area Rocket Pioneers) contests and meetings with him, where I soon discovered that there are a lot of really nice people involved in the hobby. The first couple of meets, I was strictly an observer, but that never lasts very long. Soon, I progressed to ace photographer (I've even been published in SNOAR News and AmSpam) and timer. Then I was roped into helping prep models. Last summer, one month before we got married, I had the "privilege" of attending my first LDRS and NARAM. Much to my surprise, I enjoyed it very much. I made a lot of really terrific friends all across the country.

Well, I must have done something right, because Matt and I tied the knot last September and I became part owner of North Coast Rocketry, general manager of the editor of SNOAR News, esteemed member of the Zunofark Team and a rocket wife.

With Matt as involved in rocketry as he is, it should come as no surprise that he wanted to move to "Rocket City" and so, 3 weeks after the wedding, we packed everything we owned in the world and headed off to find our fame and fortunes in Huntsville, Alabama. (Huntsville where??) Matt, in continuing with his zest for rocketry, began working at Morton Thiokol where he gets to build real rocket motors (the big ones!). And to no one's surprise, least of all mine, one of the first things we did, upon arriving in Huntsville was to attend the October rocket contest. And of course, one of the first people we meet at the contest is Vince Huegele, who not only shared a desire to get a club going in Huntsville, but turned out to be practically our next door neighbor! Well, all I can say is that this must be fate or something!

Meanwhile, here I am, this kid from Salt Lake City who knew nothing about rockets, living in Rocket City, and having my life totally revolve around rockets. I am going to my second NARAM in August and spending my first anniversary at the Internats in Yugoslavia. I have my very own rocket newsletter (MAX-Q) to publish and I go to all the meetings and launches because the people in Huntsville are just as terrific as the people that I have met all across the country. I can discuss model rocketry and North Coast semi-knowledgably and actually sound like I know what I'm talking about. (Which amazes me most of all!) And I have yet to build a rocket myself. Isn't life interesting?

Rocket Day on Brindlee Mountain

Local Cub Scouts held a rocket contest April 25th just south of the Tennessee River atop Brindlee Mountain. HARA was invited to give demonstration flights before the scout contest began. Vince Huegele and the McCain clan represented HARA and showed off a variety of models.

The clear blue sky was inviting that day, but the steady north wind was intimidating and every bit of its predicted 15 mph was making the 70° temperature even cooler. The HARA team was reluctant to put up models in that wind, but made the best of it. "We demonstrated weather cocking, if nothing else," Vince said.

The McCains calibrated the launch rod angle by launching first an Echo and Big Bertha. After retrieving those, Vince got brave enough to shoot his Columbia Scale Orbiter and a mini engine two stage rocket. The crowd of Scouts, who were beginner rocketeers and only familiar with Alpha type models, were very excited. With every countdown given over the HARA loudspeaker, they joined in the ritual chant. Wayne McCain gave them more thrills with his paper orbiter piggy-backed on a Bertha. It flew very well, but a Falcon front engine boost glider had trouble with the strong winds and came down hard.

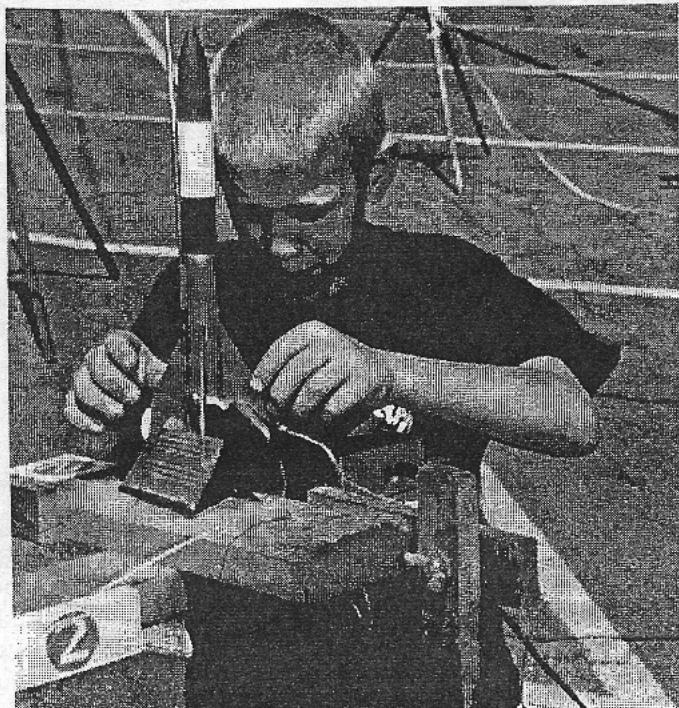
To conclude the spectacle, HARA showed the Scouts what D engines can do (like out-fly the flying area). Vince launched his Phoenix and the McCain's their Mean Machine. Both ascents plotted out wind shears of the air above. The descents introduced the recovery team to the adjacent farm. The spectators were ecstatic. "This is a great field for small rockets, and a fine park," said Vince, "but I would limit it to C engines."

As HARA packed up the club launchers, the Scouts lined up to begin their launch session. Many kids were flying their first model for the very first time. From the many grins seen at each liftoff, it won't be their last rocket day.

Parts is Parts

R.C.'s Hobbies now has body tubes, nose cones, parachutes and other individual Estes parts along with the complete kits and engines. They also have MRC rockets and engines. Remember, HARA members get 20% off at R.C.'s. See the yellow pages for a map of their location.

Photo Album



Clockwise from top left: Melanie Stenson (MSFC) helps judge the models that the Scouts built for their rocket day April 25th. 2) Scott McCain readies his model for launch. 3) Maria and Anita Burkey of the Huntsville Times prep their model to launch at the May Sports Launch. 4) Vince Huegele and John McCain man the Launch Control Center at the Scout Rocket meet on April 25th on Brindlee Mt.

Rocket City Roundup

Events and Hints

Here's What To Bring!

Predicted Duration: A good, reliable B powered streamer recovery model is in order for this event. One must at least take it out for a test flight prior to the meet to get a ball park idea of how long the bird will stay up. Thirty to forty seconds is a good prediction, especially with a kit like the Estes Maverick, Yankee, Courier, Wizard, or Zinger. One flight allowed, one piece models only are allowed, you must make your prediction prior to the flight, and it must be your first flight of the day.

B Streamer Duration: You could use an Estes Yankee, Phaser, Wizard, or Zinger, powered by a B6-6 or B4-6 for this event. The highest sum of two flights wins, so bring at least two motors. One piece models only.

1/2A International Parachute Duration: A mini engine model powered by a 1/2A3-2T or 1/2A3-4T is a good choice here. Good kits include the Eclipse, or a Sparrow, Star Dart, or Vector with a 8" or 10" parachute. Another good strategy is to use a 1/2A6-2 in a BT-20 model with a 24" or 30" parachute in it. The highest sum of three flights wins this event also. One piece models only.

1/2A Boost Glide Duration: The mini engine Dragonfly is the only way to go here. Use a 1/2A3-2T for both flights in this event, as the highest sum of two flights wins this event too!

A International Boost Glide Duration: (A/B Division) The mini engine Dragonfly is the only way to go here. Use a A3-2T or an A3-4T for three flights in this event.

Three flights in this event, with a maximum recorded time of 120 seconds per flight. *Note event change!!!*

International D Boost Glide: (C Division) This one is really for experienced modelers, as there are no good kits available. A good way to rig up an entry would be to mount a foam Space Shuttle on the side of a D12-5 powered Mean Machine. The Easy Rider is also a good plan. Three flights in this event, with a maximum recorded time of 270 seconds per flight. *Note event change!!!*

Predicted Altitude: Here's your chance to find out how high your model went. Predictions must be over 100 meters (300+ ft), so a "B" powered model is a good choice, The scoring is the same as in Predicted Duration.

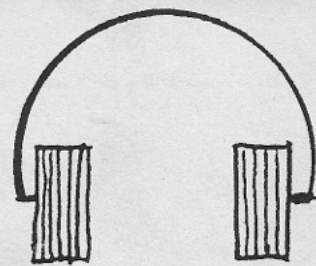
C Eggloft Altitude: The highest returned flight without breaking or cracking the egg is the winner. Two flights are allowed, but only the best one is scored for points. There's no good kit for this event, so you're best off to find an Easter Egg or Leggs and make your own capsule. Put a big parachute on it so that the egg doesn't break. (We supply the eggs- Large grade)

Drag Race: This is a fun event, where we will only use two launchers, and fly in heats. The first one off the pad, the lowest altitude, and the longest duration score a point, and the winner is the one with the most points. Usually, you can't win by getting the longest duration and the lowest altitude, so the key is to pick one, and try and be the first one off of the pad. The Estes Flying Saucer is a good choice for this event. If you misfire, that's your tough luck, do make sure you have good igniters!

Hi and Lois



HARA
1028 Antietam
Huntsville, AL 35803



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Hey, don't forget to
deliver one to:

Ed St. Luka & Michael
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