MAX-Q HARA

Newsletter of the Huntsville Area Rocketry Association Volume 8, Number 5, Oct/Nov 1994

Space Shuttle Lands at Classic Airshow

The thirteenth *Rocket City Classic* wasn't unlucky at all. The weather was great, the crowd was there, the flights were good, and the shuttle didn't land. NASA threaten to upstage HARA and draw away rocketeers by having *Columbia* land at the Huntsville Jetplex on its 747 carrier for a display at exactly the same time as the model rocket launch that Saturday morning on October 1. Heavy rain at the Cape kept the NASA orbiter in Florida, but a shuttle did land at the old airport, controlled by George Gassaway.

The weather had been warm and fair all week with Saturday getting the last mild spell before Sunday was washed out with steady rain. The *Classic* started an hour earlier this year and had every bit of a line of modelers ready to register and fly. Johnson High School and the ASFL were schools best represented.

The full range operation is always fun and impressive with a good complement of flyers to use it. The barricades surrounding the launch area and the controlled access to it bespoke a clear concern for organization and safety. About a hundred rocket enthusiasts brought lawn chairs and blankets to watch and enjoy the launch proceedings.

There were more adults present flying Aerotech size models and motors this year. The wind allowed simple and spectacular recovery of these big birds. The loud composite blastoff woke up spectators expecting the usual Estes "whoosh" sound. Flying was steady the whole morning with one or two modelers always on deck at the check-in table for a pad assignment. The

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HARA Rockets to Start Rocket City Marathon

The Huntsville Track Club in charge of the Rocket City Marathon has requested HARA fire rockets to start the race on Saturday morning, December 10. Harold Tinsley came to the November HARA meeting to discuss the launch proposal. Officers agreed that models could be fired under the constraints of the marathon.

Runners will line up at the start on Monroe Street just south of Williams Avenue. HARA will have launchers set up across from the Civic Center. The models will be aimed over the water toward the center of the park where they will presumably land. The effect is for the runners moving up the street to see and hear rockets taking off ahead of them along the race route. The models need to be large and loud enough to be impressive, but not pose a safety threat to downtown spectators or property. The track club wants to impress the runners with a salute, not distract or alarm them. (*So, no HSilverStreaks.*)

Four rockets will be launched in sequence immediately after the starting pistol is fired at 8:00 am. A race official in radio contact with the starter will be with the firing crew. Big Bertha models will be flown on C or D motors. Due to the crowd in the park, the models might be difficult to retrieve and therefore

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From the President's Pad

Classic Thanks

The success of the *Rocket City Classic* launch comes from everyone doing something. HARA is good about showing up to work.

I want everyone who helped to feel appreciated, so I try to mention some of what was done individually. Thank you all.

Joe Robertson sorted out the score cards and declared the winners. Greg Warren hauled in all the SEP launch equipment HARA now uses for the *Classic.* Sondra Robertson was the voice and finger of launch control. Neal Redmond kept traffic flow smooth at the check-in point with pad assignments. Sharal Huegele registered everyone and distributed rocketry information. Jayne Russell handled the drink money at the concession stand and brought a lot of kids with her to fly. Ed Stluka and the Huntsville ham radio club directed the radio network for the trackers. Kevin Cornelius was the time keeper for duration flights. Larry and Marty Mayfield officiated the spot landing measurements, and lent their sawhorses for barricades. Tim Pickens, Tim Bennett and Craig Presson worked the judge's table rating the models. Brian Day operated a tracking station. Wayne McCain got HARA in the AIAA budget for financial support. Dan Coon had his water rocket to show. Everyone was helpful in setting up and taking down the range.

If I've missed mentioning anyone else that helped, I do thank you.

As impressive, complicated, and satisfying as it is to launch a rocket, it's even more gratifying to successfully launch a launch.

MAX-Q

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Contributors: *Greg Warren, Jerry Schaefer, Neal Redmond,*

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Vice President: Joe Robertson
Secretary: Greg Warren
Treasurer: Sharal Huegele

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High Power is Happening

This last half of 1994 has shown a strong increase in interest in high power modeling. I've gotten four calls in two months from new people who have heard about us in the *Rocketry* magazines or seen the brochure in the hobby shops and want to know about the "big rockets." For some of them, anything above a D12 is a big motor; J and K size astonishes them. It excites them, too! I send them the usual club information and just say, "come and see." They come.

The complexion of the regular launches is shifting, also. It used to be a big deal and a special treat for someone to pull out and shoot an F powered Aerotech model. Now, if the wind is cooperative at all, half of what people fly seems to be composite and reloadable motors. Cool! With the regular availablity of the Athens field, and now the discovery of the even larger range only eighty miles away in Manchester, Tennessee, we are now able to build and fly almost anything in our catalogs.

It is happening. Big rockets are drawing people out to the launches and in to the hobby. We're ready to fly together and to grow. Keep it going.

Business Matters

The whole year went by without any action on a new club T-shirt design or procurement. Since we gave the last old HARA shirt away as a door prize, maybe now we'll move on that item. And, yes, we'll order more 'L' sizes this time.

I would like to consider next year the creation of of some new official club postions. These jobs would be volunteer or appointment, however they can be filled to help improve and expedite HARA operation. I have ideas for an Assistant Newletter Editor, Meeting Program Director, and a Promotional Director. The meeting programmer would plan discussion topics and presentations for our monthly gatherings. The assistant editor would help me get the *MAX-Q* put together, and the promotional guy would work on fund raising and displays in the hobby shops.

We'll want to discuss all this at our meetings and observe the proper review and approval process. Any new ideas for things are fair game, so bring your thoughts to share.

NEXT MEETING: Thursday, January 12, 7:30 pm. HATS Office

.....CLASSIC continued from page one

contest end time slipped from noon for about twenty minutes because there were still a few people with flights to make.

Enrollment was down this year with only 24 registered contestants, but together with the sport flyers the range stayed busy with over a hundred launches logged. Performance and scores were nominal, but the calm air made flying very satisfying.

Terry Thompson of Birmingham had several Aerotech motor flights. His car had the large rockets strapped on top like military vehicle. His beautiful *Anubis* model got second in craftsmanship.

Cameron Prince showed up with a fancy cordless controlled talking launcher. It worked well for Estes ignitors, but the battery needed more kick for a copperhead. Cameron's *Mirage* on a G put in a good flight.

Wayne Hendricks flew his foam piggy back shuttle on a D powered booster several times. George Gassaway flew his shuttle to a smooth touchdown.

Brian Day and Tim Bennett fired a few large things. Greg Warren brought out several models too big to try with a close crowd, but did fly his pencil rocket on a D12 and then a E15. He also flew a *Wart Hog*. Neal Redmond made some long duration flights.

Michael Toelle of Lynchberg, Tennessee flew a nice *Tomahawk*. Former HARA member (now renewed) Carl Gustin from Birmingham and daughter Alisha launched several advanced items. Alisha finished in the money in the duration event.

The winners received attractive rocket kits for their efforts. Due to the lack of measurable close landings, the spot event was short on awardable places. A dozen door prizes of goodies from the Space & Rocket Center were distributed by drawing.

When it was over, several rocketeers reconvened at Tim Pickens' house for a cookout and farewell to Dan Coon, who is moving to a new job in Denver.

Rocket City Classic XIII Results

Altitude

1. Sam Lagrone
2. Dan Lagrone
3. Jonathon Bracey

Duration

1. Hans Ford
2. Alisha Gustin
3. Kmeka Robinson

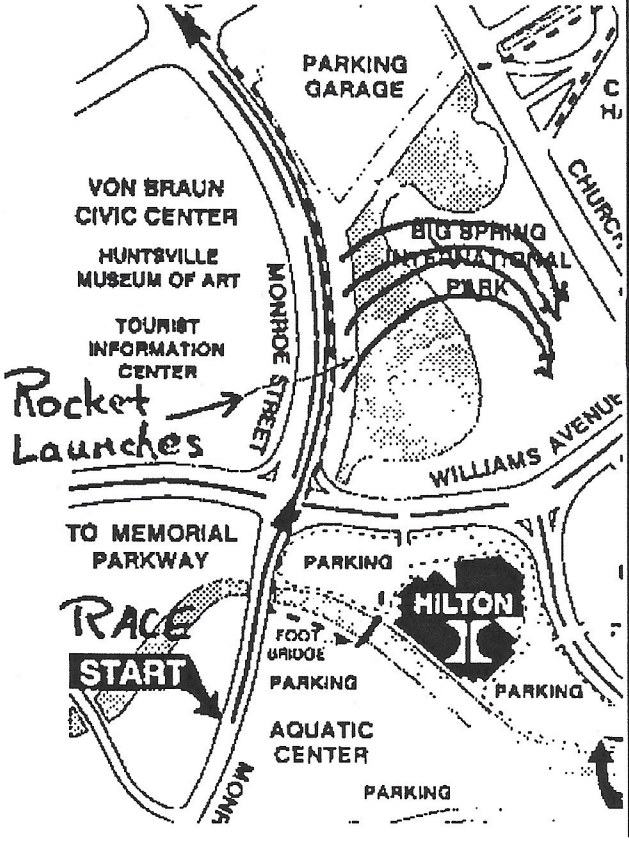
Craftsmanship

1. Gene Hornbuckle
2. Terry Thompson
3. Bo Hernandez

Spot Landing

1. Kevin Keen
2. John Bryant

PHOTOS OF CLASSIC ON NEXT PAGE



Downtown Huntsville Race Course with Launch Site

.....*continued from front.*

need to be expendable. HARA members are needed to be at recovery points to get back the rockets. Park at the library, and be at the launch point by 7:00 am.

Joe Robertson, Kevin Cornelius, Brian Day and Vince Huegele are working on this project, but a few more people can help. Call Vince at 881-2904 for details on what you can do. This should be the biggest audience for a model rocket launch in Huntsville history.

The Rockets of Madison County

photos *by Jerry Schaefer*

this page
The winning SR-71 by Bo Hernandez shown during countdown, ascent, and recovery.
below : How Terry Thompson gets his rockets to the field with a Corvette. Dan Coon's water rocket doesn't "ignite," it just "starts."

Opposite page clockwise from top: Rockets fly. People watch. Sondra Robertson and Neal Redmond control the range operations. Contest winners pose with their prizes. Sharal Huegele and Joe Robertson conduct administrative chores under Ed Stluka's tent while Brian Day racks one up.


Flying Model Rockets

Rocket Education Update

Greg Warren talks to guests about rockets on Science Day.

HARA has had several activities with local schools since the school year began.

Science Day

For the second year, the Academy of Science and Foreign Language has sponsored a Super Science Saturday that HARA attended. All morning, the school was open to student and parents to visit exhibits set up by local groups.

Representatives from medical, industrial, civil, and aerospace organizations had booths full of neat stuff for people to see and touch.

Joe and Sondra Robertson, Greg Warren and Vince Huegele came to talk rocketry and shoot rockets. Greg's SEP display was admired by potential modelers young and old. The launch demo had a slow start with some tired batteries, but all models were eventually fired to the crowd's delight.

Spaceweek Plans

Greg and Vince had another important community meeting in October. Cathy Kulas of Project LASER from MSFC arranged for them to meet with the vocational technical prepatory teachers of local middle schools. These teachers are already following a new curriculum which includes building model rockets in the classroom for one of their education units. Greg and Vince explained the rocketry support offered by HARA and SEP to whoever requests it. Plans were discussed for an expanded model contest during Spaceweek.The teachers were interested, and Greg is now booked for a record number of demos this year.

Robert Burdine helped Vince do rocket building sessions at NASA for Spaceweek teachers. Five classes taught over fifty teachers how to fly.

Academy for Science and Foreign Language at Davis Hills

L'Académie pour la Science et la Langue Étrangère à Davis Hills

Dear Vince –

Thanks again this year for volunteering your rocket expertise! We always enjoy working with HARA!

Sincerely,

Jayne Russell

STEDTRAIN '95

The same people (HATS) who brought you TABES are working on the Science and Technology Education and Training Conference (STEDTRAIN.) This seminar is to bring together teachers, educators, and technical volunteers to work on improving schools and classes.

Corporate sponsors want to give money to innovative, quality school programs. Teachers want to apply tothe right agencies to get that support. STEDTRAIN will provide a focusing network and a coordinating mechanism for the volunteer groups in the community who have science and technology enrichment and encouragement programs for the classroom.

The conference is January 20 and 21, 1995 at the UAH student center. HARA already has a booth reserved in the exhibit area.

COUNTDOWN '94

HARA meetings are second Thursdays (except December) at the Huntsville Association of Technical Societies (HATS) office, Suite 29, Building 4900, University Square, (off the Boardwalk.)
Launches are 9:30 am Saturday mornings at the Old Airport, unless announced otherwise. Call Greg Warren for SEP launch site information.

DEC: 10 Sat; 7:30 am Launch Marathon Start Von Braun CC

JAN: 12 Thurs; HARA Meeting 7:30 pm HATS
20, 21 Fri, Sat 11am-5pm STEDTRAIN UAH Student Center

For more details call Vince at 881-2904 or Joe at 721-1338.

PHOTOS, BELOW LEFT: You never know what people will bring out to a launch. But it's an airplane! RIGHT: The bronze bust of Von Braun unveiled during the Apollo 11 anniversary is in the office plaza at MSFC.

Estes "GENEROC"

by Vince Huegele

The Estes *Generic E2X* rocket should have just been called the "*Gene-roc*," and so I will. This is a beginner kit for classes and available in bulk packages. It's called generic since it has no predetermined or suggested color scheme. The design itself is generic enough.

Bulk packages work well for large classes of small kids if the teacher knows what all the parts are for and how to build rockets. Matt Sherrill demonstrated this effectiveness in his camp this summer. With bulk supply, the teacher can control the assembly rate and keep down parts loss by giving out the pieces only when they are needed.

The *Generoc* is the same as the *Athena* and *Pegasus* except for the length of the nose cone. Estes has incorporated the new engine hook with a tab, elastic shock cord, and reinforced shroud line mounts, which are all good improvements. The instructions are very explicit.

The kit is a plain, simple rocket appropriate for learning modeling, but there are two aspects I would change. Both are necessary to get the assembly time down to the one hour class period which is often a constraint in building sessions.

First, explaining and putting together a parachute takes a novice about ten minutes. Attaching a streamer takes one minute. Beginner kits for classes should have streamers.

The next most time consuming step is cutting out, folding and gluing the shock cord anchor. A better way of doing this for short rockets is by connecting the line to the engine mount. (See photo below.) Tie two knots and you're done.

These preferences come from my years of building sessions with the Estes *Alpha* and lately the Quest *Starhawk*. The *Starhawk* is the best beginner kit because it has the above features and can be completed in an hour class.

The *Generoc* is promoted to stimulate creative expression in decorating a rocket, and so may as well be built in an art class. A better idea Estes has for the scientifically inclined is the *Performance* pack. This bulk set allows the students to customize the fin shape and style to vary the drag. The fins are all the same area, so whatever shape the builder selects will be stable. And you can still paint the rocket anyway you want.

Missile-anious Tech Tips

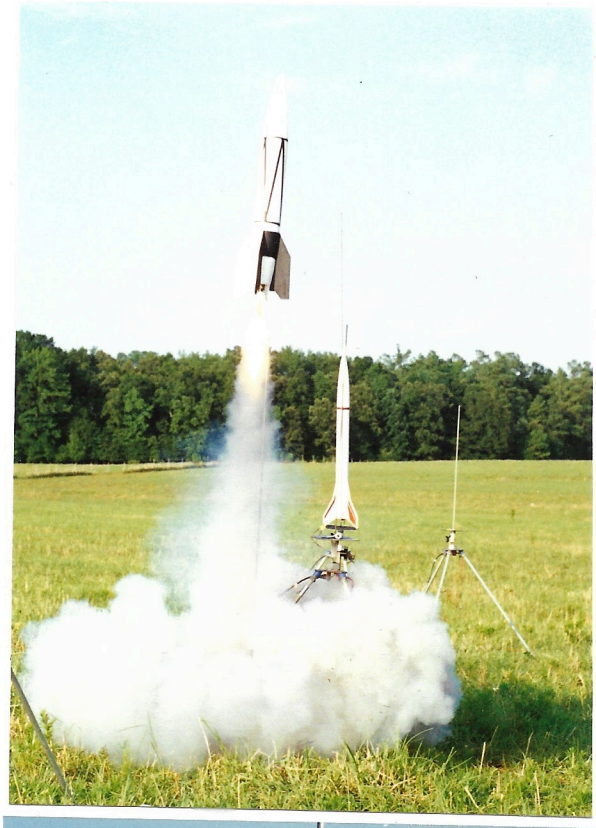
- Kevlar can now be obtained as fishing line at most stores with sports departments. This steel strong filament is indispensable for recovery rigging. Now you can anchor shock cords to body tubes in the same way as is done in Quest kits.
- A good way to attach shroud lines to home made parachutes is with notebook paper hole reinforcements. Get these little ring things at office supply stores.
- Want to protect your rocket's paint finish and lower its drag coefficient? Wipe it down with Armor-all or a similar type sealant. It'll be so slick you can't pick it up!

A Stuffed-Up Nose

For rockets with a large diameter, short length body tube like this scale V-2, there isn't enough room in the body for the recovery system. But because the nose cone is so big, it can contain the parachute.

On this four inch diameter plastic cone, the base was cut off to access the inside. The shock cord is epoxied through a slot made in the upper section, then threaded out the bottom of the base and on to the anchor in the body. The parachute is tied to the cord above the base and is packed in the nose. The shoulder base acts as a piston to support the nose and protect the chute, but should be stiffened with styrofoam or some light, rigid material.

This V-2 model built to true scale length created the space problem that was solved by this recovery design. The small amount of ballast in the nose for stability assures that at ejection, the momentum of the cone will extend the cord length to expose the chute to the airstream. It flies great on an F25-6!



In the Clouds Above Tennessee

by Rick Kauffman

A Tripoli Launch in Manchester

"*Ladies and Gentlemen, good morning and welcome to middle Tennessee. Spears Range is now officially open*," crackled over the P.A. system. That's when it hit me. Months of work had gone into organizing this regional launch and now I had opened our special Tripoli Middle Tennessee launch site to a bunch of people I had never met before last night. Was this going to work?

The early morning gray clouds faded away to leave a deep blue sky on a warm fall day. Lovette Reddick opened the event with a blast from his Electronic *Bruiser* and got everyone's attention. Rocketeers from five states converged for the weekend November 12 and 13 of what turned out to be a relaxing, picnic style launch. Some flyers even brought their families. Kyle Cornelius, son of Kevin, won the best altitude award. Kyle promised to let Dad fly his rocket when he was done.

HARA showed up with a super assortment of rockets. These guys put so much work and effort in their rockets you could swear they came from the factory showroom. There was not a failure or "lawn dart" in the bunch.

The Cornelius Clan and Neal Redmond and daughters stayed the whole weekend. Brian Day and Vince Huegele flew on Saturday. Vince was very impressed by the size of the field and promises to bring the whole club next time.

The waivers for the launch were 3000 feet all day with a call-in real time waiver to 10,000. This was used three times, once Saturday for Neal, and twice Sunday for Rick and Chris, and then Bill Walker. We watched one aircraft approaching make a hard right turn right after our call.

Here are some of the most memorable flights:

Lovett Reddick's Electronic *Bruiser* on a Vulcan L-750, and his Neon Electronic *Magnum* on a J415.

Neal Redmond's *Carbon Dawg* on a K550.

John Kraiski's scaled up Estes *Mars Lander* with a K420.

Rick Kauffman and Chris Morgan's *A.P. Ghost* with a K550, two I357's and two H220ss.

Tim Eiszner's *7-UP* with seven D12's.

Jay Beel's *Nike-Like* with an I283, four E15's and four D12's, and his *Magnum* with a Kosdon I400 and two G200's.

Colby Tucker's *Bruiser EXP* on a J355 and two H200ss.
Paul Esterley's MUSR, his SLR and his *Yellow Pearl.*
Tim Locke's minmum diameter rocket on a H220ss.
Alan Birdwell's transonic minimum diameter bird on a H238.
Brad Warner's *Ultimate EXP* with a H100, two F50's and two D12's.

Gerry Bock from Memphis had a spectacular launch of his LOC *Magnum EXP* with a J180 and two H100's. His *King Viper* had a problem when one of the H200ss motors ejected on the pad.

A few fliers had a non-ejection. It was found that the ejection charges were missing on those single use motors. It is suggested that everyone check their ejection wells and make sure there is powder there, particularly for Vulcan motors. They have a tendency to lose the seal cap and spill the powder.

Bill Walker's rocket was a modified *Questar* housing an Adept recording altimeter. Bill has written a program that will download the information from the altimeter and create a range of displays showing the entire flight. His post flight readouts drew attention from many rocketeers. On Bill's last flight, the I211 ejected too soon robbing the rocket of desired altitude and zippered a seven inch gash into the body tube. The altimeter showed the rocket was cruising at 98 mph at ejection. Bill will be back at the next launch.

The middle Tennessee rocketeers have been flying together a little over a year. In the spring of 1993 a few of us would get together and swoosh a few Estes and small F and G motors in a field just south of Nashville. This was okay, but we wanted more. Then along came Bill Walker, who came across a field near Manchester. He said it was 3000 acres! Sure enough, it was. We went there last November and flew H and I motors.

I contacted the FAA office in Nashville about getting a waiver for the area. They were initially agreeable, but then turned us down. John Cato in Georgia gave me the name of the officer he used, and my next application was accepted. We flew at the site for six months to get the hang of high power launches and decided it was time to let others enjoy the field as well.

I would like to thank those who made the launch possible: Mr. and Mrs. Spears for the unlimited use of the site, Bill Walker for finding the site, Tim Eiszer for his superb LCO and narration work, Larry Smith of Rocket Science for having a range store, Lovett Reddick of Tripoli East Tennessee, Ross Dunton for keeping the faith, Vicki Yokum for helping us acquire our motors, and Vince Huegele from the NAR section in Huntsville.

We had such a great time that we've decided to do this again. The next Spear's Range launch will be April 1 and 2 next year. Make plans to come!

M A X - Q

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