



M.D.R.A. Report

Volume 6, Number 4



Cover: Kevin Kelly's M&M rocket on a K800 BMW WT. Photo by James Kelly.

Editor's Corner :

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Editor Bob Utley

DARE 2 is coming on Oct 17,18,19. As members of the local rocket club's up and down the east coast will be coming to this event, we need to help Lester, Norwood and Ted with the launch.

As some of you that have been there before, this is a big launch and it takes lots of folks to help make it go smooth. So help out, even if it's for only an hour or so. Pad Managers, Directing Parking, helping others get their rocket to or from the pad, RSO, and LCO can all use some help during the day.

I know that all our membership that can will show up to support this launch as they do at our other fields too, Sod Farm, Higgs Farm and Coverdale. We are very lucky to have this many fields in the area and be allowed to fly as much as we like on them.

Remember that, when you talk to the guest that show up from out of state and listen as they describe their field. We are lucky indeed.

I want to ask again for any articles for the newsletter, as you see we put in any that come our way. Besides aren't you getting tired of reading what Neil has to say? So if you want to write something for ER or Sport Rocketry or HPR this is the place to test the waters.

I want to thank Ivan Galysh and Neil for their articles. Also Bob Lussier for putting up the questions Neil asked and taking the time to answer them too.

At our monthly meetings we are trying to get our member to talk a little about their jobs as it relates to Rockets or the Rocket Industry. Again I want to thank Bob Lussier for talking to us about his job at NASA, along with Rob Roberts on his work with the Hubble. I sent an email with some links to Hubble images that Mr. Roberts gave me so if you used them, thank him when you see him at the launch.

Want to be Prefect for Tripoli? See our link to MD Tripoli web page and get your name on the list, hurry it ends at the end of this month (Sept).

So on to the newsletter and seeing your name in print....

ESL #53 Sod Farm 7/12-7/13

Rain, rain go away! I think when you look up rain in the dictionary these days the definition refers you to "See Rocket Launch". The two do seem synonymous. Fortunately we were able to get in almost 2 full days of launching rockets. Something must be wrong; the weather appeared to be begrudgingly trying to cooperate. LDRS is on the horizon and there are a number of members that will be attending this National Event. A good day at MDRA should prove to be a good omen for the trip out to Kansas and the National Spotlight.

A Cub Scout Pack (495) sponsored by Larry Harris and Jim Williams and a plethora of small rockets visited us. The Viking was the most prevalent powered by the mighty B-6 motor. There were also a couple of other flights in the A to C range that were flown by the boys. This was the first rocket experience for many of these future Astronauts. I am sure that it will not be the last. After the B and C class motors the kids soon learn that the sky is not the limit. The boys turned in 24 flights over the course of the day.

Bill Brown good in six flights, two with his Saturn V on a D-12 for a nice low, up close and personal flight. The Saturn V actually made it into one of the Delaware News Papers being recovered under chute. Bill also flew his Bull Pup on 2-C-6's. Rich Custer had two flights on this fine day. Rich flew his rocket called The Bulldog on a G-40 and 4, F-21's. The jury is still out on this one. Rich also flew his New Detroit on a F-20. Glenn Davis got in five flights in the E to H range on his rockets called Drunk Bob, No Pants, (Which Bob could he be referring too? Let me take a guess), Ready Betty, Warhog, Harpoon, and Crack the Sky. At least Glenn is showing a little class by naming his rocket after one of Baltimore's premiere rock bands. Randy Ejma flew 4 times with his Stinger on I-200's, his little John on a G-64 and no name rocket on an E-9.

Larry Harris actually got to launch a few of his own rockets. Larry put up his Path Finder on an E-9, Forte' on a G-35 and his Pringles light on an E-9. Tom Hier blasted a hole in the sky with his Amraam 4 powered by a J-450. James Kelly flew twice with his

Blue Lightning on a F-23 and his Skywinder on a C-6. Kevin Kelly flew his M&M to 3921 feet on a BMW K-800. This motor was 10% zinc that helped produce a nice white smoke trail reminiscent of a well-known Commercial Motor manufacture. Bill and Phil Krehmann combined for 5 flights, four of which were Bill's and one for Phil. The flights spanned the A to G range. The rockets were the V-2, Explorer, Student and a Big Daddy. Bart Merkley flew his Sentinel for a neck cracking flight on a J-330. Ben Miller got in three nice, high flights on his Callisto powered by an I-400 and H-400 and his Ianmed on a H-450.

Jerry O'Sullivan painted the town or at least the sky red with his High-5 on a J-360 BMW Red Neck Red motor. Rob Roberts flew three times but got 4 for the price of three, as one of his flights was a two stage. Rob flew his Graduator on a G-45, LOC IV on a H-62 and his Two Stage Double Trouble on a H-190 staging to a F-70. Sloano Diego flew an Initiator on a G-35. George Tiger trudged to the pads three times with his Initiator on a F-20, Bull Pup on a G-64 and his clustered attempt of a G-40 and four F-21's in his Tomahawk. Bob Utley made two distressing flights with his flying Port-A-Pot on a F-25. I guess the flights will continue until we take notice. Next time you see Bob, tell him how much you enjoy seeing the Port-A-Pot fly. I know it makes my day. Bob also flew a real rocket, his Sand Hawk on a BMW K-800 White Trash Load. The rocket flew to 3,264 feet on the 8% zinc formula. All I can say is "Aero-Who?" Nelson Wallace flew his two stage Navaho on C-6's and his Cheetah on a F-20. Both for successful flights. Nelson is warming up for the big fields and the big motors. You won't want to miss that. Dave Weber flew his Warlock on a BMW K-450 Pink Load for a simply fabulous flight. (Spoken with a lisp) The pink of the flame (or is a flamer) complimenting the yellow hues of the rocket in the most tasty and delicate way. (It's hard to write this with a limp wrist.) Dave also flew his Tuber for another record setting flight, 152, on H-128 power. Jason Whitely flew twice on D-12 power with his Hulk and Green Hornet. We know who reads too many comic books or can there be such a thing? Gerry Willis attempted his level 1 with his W1 on a H-128, unfortunately to no avail. That

requirement to return the rocket in flyable condition is easier said than done some things.

Sunday was beautiful day that would stay that way all day for the fliers on hand. Dave Bathras was going to raise the stakes another notch by going for his Level 3. Dave had previously dragged his rocket all over the Eastern Shore of Maryland it seemed looking for the perfect day to fly. Much like surfer looking for that perfect wave. The day started out with a slight wind out of the North that dissipated as the day went on. When it was time to fly the wind was negligible. Dave's rocket was a 6" diameter scratch built Black Brant powered by an AMW M-1850 Green Gorilla. After the usual hoopla and pictures with family and friends that assisted with getting the rocket on the tower it was time to push the button. The rocket came right up to pressure and defiantly rose from the tower on a long and loud green flame. The rocket continued arrow straight to apogee and broke open right on cue. The recovery was perfect, placing the rocket 100 yards away from the pad. It will just be a matter of time that all the MDRA members are Level 3. Congratulations Dave, keep flying the big dogs. As an appropriate way of celebrating Dave lit off some fireworks in true Rocketeer style. Dave launched his Strong arm on a L-950 Sparky load that showered the sky in titanium sparks are shook the trees with the roar of the motor.

Bill Brown flew his Saturn V on a D-12 and his Aerobee on a C-6. Rob Camele sunburned the bottom of his chin twice with his Excalibur on a H-128 and his Our Lady of the Sky on an I-357. Jim and Chris Cox combined for four flights in the C to H range. They flew the Big Bertha on a C-6, V-2 on a G-75, Silver Comet on a G-64 and the Callisto on a H-200. Glenn Davis wore a path to the pads with six flights on his Ready Betty on a D-24, Krypton on F-39's, Drunk Bob / No Pants on a G-64, Crack the Sky on a F-50 and the warhog on a F-62. Mike deBay flew four times on this sunny, hot day. Mike heated things up even more with his no name rocket on a BMW H-150, Stretch Explorer on a BMW I-250 and later on a BMW I-300 and the Crayon on a BMW H-200. Randy Ejma put 6 rockets on the pad and left with 5. Randy flew his Stinger on an I-400 and I-250, Buh-Bye on a long burn D-

3, Blue Ninja on an E-9 and Phoenix on a H-200. Randy did not leave with his HARV II on a J-600. A little too much pressure for the nozzle size and the casing. This qualified as a Really Cool Flight in MDRA speak.

John Gramick flew two times on F-20 power with his Onyx and Bull Pup, once with a F-25 powering his Strong Arm, and a G-38 powering his Eliminator. Mitch Guess launched his V-2 on a H-143, Rohini RH-75 on an I-205 and his LOC IV on a G-64. Richard Hickok got in five good flights with the Upscale Yellow Jacket on G-75 power, Bender on a D-12, Harpoon on a D-12, harpoon on an E-18, Hawk Motor Test Vehicle on a C-6 and the Blue Meanie on a 2 D-12's. James Kelly flew his Mission to Mars, not quite that far, on a D-12, his Skywinder two more times on C-6 power. Kevin Kelly took to the skies two more times on BMW power. Kevin flew his M&M on a K-800 White Trash Load of 8% zinc to 3,561 feet and then again on a K-450 Pink load. What's with the Pink fellas?

Neil McGilvray jumped on the BMW bus also. After all, "We are all Bozos on this bus". Rancor was flown in a slightly scaled down version from the previous O flights to test the BMW White Trash Load in the M format. Previously Dave Bathras had a perfect flight off the Dave Bullis Tower making it a hard act to follow for the next rocket. The BMW M-2000 motor was up to the task as the 100-pound rocket soared skyward on a thick trail of white smoke. The recovery was picture perfect; I'll take them when I get them. It was good feeling to have such a successful flight as the big Cow rocket was a week away from its highly anticipated P motor flight. It is always good to be heading out for a big motor launch on a good note. This was also a test flight for the next launch of Scott McCluskey's two stage Standard Arm Rocket set for latter this fall. Scott was just this side of satisfied with the performance. Ben Miller was pushing some G's with his flights on Over Built with a J-600, and Sudden Rush with a H-400 as a warm up and a J-750 to show it who is the boss. Russ Miller flew his Snake Eyes three times. Twice on J-330's and once on a J-200. The rocket was called Snake Eyes but you needed Eagle Eyes to see it.

Dave Olson got in 5 flights with everything from a C to an H motor. Dave flew his Air Spike on an F-20, Excalibur on a

H-135, 3-Stage Comanche on a D-12 to C-6's, Initiator on a F-23 and his Mirage D on a G-80. Jerry O'Sullivan got off the bus with the rest of the Bozo's to fly two times on BMW power. Jerry explored his feminine side with a BMW K-400 Pink load and demonstrated his manliness with a K-650 Blue load. Ted Proceus took to the pads with his Orange Crush on a White I-400 and his Nike Smoke on another White J-800. Ian Rose launched his Biog daddy on a F-24 and his Tube Tied on an E-15. Jon Rose flew his Up-Roar on a H-112 and his Spikenzoid on a H-128. Allie Scrimgeour owned the pads with 867,924 C motor flights. Ok, I lied there were two E powered flights in there. Happy now? Dad Kevin Scrimgeour flew almost as many times, six to be exact with everything from F power to I power. Kevin flew his Blue Sky on an I-205, Up & Away on a G-40, Purple Haze on F-25's and F-38 power and his Stars and Stripes on a F-20. George Sechrist flew his Initiator on a F-20. Michael Senseney worked his way up the alphabet with three flights. Michael launched his Starship Invader Zims on a D-12, Tomahawk on a G-54 and his Michaels Needle on a H-180. Ross Sorci got into the act seven times with everything between a C and an H motor. Ross launched his two stage Echo Star twice on a C-6-to-C-6 combination, Black Brant on a H-128, Smaller Black Brant on a C-11, Helicat twice on a C-6's, Tartar on a H-153. All for nice flights. It doesn't matter what is powering your rocket. When they work there is nothing like bringing the fleet home intact.

Joe Sorrentino, got to see his Nike Smoke leave the pad unexpectedly thanks to yours truly and an itchy launch button finger...Opps...Sorry about that Joe, it will never happen again. At least until the next time with the next victim. Be sure to watch the entire rack your rocket is on, there is no telling when an extra switch might be energized and un-noticed. It could happen and does. Joe's Nike Smoke was powered by a F-24, which provided lots of speed for the True Modeler rocket. Joe also launched his rocket J on a G-64, as scheduled. George Tiger wore a path to the pads again with five flights. George launched his Initiator on a F-20, Big Daddy on a D-12, Tomahawk on a G-80, The Finish on an E-28 and his Bull Pup on a G-64. All for nice

flights. Norwood Truitt snuck in four flights. Norwood launched his Phobos on a G-64 and then on a G-40, Spyro Gyro on a H-120 White load. Norwood also teamed up with Ted Proceus on his Born Yesterday powered by a K-400 Orange Load that Ted has been working on and by all accounts is finished. The Motor worked great with the desired effect. Bob Utley did us all a favor and left the flying Port-A-Pot in the Truck and instead flew a real rocket, his sand Hawk. The Sand Hawk was powered by a, hold on to your hats, BMW motor. A K-800 with 10% zinc blasted the rocket to 3,772 feet on a nice column of white smoke and flame.

Fred Wallace took some well-deserved time to loft a couple of rockets in the air. Fred launched his Mag-It on an I-155 for a nice flight and his Military Justice on a J-800 for a neck cracker. Meagan Wallace got in two flights of her own with a B-6 powered flight in her Alpha and her Purple Streak on a F-25. Nelson Wallace got in set with the other Wallace's and also launched twice. Nelson looked skyward to see his Silver Bird on 2 D-12-to-D-12 two-stage flight and his Mirage D on a G-64. Ernest Walter spent the day getting two rockets in the warm blue sky. He launched his Oh-N-In-Flux on a J-270 and his Grandpa Zims UFO on an I-160. Ernest also static fired a L-330 long burn motor that looked more like a L-33, it burned so long. Dave Weber joined the groups of two by launching his Minnie Magg on an I-161 with a Buzz Light Year passenger complete with his own parachute for recovery. Dave also had the high drag coefficient flight of the day with his Kick The Bucket. This is a bucket-stabilized rocket, what's not to like about that for ingenuity? Jim and Emilio Williams were back again, inspired from the happenings with the Cub Scouts on Saturday. They launched their Alfa three times on B-6's.

The summer launches at the Sod farm are a welcome relief to having no summer launches, as has been the case in past years. We need to keep in mind that we are guests of the Warpinski's and we as a group need to make sure that each individual does his and her best to leave the property in the best shape we can. The Sod farm is a great place to launch and we hope to be thanking the Warpinski's for many years to come, with your help.

Neil McGilvray

ESL #64 Sod Farm 8/9-8/10

Once again the good fortune and the graciousness of the Warpinski's had brought the MDRA back to the Central Sod Farm for another summer launch. Typically in past years the words summer and launch rarely occupied the same sentence. With the help of all of the MDRA members we will maintain the good will of the Warpinski's and keep the words summer and launch in the same sentence for many years to come. Saturday started as it finished, finicky with regard to the weather. Dodging those 5-minute showers kept everyone on their toes moving rockets and launches systems in and out of cover. But that was not enough to stop the button from being pushed and push it we did.

Dave Bathras launched what is becoming a familiar sight in the skies above the Sod Farm. A L-950 Medieval Motor works (MMW) Sparky load blasting the 6" diameter Strong Arm into the sky on the tail of a shower of sparks and reverberating noise off the distant trees. As usual everything worked according to plan and Dave will be back again with another L-950 MMW Sparky load. This is kind of reminiscent of the way Fred Schumacher flies. Someone get me some coffee to stay awake. Bill Brown spent the day getting six rockets in the air. Bill has been upping the ante' on his Saturn V with increasingly higher-powered motors on the finely finished model. Bill flew a F-12 and a G-64 in the Saturn V and got it back both times. Bill also flew his Aerobee, Iris and Black Brant.

Rich Custer, the guy who's rockets never look like rockets had the group conspire to humiliate Jerry O'Sullivan as much as possible on Saturday. Normally Jerry does a pretty good job himself with and without rockets, so that made our job even easier. Jerry is due to be married, yes another one bites the dust, at the end of August and this launch was to partially serve as his bachelor party. A large portion of the rockets were announced with new names

like "Honey will you do the dishes?" or "Honey does this rocket make my ass look fat?" Rich went the extra mile for his good friend and in his typical comical style "dressed up" some of his rockets just to drive the point home. Rich launched his Last Party Ever, a flying Beer Bong, on a F-21. It flew as expected, not well. Rich also launched his scantily clad Bambi Blastoff, complete with G-String bikini and flowing pink Boa. The stability was questionable as it is with Jerry's ability to function after a long day of launching rockets, so they had something in common. Could this have been the truly right "girl" for Jerry? Rumors had it she was single use. Bambi was powered by a H-124 and as expected did a little dance and crashed soon after burn out. I thought that was the man's role? Rich also flew his Blinky on a F-20. Glenn Davis, not wanting to miss a good time and a chance to razz Jerry brought out his Drunk Bob, No Pants. I am not sure what Glenn was thinking but at least he was going to have fun. Drunk Bob staggered off the pad on a G-40 and should be shuffling this way again. Glenn also launched his Krypton on a F-24.

Paul Haberlein showed up with his Nike Ajax that he had some stability problems with at a previous launch. This rocket had lots of fins, lots of motor and unfortunately for Paul it ended up in lots of pieces. The rocket took off on the I-284 looking good until it took a horrendous nosedive and powered into the ground. Paul also flew his Archer with much better results on a G-104. Larry Harris was on hand with some more of the many students that he is exposing to the joys of rocketry. With Larry's help the boys got in three flights on Gnome rockets powered by 1/2A's. Larry got to have some fun for himself with his LOC IV on a H-124. Rob Bazinet combined with Todd Harrison on the scratch built Bear Claw powered with a K-375 Red motor of their making. Maggie Hier tore a hole in the sky with her Alpha 3 on an A-8. James Kelly got his Skywinder up and back safely on a C-6. Kevin Kelly Cranked off his Down and Dirty on a BMW Red Neck Red K-450 for a very nice flight. Bob Lussier motored out to the pads to launch his Hi-Tech on a G-40 for a perfectly timed apogee recovery. Bill Miller launched hi Luna I on a G-38.

Todd Moore of Sky Ripper Systems chose MDRA to perform some testing on his Hybrid Motor Systems. I am sure that Todd realizes that he came to the right place for testing new motor technology. You can read about this system at the Rocketry Online website. Todd launched his Space Hawk on a H-150 and his Sonda on a H-170. Both of the motors work well though one of the rockets did find it's way to the Northern Rocket Eating Trees and was not able to be recovered. Groom to be, Jerry O'Sullivan busted off his Nike Smoke on a BMW L-1000 White Trash Load. What better wedding gift could a man get? The motor performed flawlessly producing a thick column of smoke and the ARRD recovery system worked as planned. It's so nice when that happens. Fred Schumacher was flying Jerry's motor's little brother, or in Fred's case, little sister. Fred had the BMW K-450 White Trash Load. The flight went off as expected and all was looking good until that pesky recovery portion of the flight. Fred got the chute out and not with a second to spare. Fred builds them strong and now everyone knows why. Allie and Tyler and Dad, Kevin Scrimgeour owned the pads for a good part of the day with their eight combined flights in the C to E range.

Steve Thatcher flew his Endeavor on a J-350 for a loud and fast flight. It almost looked like Aerotech is getting close to the smoke consistency on the BMW White Trash Loads. I am sure they will figure it out but they keep working on it. George Tiger launched his Initiator on a F-23. Norwood Truitt lofted his Born Yesterday skyward on a K-250 motor. The flight was great, though there were a few problems landing in the thick mud that covered most of the field where the Sod had been recently removed. Nelson Wallace had his Cheetah back in the air on a F-20. Dave Weber launched his Minnie Magg on a H-148 for a nice apogee recovery and his Nike Smoke on a F-20. Dave also showed the crowd that all you have to do is put a rocket motor in something and it will fly. Dave flew his I killed Kenny rocket on an E-30, but only managed to kill the rocket that boosted poor Kenny. Kenny came down safely on his chute, can't say the same for the rocket. Darren Wright was on hand to static fire some Star Grain motors of his own creation. Darren fired off a J-200 Star Grain and a L-

1500 Star Grain successfully. With the amount of EX fliers in MDRA, the Star Grain configuration will be the next nut to crack. It will not be long before you see many more fliers following Darren's lead and taking that next logical step in motor making. The Star Grains should get us more bang for the buck.

Sunday's weather was absolutely gorgeous. Sunny, warm and little or no wind. The crowd started filling in early and it looked like we would be having a great day for flying. As MDRA evolved from a perceived renegade group of breakaway Tripoli members to the established leader in the future of HPR, the outside world has kept a constant eye on us. Most of the eyes wonder, "How we do it?" Some of the eyes wonder, "Why we do it?" after all there is Tripoli and NAR out there, isn't that enough. The answer is a resounding "NO!" It has taken some time and diligence by you Board of Directors to get us where we are today. It took the vision of Dave Bullis to get the ball rolling that has gained momentum and has transformed into an unstoppable force in Rocketry today. Today the MDRA has gained total unquestioning acceptance in Rocketry, to the point that we had a visitor who we can consider an ally in our move forward to cement the combining of Experimental and Commercial motors together at the same launch. In the future I believe that you will see many more clubs sponsoring MDRA like launches and eventually under the banner of Tripoli these types of launches will be just another day at the office. Bruce Kelly was that visitor and by all accounts he generally liked what he saw. That is a credit to the membership and to the BOD. I think everyone deserves a pat on the back. It is through a constant effort of each individual to remain safe in the pits as well as in the air we will be able to promote MDRA as the wave of the future. Granted we have our issues in the pits as well as the air, but I can assure you that we are on the low side of average when compared to other big launches, especially considering the high percentage of Experimental Motors we fly. Keep up the individual good work and that will reflect squarely on the club as a whole. We are only as good as the weakest link.

Bill Brown was back at it again on Sunday with his Saturn V on a F-14, Tomahawk on a F-20, Black Brant V on a G-

64 and his Iris on another G-64. Don Brown got in five flights with the F-20 and later G-35 powered Quark on Steroids, Arcas on a G-64, Ecee Thunder Glider rocket on a D-12 and Was a Warhog on a F-20. Glenn Davis also got 5 birds into the air with his Drunk Bob No Pants on a G-64. I have written this name and announced so many times that I am becoming too use to saying it and seeing it in print. Is that a problem to accept "Drunk Bob, No Pants" The vision sends a shiver up my spine, how about you? Glenn also got his Krypton with a F-24, Tomahawk on a F-12, The Jerry O'Sullivan inspired "Jerry, Honey where is the money" on a C-6. Humm! What is Glenn trying to say by using such a small motor? What could the possible subliminal and subconscious meanings be? Let's spend some time and discuss this issue. But then again, lets not. Who really cares about the size of Jerry's motor? Shirley will have to live with that, not us. Glenn finished things up with his Could-a, Would-a, Should-a on a F-24. Was that for Jerry also? Mike deBay was looking up three time for his rockets with the BMW powered I-120 White Trash Load in his Crayon rocket, BMW W.T. I-200 in his Stretch Explorer and a commercially available F-20 in his Arreux.

Randy Ejma trudged to the pads three times and flew twice. Randy blasted his Heat Rises on an I-150 and an I-200 for nice flights. Randy also had a bit of an over pressurization problem with the Amarillo Blue formula that our EX friends in Texas have made available. I think it is a conspiracy to watch things you love go boom! Randy dismantled his brothers Israeli Patriot on the pad with an I-200. Mark Eurek got in six flights in the D to G range. Mark flew his Diana on a G-80, Mirage on a G-80, two stage Lighting on a E and D combination, Screamin Mini on a E-15, Alpha 2.6 on a E-9 and his alpha 60 on a D-12. Ivan Galysh has been instrumental with the support and promotion of the CanSat launches. Basically they put a "soda can" sized satellite in the rocket and dump it out at apogee and read off the telemetry that is down linked to the ground. They measure barometric pressure, temperature and all sorts of good stuff like that. There were four different teams at the launch on Sunday and Ivan was responsible for the launch of CanSat One and Four. CanSat One was

launched in the Ezi-CanSat powered by an I-270 hybrid motor and CanSat Four was lofted skyward on an I-205 Hybrid motor in Ivan's Black Brant.

Kathy Gilliland showed her benevolent ways by sponsoring eleven flights for Jeff jr. and Andrew. Richard Hickok had a large portion of his fleet out and in the air with six flights. Richard launched his AA9 Amos on a G-64, GBU-28 on an E-18, Vigilante on a G-33, Upscale Yellow Jacket on a G-80, AA6 Acrid on a F-24 and his HARM on an E-18. All for nice flights. Kevin Kelly was paying tribute to the upcoming O'Sullivan Wedding with his "Honey, I need the car washed". However, Kevin should have named it "I forgot to attach the quick link and now I need a new rocket" Yes he did, right out of the Fred Schumacher "This is how to lighten your load for the ride home" book. The boost was performed by a BMW W.T. K-700 and it did the job getting the rocket to a very substantial altitude to allow for the total destruction of the booster. Gravity isn't just a good idea, it's the law. Bob Lussier launched his Big Brute again with a F-50 for a nice flight and recovery.

Neil McGilvray had to throw the monkey, or Cow as it were off his back after the devastating events at LDRS with the big P-Powered Cow rocket. The half scale Udder Madness was launched on a L-1800 SRB load. The powerful 54mm motor herded the smaller Cow right of the pad and into the sky. The recovery was perfect with the Holstein inspired chute and all. Time to rebuild the big one. Ben Miller was going to be part of a father and son level 3 certification day with his dad Paul, however they both found out that the M-powered flights take a little more preparation than the Level 2 and Level 1 projects. Ben did get to fly his custom scratch built, 3-fin rocket on an AMW M-1850 Green Gorilla. You could clearly see the green and you knew it was a Gorilla because it took off like a raped ape. The rocket achieved at least 6,500 feet and the recovery was perfect placing the rocket right back on the field. Congratulations Ben! Paul will be next and that means we will be seeing even more big projects at MDRA. Well, you won't see me shed a tear.

Russ Miller had his Snake eyes in the air, fast and high, twice powered by J-550's. Russ also cranked off his ½ Naked

with a K-550 for a nice flight. Kevin Mitchell stood by while his wife Barb prepped and flew her Heaven Bound on a G-40. It just goes to show that the women of HPR can give the men a run for their money, what little they let us have. Todd Moore was back to finish up his weekend of Sky Ripper Beta testing. Not only did Todd finish up with the testing but he finished up his Black Brant II rocket. Todd was attempting to fly a Hybrid Sparky J-350 load, with the help of our own Sean McAndrew. Unfortunately the sparky propellant didn't cooperate with the complex set up in the hybrid motor. This is a problem that appears to be a challenge that Todd and Sean will be up to the task on. Once again we will be seeing MDRA members breaking new ground as well as breaking a few rockets in true MDRA tradition. Todd did fly his Wahoo on a Sky Ripper I-160 for a loud, buzzing flight. Dave Olson got in five flights. Daves return home was slightly lighter than his arrival at the field and it was not because of the motors he burned, well actually it was...So I lied...obviously this is the first MDRA Launch Report you have ever read. Dave flew his Comanche as a single stage for a great flight on a D-12 then he decided to fly it in the three-stage configuration, D-12, C-6, C-6. The problem is that the booster motor has to light the second stage and the second stage has to light the third stage in order to recover the rocket the way you intend, in other words one piece. Dave had the luck if the Irish, must have something to do with Jerry O'Sullivan being present. The second stage never lit and the rocket was recovered but I don't think the newly acquired pretzel shape was what Dave was looking for. Dave also flew his Initiator on a F-20, Mirage on a G-80 and his Air Spike on a F-23. They went home intact. Speaking of the Luck of the Irish, Jerry O'Sullivan was determined to launch his Ntropy rocket with a Sean McAndrew Sparky load no matter how many times he drove back and forth to the away cell. Jerry burned enough fuel driving back and forth to the away cell to put a rocket on the moon. Despite his best efforts to forget everything imaginable you can put in a rocket, Jerry did get to launch Ntropy on a huge column of sparks, black smoke and most of all a thunderous roar of the L-500 motor. The flight was spectacular and the

motor performed flawlessly. Good work Sean and nice flight for Jerry.

Ted Proceus had two more rockets zooming skyward. Ted launched his Upper Air Disturbance on a H-15 and his Nike Smoke on a K-200 long burning White Smoke load. Ted did a nice job on both. Rob Roberts stepped back from the mixing bowl to launch some certified motors with his home brew motors, you be the judge what is what. Rob launched his Nike Ajax on 3 D-12's, Graduator on a G-200, his two stage Double Trouble on a H-164 to a F-70, Patriot on a G-40, Steve's rocket on a C-6 and his Lil'Nuke on a G-101. Karl Schuler has caught the clustering bug also with his flight of 4 D-12's powering his Standard ARM rocket for a successful flight. Karl also flew his Black Brant XII on an E-9, Mercury Red Stone on a C-6 Finster Blaster on an E-9 and his Bee Sting on a C-6. Fred Schumacher was sporting another one of those popular BMW formulas in his Overkill 4 rocket. Fred flew a K-700 W.T. load for a nice accent and even pulled the chute out before the booster was on the ground. It is amazing how much softer they land when the rocket is under chute. Bill Schworer launched CanSat Three for the group of students in his CanSat Team #3 rocket powered by an I-285. George Sechrist blasted his Minnie Magg off the pad twice on both H-112 and H-123 power. Ross Sorci was all over the map with rockets and motor selections firing off everything from a C-6 to an H-143. Ross launched his Blue Ninja on a D-12, Sidewinder on a C-6, Tartar on a H-143, Echostar on a C-6 to a C-6. The Black Brant was launched three times twice on a c-11 and D-12. The bigger Black Brant was launched on a G-80 twice, and the Echostar flew as a single stage on a C-6.

Phil Stein had the scariest flight of the launch and this severed as a wake up call. Phil launched a 7.5" Nike booster with no payload section or nose cone (*ED: it had a nosecone it just didn't look like it had one*). The rocket was powered by a L-800. The ascent was fine as the L-800 blasted the booster to at least 4,000 feet. The problem was the recovery or lack of it. (Details not provide in this edition) Each individual is responsible for making sure that you have completed all of the steps to ensure that you get a parachute out. It is a rocket and if you are not having problems with it now, you

probably just had a problem or you are going to have a problem. It is the "you are going to have a problem" aspect of flying rockets that we want to minimize. This activity is all about risk management and we have to minimize the risk. The MDRA is all about "Freedom to Fly"; we proudly put it on our Tee Shirts. This is assuming that the individual has taken all the prudent steps to ensure they deserve that "Freedom to Fly". Please prep your rockets properly, don't make the RSO make the decision for you. If they do their word is final.

George Tiger flew his Tomahawk on a G-40 and his Shadow on a F-39. Bob Utley assisted in boosting a CanSat as part of CanSat Team Two. Bob launched the Can Sat in his Sandhawk powered by a BMW K-800 W.T. The question is where did Bob come across a BMW load. It must be true that "we are all Bozo's on this bus." The rocket and motor performed as expected, to Bob anyhow. The CanSat Team Two didn't expect the altitude that the Sandhawk provided them. Bob blew the dust off Primo and flew that on another BMW W.T K-450 for a nice high flight on a trail of that now common place EX-produced white smoke. Fred Wallace busted off his 5X4 on a K-600. The flight was arrow straight and that was followed by a great recovery but there is always a gray cloud lurking in the background. Fred developed a hot spot and got his brand new Loki Research casing a little toasty. Nelson Wallace got three birds into the air. Nelson launched his Phoenix on a D-12, Phobos on a G-64 and his Aerial on an I-205.

Dave Weber had lots of motors and not so many rockets, so the solution was to cluster three G-75's in his Expediter for a loud and fast flight with a nicely timed apogee recovery. Having three ejection charges firing virtually at once helps to insure the "something" will happen. Dave launched his V-2 on an I-195. As the story goes all good things must come to an end. Those at the launch on Sunday witnessed the end of a streak that will probably never be equaled in HPR. Dave Weber's rocket called Tuber had achieved 152 perfect flights. This was flight number 153. As fate would have it, the Club that Dave is the President of, the club that promotes Experimental Motors like there is no tomorrow, witnessed no tomorrow for Tuber

at the hands of a Certified Motor. The Aerotech H-128 reload gave up the ghost half way through the flight when the forward closure let go and toasted the interior of the rocket while partially cooking the Chute as flames blew out the top of the rocket before it's inevitable meeting with mother earth. This time not adding to the record but ending it. Congratulations Dave, The Tuber was and is the Cal Ripken of rocketry and that will be a feat not easily accomplished.

Gerry Willis was to attempt his Level 1 on this day but it was not to happen due to lack of motors showing up at the site. Gerry did launch two smaller rockets, practice makes perfect. Gerry launched his W-1 on a F-25 and his W-2 on a G-80. Hopefully there will be some certified motors for the Level 1 at the next launch. Ray Wright launched his DCY on a C-6 and had two flights of his Transonic flying on J-285 and J-330 power for some nice high flights.

The weekend was a lot of things. Successful and educational. It also did serve as a wake up call for those of us running the launches. We still need your help in keeping the ship on an even keel during the course of the day. Plan on spending an hour or two helping out. Your club needs your help, especially in the areas of RSO and Pad Manager. It is a great way to meet people and put some faces with the names. It is often said by many that the reason that they like HPR is the people. By volunteering to work for a few hours at the launch you can find out why this is true. If you are not sure what to do or you are concerned that you qualified, not to worry. There are seasoned individuals that are more ready, able and willing to show you the ropes. It is a great way to meet people and give those who put in many hours during the weekends a chance to fly some rockets too. Fly high and recover low.

Neil McGilvray

Interview: Bob Lussier

What project are you working on now?

I'm trying to put a level 3 cert package together to present to the TAP Board. It's going to be "SMOKIN ROCKETS," 7.5" dia., MEGA-NUK with a 98 mm "M" motor.

What is the next project that you are considering?

After I get my level 3 cert, I would like to try using strap-on boosters to lift something big. I was thinking of a MACH III from Maximum Thrust Rocketry as a platform for such a project.

I understand that you use to get to play with the real thing when you were in the Air Force.

Yes, I was in the Strategic Air Command (SAC) and stationed with the 351st Strategic Combat Missile Wing, Whiteman AFB, Missouri as a minuteman missile technician. I trained on both the II and III models, but worked mostly on the silo based minuteman II.

Rumor has it you had an unfortunate meeting with the only tree in Missouri, what happened?

Well, I ended up against the tree but I really don't remember how that happened; I woke up in the hospital. I was on my way to the air base and went over a railroad crossing. After that I don't remember too much, but I think I somehow broke my back on the cross beam of the car roof.

You must have to plan you projects slightly different than the average Joe Rocket, how do you do it?

When I do big projects, I try and make them in a modular form so I can handle them easily from a wheelchair. Also, so I can get them to fit in my Van along with all the ground support equipment I use.

What do you do for a job now?

I work at Goddard Space Flight Center in Greenbelt, MD as a NASA/Electronics Technician. The Branch I work in builds power supplies and power distribution

systems for spacecraft and experimental payloads flown aboard the Space Shuttle.

How are you able to juggle you work and rocket related activities?

It's really nice to be able to mix your hobby along with your job, and I've been able to do rocketry as an outreach part of my work at Goddard.

What kind of time on average do you invest in rocketry?

There never seems to be enough time in a day to do everything, but I try to spend a little time on something related with rocketry each day. That's been going on for the past 36 years.

Why do you do it?

After I was injured and in the hospital, I didn't know what was going to happen to me. It was like being reborn and you have to learn how to do everything over again from a wheelchair. When things got tough, and I was feeling really bad, I'd start thinking about all the rockets I wanted to build--if and when I got out of there. It kept me sane in my new chair-bound world. There's just something about planning and building a rocket with your own hands and then watch it punch a hole in the sky.

I LOVE IT!!!

It's true, I may not be able to walk, but I sure can fly!

Are you involved in any other non-rocket related activities?

I enjoy a lot of outside activities like hunting, fishing, target shooting, and collecting antique bottles.

You were one of the original members, how have things changed over the years?

There have been a lot of changes and I think they are all good for the most part. Better insurance, reloadable motors, better electronics, being able to design, build, and fly your own motors are examples.

Some of the problems are too much politics in rocketry, over-regulations of our motors, and finding larger launch areas.

One thing that hasn't changed, and I hope never will, is the friendship and the willingness of MDRA members to help each other and newcomers with the rocket projects.

Where do you see things going?

Hopefully, we will be able to continue to enjoy rocketry for a long time. But, it's looking like there are many bumps in the road to come. And I would hope that the members of MDRA will learn and help others to learn how to negotiate the bumps to keep our hobby moving forward.

Any words of wisdom?

FLY SAFE, FLY LOUD, FLY FAST, FLY HIGH!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

Bob Utley's questions:

You have a small SUV to get rockets what is it called? Whats the top speed.

It's an all terrain wheelchair called TracAbout.

Top speed is 3.5-4mph.

How many of Neils rockets have you run over it? Neil needs the help to explain why so many of his rockets break.

When I recovered my level 2 cert flight at Higgs Farm, I actually brought back one of Neil's "runaway cows." It landed in the tree next to the one mine was in. I guess Neil was lucky I didn't have the TracAbout back then.

At the meetings I see you as the first one there and last one to leave and have the most empty beer cans around you. Are you drag racing beer with Fred Schumacher?

No, I think all those cans do belong to Fred. Getting there early is just so I can get a beer before they are all gone.

Being as your one of the original members, what dirt do you have on our new President Dave Weber??

Rumor had it that Dave Weber was related to the Weber grill manufacturers and has it made. But I happen to know Weber isn't his last name at all.

It's really "HIBACHI"!!!!!!!

Any questions we have not asked that you would like to answer at this time?

None I can think of or swear to in a court of law.



LDRS 22:

"The Udder Madness Project"
July 17th to 22nd

What started out as an absolutely "no way", "can't make it", "don't have the time" eventually turned into "lets go, this is what we do" and so began the rocket adventure of a lifetime. We were going to LDRS 22 in Argonia, Kansas. For me this would be my first LDRS and for Jerry O'Sullivan this would be his second. However for both of us it was our first major opportunity to fly what were suppose to be some of the premier flights of the event.

Months before the event was to take place fellow rocketeers and ace motors maker Darren Wright of Ozark Propulsion Labs and Jeff Taylor of Loki Research approached both Jerry and myself about teaming up and putting some big projects in the air. Jeff was now full time producing the finest casings on the market and Darren had made quantum leaps characterizing and casting propellant for big motors that have found their way into some of the biggest joint projects on the East Coast. Early on the timing just wasn't right. Too busy with work, family, the long ride, the floods, the locusts, volcanic eruptions. We had a million

excuses. Then as the event got closer we threw in the towel and submitted to the mandatory 10 count as we were out of excuses and were committed to attend the pinnacle of all rocket launches in the country, lets face it the world. Jerry was going to fly a massive two-stage project called Ntropy powered by a 14,000ns N-3000 motor made by Darren Wright and staging to a 6000ns M-2000 made by Bob Utley of Bozo Motor Works fame. The assembled project stood over 16 feet tall. The Nike Smoke Style Booster was 7.5" in diameter and the sustainer was 5.3" in diameter. I was going to fly "The Cow". My 19.5' tall, 12" diameter, 400 pound rocket painted with Holstein Cow motif in a P-12,000 motor. It promised to be quite an event for both Jerry and myself. My project was being flown under the banner of the "Udder Madness" Project.

As the departure date approached the name of the project "Udder Madness" truly began to take shape. Darren Wright, Jeff Taylor and Justine Gleiter were going to drive out to Kansas. Darren spent the approaching departure days mixing propellant for the big projects, pricing and buying a trailer to transport the all the rockets, support equipment, Loki Research Inventory (to be displayed and sold at LDRS). It was a busy time indeed. The trailer was painted with "Cow Spots"; the back door sported the message "Got Thrust" and was ready to roll on Tuesday 7-15-03. All was right with the world, or so we thought. Jerry and I were going to fly out to Kansas and meet the rest of the team there.

We arrived at the launch site on Friday afternoon to witness the biggest launch that we had ever seen. Flying out of our relatively small sites in Maryland and Delaware made the open expanses of Kansas seem endless. This was truly a rocketeer's paradise, a seemingly endless expanse of fields. Then we got out of the car. Good Gravy!!! Could it be any hotter? Temperatures averaged in the 100-degree plus range and when the famous Kansas wind blew in, it got even hotter. It was an experience to finally meet many of the "names" face to face that many of us have only heard or read about. Friday was spent just taking in the scene and adjusting to the heat. As our flights were not scheduled until Monday, Experimental Day, we had plenty

of time. We also had to register with Tripoli and check in with the Discovery Channel. Both of our flights were going to be covered as Special Projects on the Rocket Challenge show that the Discovery Channel was producing. This should be a huge boost to Tripoli and rocketry in general and it couldn't come a better time.

Saturday and Sunday were spent full time prepping both our projects and watching the continuous launching of everything from 1/2A flights to the Mega Clustered Monster Projects on the "88" Pads. While both of our projects were completely different in their scope and approach they did retain a common element, the complexity of a big project. "The Cow" was going to be the heaviest rocket at 400 pounds to be launched at LDRS 22 and it was going to fly on the most powerful motor, 55,000 total ns P-12,000. The "Udder Madness" Project was originally going to be the test bed for an even larger project currently under construction by the Maryland Delaware Rocketry Association, (MDRA). The Liberty Project is going to be a world record attempt at launching a 24' tall, 24" diameter, 1,300 pound rocket powered by a central P motor with two outboard O motors. The prep work went along slowly, but steadily until the propellant creator Darren Wright discovered the unthinkable.

Just prior to final motor assembly, Darren was inspecting the grains for the 6" diameter P motor when he noticed inconsistency with the propellant composition inside one of the motor cores. (The mandrel for the cores was 54mm motor casings manufactured by a well-known commercial producer of red anodized casings.) This permitted Darren to get a good look inside the core of the motor. As he inspected the propellant he realized that one of the grains that didn't make the grade during the initial mix and packing had stowed away, leaving behind the good grain in Delaware. This precipitated a rush of brainstorming, "what to do?" As fate would have it, one of the door prizes from the banquet the night before was a collection of materials and chemicals to make Experimental Motors out of. As fate would further have it, Jeff Taylor had sold a 6" casting tube and liner set the day before. As fate would even further have it, Pat "G" Gordzelik, of "The Aurora Project Fame" just happen to have a

10-quart mixer that the team brought up from Texas. As fate would continue to even have it, Terry, "The Perfesser", McCreary happen to have some more of the much needed chemicals to pull it off. "Quick", we have to find these guys and see if they would be willing to help pull this off. Find them we did and the "Udder Madness Project" was staying true to its name. What were we thinking? It was decided then, we would make a new grain on site and continue with the launch of the P motor with one day to spare. How could it have happened any other way? Tripoli members are famous for pulling together to help a fellow member get his rocket into the air. Why didn't this group stay home? There were many other people involved that came and went who's names escape me but they know who they are and despite all, thank you.

At this point Darren had his work cut out for himself. Some of the Kansas Tripoli members sent Darren over to a small shop in Argonia and he began the mixing process. While all the elements of the original formulation were not going to be included in the replacement grain, the confidence level was still high. Darren and Eric Hall work for the better part of Sunday afternoon mixing and packing the 12 pound grain. I continued with the preparation of the rocket. At 400 pounds you certainly want to double and triple check everything, twice. The rocket had two hundred feet of webbing between the booster and payload section. There were four altimeters for recovery. Two Altacc 2-C's, Transolve P-2 and a Missile Works WRC2. The main portion of the rocket was to be recovered on a 28' military chute and the nose cone section was to be recovered on a XXL Sky Angle chute. The nose cone section was also to house the Eric Hall, Ozark Aerospace, developed ARTS unit that had GPS and real time telemetry down link capability. Included in the nose cone was two video cameras, one was Darren Wright's looking straight out the side of the rocket. The other was the Discovery Channels that was set up with a "Lip Stick Camera" looking down the at the fins of the rocket. The views should be outstanding, as the rocket lifted to its *predicted* 8,500-foot altitude in the clear Kansas sky. Later that evening it was declared that the grain would pass muster and would be included in the P

motor as the bottom grain. The thought was that if there was excessive erosion then it would not impact the other grains or clog the nozzle. I knew that was a possibility of the propellant getting somewhat energetic and/or ignorant but the motor casing had been hydrostatically tested to 1,500 PSI and could probably take much more. After the trip out there and quality of the people on the team there was no way that we were not going to put the "Cow" on the pad.

After almost another full day of final prep, the time had come and all the launch criteria had been met. There was daylight. The next trick was to find a way to transport the heifer out to the pads. Once again the goodness of the people associated with rocketry came through, this time it was the landowner, Rick, who volunteered his low bed trailer. It never fails to amaze me how people that you have never met before are so willing, at the drop of a hat, to lend a hand. It is that type of comradely that is the true glue that holds this hobby together. When the time came to move out to the Way Away Cell, once again there where people literally from all over the country that lent a hand. There was Kimberly Harms from Washington State, John Lyngdal from Oregon, Kelly Mercer from North Carolina, Brian Wheeler from Texas, Darren Wright from Delaware, Jeff Taylor from Connecticut, Keith Holt from Maryland, Jerry O'Sullivan from Virginia, Justin Gleiter from Pennsylvania, Eric Hall from Florida. Then there was Paul Norsaman from Texas with his hydraulic tower that worked like a champ. It lifted the 400-pound airframe like it was not even there. Every club should have two of these.

Once out at the pad the motor was wrestled into the booster. The casing has expanded slightly due to the heat and it took a slight bit of persuasion to get it into the business end of the rocket. With that done the booster and the payload section was loaded onto the rail. The cameras and the ARTS system were powered up and the nose cone was the last thing to install. Paul's tower raised the rocket effortlessly and we were ready for arming of the electronics and igniter installation. It was getting close you could just feel it. A ten-foot tall stepladder was required to arm the electronics. You know you have a big rocket when you're at the top of a ten-foot

stepladder and there is another half of the rocket towering above you. I still can't understand where all my helpers went as I began to arm the electronics? What could go wrong? Everything powered up normally and then the igniters were inserted into the 58" long 6" diameter P motor. Finally the time had come to launch a P-12,000 motor at LDRS. The wind speed was low, the sky was clear; you could cut the anticipation with a knife.

The support crew and camera crews retreated to a safe distance from the pad and all eyes were on the "Cow" pointing skyward on the tower, electronics were beeping confidently, waiting for the button to be pushed. What could possibly go wrong? Everything had been triple checked. We were soon to witness one of the main truisms of rocketry as said best by Milt Rosen Viking Program Director of the Whites Sands Missile Test Range. "Rockets are just another name for trouble. Either you just had trouble, you are having trouble or you are going to have trouble." At T-minus 0 we unknowingly were stepping into the realm of "going to have trouble" As the button was pushed you could see the smoke from the igniter begin to appear at the nozzle of the motor. This was quickly followed by the first licks of flame poking their head out for a look. They must not have liked what they saw. The motor began to roar to life and the first blast of thrust from the powerful motor kicked the rich Kansas soil 20 feet into the air, as the rocket slowly began to move up the tower. Within the next split second all hell broke loose with a resounding thud, followed by an eerie silence then the hissing of free burning propellant and the painful thuds of the heavier pieces of the rocket falling back to the ground. The motor had over pressurized and CATO'ed! The 60 pounds of flaming propellant was now back at atmospheric pressure and was making a quick exit from the motor casing. There was a huge cloud of Kansas topsoil being kicked up from the pressure release and the Cow was quickly being turned into Ground Beef. Fins were seen distinctly flying off in four different directions, the parachute / payload section was thrust straight up the tower as in a normal launch, without the bottom half of the rocket. The ARTS system that was still functioning was recording as the nose cone

was sent 275 feet into the air on a ballistic trajectory. The 28' military main parachute, (never used), caught its share of the hot gases being released from the motor and was now a useless rag. The XXL sky angle chute that was to bring the 45-pound nose cone section back was in the same condition. Both flailed helplessly as the air borne sections dropped painfully back to the ground. About half of the propellant remained lit and burned where it lay in the dirt field. The other half was extinguished as a result of the extreme pressure drop that was experienced from the peak of over pressurization to the low of atmospheric pressure.

There are many that might look at the photos or watch the video and say that the Cow exploded. There could be nothing further from the truth. APCP does not explode; it burns, as everyone knows. The casing over pressurized much the way a balloon will over pressurizes if you were to put too much air into it. In this case the "balloon" was made of aluminum and the "air" was the rapidly expanding gases produced from burning propellant. The resulting release of flaming propellant at high pressure was nonetheless dramatic. The motor casings are designed to take the stresses of extreme pressure and heat but everything has its limits and the Loki Research 55,000ns P casing was shown its limit and then some. Something has got to give and it will.

The first thought that ran through my head was "hmmm, this is not a good thing" (or something to that affect) to "I wonder what can be salvaged". As it turned out there was little to salvage. The motor was split open from top to bottom like a gutted mackerel. Strangely enough it was still in the booster. As a testament to Jeff Taylor's skill and quality of motor fabricating the nozzle retention was still in place. Of course the graphite nozzle was in about a million pieces but that was to be expected. The front of the booster was just gone the remaining three sides were blackened and charred from the heat. All the flight electronics were totally destroyed. The forward closure of the motor had hit the bottom bulk plate and crushed $\frac{3}{4}$ Baltic Birch through the coupler shearing off 14 of 18 stainless steel screws and badly twisting the remaining four. The ARTS system was destroyed along with Darren

Wright's video camera and the Discovery Channels video camera.

After surveying the scene and making sure everything was safe all the bits and pieces were gathered up included the extinguished propellant. This was put into a rather large pile and ceremonially burned at the pad. As everyone knows the propellant we use doesn't explode it burns and creates pressure from the gas that is released. Hence burning the remnants was the safe and prudent thing to do.

Wow! What a day, what a week, what a month. All that work for this? While the actual flight, if you could call 12 inches a flight, was a total *Cowtastrophe* that is only a small portion of what rocketry is all about. Sure we come to fly, sure we come to succeed but we do it with the knowledge that failure is just a push of a button away. The journey is the important part and the friendships you make along the way. The planning, the construction, the testing, the anticipation of great things is what drives us on to create and attempt to fly these monster projects. The same hold true for any rocket that any Rocketeer puts on the pad, we want it to work. But when it doesn't do we throw in the towel? Hell no! We pick up the pieces and start again. We continue to attempt to control the un-controllable. Once that button is pushed the rest is out of our hands, literally. It all comes down to planning and risk management. When they work they are cool and when they don't work they are "really cool". Unfortunately for the Udder Madness Project this was a "Really Cool" attempt. What really happened may never be known for sure. One thing is for certain; we know it was a motor failure. Needless to say it has provided for some lively conversation and debate and that is part what this hobby is all about, learning and recovering from failure. To expect every motor and every rocket to perform flawlessly is unrealistic. You just hope it happens to the other guy. You live; you learn and put another rocket on the pad. How else are you going to have a tale to tell? How else are you going to show your friends the blurry photos and monkey cam video of something you are so passionate about they will never understand? If you are afraid of trashing your rocket, don't put it on the pad.

Is this the end? Hell no! The Cow will be back and we will do it again. There is

something about watching a 19.5 foot tall, 12" diameter, 400-pound Cow Rocket being launched skyward on a tail of smoke and flame that only P motor can provide. Of all the comments that I heard over the course of the week at LDRS the one that will stay with me forever was when what appeared to be a couple of "locals" walked by our base camp and looked at all the pre-flight portions of the Cow laid out for display. Both "gentlemen" looked at the rocket, looked at each other, looked back at the rocket again. Then one guy says to the other, "A Cow Rocket, man. It ain't right" What better compliment could you have?

As result of the issues with the Cow, Jerry O'Sullivan never got to fly his two stage rocket Ntropy on the first day of EX as planned. A combination of having the wind taken out of his sails with the results of the P-motor and the winds Tuesday significantly increased over the light winds on Monday. (A front had come through the site on Monday night and totally trashed every Pop Up Tent and anything else that was not tied down with 70 MPH winds). Jerry did fly the 42-pound sustainer section of the Ntropy project. The motor was a Bob Utley, Bozo Motor Works M-2000. The rocket screamed through the windy, yet clear, Kansas sky to an apogee of just over 8,000 feet. The recovery was right on the money. It was not what Jerry had planned, however flying half a project and returning home with it sure beats the alternative. I told him I would trade results, he declined the offer.

Many thanks to all of those that helped with the project. Those mentioned and those not mentioned, you know who you are. Rest up those muscles because we will be doing it again. It is not a matter of "if" but when.

Neil McGilvray



CanSat Summer Camp

Westfield High School, Chantilly, VA

During the week of August 4 to 8, the first Federation of Galaxy Explorers CanSat summer camp was held at Westfield High School. Eight students joined the camp and learned about satellites. The summer camp taught what satellites do and how they are built and launched. For hands on work, the students had to take a CanSat kit and develop software to read the pressure and temperature sensors, process the data, and transmit the data as telemetry. The students learned how the processor works. They learned how to use the C language to develop the software. After wards they tested their CanSats in vacuum chambers and made sure their radio links operated.



CanSat

The CanSat is a "satellite" that fits in a soda can. The students use the kit that includes a processor, pressure sensor, temperature sensor, and a radio transmitter. The CanSat teaches the students the basics of satellite design. It incorporates most of the components of a satellite including a power supply, computer, sensors, communications, and the satellite structure. The concept of the CanSat came from Professor Bob Twiggs of Stanford University.

On Sunday, August 10, the students went to the sod farm for the CanSat launch. Bob Utley, Bill Schworer, and Ivan Galysh provided the rockets to launch a total of four CanSats. The students were Brian Pratt, Daniel Schwartts, Ryan Ho, Justin Zampedro, Lisa Anderson, Charles Daly, Sahel Farhangi, and Peter Nguyn.

The first launch was on Ivan Galysh's Black Brant on a J270 Hypertek hybrid motor. Team one was Justin and Charles. The flight only reached 1300 feet. There was a small leak in the nitrous plumbing which may have caused the lower altitude.

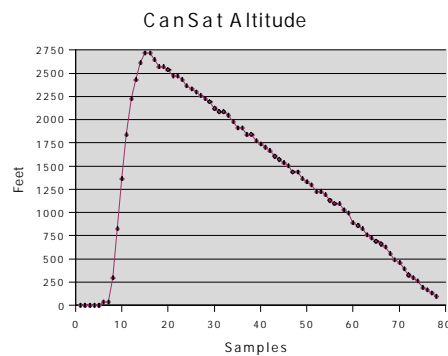
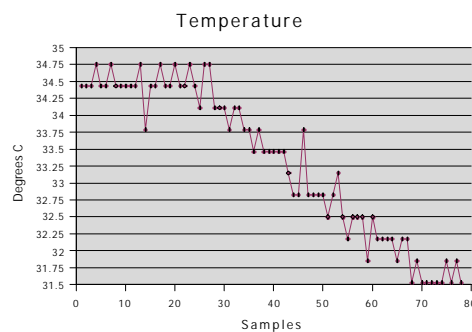
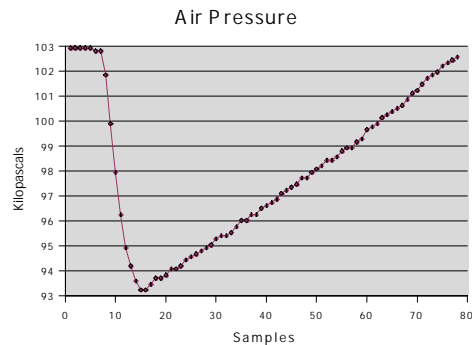


Summer Camp Students

Team four consisted of Lisa and Peter. They flew on a stretched Loc/Precision EZI-65 rocket using a Hypertek I205 hybrid motor. The flight went well. The problems started at apogee when the parachute was ejected. The CanSat deployed properly but the rocket parachute tangled and never fully deployed. The rocket crashed to the ground damaging the booster section. The CanSat developed radio problems and the telemetry was lost.

Team two flew on Bob Utley's rocket. He had a K450 motor and expected an altitude of about 3000 feet. Bob's rocket was configured for dual deployment. With a little hesitation, the CanSat was placed into the center area with the drogue chute. It wasn't known what would happen to the CanSat when it was ejected. The rocket launched and the CanSat was deployed at apogee. The telemetry came in strong and a lot of data was collected. The rocket recovered intact and the CanSat was recovered. This flight was the highest of all

the CanSats with an altitude of 2700 feet. When Brian and Sahel returned with the CanSat, the can was crunched up. This was most likely due to the CanSat being pushed against the booster section by the drogue chute. A possible solution is to install a three-inch diameter coupler and bulkhead for the CanSat to rest in and let the coupler take the abuse.



The last flight was team three and Bill Schworer. Bill put together a PML Endeavor and used an I285 Pro-38 motor with motor ejection. After spending some time finding the correct motor case, team three with Daniel and Ryan, had their CanSat launched to about 2200 feet. They received all their telemetry and recovered their CanSat intact.

The ground station for collecting the telemetry consisted of a radio with a built in terminal node controller which decoded the telemetry, a hand held antenna, and a laptop computer. One student held the antenna and pointed it in the direction of the CanSat. Another student sat in front of the laptop computer and verified that the telemetry was being received. If the telemetry stopped, the student told the other with the antenna to adjust the position and orientation of the antenna.



Team 1

Team 2

Back to school the next day, the students were given their data for analysis. The students processed the data to get the altitude profile of their CanSat. The plots shown were from team two. The first plot shows the air pressure, the second plot shows the temperature, and the third plot shows the altitude. The temperature data shows that there is a significant response time for the sensor.



Team 3

Everyone enjoyed the day at the field. Some of the parents attended and enjoyed watching all the rockets fly. David

Jagels, the assistance principal of Aeronautics at Westfield High School was very impressed with the CanSat launches and all the other rocket launches. He and Ivan will be developing a larger rocketry program for the Fairfax County public schools. With the support of the MDRA, more students will be exposed to rocketry and possibly become new club members.



Team 4

The Board of the Federation of Galaxy Explorers, Westfield High School, and the students of the CanSat Summer Camp thank the MDRA for allowing the summer camp to participate at the rocket launch. A big thank you goes to the land owner for such a great field. It was a perfect field and a great day for the CanSat launch.

Ivan Galysh

PERFORMANCE HOBBY

<http://www.performancehobbies.com>

News

Flash

Everybody!

Aerotech's having a price increase on all the Econojets, plus First Fire, Jr. and First FireIgniters.

Here's the current prices and what my prices will be. These higher prices will become effective October 20th.

F21-4/6/8W Econojet (2-pk) \$25.95, my price \$23.35.

F20-4/7W Econojet (2-pk) \$26.95, my price \$24.25.

F23-4/7FJ Econojet (2-pk) \$26.95, my price \$24.25.

G35-4/7W Econojet (2-pk) \$29.95, my price \$26.95.

G38-4/7FJ Econojet (2-pk) \$29.95, my price \$26.95.

First Fires-H and up and First Fire Jr. F & G only are currently \$5.95 for 3. As of October 20th, they'll be \$9.95 for 3. At these prices, I won't bother to order and stock them. You can however take advantage of the current price of \$15.00 for ten of the Firefly igniters, which I have plenty of and they'll work for 18mm thru 38/360 single use and reloadable motors.

Take advantage of the current pricing of F21W's, F20W's and G35W's that I have in stock. There are no F23-FJ's and G38-FJ's available at this time.

Also don't forget that I stock "plenty" of Firefly, as well as Daveyfire igniters.

See you at a launch soon!

Ken

Phone (202) 723-8257, fax (202) 723-0010.



MDRA "Freedom" t-shirt for the Liberty Project.

NEXT ISSUES:

- More words from Neil.
- Launch report of Sept & Oct.
- Events for Nov & Dec.
- Review on Missile Works WWRC.



MDRA newly designed hat in two styles of hats.

Keep The Pointy End
up and the Fiery
End down.
D. Bullis

<http://www.mdrocketry.org/>

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Ground Station with everyone trying to track the CanSat

Log July 12 -13 , 2003 ESL #63

Flyer		Manufacturer	Model	Motors	Result
Benjamin	Jim	Estes	Viking	B6	
Brown	Bill	Estes	Bull Pup	C6/C6	
Brown	Bill	Estes	Saturn V	D12	
Brown	Bill	Estes	Bull Pup	C6/C6	
Brown	William	Estes	Bull Pup	C6/C6	
Brown	William	Estes	Bull Pup	C6/C6	
Brown	William	Estes	Saturn V	D12	
Custer	Rich	Scratch	The Bulldog	G40/F21/F21/F21/F21	
Custer	Rich	Scratch	New Detroit	F20	
Davis	Glenn	Scratch	"Drunk Bob, No Paints"	H100	
Davis	Glenn	Scratch	Ready Betty	D24	
Davis	Glenn	Aerotech	Warthog	F20	
Davis	Glenn	Launch Pad	Harpoon	E28	
Davis	Glenn	Scratch	Crack the Sky	F52	
Ejma	Randy	Scratch	Stinger	I200	Tiger Tail
Ejma	Randy	Estes	?	E9	
Ejma	Randy	Scratch	Stinger	H200	red
Ejma	Randy	Aerotech	Little John	G64	
Galysh	Ivan	PML	Black Brant	J270	
Gilliand	Kathy	Scratch	Lemmon Twist	K450	BMW Pink
Gilliand	Kathy	Smokin Rockets	Rossi	J650	BMW blue
Harris	Larry	Estes	Path Finder	E9	
Harris	Larry	Aerotech	Forta	G35	
Harris	Larry	Scratch	Pringleslight	E9	
Harris/White	Larry/Jason	Estes	Gold Strike	B6	
Harris/White	Larry/Jason	Estes	Polaris	B6	
Hier	Tom	PML	Amraam 4	J450	
Jim	Austin	Estes	Viking	B6	
Jim	Desra	Quest	Novia	A6	
Jim	Desra	Quest	Novia	B6	
Jim	Emilio	Estes	Alpha	B6	
Jim	Emilio	Estes	Alfa	B6	
Jim	Emilio	Estes	Alfa	B6	
Jim	Loren	Estes	Viking	B6	
Jim	Rick	Estes	Alfa	B6	
Jim	Rick	Estes	Alpha	B6	
Jonathan	Jim	Estes	Viking	B6	
Kelly	James	Estes	Blue Lighting	F23	
Kelly	James	Estes	Skywinder	C6/C6	
Kelly	Kevin	Scratch	M&M	K800	BMW 3921 10%
Kuehrmann	Bill	Estes	V2	D12	
Kuehrmann	Bill	PML	Explorer	F50	
Kuehrmann	Bill	PML	Explorer	G40/F21/F21/F21/F21	
Kuehrmann	Bill	Scratch	Student	A8	
Kuehrmann	Phil	Estes	Big Daddy	D12	
Merkley	Bart	Binder	Sentinel	J330	
Miller	Ben	PML	Callistro	I400	
Miller	Ben	Scratch	Iannmed	H450	
Miller	Ben	PML	Callistro	H400	
O'Sullivan	Jerry	Scratch	High 5	J360	BMW RNR
Roberts	Rob	LOC	Graduator	G45	
Roberts	Rob	LOC	Loc 4	H62	
Roberts	Rob	Scratch	Double Trouble	H190/F70	
Solano	Diego	Aerotech	Initiator	G35	
Tiger	George	Aerotech	Initiator	F20	
Tiger	George	Aerotech	Tomahawk	G40/F21/F21/F21/F21	
Tiger	George	Scratch	Bull Pup	G64	
Utley	Bob	Scratch	Sandhawk	K800	BMW 3264 8%
Utley	Bob	Newton 3rd	Port-a-john	F25	
Utley	Bob	Newton 3rd	Port-a-john	F25	
Wallace	Nelson	Estes	Navaho	C6/C6	
Wallace	Nelson	Aerotech	Cheetah	F20	
Weber	David	LOC	Warlock	K450	BMW Pink
Weber	David	Weber Eng.	Tuber	H128	Flight # 152
Whitley	Jason	Scratch	Hulk	D21	
Whitley	Jason	Estes	Green Hornet	D21	
Williams	Jim	Quest	Renegade	C6/C6	
Williams	Jim	Estes	Viking	B6	

Flyer		Manufacturer	Model	Motors	Result
Williams/Ben	Jim	Estes	Viking	B6	
Williams/Cesare	Jim/Austin	Estes	Alfa	B6	
Williams/Cesare	Jim/Austin	Estes	Alfa	B6	
Williams/John	Jim	Estes	Viking	B6	
Williams/Joshua	Jim	Estes	Tubro Copter	B6	
Williams/Rich	Jim/Cameron	Quest	Sonic Boom	B6	
Williams/Rich	Jim/Cameron	Estes	Alfa	B6	
Williams/Rich	Jim/Cameron	Quest	Sonic Boom	B6	
Williams/Rich	Jim/Cameron	Quest	Sonic Boom	A6	
Willis	Gerry	Scratch	W1	H128	
13-Jul					
Bathras	David	Scratch	Black Brant II	M1850	*Cert 3* Yea....
Bathras	David	Scratch	Strong Arm	L950	Dark Side Sparky
Brown	Bill	Quest	Aerobee	C6	
Brown	Bill	Estes	Saturn V	D12	
Camele	Rob	PML	X-Caubur	H128	
Camele	Rob	PML	Our Lady of the Sky	J357	
Cox	Chris	Scratch	Big Bertha	C6	
Cox	Jim	MSH	V2	G75	
Cox	Jim	Estes	Silver Comet	G64	
Cox	Jim	PML	Callisto	H200	
Davis	Glenn	Scratch	Ready Betty	D24	
Davis	Glenn	Launch Pad	Krypton	F39	
Davis	Glenn	Scratch	"Drunk Bob, No Paints"	G64	
Davis	Glenn	Scratch	Crack the Sky	F50	
Davis	Glenn	Aerotech	Warthog	F62	
Davis	Glenn	Launch Pad	Krypton	F39	
deBay	Mike	Scratch	?	H150	BMW Pink??
deBay	Mike	PML	Stretch Explorer	I250	BMW Pink ?
deBay	Mike	Scratch	Crayon	H200	BMW
deBay	Mike	PML	Stretch Explorer	I300	BMW
Ejma	Randy	Scratch	Stinger	I400	
Ejma	Randy	Scratch	Buh—Bye	D3	long D motor
Ejma	Randy	Estes	Blue Ninja	E9	
Ejma	Randy	Scratch	Stinger	I250	
Ejma	Randy	LOC	Harv II	J600	
Ejma	Randy	Rocket R&D	Phoenix	H200	
Gramick	John	LOC	Onyn	F20	
Gramick	John	Aerotech	Bull Pup	F20	
Gramick	John	Aerotech	Strong Arm	F25	
Gramick	John	NCR	Eliminator	G38	
Guess	Mitch	LOC	V2	H143	
Guess	Mitch	Scratch	Rohini Rh75	I205	
Guess	Mitch	LOC	LOC4	G64	
Hickok	Richard	Scratch	Upscaled Yellow Jacket	G75	
Hickok	Richard	Scratch	Bender	D12	
Hickok	Richard	Scratch	Harpoon	E18	
Hickok	Richard	Scratch	Hawk Motor Test Vec	C6	
Hickok	Richard	Scratch	Blue Meanie	D12/D12	
Kelly	James	Estes	Mission to Mars	D12	
Kelly	James	Estes	Skywinder	C6	
Kelly	James	Estes	Skywinder	C6	
Kelly	Kevin	Scratch	M&M	K800	BMW 8% 3561
Kelly	Kevin	Scratch	M&M	K450	BMW Pink
McGilvray	Neil	Scratch	Rancor	M2000	BMW WT
Miller	Ben	Scratch	Over Built	J600	
Miller	Ben	PML	Sudden Rush	H400	
Miller	Ben	PML	Sudden Rush	J750	
Miller	Russ	Scratch	Snake Eyes	J330	
Miller	Russ	Scratch	Snake Eyes	J330	
Miller	Russell	Scratch	Snake Eyes	J200	
Olson	Dave	Aerotech	Airspike	F20	
Olson	Dave	PML	Xcalibur	H135	
Olson	David	Estes	Comanche	D12/C6/C6	
Olson	David	Aerotech	Initiator	F23	
Olson	David	Aerotech	Mirage-D	G80	
O'Sullivan	Jerry	Scratch	High 5	J650	BMW Blue
O'Sullivan	Jerry	Scratch	High 5	K400	BMW Pink
Proseus	Ted	Scratch	Orange Crush	I400	wl

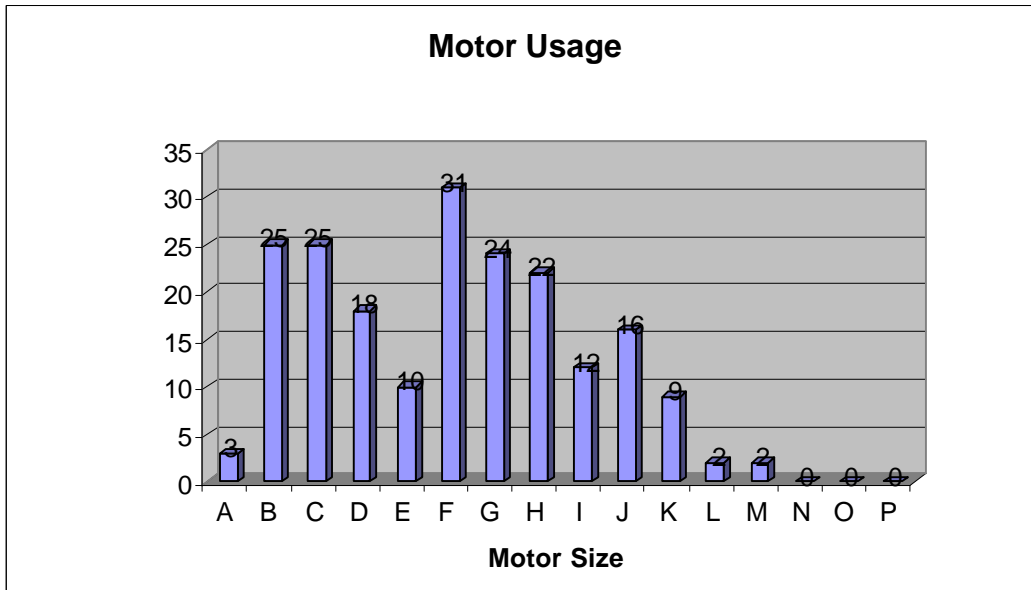
Flyer		Manufacturer	Model	Motors	Result
Proseus	Ted	Scratch	Nike Smoke	J800	wl
Rose	Ian	Estes	Big Daddy	F24	
Rose	Ian	Scratch	Tube-Tied	E15	
Rose	Jon	Scratch	Up-Roar	H112	
Rose	Jon	Scratch	Spikenzoid	H128	
Scrimgeour	Allie	Estes	Blue Stripe	C6	
Scrimgeour	Allie	Estes	Sparkel	C6	
Scrimgeour	Allie	Estes	Blackwidow	C6	
Scrimgeour	Allie	Estes	Blue Stripe	C6	
Scrimgeour	Allie	Estes	Sparkel	C6	
Scrimgeour	Allie	Estes	?	D12	
Scrimgeour	Allie	Estes	Blackwidow	C6	
Scrimgeour	Allie	Estes	Sparkel	C6	
Scrimgeour	Allie	Estes	Red Glare	E30	
Scrimgeour	Allie	Estes	??	E15	
Scrimgeour	Kevin	PML	Blue Sky	I205	
Scrimgeour	Kevin	Scratch	Up & Away	G40	
Scrimgeour	Kevin	V.B.	Purple Haze	F25	
Scrimgeour	Kevin	V.B.	Purple Haze	F25	
Scrimgeour	Kevin	Aerotech	Star N Stripes	F20	
Scrimgeour	Kevin	V.B.	Purple Haze	F38	
Sechrist	George	Aerotech	Initiator	F20	
Sensenev	Michael	Scratch	Star Ship Invader Zims	D12	
Sensenev	Michael	Aerotech	IQSY Tomahawk	G54	
Sensenev	Michael	Scratch	Michael's Needle	H180	
Sorci	Ross	Estes	Echostar	C6/C6	
Sorci	Ross	PML	Black Brant	H128	
Sorci	Ross	Estes	Black Brant	C11	
Sorci	Ross	Estes	Helicat	C6	
Sorci	Ross	Scratch	Tartar	H153	
Sorci	Ross	Estes	Echostar	C6/C6	
Sorci	Ross	Estes	Helicat	C6	
Sorrentino	Joe	True Modeler	Nike Smoke	F24	
Sorrentino	Joe	Scratch	Rocket J.	G64	
Tiger	George	Aerotech	Initiator	F20	
Tiger	George	Estes	Big Daddy	D12	
Tiger	George	Aerotech	Tomahawk	G80	
Tiger	George	Scratch	The Finish	E28	
Tiger	George	Scratch	Bull Pup	G64	
Truitt	Norwood	PML	Phobos	G64	
Truitt	Norwood	Scratch	Spyro Gyro	H120	wl
Truitt/Proseus	Norwood/Ted	Scratch	Born Yesterday	K400	Orange
Turitt	Norwood	PML	Phobos	G40	
Utle	Bob	Scratch	Sandhawk	K800	BMW 10% 3772
Wallace	Fred	Scratch	Mag-II	I155	
Wallace	Fred	Scratch	Military Justice	J800	
Wallace	Meagan	Aerotech	Purple Streak	F25	
Wallace	Meagan/Cindi	Estes	Alpha	B6	
Wallace	Nelson	Estes	Silver Bird	D12/D12	
Wallace	Nelson	Aerotech	Mirage-D	G64	
Walter	Ernest	Scratch	Oh-No-In-Flux	J270	
Walter	Ernest	Scratch	Grampa Zims UFO	I160	
Walter	Ernest	Scratch	Static Burn	L330	long burn...
Weber	David	LOC	Minnie Magg	I161	Buzz Lightyear
Weber	David	Weber Eng.	Kick the Bucket	G35	
Williams	Jim/Emilio	Estes	Alfa	B6	
Williams	Jim/Emilio	Estes	Alfa	B6	
Williams	Jim/Ricky	Estes	Alfa	B6	

A	3	7.5
B	25	125
C	25	250
D	18	360
E	10	400
F	31	2480
G	24	3840
H	22	7040
I	12	7680
J	16	20480
K	9	23040
L	2	10240
M	2	20480
N	0	0
O	0	0
P	0	0

199 TOTAL MOTORS 96422.5 NEWTON/SECONDS

Alien	0
Atlantic	0
Aerotech	20
Apogee	0
Binder	1
BSD	0
Centuri	0
Cluster R	0
Custom Rockets	0
Dynacom	0
Edmonds	0
Estes	61
Giant Leap	0
Hawk Mountain	0
High Flight Tech	0
Hobby Lab	0
Impulse Aero	0
JD Cluster	0
LOC	8
Launch Pad	3
Missile Works	0
MSH	1
NCR	1
Newton 3rd	2
Neubauer	0
PML	18
Pratt Hobbies	0
Public Enemy	0
Quest	7
Rocketman	0
Rocket R&D	1
Rocket Teck	0
Rogue Aero	0
Rocket Vision	0
TCB	0
Thoy	0
True Modeler	1
Scratch	64
Shrox	0
Smokin Rockets	1
V.B.	3
Unknown	0
US Rockets	0
Vertical Concepts	0
Weber Eng.	2
Yo-Yo Dyne	0

194 TOTAL ROCKETS



CanSat Students with the MDRA Board (BOD Dave Bullis not pictured)

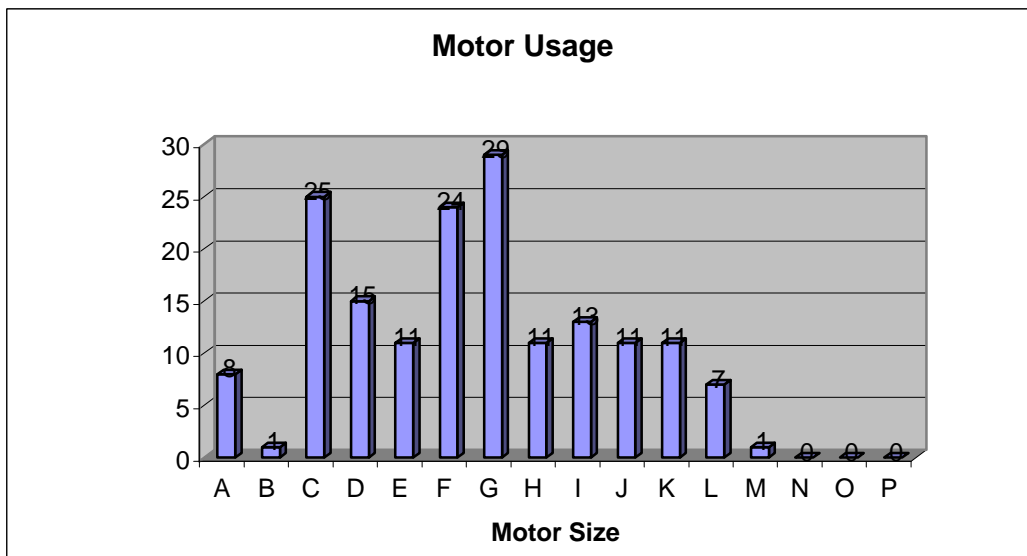
Log August 9-10 , 2003 ESL #64

Flyer		Manufacturer	Model	Motors	Result
Bathras	David	Scratch	Strong Arm	L950	MMW Sparky
Brown	Bill	Estes	Saturn V	F12	
Brown	Bill	Quest	AeroBee	C6	
Brown	Bill	PML	Black Brant 5	G64	
Brown	Bill	Estes	Saturn V	G64	
Brown	Bill	LOC	Iris	G64	
Brown	Bill	Quest	AeroBee	C6	
Custer	Rich	Scratch	Last Party Ever	F21	
Custer	Rich	Scratch	Blinky	F20	
Custer	Rich	Scratch	Bambii Blastoff	H124	
Davis	Glenn	Scratch	Drunk Bob-No Pants	G40	
Davis	Glenn	Scratch	Kyrton	F24	
Haberlein	Paul	Scratch	Nike Ajax	I284	
Haberlein	Paul	NCR	Archer	G104	
Harris	Larry	Estes	Gnome	A10	
Harris	Larry	Estes	Gnome	A10	
Harris	Larry	Estes	Gnome	A10	
Harris	Larry	LOC	LOC4	H124	
Harrison/Bazinet	Todd/Rob	Scratch	Bear Claw	K375	Red
Hier	Maggy	Estes	Alpha 3	A8	
Kelly	James	Estes	Skywinder	C6	
Kelly	Kevin	Scratch	Down & Dirty	K450	BMW RNR
Lussier	Bob	LOC	Hi-Tech	G40	
Miller	Bill	Scratch	Luna I	G38	
Moore	Todd	Scratch	Space Hawk	H150	Hybird
Moore	Todd	Scratch	Sonda	J170	Hybird
O'Sullivan	Jerry	Scratch	Nike Smoke	L1000	BMW WL
Schumacher	Fred	Yo-Yo	Overkill 4	K450	BMW WL
Scrimgeur	Allie	Estes	Sparkel	C6	
Scrimgeur	Allie	Estes	Black Widow	C6	
Scrimgeur	Allie	Scratch	ColorZ	D12	
Scrimgeur	Allie	Estes	Black Widow	C6	
Scrimgeur	Kevin	V.B.	Big Red	E25	
Scrimgeur	Tyler	Scratch	"Red, White & Blue"	C6	
Scrimgeur	Tyler	Scratch	ColorZ	D12	
Scrimgeur	Kevin	Scratch	"Red, White & Blue"	C6	
Thatcher	Steve	PML	Endeavor	J350	
Tiger	George	Aerotech	Initiator	F23	
Truitt	Norwood	Scratch	Born Yesterday	K250	
Wallace	Nelson	Aerotech	Chetah	F20	
Weber	David	Weber Eng.	I Killed Kenny	E30	
Weber	David	LOC	Minnie Magg	H148	
Weber	David	Cosmo	Nike Smoke	F20	
Wright	Darren	Scratch	static test	L1500	3500 star
Wright	Darren	Scratch	static test	J200	800 star
10-Aug					
Bazinet	Rob	Scratch	Mass Exodus	J330	
Bazinet	Rob	Scratch	Bear Claw	J400	sparkly
Bazinet	Rob	Scratch	Mass Exodus	J450	sparkly
Brown	Bill	LOC	Iris	F39	
Brown	Bill	Estes	Saturn V	F14	
Brown	Bill	Aerotech	IQSY Tomahawk	F20	
Brown	Bill	PML	Black Brant 5	G64	
Brown	Bill	LOC	Iris	G64	
Brown	Don	Scratch	Quark on Steroids	F20	
Brown	Don	Aerotech	Arcas	G64	
Brown	Don	Edmonds	Ecee Thunder	D12	
Brown	Don	Aerotech	Was a Warthog	F20	
Brown	Don	Scratch	Quark on Steroids	G35	
Davis	Glenn	Scratch	Drunk Bob-No Pants	G64	
Davis	Glenn	Launch Pad	Kyrpton	F24	
Davis	Glenn	Aerotech	Tomahawk	F12	
Davis	Glenn	Scratch	Oh Jerry where's the money	C6	
Davis	Glenn	PML	Could-ah Should-ah	F24	
deBay	Mike	Scratch	Crayon Rocket	I120	BMW WT
deBay	Mike	PML	Stretch Explorer	I200	BMW WT
deBay	Mike	Aerotech	Aerreaux	F20	
Ejma	Randy	Scratch	Heat Rises	I200	

Flyer		Manufacturer	Model	Motors	Result
Ejma	Randy	Scratch	Heat Riser	I150	
Ejma	Randy	PML	Patriot	I200	Amarillo Blue
Eurek	Mark	Scratch	Diana	G80	
Eurek	Mark	Aerotech	Mirage	G80	
Eurek	Mark	Scratch	Lightnin	"D12,E9"	
Eurek	Mark	Estes	Screamin Mini	E15	
Eurek	Mark	Scratch	Alpha 2.6	E9	
Eurek	Mark	Scratch	Alpha 60	D12	
Galysh	Ivan	LOC	Ezi Cansat	I205	Cansat #4
Galysh	Ivan	PML	Black Brant	I270	Cansat #1
Gilliand/Andrew		Estes	Big Daddy	D12	
Gilliand/Andrew		Scratch	Raser	C6	
Gilliand/Andrew		Scratch	Venture	B6	
Gilliand/Andrew		Estes	USA Speedy	C6	
Gilliand/Andrew		Quest	The Rugrat	C6	
Gilliand/Potter	Kathy/Jeffey	Scratch	V2	E9	
Gilliand/Potter	Kathy/Jeffey	Estes	UFO	C6	
Gilliand/Potter	Kathy/Jeffey	Estes	Sizzler	A10	
Gilliand/Potter	Kathy/Jeffey	Estes	Sizzler	A3	
Gilliand/Potter	Kathy/Jeffey	Estes	Blitz	A3	
Gilliand/Potter	Kathy/Jeffey	Estes	UFO	C6	
Hickok	Richard	Scratch	AA9 Amos	G64	
Hickok	Richard	Scratch	GBU-28	E18	
Hickok	Richard	Scratch	Vigilante	G33	
Hickok	Richard	Scratch	Yellow Jacket Upscale	G80	
Hickok	Richard	Scratch	AA6 Acrid	F24	
Hickok	Richard	Scratch	Harm	E18	
Kelly	Kevin	Scratch	Honey I need the car wash	K700	BMW WT
Lussier	Bob	NCR	Big Brute	F50	
McGilvray	Neil	Scratch	Udder Madness	L1800	SRB
Miller	Ben	Scratch	????	M1850	
Miller	Russ	Scratch	Snake Eyes	J550	
Miller	Russ	Scratch	Snake Eyes	J550	
Miller	Russ	Scratch	1/2 Naked	K550	
Mitchell	Kevin	LOC	Barb's Heaven Bound	G40	
Moore	Todd	Rocketman	Wahoo	I160	
Moore	Todd	Scratch	Black Brant II	J350	Sean Sparkly
Olson	Dave	Aerotech	Initiator	F20	
Olson	Dave	Estes	Comanche	D12	
Olson	Dave	Estes	Comanche	"D12,C6,C6"	
Olson	Dave	Aerotech	Mirage	G80	
Olson	Dave	Aerotech	Air Space	F23	
O'Sullivan	Jerry	Scratch	Ntropy	L1500	Sean Sparkly
Proseus	Ted	Scratch	Nike Smoke	K200	White
Proseus	Ted	Scratch	Upper Air Disturbance	H15	
Roberts	Rob	Launch Pad	Nike Ajax	"D12,D12,D12"	
Roberts	Rob	LOC	Graduator	G200	
Roberts	Rob	LOC	Double Trouble	"H164,F70"	
Roberts	Rob	NCR	Patriot	G40	
Roberts	Rob	Estes	Steves Rocket	C6	
Roberts	Rob	LOC	Lil Nuke	G101	
Schuler	Karl	Launch Pad	Standard Rim 67A	"D12,D12,D12,D12"	
Schuler	Karl	Scratch	Black Brant XII	E9	
Schuler	Karl	Estes	Stone Mercury Red	C6	
Schuler	Scott	Scratch	Finster Blast	E9	
Schuler	Scott	Scratch	Bee Sting	C6	
Schumacher	Fred	Yo-Yo	Overkill 4	K700	BMW WT
Schworer	Bill	PML	Cansat Team 3	I285	Cansat #3
Sechrist	George	LOC	Minnie Magg	H112	
Sechrist	George	LOC	Minnie Magg	H123	
Sorci	Ross	Estes	Blue Ninja	D12	
Sorci	Ross	Estes	Sidewinder	C6	
Sorci	Ross	Scratch	Tartar	H143	
Sorci	Ross	Estes	Echostar	"C6,C6"	
Sorci	Ross	Estes	Black Brant 5	C11	
Sorci	Ross	PML	Black Brant 5	G80	
Sorci	Ross	PML	Black Brant 5	D12	
Sorci	Ross	Estes	Echostar	C6	
Sorci	Ross	PML	Black Brant	G80	

Flyer		Manufacturer	Model	Motors	Result
Stein	Philip	Scratch	Nike Booster	L800	
Tiger	George	Estes	Shadow	F39	
Tiger	George	Aerotech	Tomahawk	G40	
Utley	Bob	Scratch	Primo	K450	BMW WT
Utley	Bob	Scratch	Sandhawk	K450	BMW WT Cansat#2
Wallace	Fred	Scratch	5 by 4	K600	WL
Wallace	Nelson	Estes	Phenix	D12	
Wallace	Nelson	LOC	Phobos	G64	
Wallace	Nelson	Aerotech	Ariel	I205	
Weber	David	Loc	Expediter	"G75,G75,G75"	
Weber	David	Weber Eng.	Tuber	H128	"Flight #153, cato..."
Weber	David	LOC	V2	I195	
Willis	Gerry	Scratch	W2	G80	
Willis	Gerry	Scratch	W1	F25	
Wright	Ray	Quest	DC Y	C6	
Wright	Ray	Hawk Mountain	Transonic II	J285	
Wright	Ray	Hawk Mountain	Transonic II	J330	
Wright	Ray	Launch Pad	Aim 120	"D12,D12"	
Wright	Ray	Quest	DC Y	C6	

A	8	20
B	1	5
C	25	250
D	15	300
E	11	440
F	24	1920
G	29	4640
H	11	3520
I	13	8320
J	11	14080
K	11	28160
L	7	35840
M	1	10240
N	0	0
O	0	0
P	0	0
167	TOTAL MOTORS	107735 NEWTON/SECONDS



Alien	0
Atlantic	0
Aerotech	13
Apogee	0
Binder	0
BSD	0
Centuri	0
Cluster R	0
Custom Rockets	0
Cosmo Drome Rocketry	1
Dynacom	0
Edmonds	1
Estes	30
Giant Leap	0
Hawk Mountain	2
High Flight Tech	0
Hobby Lab	0
Impulse Aero	0
JD Cluster	0
LOC	16
Launch Pad	4
Missile Works	0
MSH	0
NCR	3
Newton 3rd	0
Neubauer	0
PML	11
Pratt Hobbies	0
Public Enemy	0
Quest	5
Rocketman	1
Rocket R&D	0
Rocket Teck	0
Rogue Aero	0
Rocket Vision	0
TCB	0
Thoy	0
True Modeler	0
Scratch	63
Shrox	0
Smokin Rockets	0
V.B.	1
Unknown	0
US Rockets	0
Vertical Concepts	0
Weber Eng.	2
Yo-Yo Dyne	2

155 TOTAL ROCKETS



©J.Kelly 2003
The competition for air space.

October 2003

Rocket Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																										
			1	2	3	4 MDRA Sod Farm Launch																																																																																																										
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12 Whitakers WELD	13 Columbus Day (Observed)	14	15	16	17 MDRA DARE II Launch Rhodesdale	18 MDRA DARE II Launch Rhodesdale																																																																																																										
19 MDRA DARE II Launch Rhodesdale	20	21	22	23	24	25 Whitaker Launch																																																																																																										
26 Daylight Savings-- set back 1 hour Whitaker Launch	27	28	29	30	31 Halloween																																																																																																											

Space Facts:

Ham and Enos were the names of the chimpanzees that American flew in space during Mercury spacecraft test.

Last Page Funny



Jerry O'Sullivan accepting Glenn Davis Wedding rocket hat. Wear it with pride Jerry.

No one is exempt from this page, we are starting at the top and working our way to the bottom of the barrel.