



# M.D.R.A. Report

Volume 6, Number 1



Cover: Bob Utley's Level 3 rocket. Photo by Jill Weber.

## Editor's Corner:

*email: robertu@erols.com*

*Editor Bob Utley*

### Homeland Security and You. Part 2

In the past couple of days you have receive many emails about faxing out letters to your Senator.

This came about from Mr. Wickman, CP Technology. You should remember seeing his ads about building motors using PVC pipe. Mr. Wickman as been taken a different route then TRA/NAR, to help correct the problems the ATF and Homeland Security has imposed on the rocket community.

He contacted Senator Enzi who is now co sponsorship in legislation a bill that would provide a general exemption of rocketry from the Safe Explosives Act, which is part of the Homeland Security Act.

The point of all the emails is that if you want to be able to fly again, you need to fax, call, or write you Senator. It's going to take some time before we see if this exemption will happen, but now is the time.

For a complete list of Senators by state with address and phone numbers, go to [www.space-rockets.com/congress.html](http://www.space-rockets.com/congress.html). This site is also packed with other very useful information about the exemption and what to include in your letter.

MDRA has setup a Special page off the main page with a draft letter and link to Mr. Wickman page to help our members support this drive.

TRA and NAR support this action. This is not the be all end all of what needs to be done, but it is a start and anything we can do should be done.

Now for something different. You should be seeing ballots for BOD coming out in the next couple of weeks. Please take the time to vote and return them.

See you at the field.

## Extreme "Tube-Fin" Rockets

I've always enjoyed building unusual rockets. "Three fins and a nose cone" were a great way to learn, but I needed something different to hold my interest.

Some quick biographical information to start ...I am David Weber, 48 years old, live in Mount Airy, Maryland and I started flying model rockets in 1966. None of this "born again rocketry" for me, I have flown rockets consistently for 36 years. I am fortunate that my high school sweetheart became my wife and rocket photographer and has supported my rocketry activities literally for decades. I am a founding member of Maryland Tripoli Prefecture #68 and of the Maryland - Delaware Rocketry Association (a great bunch of guys and girls).

My first rocket was an Estes Skyhook kit and by the time I had reached high school I had a large fleet of "kit" rockets by Estes and Centuri. In high school geometry class I learned a principal that six circles will fit perfectly around one circle of the same diameter, and here is where the "story" really begins. I decided to scratch build a rocket with sections of body tubes for fins. I started with BT-20 and it worked! I then moved up to BT-50 and BT-60 models that were a total of 24 inches long and they too were also successful.

Fast forward through two decades of model rocketry and a desire to fly "bigger." I perfected clustering Estes "D" motors in rockets that were six feet tall constructed of BT-101. In 1993 I was introduced to High Power Rocketry at the BATTLEPARK launch in Culpeper, Virginia. I was amazed at the SIZE of everything. Thanks to a very helpful and patient Ross, of Magnum fame, I left the launch with two LOC kits (Onyx and Norad), "F" and "G" motors, two pieces of four inch diameter airframe and a four inch nose cone. After building/flying the two kits, and getting used to "high power" (compared to my prior experience, "F" and "G" was high power) I constructed a four inch diameter tube fin rocket that is three and a half feet tall. I went to a local park with my neighbor who told me that it would never work. It flew great on a G80 motor, and my neighbor challenged me to fly it five times to prove

that the first flight was not a fluke...by the end of the day TUBER (as I had been calling the rocket) was five for five.



**TUBER ascending on an H97**

At BATTLEPARK '94 I "confirmed," as it was called back then, and then flew TUBER several times. Fellow rocketeers were also doubtful about TUBER's airworthiness and I told them that it had flown many times. It was at that point I started keeping track of the number of flights. I "certified" Level 2 at a later BATTLEPARK and by then Maryland Tripoli had it's own field for launches. TUBER continued to be my most frequently flown rocket, both at club launches and on weekends at the local park. I was satisfied flying up to "L" power until fall 2001 when I decided to scratch build my Level 3 certification rocket. By this time TUBER had successfully flown 136 times! Therefore, it was a "no-brainer" on what to build for my Level 3 project...SUPER-TUBER!!!

I decided to use Hawk Mountain fiberglass airframe for SUPER-TUBER. Through the fall I finished the design and received my TAP member approvals from Fred Wallace and Ed Miller (thanks again guys!).

Attachment of the tube fins to the airframe was a critical consideration. On prior model rockets, the tubes were simply surface glued. On the four inch TUBER I created epoxy rivets in addition to the surface epoxy. Each tube fin on SUPER-TUBER has three screw attachments in the motor tube centering rings and they are bolted to each other. Also, a high strength

epoxy specially formulated for the fiberglass was used.

SUPER-TUBER statistics are as follows: six inch diameter airframe, 13.5 feet tall, 52 lbs. dry weight, two Rocketman R-14 parachutes, and three Adept ALTS altimeters. I successfully certified to Level 3 on April 20, 2002, with SUPER-TUBER powered by an M1939. This occurred at our launch site, Tommy Higgs' farm in Price, Maryland. SUPER-TUBER climbed on an awesome nine foot flame to an altitude of 7,480 feet AGL. At that point TUBER had flown 139 times.



**SUPER-TUBER in final prep**

The pictures show: TUBER ascending on an H97, SUPER-TUBER in final prep, arming altimeters, ready to go and T +2 seconds. I have been told that TUBER has flown on more highpower flights (68 - H motors) than any other single highpower rocket and that SUPER -TUBER is the tallest tube fin rocket and the only one of it's type to be used as a level 3 certification rocket.

If any of my fellow rocketeers are fans of tube fin rockets, I would like to hear from

you. My e-mail address is [DSWROCKET2@aol.com](mailto:DSWROCKET2@aol.com).

I have enjoyed building and flying tube fin rockets over the past three decades, along with many other out of the ordinary designs. Don't be limited to 3 FNC, let your imagination run wild!

*David Weber*

## ESL #57 Price, MD 01/18-19/03

If there were any doubts as to who were the dedicated or the just plain crazy rocketeers in the MDRA, all someone had to do was to join us on this weekend. To say it was cold would be an understatement. With the temperature hovering around 17degrees Fahrenheit on Saturday and about 7 degrees Fahrenheit on Sunday with the wind chill you would think we were at a dance class instead of a rocket launch. To witness our "over" grown members hopping around to keep warm was a sight to behold. It's a good thing that American Idol restricts its competition to singing. I am sure that Simon would tear us a new "one" due to our pathetic lack of coordination and rhythm. I suppose that is why we launch rockets instead performing in dance competitions. The good new was that Saturdays winds were very light and the skies were clear and that made up for the frigid cold. With the small number present it was interesting to see how many members came from out of state to fly on this cold weekend from as far away as Massachusetts.

Ivan Barnsley launched four rockets. Ivan put up his 1/35<sup>th</sup> scale Jupiter on a D-12, 3X Midget on an E-9, Whistler on a G-69 and his Couch Potato on a H-128. All for good flights despite some issues with small igniter leads and cold hands. Dave Bathras launched his largest rocket to date. It was a 6" diameter up-scale of an Estes Strong-Arm. It had a nice military paint scheme and a nice power plant to match. Dave flew the Strong-Arm on a motor of his making that he thought was a L-900 but it looked more like a 1500 to me. But what do I know? I just make up stories about peoples flights for the

newsletter. A great boost and recovery was working up to the point where the parachute was supposed to deploy. The 17' military main chute did deploy but never fully inflated. This is not an unusual occurrence with the surplus military chutes. I have seen this more that once lately. It appears that the rocket is moving too fast for the chute to catch enough air and it looks like a streamer. Once the booster lands and there is less weight and speed on the main it inflates. Tip of the day is to use a slightly larger drogue than normal to slow the decent to a reasonable opening speed. Dave's rocket looked like it survived and we look forward to seeing it fly again.

Rob Bazinet was down from Connecticut to launch two rockets. Rob took to the air with his Magnum on a L-850 for a ripping flight and his Mass Exodus on a L-500, White Lightning clone. Both flights flew and recovered well. Doug Cameron was down from New York City to loose some more of his inventory. Doug flew his No Name on a F-52 and his PML Parts on a F-52 and finally lost it to the Rocket Gods on a G-80. Small rockets, big motors and high flights usually spell MIA. We will keep an eye out for the rocket, as they seem to have a way of turning up months later. Doug will be glad that he carbon fiber glassed this bird if he ever gets it back. Tom Heir flew his two stage Quantum Leap with less than optimal results. The rocket was powered by a J-450 staging to an I-170. The motor part work fine, it was the timing of it all that was the problem. The sustainer lit well after motor burn out on the booster when the rocket was beginning a long arc. This caused the sustainer to fly away at an undesirable trajectory. Apogee deployment tore the rocket apart and the booster never fired the main with motor ejection. All in all, a really cool flight. Tom will be back to do this one right. Tom and Noah also flew their Recon on a B-6 with the help of Dave Bathras.

Kevin Kelly had a nice high flight with his rocket called the Weasel on an F-50. Neil McGilvray made it to the pads twice with the same rocket called Comfortably Numb and never got it of the ground. The first attempt was scrubbed due to a bad apogee charge igniter. The second attempt ended in spectacular fire when the forward closure decided to pop out for an



undetermined reason. This resulted in a 25 second free burn of Big Boy Pants Blue out of the top of the booster section. The things you see when you don't have a marshmallow. The good news is that the rocket won the closest to the pad competition for the day. John Ritz was down from the City of the Presidents, Quincy Massachusetts, to fly two of his rockets. John flew his Mod Temptation on a J-700 yellow flame motor for a nice flight. He also flew his 6-Pak, not in stomach, for another high flight on a J-600.

Fred Schumacher flew his Over Kill 4 rocket on K-450 White Lightning clone K-450. The rocket performed well and was actually recovered in tact. The motor was a fast burn and left a nice white smoke trail. And so will continue the quest to find the secret behind the thick white smoke. Bill Schwore flew his rocket called Forget It on a G-33. This rocket has flown on this combination many times, but this time I bet Bill wishes that he did Forget It. The motor never came up to full pressure as it "lifted" the rocket off the pad but it didn't go much further as it met its end with the frozen tundra that we were launching from. Jeff Taylor was also down from his new home in Connecticut to fly some rockets. Jeff flew his Boston Terrier for two flights. The first flight was on a J motor of Jeff's creation for a powerful, straight flight and the second was on a J-400 with the same predictable fine results. I am surprised the rocket even made it through Kathy Gilliland's Color Coordination RSO. It just shows how cold it really was.

Bob Utley static fired three tests of his attempts at recreating a White Lightning clone. The tests were performed in the 1440ns 54 mm casing and all worked great. The true test will be in the business end of a rocket. We know they work as Fred Schumacher even flew one successfully. Bob's main purpose for freezing his butt off was to fly for his Level Three Certification. Bob has had his fingerprints on just about every Level Three flight that has taken place at Higgs Farm, so it was time for some of the people that he had helped in the past put their fingerprints on Bob's rocket. There is no doubt in my mind that there was method to the madness with the day Bob selected for his attempt. Since it was so damn cold there would be no fingerprints on his rocket

because no one dared to leave their gloves off for any length of time. Not that it would have mattered. Bob called his rocket Bada-Bing Bada-Boom, to celebrate his rich "Italian" heritage. I never figured Bob for an Italian. I always thought of Bob being orphaned on a doorstep and Utley was just a collection of letters thrown together to make his name. Either that or Bob has watched one too many episodes of the Soprano's. An AMW M-1850 Green Gorilla in the 6,000 ns casing powered the rocket. One thing Paul Robinson of AMW has done right is get the Green down pat. The rocket lifted off with a fluorescent green flame providing a powerful 10G boost on the 40-pound rocket. The maximum altitude was about 6,200 feet. The recovery was right on cue for a nice "soft" landing on the frozen ground. Congratulations to Bob and his effort. It has been a long time coming.

Dave Weber launched 4 four rockets on this cold day. Dave flew his Little Joe on a G-80 for a nice scale flight. Dave also flew his Mini Magg on an I-112 and flew the venerable Tuber for flight 142. The world record continues with the Cal Ripkin of rockets. Dave's fourth flight and his last of the day was on a LOC Hi-Tek powered by an I-134. The rocket was sent on a nice high flight, but maybe a little too high. Like Doug Cameron, Dave's rocket is currently MIA. Ray Wright got in three flights. Ray warmed up with his AIM-120 powered with two D12's for the first flight and then two E-30's for the second flight. This in preparation of his second attempt at Level Two. Level Two always seems to be the tough one. Everybody fears the test and then aces that part. The flight is where most flyers think they have it licked and they always get bit. It the first time testing your lower power construction and recovery techniques on a much higher powered motor. The second attempt was the charm for Ray. The Quantum Leap tore off the pad powered by a J-400. The recovery was right on the money and Ray is now on step closer to that Level Three attempt, (no pressure Ray).

Sunday was a much colder day as the wind decided to make an appearance at about 16 MPH from the Northwest. This always a pleasant wind direction as it means a storm has just passed or one is coming. But some of the faithful were there to launch and we were going to push the button.

Victoria Ash launched her Zoomer on a C-6 for a nice flight. Rob Basinet static fired a J-400 White lightning clone. Aaron Blizzard, his name was appropriate for the weather we were having maybe he brought it, flew his Sergeant on aH-143 for a nice flight. The wind did drag the rocket some and broke off a fin as a result. We should see this rocket fly again though.

Mike deBay flew his Stretch Explorer on a H-120 Blue motor for a great flight and even a close recovery considering the wind. John Fenwick was on hand to fly three times for a school project he was working on. We were unable to determine the exact purpose, however he put up his Big Bertha on a D-24, Super Big B on an E-9 and his Trek on an F-24. The wind took advantage of a couple of the flights but they were returned pretty much intact. Sean McAndrew flew his Spool Rocket on a H-120 low smoke motor for a fast fun flight. The Spool was recovered in tact with no chute, no fuss no muss. Sean also combined with Ted Proceus to fly his Pyramid rocket, again with no recovery means, on an I-300 for another fun flight. Ted Proceus static fired a couple of motors he was working on. Ted fired an I-200 and F-50.

John Ritz was going to make his trip down from Massachusetts worth his while and launched his 6-Pak into the cold and windy sky. John powered the rocket with a J-700. The rocket whipped off the rod and sent it on a sub nominal trajectory. This actually worked to his benefit as it put the rocket right back in the pad area. Jeff Taylor static fired on of his Star Grain creations. It was a L-2000 that was fired in a 3" 6,000 ns casing that is normally reserved for M's. It worked great and seemed to have lots of power to spare. Next time we'll have to see it in a rocket. Ray Wright tempted fate and won as he flew his AIM-120 on two E-30's.

The day was so cold and windy we decided to wrap things up earlier and let the football fans among us get home to watch the Buc's beat the Eagles and the Raiders beat the Titans for what should prove to an interesting Super Bowl. We will launch all winter as usual so remember to dress for the occasion no matter what the weather report says. It will always be colder that you think it will be. Dress in layers and get as much prepping as you can do at home. Cold fingers and little screws don't mix. Once

again we have to thank Tommy Higgs for letting us do what we do. Until next time fly high and recover low.

*Neil McGilvray*

## Interview: Dave Weber

*Ed: This is a new feature I thought it might give us a look into other members minds. We will not be asking the same question in each interview. Weber was the guinea pig, because I owed him.*

Questions by Neil McGilvray

### **Q:What are you working on now?**

**A:** I am currently adding an ADEPT electronic stage/timer to the altimeter bay in my Skyraide with the intent of air-starting two 38mm motors after 54mm motor burnout. I have several rockets in waiting for construction....Thoy NightHawk (a 7 motor cluster)...a Public Enemy Honest John (to replace the one that got soaked at Tommy's after I lost it for a month)...and a scratch built upscale of the old Estes Trident done in Hawk Mountain fiberglass.

### **Q:What is the next project that you are considering?**

**A:** OOPS- see above.

### **Q:What do you do for a job?**

**A:** I am 1/3 owner of a Civil Engineering and Land Surveying company....57 employees at this time.

### **Q:How are you able to juggle you work and rocket related activities?**

**A:** Well it ain't easy. I work 11 to 12 hours a day Monday thru Friday, so most of my rocketry is done on the weekends.

### **Q:What kind of time on average do you invest in rocketry?**

**A:** I manage about 8 to 10 hours over a weekend on my personal stuff. During the week immediately prior to a launch it is another hour on MDRA launch forms and the week after a launch another 2 hours on MDRA accounting and updating paperwork.

The occasional MDRA Board of Directors meeting is another 4 hours a month of yelling and drinking....oops, better not include that.

**Q: Why do you do it?**

**A:** Rocketry activities keep me sane. As most of you know, life is full of demands and if you don't make time for something purely for yourself, you will fold. There are many parts of rocketry that I enjoy....regular construction, designing something that looks pretty weird or taking an everyday object and converting it into something that flies, the smoke/noise, recently starting to make my own motor reloads, the elation of a successful flight and teaching kids (small and big) how to do it. It is a rush to do "right". But I think my favorite part is the camaraderie of a bunch of guys and girls that share the same love of doing this wonderful thing we call High Power Rocketry.

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

**A:** When the kids were younger I used to coach sports teams and I also practiced Karate. My second favorite activity is "paintball" and I also have a few firearms that I shoot recreationally.

**Q: Tell us about why you stay involved in the operations end of the Club. It seems like you have been here forever.**

**A:** There is something that I learned a long time ago called the "90/10 rule".....90% of the work is done by 10% of the people participating in the fun. I was a founding member of Maryland Tripoli in 1993 and after "our" first launch there were 4 of us left to clean up and put away the equipment. I was pretty pissed off at first and at that time I made a decision that I did not want any of my rocket buddies thinking the thoughts about me that I was thinking about the many that just packed up their stuff and left. I'm not sure if this is going to upset people and I don't really care. I guess that most people feel that if they just pay their launch fee they don't have to help with set-up, take-down or the actual running of the launch (RSO, LCO, Pad Management). Over the years I have mellowed somewhat and I no longer get pissed off about just a few of us doing the majority of the work. It has actually created

a pretty tight-knit group of friends and I enjoy that!!!

**Q: How have things changed over the years?**

**A:** Omigosh, that is an easy one....more POWER!!!!!!(and size does matter) Back in '93 it was a major event when somebody flew a "K" motor. The majority of flights were "D" thru "G" impulse and maybe 20% were actually "High Power". Now it is common to see multiple "M" class flights at our launches. Also, there is more sophistication in construction techniques and more people using electronics.

**Q: Where do you see things going?**

**A:** As I have recently done, I think that more people are going to get involved in making their own motor reloads. It is not only less expensive, it adds another challenge and dimension to what we do. I almost want to talk about "regulation" of our hobby but I think I'll leave that alone. I hope that the MDRA membership grows, as Treasurer I have contact with every member at one time or another. There is a "core" membership that renew every year and about an equal number that "come and go". Depending on where the regulation issue goes, that will certainly change.

**Q: Any regrets?**

**A:** I look back to the past not to lament, but to remember the good times and not repeat the mistakes. I don't regret any of the mistakes because I view them as learning experiences.

**Q: Any words of wisdom?**

**A:** We do this because it's **COOL**.....so have fun and get involved!!!!

Questions by Bob Utley

**Q: Being Treasure of MDRA, how much money have you skimmed off the top?**

**A:** You should know, we split it 50/50.

**Q: You went to Huntsville, Space Camp, what where the cheerleaders outfits like?**

**A:** Strangely enough they resembled EVA suits and LCVG's.

**Q: You never seen a Shuttle launch how is that possible?**

**A:** Actually, I have attended 4 shuttle launches...one was viewed from the Engine test stand at a distance of only 4-1/2 miles. I also have the good fortune to have a brother in Winter Park, FL and I was able to see 1 Gemini and 2 Apollo launches.

**Q: You always have a smile on your face and a hand out to shake, what drugs do you take to cause this problem ?**

**A:** It must be the Altace that I take for my High Blood Pressure, it is supposed to mellow me out.

**Q: You told me once that you get your ideas for rockets from your dreams, what do you eat before you go to bed to cause these dreams?**

**A:** Mostly Captain Crunch cereal, but the occasional Sushi or hot pepper laden sub sandwiches might be at the root of the issue.

*Neil McGilvray & Bob Utley*

## Keep It Stupid, Simple

The things we do to try to build a better mousetrap, or a rocket in our case. You look back at some of the disasters you created and just shake you head in disbelief. Think about some of the modifications to existing systems or inventions you came up because you had a better way. Or more importantly you were going to save some money by recreating the wheel. Think of the money you didn't save. Fear not, you are not alone. I too have strayed down the path of saving a buck. I too have exclaimed, "They don't know what they are talking about, I'll show them". In the famous last words of the Red Neck who dies a righteous death, "watch this". I too have blazed trails where no man dare tread. But I have always found the strength to drag my sorry ass back to the next launch.

What I have I done that might border on stupid or even scream its name? I keep thinking that I have done it all, and then wham! It hit's you. Here's something that no one has taken credit for yet. When I first got into rocketry I knew very little about

this hobby. But I did know one thing. I knew early on that High Power Rocketry was Cool. With that little bit of knowledge I was off to the races. Nothing was going to stop me. I wasn't going to let those pesky formulas and calculations get in my way I was going to launch rockets. History has shown that instead of running through the fire, you don't get burned as bad when you walk around it. Moral of the story, take the time to figure it out. Your project is cheap and intact when it is still a piece of paper.

Ask lots of questions or at least look over lots of shoulders to see what the other guys and gals are doing. This is particularly important in the beginning stages of HPR. Stay within you comfort level. Check out how the kits are built, how people are applying different techniques to their project. But understand that what works for one guy might not work for you. As you move up to bigger projects it will become real apparent what works and what doesn't. The construction and flying techniques that work are the ones that get the rocket back again and again. Take Dave Weber's "Tuber" for instance. This rocket has flown successfully over 145 times. That is not by mistake, it is by design and flying technique. Dave has spent his time in the barrel trashing his beloved rockets but he gets it right with "Tuber" every time. The construction and flying techniques that don't work are self-explanatory. They come home in a bag or worse.

Some things that I have done to insure that the rocket came home in a bag are the following. Too small of an ejection charge. This will ensure that chute never fully comes out and makes for a great core sample. Too big of a charge. In a non-fiber glassed rocket this will ensure that you blow your payload section to pieces and toast the chute. There is nothing worse than seeing a melted ball of nylon trying to slow a rockets decent to it's final destiny and impact with the ground. Improperly pack the chute. Once you are successful in getting the chute out, wouldn't it be nice if it would open? While there are many different types of chutes and packing techniques, you to find one that works for you. Once again it will be real apparent which ones don't work. Some more questions or over the shoulder spying might be in order. See who is using chutes like you have and ask them what they are doing to



be successful. One day you will be the guy answering the questions not asking them.

Make sure the webbing is securely attached to the chute and the rocket. There is nothing more embarrassing than seeing the rocket work perfectly then fall untethered to a recovery device. One way to ensure the quick licks are closed and webbing is attached is to put a small piece of tape on the nut so it can't back out. Make sure that your knots are secure. I like bowlines because they only get tighter with tension. That is if you tie them right. Be sure to protect the chutes and webbing from the hot ejection gasses. Inspect all your recovery systems before flight. It doesn't do much to inspect it after you dig it out of a hole. Give your self plenty of webbing between the booster and the payload section. A good rule of thumb is **10 feet of webbing** for each diameter inch. In other words, a 4" diameter rocket should have 40' of webbing. A 6" diameter rocket should have 60' of webbing. This may seem excessive but it will minimize the deceleration effect on the nose cone. If the webbing is too short the weight of the nose cone under load will shear the retention system you are using and the nose cone will come off and deploy the main at apogee. I had a 400-pound rocket float 3.5 miles away because of this with 110 feet of webbing out, so there are no guarantees. Prepare for the worst and hope for the best.

Altimeters can be a Godsend or a curse. Before you make the move to altimeters, ask around. There are many different brands out there and they all look great on paper. The problem is in the beginning you think you are going to get a way with just one. You think that you need all this data the altimeter will provide. You want to get the best bang for your investment buck. I would suggest keeping it simple in the beginning. Check around and see who is using what and why. Buy something you won't miss if you trash it. All you really want the altimeter to do is get the chute out before the rocket hits the ground. If it does that the rest is icing on the cake.

Though it is a slightly expensive way to go I always fly two altimeters in anything over 4" in diameter. Sometimes that is not enough! Anything can and eventually will go wrong. I have installed them upside down. I have had batteries go dead. Replace the

batteries for each flight or check the voltage at a minimum. I have had circuits rip loose under high G loads. I have had switches fail. I have had phone jacks fail. Currently, I jump the switch out so it is permanently on and arm the altimeter by connecting (twisting the wires together) the positive battery lead that is hanging outside the rocket. This seems to be the most positive means of keeping the altimeter powered up. The G-force alone can reek havoc with cheap switching mechanisms and batteries. Firmly secure the batteries with tape or some other means. Make sure you have continuity through your igniters for the ejection charges. You should typically see about 1.2 to 1.7 ohms of resistance on a white Davey Fire. The altimeter will also let you know if you have continuity. I have had the mounting board break loose. Do not underestimate the forces that you are dealing with. If you do, the results will come home in a bag.

Until recently motors were the last of my concerns. But I had an eye opening experience at ESL 57. The forward closure came loose at motor ignition and basically burnt the motor up on the pad. Maybe it had something to do with announcing the propellant as Big Boy Pants Blue or maybe it was just my turn in the barrel. Regardless, double-check your forward and aft closure systems. If you have a "Kosdon" style motor, make sure the snap rings are securely seated. It can be the difference between a great flight and barbecue. If you are like me, you won't have a hot dog when you need one. I have "over pressurized" my share of motor casings. We don't like the B\_ \_ \_ up-word because AP motors don't detonate, they over-pressurize. I have put stepped grains in backwards, leaving the smaller core at the bottom instead of the top. I have had grain-bonding problems where the flame has gotten to the outside of the grain. This exposes too much surface area and the result is a really cool flight. There isn't a real good defense against this but another rule of thumb is to grease both the outer diameter of the grains and the outer diameter of the liner. It's like praying, it can't hurt. Plus if the motor does CATO then you can say that you did grease it properly. This will put the responsibility on the propellant manufacture. Hopefully it was someone other than your self. It is so nice to point the finger, "it wasn't my fault." If you are into experimental motor

building the do's and don'ts on that can fill volumes and won't be explored here. Make sure you securely attach the motor in the rocket. The last thing you need is a motor falling out from apogee or worse getting loose while pressurized.

Over the years I have experimented with different construction materials. Most of them turned out to be heavy, hence the big motors. If you are going to get away from the standard products like PML Craft Phenolic make sure the material is equal to or greater in strength to the Phenolic tubing. It is a good benchmark. If you are going to use the Craft Phenolic material I have found it is well worth the time to fiberglass anything that you want to keep past one flight. A perfect recovery and deployment can still zipper the tube. A hard landing can yield little or no damage to a fiber glassed airframe. There is nothing like walking back to the pits with a rocket that is still intact, so I'm told. As you get into the bigger and heavier rockets you will see what I mean. If you do use alternative materials chances are the material will be heavier than what you are use to so you need to be aware of your recovery requirements and most importantly you thrust to weight ratios. The safe standard is 5:1. This can be figured out easily by dividing the average thrust of the motor by 4.45 then dividing that by 5. The answer is the maximum weight in pounds that the motor lift safely at a 5:1 thrust to weight ratio.

One of the missions of the MDRA is to serve as an educational organization. I can say without any reservation that I get an education every time I show up at a launch. It is true that you learn by your mistakes. I didn't realize I had so much learning to do. But that is part of the challenge, trying to control the un-controllable. Once the button is pushed it is out of you hands and control. All you have to lean on is the planning and preparation that went into the flight. The slickest paint job in the world will not compensate for an ill prepared rocket. Rocketry is pretty much black and white. Either it succeeds or it fails. There isn't much gray in between. This isn't gospel, just food for thought as you prep for that next flight.

*Neil McGilvray*

## To Be Or Not To Be

That is the question each and every one of us has to ask ourselves. Who are we and what are we? What were we? Originally we were the gleam in a few inspired rocketeers eyes many years ago. Our treasurer, Dave Weber was one of the founding fathers. Paul Miller, Stan Hunter were others involved in those early days. Those were days when just talking about rockets filled the void. Those were the days when no body was launching rockets of any significant size and power. The motors didn't exist then. Those were the days when the total Newton Seconds for the days launch might not even add up to a K Motor. Those were the days when there was no field to fly on.

Through trial and error, search and destroy, pleading and begging, what ever it took those guys found fields to fly on. There were more than agricultural crops planted on those early small fields. Little did our founding members know what kind of crop they were actually planting. It wasn't a fast crop, but a steady crop. It kept growing and every year got bigger and stronger. Today the crop is able to thrive on the four fields that we launch on under the MDRA banner. The word is out on what has taken root in Maryland and Delaware. The crop has gone through a metamorphosis of sorts over the years. We still launch rockets like in the early days. But today we control our own destiny. Other groups have taken notice and are starting their own MDRA style organizations across the country. Why? The answer is simple, because it makes sense. The opportunity to be able to fly experimental motors on the same rack as certified motors is the wave of the future. With the cost of rocket related accessories and motors it is a natural transition that will eventually become the normal acceptable practice. It is how rocketry will continue to generate new interest, survive and stay fresh.

This has been a major key to our success as a leader in the rocketry community. Another key to our success is the field options we have. Higgs Farm, Rhodesdale, Coverdale, The Central Sod Farm. With these field options we have come added responsibility. The membership

is responsible to use these fields. While we normally have good turnouts at Higgs Farm the response at Rhodesdale and Coverdale, especially, as been less than optimal. As an organization we have to collectively take advantage of what we have. If we don't use these fields to their full capability they can go the way of the dinosaur. We have access to these fields because some of your fellow members have gone the extra mile for Club. Don't let their hard work go by the wayside. They made the extra effort and developed a relationship, in most cases with a perfect stranger and convinced them to allow us fly rockets on their property. How many of you would be receptive to something like that on your property? I think we all know the answer.

The MDRA launches on four of the best fields on the East Coast. It is a privilege to fly on these fields, not an entitlement. They can be taken away. One way to maximize our position is by simply showing up and flying there. Each field is basically responsible to independently support itself through the launch fees collected. Without your help and participation they will fall short every time. Porta-pots, Land Owner reimbursement, infrastructure upgrades cost money. Your support makes these things happen. At a very real level each Launch Site is a business and unless people are engaged in that business it can and will fail. For those of you that have not ventured out to Coverdale or Rhodesdale, you don't know what you are missing. Each of those fields has more open land than Higgs Farm, without the drainage ditches. You think the wind might be a little too strong? Put your worries to rest on these fields. Unless you are flying to the moon, you'll be driving home with your rocket. However, if flying to the moon is your cup of tea then these fields are perfect for that too. Rhodesdale boasts a 16,000 AGL Waiver. If you use that altitude up, you're doing something.

As the weather warms we begin turning our sights to the Central Sod Farm. While this field is more limited in size, it still beats most of the East Coast fields hands down. It is as big if not bigger than the fabled Sod Farm in Orangeburg, S.C. They have held LDRS there multiple times and I for one don't know how they did it. The Central Sod farm is easily capable of handling up to M motors and is a great place to fine tune your

two stage or ARRD recovery for the fall and spring launches. It is like being on vacation and launching on a golf course. After this winter of record snowfall and the inevitable painful cancellation of launches, I for one will never complain about the heat again.

If we are "To Be", then as a group we need to show up and fly. Once there you will be shamed into helping run things, but that is another dissertation. If we are "Not To Be", then we can sail the same course and Darwinism will sort things out for us. I for one don't want to take that chance. People are the most valuable element of any organization. Let's gold plate ours.

*Neil McGilvray*

## PERFORMANCE HOBBY

<http://www.performancehobbies.com>

Need parts for your rocket, tell Kenny and he'll bring them to the launches.

Almost anything you could need he should have. Phone (202) 723-8257, fax (202) 723-0010.

## NEXT ISSUES:

- How to use chutes from Neil.
- Launch report of March & April.
- Events for May & June
- Another last page funny.

Keep The Pointy End  
up and the Fier y  
End down.

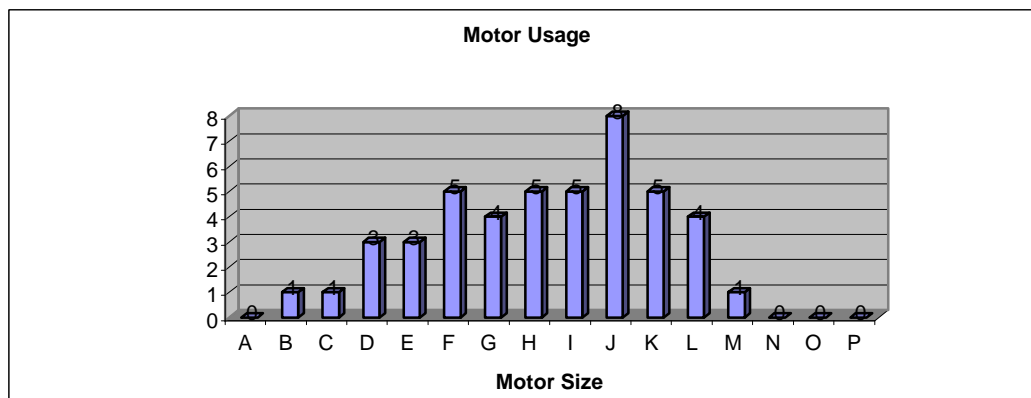
D. Bull is

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

Copyright 2003 M.D.R.A./ M.T.R. #68

## Log January 18-19, 2003 ESL #57

Flyer		Manufacturer	Model	Motors	Result
Barnsley	Ivan	Scratch	3x Midget	E9	
Barnsley	Ivan	Scratch	Whistler	G69	
Barnsley	Ivan	Scratch	Couch Potato Delight	H128	
Barnsley	Ivan	Scratch	1/35 Jupiter	D12	
Bathras	David	Scratch	Strong Arm	L900	LD
Bazinnet	Rob	LOC	Magnum	L850	
Bazinnet	Rob	Scratch	Mass Exodus	L500	White Lighting
Cameron	D.	Scratch	No name	F52	
Cameron	Doug	Scratch	PML Parts	F52	
Cameron	Doug	Scratch	PML Parts	G80	
Hier	Tom	PML	Quantum Leap	J450/I170	
Hier/Bathras	Tom/Noah	Estes	Recon	B6	
Kelly	Kevin	LOC	Weasel	F50	
McGilvray	Neil	Scratch	Comfortably Numb	K1000	Big Boy Pants Blue
Ritz	John	Scratch	6 Pak	J600	
Ritz	John	PML	Mod Temptation	J700	Yellow
Schumacher	Fred	Yo-Yo	Overkill 4	K450	Kpassa WL
Schwore	Bill	PML	Forget It	G33	
Taylor	Jeff	Scratch	Boston Terrier	J????	
Taylor	Jeff	Scratch	Boston Terrier	J400	
Utley	Bob	Scratch	"Bada Bing, Bada Boom"	M1850	*Cert 3*
Utley	Bob	Scratch	static fire	K450	White Lighting
Utley	Bob	Scratch	static fire	K450	White Lighting
Utley	Bob	Scratch	static fire	K450	White Lighting
Weber	David	Weber Eng.	Tuber	H100	#143
Weber	David	MSH	Little Joe I	G80	
Weber/Brerdin	David/Curtis	LOC	Hi-Tek	I134	
Weber/Taylor	David/Andre	LOC	Minnie Magg	I112	
Wright	Ray	Launch Pad	AIM 120	D12/D12	
Wright	Ray	Launch Pad	Aim-120	E30/E30	
Wright	Ray	PML	Quantum Leap	J400	*Cert 2*
19-Jan					
Ash	Victoria	Estes	Zumer	C6	
Bazinnet	Rob	Scratch	static fire	J400	White Lighting
Blizzard	Aaron	Rocket R&D	Seargant	H143	
deBay	Mike	PML	Stretch Explorer	H120	Blue
Fenwick	John	Estes	Super Big B	E9	school project
Fenwick	John	Estes	Big Bertha	D24	school project
Fenwick	John	Scratch	Trek	F24	school project
McAndrew	Sean	Scratch	Pyramid	I300	smoky
McAndrew	Sean	Scratch	Spool	H120	low smoke
Proseus	Ted	Scratch	static fire	I200	
Proseus	Ted	Scratch	static fire	F50	
Ritz	John	Scratch	No name	J700	Yellow
Taylor	Jeff	Scratch	static fire	L2000	Star grain
Wright	Ray	Launch Pad	AIM 120	E30/E30	



A	0	0	
B	1	5	
C	1	10	
D	3	60	
E	3	120	
F	5	400	
G	4	640	
H	5	1600	
I	5	3200	
J	8	10240	
K	5	12800	
L	4	20480	
M	1	10240	
N	0	0	
O	0	0	
P	0	0	
45	TOTAL MOTORS	59795	NEWTON/SECONDS

Atlantic	0
Aerotech	0
Apogee	0
Binder	0
BSD	0
Centuri	0
Cluster R	0
Custom Rockets	0
Dynacom	0
Edmonds	0
Estes	4
Giant Leap	0
Hawk Mountain	0
High Flight Tech	0
Hobby Lab	0
Impulse Aero	0
JD Cluster	0
LOC	4
Launch Pad	3
MSH	1
NCR	0
Neubauer	0
PML	5
Pratt Hobbies	0
Public Enemy	0
Quest	0
Rocketman	0
Rocket R&D	1
Rocket Teck	0
Rogue Aero	0
Rocket Vision	0
TCB	0
Thoy	0
True Modeler	0
Scratch	25
Shrox	0
Smokin Rockets	0
V.B.	0
Unknown	0
US Rockets	0
Weber Eng.	1
Yo-Yo Dyne	1
45	TOTAL ROCKETS



# March 2003

## Rocket Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																									
						<i>1</i>																																																																																									
<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>																																																																																									
<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i> Rhodedale Launch																																																																																									
<i>16</i> Rhodedale Launch	<i>17</i> St. Patrick's	<i>18</i>	<i>19</i>	<i>20</i> MDRA Meeting	<i>21</i>	<i>22</i> Whitakers Launch																																																																																									
<i>23</i> Whitakers Launch	<i>24</i>	<i>25</i>	<i>26</i>	<i>27</i>	<i>28</i>	<i>29</i> Price Launch																																																																																									
<i>30</i> Price Launch	<i>31</i>	<table border="1" style="display: inline-table; margin-right: 20px;"> <caption>February</caption> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td>1</td></tr> <tr><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td></tr> <tr><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td><td>14</td><td>15</td></tr> <tr><td>16</td><td>17</td><td>18</td><td>19</td><td>20</td><td>21</td><td>22</td></tr> <tr><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td></td></tr> </table> <table border="1" style="display: inline-table;"> <caption>April</caption> <tr><td>S</td><td>M</td><td>T</td><td>W</td><td>T</td><td>F</td><td>S</td></tr> <tr><td></td><td></td><td></td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>11</td><td>12</td><td></td></tr> <tr><td>13</td><td>14</td><td>15</td><td>16</td><td>17</td><td>18</td><td>19</td><td></td></tr> <tr><td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td></td></tr> <tr><td>27</td><td>28</td><td>29</td><td>30</td><td></td><td></td><td></td><td></td></tr> </table>					S	M	T	W	T	F	S							1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28		S	M	T	W	T	F	S				1	2	3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19		20	21	22	23	24	25	26		27	28	29	30				
S	M	T	W	T	F	S																																																																																									
						1																																																																																									
2	3	4	5	6	7	8																																																																																									
9	10	11	12	13	14	15																																																																																									
16	17	18	19	20	21	22																																																																																									
23	24	25	26	27	28																																																																																										
S	M	T	W	T	F	S																																																																																									
			1	2	3	4	5																																																																																								
6	7	8	9	10	11	12																																																																																									
13	14	15	16	17	18	19																																																																																									
20	21	22	23	24	25	26																																																																																									
27	28	29	30																																																																																												

# April 2003

## Rocket Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
		<i>1</i> April Fools Day	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	
		<i>6</i> Daylight Savings-- set ahead 1 hour	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i> Whitakers WELD Launch
		<i>13</i> Price Launch Whitakers WELD Launch	<i>14</i>	<i>15</i>	<i>16</i>	<i>17</i> MDRA Meeting	<i>12</i> Price Launch Whitakers WELD Launch
		<i>20</i> Easter	<i>21</i>	<i>22</i>	<i>23</i>	<i>24</i>	<i>18</i>
		<i>27</i> Whitakers Launch	<i>28</i>	<i>29</i>	<i>30</i>	<i>25</i>	<i>26</i> Whitakers Launch

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

S	M	T	W	T	F	S
						1
						2
						3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

## Last Page Funny



This is the chute that will be used on the Liberty Project, 110", notice the guy on the right?  
What was he thinking.....

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