



M.D.R.A. Report

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Cover: John Ritz's Tetrahedrons. Photo by John Ritz.

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Editor Bob Utley

Imagine if you will.....your seating down, watching your favorite rocket video on a Saturday afternoon, when your front door opens and a stranger walks in. Imagine your going to take a rocket out to your back yard only to find someone you don't know walking around as if they are looking for something. I'm sure your first reaction is not to walk up and shake their hand.

Most of us live in the city, in townhouses, apartments and single-family homes. When you live out in the country, your land is just like your home, when someone walks on it without asking permission you get upset if not down right mad. We need to remember that when we go looking for our rockets. We are in fact entering someone's home when we walk on someone's land. Treat it like that, ask for permission and you will find that they are more likely to give you permission than the business end of a shot gun.

MDRA has talked to all landowners around our fields that rockets land on. We have found that as long as we ASK for permission to enter their land there is not a problem, but you need to remember we need to ask the landowner at each launch before you go out to get your rocket. **If your rocket lands outside our flying field come up to the LCO and get directions on who and what to say to get your rocket back.**

This is not rocket science but common sense on how to treat people with respect and to respect their property and home.

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

ESL #73

Sod Farm

5/1 & 5/2 2004

This launch was the opening of the MDRA Summer Season at the Central Sod Farm. Our thanks go out to the Warpinski's and their generosity. While the size and recovery area is smaller than Higgs Farm, the Sod farm allows the members to fine tune their recovery techniques on lighter weight, less expensive rockets. (There are such things, right?) We have had beautiful weather right up until this much-anticipated weekend of rocket flying so why shouldn't it continue? I'll tell you why, we scheduled a rocket launch. The threat of rain and high than preferred winds kept the bigger projects on the ground but the warm weather was welcome relief after the winter we just endured.

Bill Brown flew two rockets. Bill tested apogee deployment on his Sub Zero on H-180 power and his Frost Bite on an I-435. All the flights passed their test and were recovered in tact. Don Brown flew his rocket called Skeeter, an up scale Mosquito, on an H-242. It is always cool to see these rockets fly. Don also flew his I-ROC on an H-123. Russell Brown got in three flights in the C range. Andrew Bryson also flew three times with A and B power. Jessica Buckner flew twice on C-6's.

Bruce Canino flew his Edmonds Arice II on D-12 boost power and gravity dive recovery on the glider section. Bruce also flew his Sumo on an H-165 with much better results. Glenn Davis flew his DBNP on a G-64 and fought with the trees after the recovery effort. Glenn also flew his Austin Powers Gold Member on a J-400 and his Glad-He-Ator on an H-210. Angelica and Rob Friemayer combined for seven flights in the C to G range. Kathy Gilliland proudly brought out her newly constructed, fashionably colored pink Initiator that she called the "Sleep Inn- Shhh!" I can't even imagine what this is in reference too, as we are normally quite as church mice while at the Sleep Inn, especially after a couple of cold beers. I guess being not listening has its advantages. The rocket was flown on a G-80 for a nice high flight that ultimately put

the new rocket in the trees, where it resides to this day.

Larry Harris had his usual group of students out the Sod Farm. Larry has the patience of a saint and gives up most of his flight time to share his love of rocketry with kids that normally would not have an opportunity to fly the Estes stuff, let alone to view what the MDRA has to offer. These kids are our future and we should applaud Larry's efforts. The kids combined for 16 flights in the A to H range. Yes Larry flew the H and it was good to see him get in at least one flight. Richard Hickok was able to fight his way through the Bay Bridge Walk traffic to get in four flights in the D to F range. Maggie Hier flew her Big daddy on a D-12 and her Sky Dive on a B-6. Dad, Tom did a static test of a Blue motor he was working on. Tom called it a K-700.

Kevin Kelly flew his scratch built M&M on a BMW K-900. The rocket performed well on the up part and came dangerously close to being consumed by the rocket eating woods. Abbie Landon flew two B and C powered rockets. Bob Lussier had his Big Brute working on G-40 power. Tom McDonald threw fate and his rocket to the wind. Tom flew his ASP on a K-445 for a rip snorting flight. Everything was looking good until the recovery effort brought the rocket into the trees. The rocket and all of its components were deposited about 35 feet up in the trees out of reach of anything short of a chain saw. At this writing I believe the ASP has become permanent ornament.

Curt Newport had the Porteus fleet in service. Curt flew the Porteus II on an H-153 warm up flight. Curt then flew his Level III bird, Proteus III on an L-1800. The flight and recovery were perfect, well almost perfect. Those pesky rocket-eating trees reared their ugly heads, or branches. Curt's rocket ended up on the other side of John Brown Road and was eventually recovered intact. Getting them back is a beautiful thing. Dave Olson put his Nimbus to the test on I-161 power. All went well and Dave will fly the Nimbus again. Jeffery Potter got in two flights in the A and B range. Lynn Reamy pulled herself away from her normal volunteer position to fly her rocket called Tabitha on an H-123. So, ok, she had some help with expert parachute folding, which helped to achieve a perfect recovery. (I

wonder how many people think they were this Mad Parachute Folder.)

John Ritz got into the act twice. John launched his Minnie Me on an I-350 and his Fluttering Heights on an L-700. Fred Schumacher had the maiden voyage flight of his rocket called Nasty Habit. Don't we all have some of these? Fred powered the rocket with a BMW K-450 for a nice flight and on the field recovery. Ross Sorci launched his Black Brant on a G-75 and later on an H-165. Ross also flew his Tartar on an H-165. Dick Stafford made seven trips to the pads. Dick flew his Lazarus on an I-357, Fat Boy on an E-9, Carrot Top on a G-80, Big Brute on an F-20, Snipe on an E-9. Dick had two of his neat creations to fly. One was the always fun Hat of Death on an F-21 and his Screwed Up Too on three D-12's. This rocket had a propeller instead of fins and the motors were supposed to spin the rocket up. So much for that plan! The motors just flew right off the rocket, solidifying Dick's attempt at closest to the pad.

Dave Weber got in two attempts. One was with his rocket called Momentary Lapse of Sanity. It was powered by an H-268, three G-80's and three F-20's. The H and the G's were to be lit on the ground and the F's were to be air started. All but one F motor lit. The rocket was recovered in the high wind. Dave also was putting another notch on the Tuber for flight 169. The wind and the trees almost conspired to see that this was the last flight. Luckily Dave was able to retrieve his rocket. This was actually part of a closest to the pad challenge that Dave Weber, Glenn Davis and Ross Sorci had. Glen was the winner and Dave was the loser. The winner got a limited edition Liberty Project Tee Shirt paid for by the loser. The Liberty Project appreciates the donation regardless of source.

Sunday May 2nd started windy and dismal. We stayed the course and eventually it improved to just windy. But we had come to fly rockets and fly rockets we did. James Kelly launched the newly re-named 2" Amraam "MDRA Lost and Found four times. The rocket flew and was recovered each time. It flew on an F-20 and three G-38's. Neil McGilvray dragged out the Standard ARM inspired Bone Daddy and launched it on a DPS L-1800. The 35-pound rocket tore off the pad for a beautiful flight and recovery. Well up until it got close to the

ground. The rocket ended up draped all over the farm equipment parking area. The thought placing the airframe in the middle of what amounted to a Medieval Torture Chamber for rockets was disconcerting to say the least. But there was virtually no damage and Bone Daddy will fly again.

The Scrimgeour Clan, Kevin, Natasha and Allie combined for 12 flights in the C to F range. We had teen idol Britney Spears flying her Black Widow on a C-6 and she didn't even have to lip sync. Dave Weber got in flight 170 on the Tuber powered by an H-97 and kept it well out of the trees this time. Gerry Willis had his V-2 in the air on E-9 power and his Tethys on the Dave Weber donated H-180. Both for satisfying flights. Ron Willis flew his Code Red on C-6 power.

The first Sod Farm launch was sparsely attended due to funky weather and the Bay Bridge walk but those that did attend enjoyed warm weather and more sun than expected. Once again we thank the Warpinski's and look forward to a warm and light wind summer of flying at the Central Sod Farm. Fly high and recover low.

Neil McGilvray

ESL #74 Sod Farm 6/12 & 6/13 2004

This is what rocketry should be, all year long, warm weather and low wind. Our summer field at the Central Sod farm is certainly a sight to behold with the finally manicured green grass and scenic vistas, especially when viewed from well above the field.

Bill Brown flew his Sub Zero on an H-210, as a warm up flight. Bill's claim to fame on the day was his Level 2 certification on a J-350 powering his Frost Bite into the air and back safely to the field. Congratulations Bill, now you can begin to dig even deeper into your wallet. Don Brown flew five times. Don launched his Bull Puppy on an H-123, Skeeter and I-Roc on I-211 power, his Phoenix on an H-112 and his V-2 rumbling skyward on an I-285. Glenn Davis

was mixing up the EX and commercial motors with four flights. Glenn flew the EX powered PAC 3 and his Gold Member on BMW K725 and K-400 respectively. Glenn powered his Glad-He-Ator on a G-64 and his Bull Pup on an E-25. Alex Deschemes got in two and a half flights with his Level 1 Certification flight on Single Trouble. This rocket flew on an H-128 and then as a celebration Alex attempted the Two Stage version of the rocket on H-153 and G-35 motors.

Angelica and Rob Friemayer combined for 15 flights on everything from a CBU-87 Bunker Buster on a C-6 to their tri powered Big Daddy on three D-12's. Kathy Gilliland was brightening up the launch with here Pink rocket that she called Sleep Inn on massive D-12 power. Paul Haberland got in three flights with his V-2 on an I-161 and his Bull Pup on an H-123. Paul saved the best for last with his J-570 flight of his Phoenix. Richard Hickok wore another path to the pads with six flights. Richard flew his Arcas on an F-25, BBU-28 on an F-21, Yellow Jacket on an H-128, Sea Skua on an F-39, Fred's Frog on a B-4 and his AMOS on a G-40. James Kelly flew the adopted MDRA Lost and Found on a G-35. This rocket was used as a test vehicle for some custom electronics developed by John Rowland. There were additional rings added to the Amraam design to house the electronics. The rocket flew much lower than any other previous flight, lawn darted and still survived to fly again. This is a testament to the original builder.

Vince Leonardi flew two times on this fine day. Vince launched his Initiator on a F-40 and his Nike Smoke on a C-6. Both for nice flights. Ron Mains flew eight times exhausting his quiver of rockets on B through G power. Mike McBurnett was up from southern Virginia to launch three times. Mike was cranking necks with his flights of his Barbecued Weasel on a G-80, Patriot on an I-300 and his Excel Jr. powered by an H-165. Neil McGilvray had Bone Daddy Lumbering of the pad on a slow blue formula. The 38-pound rocket accelerated through the L-1000 burn and turn in a nice smokey flight to 2,900 feet. Joseph Nicholas launched two rockets, his No Name on an F-52 and his Comet on a G-64.

Jerry O'Sullivan was doing neck breaking flights with two rockets. Jerry flew

his Astrobee-D on an I-211 and his High 5 on a J-800. Wayne Parker also got in two flights. Wayne flew his Cheetah on an E-30 and his Onyx on a G-80. John Ritz had everyone's attention for his 4 flights. John flew his Falcon on a J-600 for a nice flight. John also broke out his flying Tetrahedrons powered by a variety of motors. John went three for three with the Flying Pyramids of Death on I-300, K-400 and K-600 power. The "FPoD" never fail to have the crowd watching with ear-to-ear grins. Ed Rowe had one of the feature flights of the day with his King Viper III. This rocket sported 3 L-1000 sparky motors all lit by Thermite. This is the only way to ensure an instant on lighting of a large cluster. And light it, it did. The rocket tore off the pad on a column of smoke sparks and flame. The noise of three sparky motors is something you have to hear to appreciate. The rocket was recovered on the field and we hope to see this combination again. John Rowland got in two flights to continue the testing of his electronics on G-60 power.

Fred Schumacher kicked his rocket, "Nasty Habit", right in the butt with BMW power. Fred flew N.H. on a BMW white motor and brought the rocket right back onto the field for a nice flight. The Scrimgeours' Kevin, Allie and Natasha combined for 20 flights. Who says there is a motor shortage? They flew everything from C power to clusters of C motors to high-powered J-330 motors in Kevin's Stars-N-Stripes. They are the poster child for the family that flies together, cries together. Just kidding, they actually had an excellent recovery record. Jeff Taylor was doing some Beta testing of the soon to be released Loki Research propellant in his rocket called Chicken Hawk. Jeff flew his H-100 and I-300 Loki Whites. The H motor was a little slow for the rocket and resulted in a flat spin recovery but the I motor did the trick and had the rocket reaching for the sky.

Bob Utley had the big gun out with his flight of the newly constructed M powered camera carrying 7.5" diameter rocket. Bob gave the tower a work out with the 75-pound rocket. The propellant of choice was Bob's version of BMW Sean Blue. It is amazing how many flavors of the essentially the same propellant are out there. The motor was ignited with a Thermite igniter. At the end of the count down the

igniter did a pop, pause, ignite thing and the rocket was off the pad on a bright blue flame to about 3,500 feet above the Sod Farm. Bob was able to capture video looking down at the fins and also straight out. Both can be viewed on the MDRA website. It is amazing how much water actually surrounds the Sod Farm and how fortunate it is that we stay out of it. The rocket was recovered less than 100 yards from the tower. Now that is some straight shooting.

Gerry Willis flew his Extended Tethys on a J-210 for his Level 2 certification flight. Congratulations Gerry! Needless to say the flight went off with out a hitch and next Gerry will be looking at that Level 3 hardware and rocket. Gerry's sons Ron and T.J. also got in one flight on C and E power.

Sunday was an equally fine day with a slightly stiffer breeze, yet well within the parameters that we are normally flying in. Dave and Bill Alewine combined for another flight of their Bumper Wac. This is a 7.5" diameter V-2 with a scaled Wac Corporal sitting on the nose cone. This is quite a challenging project and a rewarding one, when it works. The booster V-2 was launched on a K-530. The rocket took off perfectly, however the sustainer Wac Corporal failed to light on F-25 power. The V-2 section was recovered but the Wac Corporal was left hanging high in the southeast tree line. I am sure we will see an upgraded version of this project in the near future. Dave Alewine also got in two other flights with his Team America on a J-285 and his Magnum powered by a J-380. You have got to do something to shake of the pain.

Bill Brown launched his Red Dragon on a G-64 warm up flight before he tested out that newly acquired Level 2 with his J-429 powered Frost Bite. Doug Cameron had is ARRD recovered Nike Smoke flying on K-445 power for a picture perfect flight. Lou Centrella cleared a path with his lo on an F-21 before his Level 1 certification flight on the lo, once again on and H-129. Congratulations Lou, Level 2 is just around the corner. Seth Chapman got in four flights in the C to F range. Jim Cox spent most of the day recovering other people's rockets from the trees, but did find some time to launch and promptly lose his Executioner on H-155 power. Glenn Davis, ever determined

to lose his Homer Hickham sighed Gold Member had it back in the air again on K-445 power. Sometimes they never learn until it is too late.

John Gramick flew his SS Arrow on an F-50 and his Eliminator on a G-35. David Jarkey had G-64's working for him on his three flights. David flew his Smiley Saucer, Eliminator and his G-Force, all for nice flights. James Kelly had MDRA Lost and Found repaired and zooming skyward on a G-80. Mike McBurnett got in a final flight of his weekend visit with his Patriot on I-284 power. Russ Miller got in 2 flights with his rockets. Russ flew Snake Eyes on a J-400 and Hunk-A-Hunkin Burning Love on a K-400. Elvis definitely left the build on both of these fast and high flights. Russ also gave some assistance to Paul Long with his V-2. Unfortunately the ejection charge was not enough to get the chute deployed and the rocket came in ballistic.

Kevin Mitchell, never one to shy away from going high real quick launched his Black Brant II on a screaming I-350 flight. Some how Kevin always seems to get these things back alive. Kevin also combined with his wife Barbara on her flight of Heaven Bound powered by a G-35. Dave Olson got in two flights. Dave flew his Air Spike on an F-20 and his Nimbus on an I-287 for a nice loud and fast flight. Jerry O'Sullivan once again found the joys of ARRD recovery with his Terrier Smoke. Jerry was doing some G-force testing of Avionics for Athena and combined this with the joys of flying rockets. You have got to love that! Kurt Petrucci flew his maniac on a D-12 and then moved on to flying his clustered Minnie Magg with an H-153 and two G-35's for an impressive flight. Mariah Petrucci got in on the action with a c-6 powered flight of her Flash.

John Ritz combined something that slightly resembled a rocket and another one of his famous flying Pyramids. The rocket was Johns Falcon on an I-205 and the FPoD was powered by a K-700. The flight of the FPoD was impressive, on the up part anyhow. The "rocket" came down on a ballistic trajectory right by the RSO and LCO tents. Is John trying to tell us something? An e-mail might be more appropriate. The other Falcon flight was recovered nominally. Rob Roberts was back at the drawing board again with some "sweet" motors. Rob flew

his Graduator twice on a G-150 and a G-170 motor. Rob also flew his Un-EZI on an I-205. It just goes to show that what a little imagine and sugar will do. It adds some credibility to the old saying "you get more flies to sugar than you do to vinegar".

Ed Romani static tested an H-200 motor and then got about the real business of getting some birds into the air. Ed flew his Black and White on an H-200 and an I-440 respectively. John Rowland got another one of his no name rockets in the air on G-60 power. Fred Schumacher couldn't leave well enough alone from the day and had to scratch that "Nasty Habit" once again on BMW power. Fred launched his rocket on a K-700 for another great flight. When you get the itch, scratch it!

Bill Schworer proved once again that three times is a charm, especially if you are going for your Level 3. Bill had his big orange rocket renamed Orange Athena loaded up with an M-1900 Green Gorilla motor and Athena Avionics for some more G-force testing. The rocket was prepped for a better part of the day before it was ready for its trip to the away cell and mounting on the tower. When the countdown had reached zero the rocket ripped of the tower skyward. Eagle eye, NAR Level 3 CC Jerry O'Sullivan had it all the way to the top. The rocket was recovered just mere feet from the southeast tree line for a successful attempt. Congratulations Bill, it has been a long time coming. Joe Sorrentino got in three flights in the F range. Joe launched his Army Hawk twice on an F-24 and F-39. Joe also got his Aura in the air powered by an F-40.

Jeff Taylor had his Chicken Hawk in the air on H-120 Loki Research power. Both flights worked great and should help get the much-anticipated Loki product on Hobby Store shelves in the near future. Nelson Wallace had is Astrobee Mirage air borne on a G-64. Darren Wright, the other half of the Loki Research effort got his Minnie Magg in the air twice. Darren was looking at some different geometry with the J-400 and J-600 configurations. Both motors looked like a resounding success.

The weekend was also a success. Once again we thank the Warpinski's for the generous use of their land. Remember to take some time and give us a hand with some aspect of running the launch. This is your club also and we welcome you

assistance either with set up, break down, RSO or pad managing. It is fun and you might actually learn something. One thing is for sure. The people you help certainly appreciate the time you spend with them. Until the next launch, fly high and recover low.

Neil McGilvray

East Coast Hobby Show

March 26 and 27th, 2004. The Fort Washington Expo Center, Philadelphia, Pennsylvania

The East Coast Hobby Show has become an annual event for MDRA, thanks to Darren Wright. This is the largest Hobby Show on the east Coast and if there is something fun you might be into this is where to find it. Every year they feature everything from trains to battle bots, radio control boats to radio control planes. This year was no exception as MDRA had the most jaw-dropping booth at the event. Darren was able to convince the organizers that we needed a larger area for displays. Ask and you shall receive. This is an event where they average between 15,000 and 20,000 paid admissions over two days. So you can imagine that we had lots of traffic coming by the booth. Some people reappeared over and over again. Like us, they couldn't get enough.

The booth was populated with motor casing displays ranging from G motors to O motors. There were constant DVD and VHS tapes running on two different screens showing some of our prouder and most embarrassing moments launching rockets. All the videos kept a smile on the faces of children and parents alike that passed by the booth. The back of the booth was a static display of various rockets that Darren and myself had there for both days, Saturday and Sunday. Bob Utley, Kathy Gilliland and John Ritz were up on Saturday to spread the good word. Ted Proceus and Norwood Truitt were on hand Sunday with

their rockets to add to the display and answer questions.

The most amazing result of the rocket display was when people realized that the big green "column" at the corner of the display was actually Joe May's "Draco" rocket. This 12" behemoth is big in the middle of an open field. It is enormous inside a building! The look on people's faces when they saw the fins and looked up was priceless. Their jaw would drop almost every time and they would utter something along the lines of "That isn't real, is it?" or my favorite "you don't launch that thing, do you?"

There were lots of questions to be answered by the uninitiated and the causal rocket flier that didn't realize "they" did make rockets that big and they were safe to fly. This was an enjoyable experience as we opened the eyes of hundreds of people to a new hobby possibility. (Psst!, Psst! Hey you, why don't you give it a try? Come on the first launch is free. Its ok, it won't cost much. No, no really you get as much gratification out of flying the little ones as the big ones. Sure you can stop anytime you want. It's easy, anyone can do it.) Thanks to Darren Wright for organizing the event and making MDRA part of it.

Neil McGilvray

Severe Dehydration and Heat Illness

Being out in the summer heat can be a lot of fun and can also be dangerous if you are not prepared to deal with the heat. I would like to tell you about my own experience with summer's heat which resulted in severe dehydration and heat illness.

I recently attended the 2004 Team America Rocketry Challenge held at Great Meadows, Virginia. For everyone who attended they will remember the day as being very hot and humid. The temperature was over 90 degrees and the heat index was at 105 degrees.

I thought I was prepared for a day of heat and humidity. I was part of the team that put on the morning and afternoon high power rocketry demonstrations and spent

most of the day under a canopy and drinking water. Around lunchtime I had some food and two of the quart bottles of Gatorade and a gallon of water. A missed warning sign that I was in trouble with the heat was that even after drinking all the fluids throughout the day I never had to go to the bathroom. The afternoon high power demonstration took place around 4:00pm. I launched my rocket and it turns out that it was the only one that landed in the trees. I took the long walk across the field and saw my rocket about 20 feet up in a pine tree. Mitch Guess and I set out on a mission to get the rocket out of the tree. We tied a rope to a weight and tried and tried to throw the weight high enough into the tree to get over the shock cord so we could pull the rocket out of the tree. After about 30 minutes of intense effort (2nd warning sign), Jerry O'Sullivan showed up and we continued for another 30 intense minutes to throw the weight into the tree. I was so focused on recovering my rocket back that I ignored the feelings of getting sick (3rd warning sign). Mitch finally climbed the tree and got the rope over the rocket. We pulled the rocket out of the tree and headed back to the cars.

By the time we got back to the cars only a few people were around packing up their rockets and equipment. I was very fortunate that Mitch and Bill Schworer hadn't left the field. As I started to pack up my rocket and equipment, I got a severe cramp in my leg. This had happened to me before so I figured that I could just walk it off and finish what I was doing. That wasn't the case! All of a sudden my other leg had a severe cramp. I was frozen in place by severe cramps in both legs. When the cramps ended I started my car and turned on the air conditioning. I tried to get into my car and out of the heat but the muscles in my hips cramped up followed shortly afterwards by my legs. I had cramps in all the major muscles from the waist down. I fell out of the car in severe pain. Mitch and Bill saw this happening to me and came to my aid. They ran around and found me some water and Gatorade. I drank the water and Gatorade and started to feel a little better and thought that the cramps were finally going to end. Just the opposite! I started getting hit by waves of cramps that were moving all over my body! I had cramps in my legs, hips, back, arms, neck,

stomach, diaphragm, and instead of going away they were getting stronger. It became hard to breath and I thought that I was going to pass out. Bill called 911 and an ambulance soon arrived! The Emergency Medical Technicians immediately went to work to stabilize me and get the situation under control. They started an IV, put me on oxygen and quickly, and I mean quickly, got me to Fauquier Hospital in Warrenton. I was taken to the emergency room and examined by the staff. A second IV was started to increase the rate of replenishment for the fluids my body had lost. I was also given 12 ounces of liquid potassium and some other medicine to get my electrolytes back in balance. I spent over four hours in the emergency room at a cost of almost \$3,000! I eventually had a total of four bags of IV saline solution. The doctor that treated me told me that I was fortunate that I didn't have a heat stroke. The one major muscle that didn't cramp up was my heart! The doctor also told me that I had done some temporary damage to my kidneys and that I needed to flush my kidneys with water for a few days! I was released from the hospital and headed home after a very long day! The next morning I felt like someone had hit me all over my body with a big stick. The severe cramps had left every muscle sore and tender.

I have fully recovered and I am much more aware and prepared when I plan to spend the day having fun in the sun.

Here is a description of Heat Illness given to me by Fauquier Hospital

HEAT ILLNESS: Symptoms of heat illness are: exhaustion, dizziness, fainting, muscle cramps, nausea, vomiting, chills and goose bumps. Heat exhaustion occurs when the body loses too much water through sweating. This can lead to heat stroke, which is a medical emergency. People who work in hot environments, athletes, and older people are at greater risk for suffering from heat illness.

You **must** drink increased amounts of water or other clear liquids during hot weather to prevent heat illness. This is especially true is you work or do vigorous exercise in the heat (up to a gallon of sweat can be lost every hour under the right conditions). You

will stay cooler by reducing your efforts and by frequently dousing yourself with water.

Certain drugs increase the risk of heat illness because they reduce sweating; these include antidepressants and antihistamines. Please be more cautious during hot weather, drink several glasses of water before, during, and after vigorous activity, and see your doctor if you have any heat-related problems.

BE ALERT AND BE PREPARED FOR SUMMER'S HEAT AND HUMIDITY

*Scott A. McCluskey
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The Unwritten Rule

Do you attend more than 60% of the MDRA launches or your local launches? Are you Level II or Level III? If you can answer yes, then ask yourself this question and answer it honestly. When it comes to pitching in, where do you stand? If you start making excuses in your head that could be a warning sign that you don't participate in the group. There might be lots of reasons why people don't help. One that comes to mind is that helping approximates work and work is a bad thing. I have to wonder why it is so. Of all the organizations I have ever been associated with, Rocketry has the most dedicated, enthusiastic, passionate people I have ever come across. Why wouldn't they pitch in and just do something, anything? What we experience at MDRA is nothing new to volunteer organizations. I suppose there is a feeling of entitlement out there that says, "I joined, paid my dues and that is enough." For some people maybe this is true but only if you answered no to the questions above. For others I don't buy it. If you are Level II you can technically be

fulfilling every function required to run a launch. If you are Level III you have grabbed the brass ring and it is time to give back to the people and organizations that helped you get to the pinnacle of High Powered Rocketry. It is easy to sit back and let the others do the work, but what will happen when they collectively don't show up one day? Who will keep things going? Who will show some leadership? Remember the graveyards are full of indispensable people.

Fortunately, the tide is turning and more and more of the MDRA membership is helping out. There is a breath of fresh air filling the sails of our club and with that we will continue to expand and move forward. Being intimately involved in just about every aspect of the club I know who does what and who doesn't. If you are sitting on the side lines launch after launch, get involved. You have paid your dues and are a full-fledged member, become a working part of what you have joined. Become a cog on the gear, not a brick in the wall. Working the launch is actually an enjoyable experience. You get to meet other club members and see up close and personal what they are doing. There is a real sense of satisfaction to help out another member and see his or her dreams become reality. The beauty is that that it really doesn't take much work at all. The time literally flies by

The Liberty Project was a prime example of getting involved. There were many members of the club that did take the time to get involved and lend a hand. It was much appreciated and was greatly needed. Without those helping hands we never would have made history. We truly did it and it was a team effort. It is and was a real accomplishment for all of you that took part in the effort and you can say without any qualms that you were part of it. I have noticed that from the Liberty involvement many of the same people make a point of taking some of their valuable time to help run the launch.

It doesn't take all day, only an hour or so. Provided there are enough warm bodies willing to do their share. Why do you think MDRA launches run so smoothly? It isn't by accident. It is because there are friends of yours and fellow flyers are willing to forgo some of their time and flying enjoyment so that you can fly. All you have to do is to travel to another launch to confirm

what I am saying. You will soon have a new found appreciation for what we have here at MDRA and why it is important to participate and strive to improve on a good thing. All you have to do is witness what it is like to take part in a launch where no one really knows who to run things, no one helps and the equipment is all broken down. That will be an eye opening experience.

This past LDRS 23, MDRA was the only organization to take on a full day of range operation. All the other clubs took a half-day and had a hard time getting that right. I can say with utter confidence that MDRA blew the other clubs out of the water. Even with an active airport nearby which meant we had to stand down launch operations for up to 10 minutes at a time and with a Hypertek pads a remote Away and Way Away Cell that required additional standing down, the MDRA team launched over 420 rockets in one day. By our casual observation it appeared that we might have launched more rockets in that one day than was launched over the entire week. How did it happen you might ask? It happened because a dedicated group of individuals gave up their day flying rockets so that others could benefit from their hard work. Those people are to be commended and you all know who you are. Not only did the MDRA team exceed the expectations of the launch organizers, we showed Tripoli how it is done. MDRA was organized, had a plan and worked the plan. The only criticism that I heard was from the Extreme Rocketry photographer who said that some people complained that the MDRA guys weren't handing out warm towels after they put the flyers rockets on the rails. That is truly a

compliment to the team of folks that put just one more feather in the MDRA cap.

For those of you that traditionally do not help, ask one of the LDRS team members what the day was like and I can guarantee you that you will only hear pride in their voice as they tell you how MDRA rocked. Many of our members that took part in running LDRS had never been to another launch and I have no doubt that this has given them an appreciation for what we have and why the rest of the rocketry community envies what we are and what we have. It is people and their commitment to excellence and constant improvement that make MDRA the organization it is today and in the future. Lend a hand, the enthusiasm is contagious.

Neil McGilvray

NEXT ISSUES:

- More words from Neil.
- Launch report of July & August.
- Events for Sept & Oct.
- The Trip to LDRS 23.
- Interview with other Famous Fliers.

M.D.R.A. Freedom to Fly

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FOXTROT BILL AMEND



Log May 1 – 2, 2004 ESL #73

Flyer		Manufacturer	Model	Motors	Result
Brown	Bill	Scratch	Frost Bite	I435	
Brown	Bill	Scratch	Sub-Zero	H180	
Brown	Don	Scratch	Skeeter	H242	
Brown	Don	LOC	I-ROC	H123	
Brown	Russell	Estes	Quick Silver	C6	
Brown	Russell	Estes	The Window	C6	
Brown	Russell	Estes	The Window	C6	
Bryson	Andrew	Estes	Shuttle Express	B6	
Bryson	Andrew	Estes	Freaky Flyer	A3	
Bryson	Andrey	Estes	Space Baalz	A3	
Buckner	Jessica	Estes	X-Flier	C-6	
Bucknor	Jessica	Estes	Brandit	C6	
Canino	Bruce	Edmonds	Arcie II	D12	
Canino	Bruce	Aerotech	Sumo	H165	
Davis	Glenn	Scratch	DBNP	G64	
Davis	Glenn	Scratch	Austion Power Gold Member	J400	
Davis	Glenn	Scratch	Glad He Ator	H210	
Freimayer	Anjelica	Estes	Mongoose	"C6,B6"	
Freimayer	Anjelica	Estes	Big Dawg	C6	
Freimayer	Rob	Art Applewhite	10 1/2 Saucer	G38	
Freimayer	Rob	Estes	CBU-87	C6	
Freimayer	Rob	NCR	Big Brute	G35	
Freimayer	Rob	Art Applewhite	Earth Cone	G35	
Freimayer	Rob	Estes	Executioner	F39	
Gilliand	Kathy	Aerotech	Sleep Inn-Shhh	G80	
Harris	Larry	Estes	Pathfinder	E9	
Harris	Larry	Aerotech	Buzzer	G35	
Harris	Larry	Estes	Loadstar	D60	
Harris	Larry	Estes	Marties Albino	B6	
Harris	Larry	Scratch	The Thing	C6	
Harris	Larry	PML	Amram	G38	
Harris	Larry	Estes	Nick Rocks	C5	
Harris	Larry	Estes	The Thing	C5	
Harris	Larry	Scratch	Pringles Light	D12	
Harris	Larry	Aerotech	Arrex	F23	
Harris	Larry	Scratch	Shawnmobile	C5	
Harris	Larry	Estes	Olympic Torch	"D12,C6"	
Harris	Larry	Aerotech	Mirage	H22	
Harris	Larry	Estes	Nicky Big Break	B4	
Harris	Larry	Estes	Nicks Special	A6	
Harris	Larry	Estes	Sidewinder	D60	
Hickok	Richard	LOC	Onyx	F50	
Hickok	Richard	Scratch	Bender	D12	
Hickok	Richard	Scratch	AA-6	F24	
Hickok	Richard	Scratch	Harm	D12	
Hickok	Richard	Aerotech	Mustang	F50	
Hier	Maggie	Estes	Big Daddy	D12	
Hier	Maggy	Estes	Skydive	B6	
Hier	Tom	Scratch	Static Test	K700	
Kelly	Kevin	Scratch	M&M	K900	
Landon	Abbie	Estes	Stars Strips	B64	
Landon	Abbie	Estes	Stars & Stripes	C6	
Lussier	Bob	NCR	Big Brute	G40	
MacDonald	Tom	Rocket R&D	ASP Payload	K445	
Newport	Curt	Scratch	Proteus III	L1800	
Newport	Curt	Scratch	Proteus II	H153	
Olson	Dave	PML	Nimbus	I161	
Potter	Jeff	Estes	Shuttle Express	B6	
Potter	Jeffrey	Estes	Space Bus	A3	
Reamy	Lynn	LOC	Tabitha	H123	
Ritz	John	Scratch	Minnie Me	I350	
Ritz	John	Scratch	Flattering Heights	L700	
Schumacher	Fred	Yo-Yo	Nasty Habit	K450	
Sorci	Ross	Scratch	Tartar	H165	
Sorci	Ross	PML	Black Brant	H165	
Sorci	Ross	PML	Black Brant	G75	
Stafford	Dick	Scratch	Lazarus	I357	
Stafford	Dick	Scratch	Fat Boy	E9	

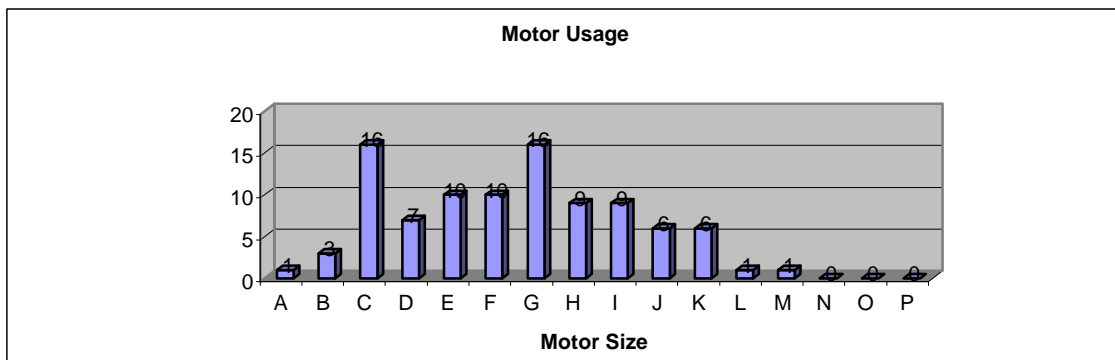
Flyer		Manufacturer	Model	Motors	Result
Stafford	Dick	Scratch	Carrot Top	G80	
Stafford	Dick	NCR	Big Brute	F20	
Stafford	Dick	Thoy	Snipe	E9	
Stafford	Dick	Scratch	Screwed up too	"D12,D12,D12"	
Stafford	Dick	Scratch	Hat of Death	F21	
Weber	David	Weber Eng.	Tuber	H50	Flight #169
Weber	David	Scratch	Momentary Lapse of Sanity		
				"H268, 80,G80,G80,F20,F20,F20"	
2-May					
Kelly	James	Scratch	MDRA Lost & Found	G35	
Kelly	James	Scratch	MDRA Lost & Found	F20	
Kelly	James	Scratch	MDRA Lost & Found	G38	
Kelly	James	Scratch	MDRA Lost & Found	G38	
McGilvray	Neil	Scratch	Bone Daddy	L1800	
Olson	Dave	Aerotech	Air Spike	F20	
Olson	Dave	Estes	Camanche-D	D12	
Ritz	John	Scratch	Scratchy	G90	
Ritz	John	Scratch	Itchy	G85	
Scimgeour	Natasha	V.B.	Silver Streak	E30	
Scimgeour	Natasha	V.B.	Silver Streak	D12	
Scimgeour	Allie	Scratch	Gold Finger	E18	
Scimgeour	Allie	Scratch	Sparkel	C6	
Scimgeour	Kevin	Scratch	The Blue	C6	
Scimgeour	Kevin	V.B.	Purple 'n Gold	D12	
Scimgeour	Kevin	Scratch	White Hott	F20	
Scimgeour	Kevin	Scratch	Gold Finger	E9	
Scimgeour	Kevin	V.B.	Big Red	D12	
Scimgeour	Natasha	V.B.	Silver Streak	D12	
Scimgeour	Natasha	V.B.	Silver Streak	D12	
Scimgeour	Natasha	V.B.	Silver Streak	D12	
Spear	Brittany	Scratch	Black Widow	C6	
Weber	David	Weber Eng.	Tuber	H97	#170
Willis	Gerry	Estes	V2	E9	
Willis	Gerry	Scratch	Tethys	H180	
Willis	Ron	Estes	Code Red	C6	

A	4	10
B	7	35
C	18	180
D	16	320
E	7	280
F	11	880
G	16	2560
H	14	4480
I	4	2560
J	1	1280
K	4	10240
L	3	15360
M	0	0
N	0	0
O	0	0
P	0	0

105 TOTAL MOTORS 38185 NEWTON/SECONDS

Alien	0
Atlantic	0
Aerotech	7
Apogee	0
Art Applewhite	2
Binder	0
BSD	0
Centuri	0
Cluster R	0
Custom Rockets	0
Cosmo Drome Rocketry	0
Dynacom	0
Edmonds	1
Estes	30
Fliskits	0
Giant Leap	0
Hawk Mountain	0
High Flight Tech	0
Hobby Lab	0
Impulse Aero	0
JD Cluster	0
LOC	3
Launch Pad	0
Missile Works	0
MSH	0
NCR	3
Newton 3rd	0
Neubauer	0
PML	4
Performance Rocketry	0
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	1
True Modeler	0
Scratch	39
Shrox	0
Smokin Rockets	0
V.B.	7
Unknown	0
US Rockets	0
Vertical Concepts	0
Weber Eng.	2
Yankee	0
Yo-Yo Dyne	1

101 TOTAL ROCKETS



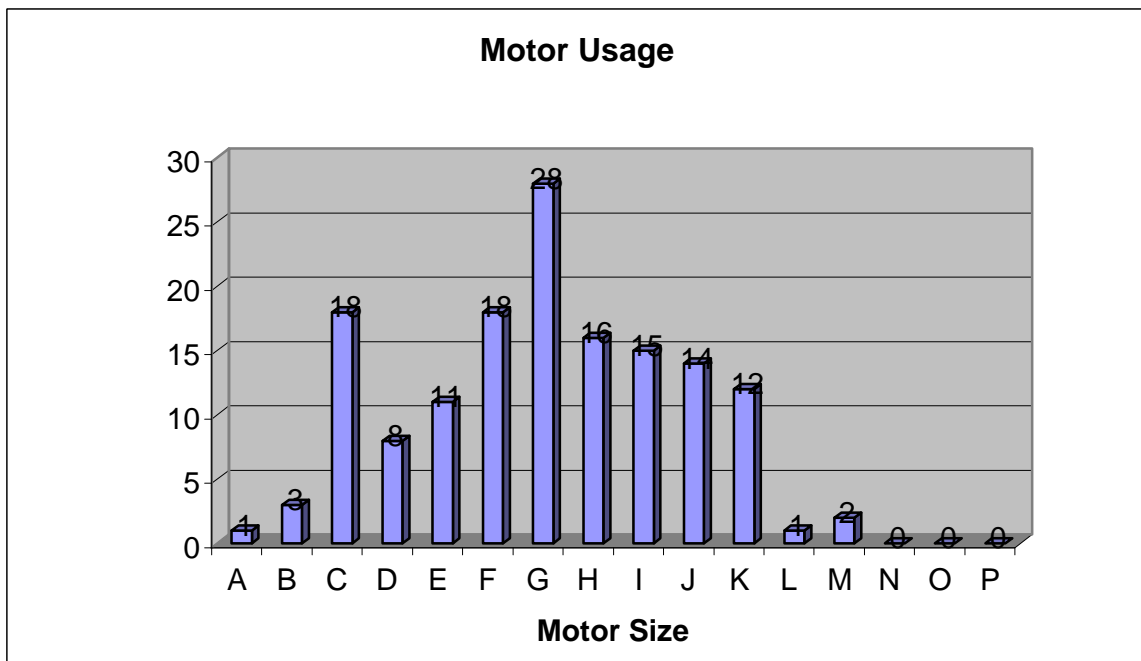
Log June 12 - 13, 2004 ESL #74

Flyer		Manufacturer	Model	Motors	Result
Brown	Bill	Scratch	Sub-Zero	H210	
Brown	Bill	Scratch	Frost Bite	J350	*Cert 2*
Brown	Don	PML	Bull Puppy	H123	
Brown	Don	Scratch	Skeeter	I161	
Brown	Don	LOC	I-Roc	I161	
Brown	Don	Thoy	Phoenix	H112	
Brown	Don	LOC	V-2	I285	
Davis	Glenn	Public Enemy	Glad He Ate Her	G64	
Davis	Glenn	Scratch	PAC 3	K725	BMW
Davis	Glenn	Scratch	Gold Member	K400	BMW White
Davis	Glenn	Scratch	Bull Pup 12d	E25	
Deschemes	Alex	Scratch	Double Trouble	"H153, G35"	
Deschenes	Alex	Scratch	Single Trouble	H128	*Cert 1*
Freimayer	Ang	Estes	CC Express	"D12,D12"	
Freimayer	Anjelica	Estes	Fat Boy	D13	
Freimayer	Anjelica	Estes	CBU-87	C6	
Freimayer	Anjelica	Estes	Mongoose	"C6,B6"	
Freimayer	Anjelica	Estes	Big Dog	C6	
Freimayer	Anjelica	Estes	Executioner	F39	
Freimayer	Anjelica	Estes	Fat Boy	D12	
Freimayer	Anjelica	Estes	Big Dawg	C6	
Freimayer	Anjelica	Art Applewhite	Gold Saucer	G35	
Freimayer	Rob	Scratch	Galileo	A10	
Freimayer	Rob	Scratch	Qubit	C6	
Freimayer	Rob	Estes	Mercury Redstone	D12	
Freimayer	Rob	Estes	Big Daddy	"D12,D12,D12"	
Freimayer	Rob	NCR	Big Brute	G64	
Freimayer	Rob	Estes	Silver Comet	E18	
Gilliand	Kathy	Estes	Sleep	D12	
Haberlein	Paul	Public Enemy	V-2	I 161	
Haberlein	Paul	PML	Bull Pup	H123	
Hickok	Richard	Aerotech	Arcas	F25	
Hickok	Richard	Scratch	GBU-28	F21	
Hickok	Richard	Scratch	Upscale Yellow Jacket	H128	
Hickok	Richard	Scratch	Sea Skua	F39	
Hickok	Richard	Scratch	Fred's Frog	B4	
Hickok	Richard	Scratch	AMOS	G40	
Kelly	James	Scratch	MDRS Lost & Found	G35	
Leonardi	Vince	Aerotech	Initiator	F40	
Leonardi	Vince	Quest	Nike Smoke	C6	
Mains	Ron	Quest	Triton X	C6	
Mains	Ron	Aerotech	Initiator	G40	
Mains	Ron	Aerotech	Initiator	F20	
Mains	Ron	Quest	Triton X	B6	
Mains	Ron	Aerotech	Initiator	F20	
Mains	Ron	Estes	Blue Ninja	D12	
Mains	Ron	Estes	Blue Ninja	"C11,C6,C6"	
Mains	Ron	Aerotech	Initiator	F20	
McBurnett	Mike	LOC	Barbequeol Wease I	G80	
McBurnett	Mike	PML	Patriot	I300	
McBurnett	Mike	Binder	Excel Jr.	H165	
McGilvray	Neil	Scratch	Bone Daddy	L1200	
McGrevey/Haberlein		Neil/Paul	Rocket R&D	Phoenix	J570
Nicholas	Joseph	Scratch	Comet	G64	
Nicholas	Joseph	Scratch	No Name	F52	
O'Sullivan	Jerry	Scratch	High 5	J800	
O'Sullivan	Jerry	Aerotech	Astrobee-D	I211	
Parker	Wayne	PML	Onyx	G80	
Parker	Wayne	Aerotech	Cheetah	E30	
Ritz	John	Scratch	Tetrahedron	K400	
Ritz	John	Scratch	Tetrahedron	K600	BMW White
Ritz	John	Scratch	Falcon	J600	Dr. Evil
Ritz	John	Scratch	Tetrahedron	I300	
Rowe	Ed	Scratch	King Viper III	"K1000,K1000,K1000"	Sparky
Rowland	John	Scratch	No Name	G60	
Rowland	John	Scratch	No Name	G60	
Schumacher	Fred	Yo-Yo	Nasty Habit	K700	BMW White
Scrimgeour	Allie	Scratch	Black Widow	"C6,C6"	

Flyer		Manufacturer	Model	Motors	Result
Scrimgeour	Allie	Scratch	Black Widow	C6	
Scrimgeour	Allie	Scratch	Black Widow	C6	
Scrimgeour	Kevin	Scratch	Gold Finger	E18	
Scrimgeour	Kevin	Scratch	Big Blue	G79	
Scrimgeour	Kevin	V.B.	Out of Hear	G35	
Scrimgeour	Kevin	Aerotech	Green Goblin	G35	
Scrimgeour	Kevin	Scratch	Triple Blue	"C11,C6,C6"	
Scrimgeour	Kevin	V.B.	Purple Hazy	E30	
Scrimgeour	Kevin	Scratch	Stars N Stripes	J330	
Scrimgeour	Kevin	PML	Bird of Happiness	F20	
Scrimgeour	Kevin	V.B.	Big Red	I165	
Scrimgeour	Natasha	Scratch	Purple N Red	E9	
Scrimgeour	Natasha	Scratch	Purple N Red	E9	
Scrimgeour	Natasha	Scratch	Red-White-Blue	C6	
Scrimgeour	Natasha	Scratch	Purple N Red	E9	
Scrimgeour	Natasha	Estes	Red & Blue	C6	
Scrimgeour	Natasha	Scratch	Purple N Red	E9	
Scrimgeour	Natasha	Scratch	Red & Blue	C6	
Scrimgeour	Kevin	Aerotech	Big Red	G35	
Taylor	Jeff	Scratch	Chicken Hawk	I300	Loki White
Taylor	Jeff	Scratch	Chicken Hawk	H100	Loki White
Utle	Bob	Scratch	Sky In My Eye	M1800	BMW Blue
Willis	Gerry	PML	Extended Tethys	J210	*Cert 2*
Willis	Ron	Estes	Ultimaomer	E9	
Willis	T.J.	Estes	Blue Ninja	C6	
13-Jun					
Alewine	Dave & Bill	Scratch	Bumper Wac 7.5	"K530, F25"	
Alewine	David	LOC	Magnum	J380	
Alinewine	Dave	Scratch	Team America	J285	
Brown	Bill	Scratch	Frost Bite	J429	
Brown	Bill	Scratch	Red Dragon	G64	
Cameron	Douglas	Scratch	Nike Smoke	K445	
Centerla	Lou	PML	IO	H29	*Cert 1*
Centrella	Lou	PML	IO	F21	
Chapman	Seth	Scratch	Soco	C5	
Chapman	Seth	Scratch	No Name	C6	
Chapman	Seth	Scratch	Mosquito Hawk	E9	
Chapman	Seth	Scratch	Sacorro	F20	
Cox	Jim	Estes	Executioner	H155	
Davis	Glenn	Scratch	Gold Member	K445	
Gramick	John	Public Enemy	SS Arrow	F50	
Gramick	John	NCR	Eliminator	G35	
Jarkey	David	Art Applewhite	Smiley Saucer	G64	
Jarkey	David	LOC	Aura	G64	
Jarkey	David	Aerotech	G-Force	G64	
Kelly	James	Scratch	MDRS Lost & Found	G80	
McBurnett	Mike	PML	Patriot	I285	
Miller	Ron	Scratch	Snake Eyes	J400	
Miller	Russ	Scratch	Hunka Hunka Brunin Love	K400	
Miller/Paullona	Russ	Scratch	V-2	J330	
Mitchell	Kevin	Scratch	Black Brant II	I350	
Mitchell	Kevin & Barb	LOC	Heaven Bound	G35	
Olson	Dave	Aerotech	Air Spike	F20	
Olson	Dave & Bill	PML	Nimbus	I287	
O'Sullivan	Jerry	Scratch	Terrier Smoke	J250	
Petrucci	Kurt	Estes	Maniac	D12	
Petrucci	Kurt	LOC	Mini Magg	"H153, G35"	
Petrucci	Moriah	Estes	Flash	C6	
Ritz	John	Scratch	Tetrahedron	K700	
Ritz	John	Thoy	Falcon	I250	
Roberts	Rob	LOC	Graduator	G150	
Roberts	Rob	Scratch	Un-EZI	I205	
Roberts	Rob	LOC	Graduator	G170	
Romani	Ed	Scratch	Static Test	H200	
Romani	Ed	Scratch	Black & White	H200	
Romani	Ed	Scratch	Black & White	I440	
Rowland	John	Scratch	No Name	G60	
Schumacher	Fred	Yo-Yo	Nasty Habit	K700	BMW White
Schworer	Bill	Scratch	Orange Athena	M1900	*Cert 3*

Flyer		Manufacturer	Model	Motors	Result
Sorrentino	Joe	Launch Pad	Hawk	F24	
Sorrentino	Joe	Launch Pad	Army Hawk	F39	
Sorrentino	Joe	LOC	Aura	F40	
Taylor	Jeff	Scratch	Chicken Hawk	H120	Loki White
Taylor	Jeff	Scratch	Chicken Hawk	H120	Loki White
Wallace	Nelson	Aerotech	Astrobe Mirage	G64	
Wright	Darren	Scratch	Mini Magg	J400	Loki White
Wright	Darren	LOC	Mini Magg	J600	Loki White

A	1	2.5
B	3	15
C	18	180
D	8	160
E	11	440
F	18	1440
G	28	4480
H	16	5120
I	15	9600
J	14	17920
K	12	30720
L	1	5120
M	2	20480
N	0	0
O	0	0
P	0	0
147	TOTAL MOTORS	95677.5 NEWTON/SECONDS



Alien	0	
Atlantic	0	
Aerotech	13	
Apogee	0	
Art Applewhite	2	
Binder	1	
BSD	0	
Centuri	0	
Cluster R	0	
Custom Rockets	0	
Cosmo Drome Rocketry	0	
Dynacom	0	
Edmonds	0	
Estes	20	
Fliskits	0	
Giant Leap	0	
Hawk Mountain	0	
High Flight Tech	0	
Hobby Lab	0	
Impulse Aero	0	
JD Cluster	0	
LOC	11	
Launch Pad	2	
Missile Works	0	
MSH	0	
NCR	2	
Newton 3rd	0	
Neubauer	0	
PML	9	
Performance Rocketry	0	
Pratt Hobbies	0	
Public Enemy	3	
Quest	3	
Rocketman	0	
Rocket R&D	1	
Rocket Teck	0	
Rogue Aero	0	
Rocket Vision	0	
TCB	0	
Thoy	2	
True Modeler	0	
Scratch	69	
Shrox	0	
Smokin Rockets	0	
V.B.	3	
Unknown	0	
US Rockets	0	
Vertical Concepts	0	
Weber Eng.	0	
Yankee	0	
Yo-Yo Dyne	2	
	143	TOTAL ROCKETS

Space Facts:

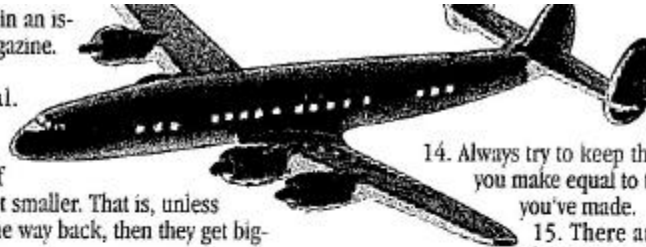
Hydrogen Peroxide was used as propellant for the attitude control rockets of the Mercury spacecraft.

Last Page Funny

This item reportedly appeared in an issue of *Australian Aviation Magazine*.

Rules of the air

1. Every takeoff is optional. Every landing is mandatory.
2. If you push the stick forward, the houses get bigger. If you pull the stick back, they get smaller. That is, unless you keep pulling the stick all the way back, then they get bigger again.
3. Flying isn't dangerous. Crashing is what's dangerous.
4. It's always better to be down here wishing you were up there than up there wishing you were down here.
5. The *only* time you have too much fuel is when you're on fire.
6. The propeller is just a big fan in front of the plane used to keep the pilot cool. When it stops, you can actually watch the pilot start sweating.
7. When in doubt, hold on to your altitude. No one has ever collided with the sky.
8. A "good" landing is one from which you can walk away. A "great" landing is one after which you can use the plane again.
9. Learn from the mistakes of others. You won't live long enough to make all of them yourself.
10. You know you've landed with the wheels up if it takes full power to taxi to the ramp.
11. The probability of survival is inversely proportional to the angle of arrival. Large angle of arrival, small probability of survival and vice versa.
12. Never let an aircraft take you somewhere your brain didn't get to 5 min earlier.
13. Stay out of clouds. The silver lining everyone keeps talking about might be another airplane going in the opposite direction.



Reliable sources also report that mountains have been known to hide out in clouds.

14. Always try to keep the number of landings you make equal to the number of takeoffs you've made.
15. There are three simple rules for making a smooth landing. Unfortunately no one knows what they are.
16. You start with a bag full of luck and an empty bag of experience. The trick is to fill the bag of experience before you empty the bag of luck.
17. Helicopters can't fly; they're just so ugly the earth repels them.
18. If all you can see out of the window is ground that's going round and round and all you can hear is commotion coming from the passenger compartment, things are not at all as they should be.
19. In the ongoing battle between objects made of aluminum going hundreds of miles per hour and the ground going zero miles per hour, the ground has yet to lose.
20. Good judgment comes from experience. Unfortunately, the experience usually comes from bad judgment.
21. It's always a good idea to keep the pointy end going forward as much as possible.
22. Keep looking around. There's always something you've missed.
23. Remember, gravity is not just a good idea. It's the law. And it's not subject to repeal.
24. The three most useless things to a pilot are the altitude above you, runway behind you, and a tenth of a second ago. ■

Thanks Glenn.....

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