The LDRS Story
(Originally appearing in SNOAR News, and reprinted in the Tripolitan. It is reprinted here as an updated version.)

By Christopher T. Pearson

The story of the first organized national high power sport launch, the first to get a FAA waiver, and the first to cause the NAR to expel members.

About the author: He got started in model rocketry in 1967, at the tender age of 13 years old while the US and the USSR were at the height of the Moon race,. By 1976, at the ripe old age of 22, he was ready for something more than NAR competition and Estes' rocket kits. Having been introduced to motors "bigger than a D" by Flight Systems Inc., he entered the forbidden (at least as defined by the NAR) realm of what was called "illegal amateur rocketry", that was, at the time, anything weighting more than one pound and having more than four ounces of propellant. Clusters of D, E and F black powder motors soon gave way to early composites. Reinforced Estes and Centuri model rocket kits adapted to take high-power motors quickly evolved into what was considered "big" for the time, four inch diameter rockets of original design and later those produced by the first high-power rocket kit companies. The rest is history.

The LDRS story actually got started a number of years before the first LDRS was held in a northern Ohio farm field. Here's how it began:

As with many people, I started into model rocketry as a teenager, but more adult things, like cars, motorcycles, girls, a job and college forced me to put rocketry on the back-burner for a while. When I got back into rocketry, even though I was heavily involved in NAR competition until 1978, I wanted to try something different. I got started in high-power rocketry, as it existed then, back in 1976. I quickly made contacts with people all over the country that were involved in the emerging high-power hobby. Some of these people were Gary Rosenfield (then of Pro-Jet, predecessor of Composite Dynamics and Aerotech), Roger Johnson (aka: The Rocket Clown), Korey (the Ace from Space) Kline of Ace Rockets, the first high power rocket kit company, Mark Mahyle of Small Rocket Sounding Systems, another composite motor and kit company, along with others who were, at the time, taking "model rocket technology" to the limits. MRT, as it was also called, referred to high-power rockets made from model rocket components.

Between 1972 and 1978, unless you had an "in" with a motor manufacturer, about the only thing there was for the high power crowd was either clustering D12's or using FSI motors. Centuri/Enerjet had ceased motor production, although limited motors were still available and being used. This was before any of the early composite rocket motor companies arrived on the scene. Some of the people that were visible in the early high power community were Scott Dixon of Vulcan Systems, and Irv Waite, formerly of Rocket Development Company, father of the Enerjet line of composite rocket motors. They were both producing professional rocket motors for military and industrial use, but for the right amount of $$$, they could be persuades to make motors for you.

Before this time, there were many notable, and now very rare and collectable, high power rocket motors. Pro-Dyne, maker of F thru G class motors. Coaster, who made large E, F and G black powder motors, and Centuri Mini-Max, also D, E, and F black powder motors. They had all vanished from the rocketry scene by 1970. Gary Rosenfield was one of the new breed of composite motor manufacturers, as his first company, Pro-Jet, produced F and G composite motors. Mark Mahyle of SSRS (later known as Crown Rocket Technology) entered the foray with E thru H composites motors, and a little known company called Plasmajet, run by John Krell and Randy Sobczak, made F thru I motors. So with those new motor manufacturers producing a new generation of motors, a number of high-power kit manufacturers soon followed suit. Unfortunately, as with most hobby-type businesses, many people entered the hobby and left just as quickly. Gary Rosenfield joined forces with John Davis and formed Composite Dynamics, which gave rocketry mass-marketed composite 24mm E and F motors, as well as the first end-burning composite, the 29mm E9, a motor which, ten years earlier, Enerjet had called "impossible". Other early companies produced specialized items for the high-power community such as launchers, pads, etc.

Unbeknownst to the NAR, a number of people at the time were flying high-power rockets at local sport launches or side by side with competition rockets at NAR events. Unlike NARAM's today, where the sport range is busier than the competition range, sport flying was almost unheard of at a NAR launch. At one of our regional meets early in 1980, several uncertified F, G and H motors were flown in overweight rockets. Somehow, word of this leaked out and later that year while at NARAM-22, another SNOAR member and I were called on the carpet by Mark Bundick, the National Contest Board Chairman and questioned about it. This is where the famous, "Who flew the G?" quote came from.

My high-power contacts in California told me of all the extreme rocket flying that was happening out there: huge clusters of F and G motors, real metal vehicles, special effects rockets and so on. I wanted to observe what was going on in high-power rocketry on the west coast, so, in 1981; I journeyed to Smoke Creek, Nevada, to attend the annual Memorial Day Amateur Rocket Launch. This was sponsored by the Rocket Research Institute, and is primarily for the zinc/sulphur crowd, but they allowed the launching of large model rockets and MRT vehicles, along with a lot of professional pyrotechnics people who lit up the nighttime sky with fireworks demonstrations. While there, I heard Roger Johnson say something that was to stay with me long after the launch, and that was "We're going to fly some large and dangerous rocket ships!"

To tell you the truth, I was actually somewhat disappointed by what I saw flying out at Smoke Creek. Except for the zinc/sulphur and asphalt/per chlorate rockets being flown by Dr. Key's high school group, it was rather mundane. It was nothing like what is flown at LDRS today. Primarily a lot of four-inch stuff with clusters of F and G motors, and an occasional H or I motor. And as for the launch facilities, you walked out away from the cars, stuck a rod in the desert floor and ignited the motors with fuse and a match! Nothing like I was led to believe was flown.

Later that summer, the NAR section that I belonged to ran a regional meet in which we flew a number of E and F competition events, which was very rare for sections even today. We advertised it as a meet for "you Large and Dangerous Rocket Ship fans." Also flown during that event were actual high power rockets powered by non-certified motors.

It was only a few months later that I let my NAR membership lapse after being a member for 14 years. When other NAR members asked me the reason, I explained that it was because I wanted to fly rockets that would exceed the NAR's limits, and I didn't want to cause problems by doing so. I was later told by a NAR official that this was probably the best way to have done it, rather than openly flying high power and daring the NAR to do something about is, as some people did.

Shortly after that I began planning what would later become the first national high power rocket launch, LDRS. The name LDRS was an acronym for “Large and Dangerous Rocket Ships”, just as I had heard Roger Johnson say it at Smoke Creek the year before. LDRS was the first MRT or high-power rocketry event that was promoted as such. I found out what I needed to do to get a FAA waiver to legally fly “amateur” rockets. When I contacted the Oberlin Air Traffic Control Center about the waiver, they were baffled! They had never issued a waiver before! So it was a learning experience for both of us.

Feeling rather the rogue at the time, I even managed to get the event listed in the contest events schedule in the Model Rocketeer, the NAR’s magazine for one issue before they discovered its true nature. The following is how it appeared.

> **LDRS-1** Sport Launch, 24-25 July, 1982, Medina, OH (SNOAR). Three unofficial “events,” prizes to be awarded (no national contest points). Contact: Chris Johnston, 26481 Shirley, Euclid, OH 44132; (216) 731-3839.
>
> -From *Model Rocketeer*, May, 1982 Con Calendar

Then, late one night a couple of months before the launch, I received a rather nasty phone call from a very PO’ed then-editor of the magazine, Chris Travares, questioning me about the true nature of the launch. So I told him. Needless to say, he was not pleased. After that, they ran a disclaimer in the next few issues warning about "intentional amateur activities" and urging NAR members not to attend.

> **LDRS-1,** previously appearing in this space has been determined to include intentional amateur activity not announced in the original notice sent to the *Model Rocketeer*. **NAR members are urged not to participate in LDRS-1**
>
> -From *Model Rocketeer,* June, 1982, Con Calendar

We were under a great amount of pressure from the NAR officials, after all, in their arrogance they thought that they were in control of all model rocketry (at the time even Estes bowed down to them) and here was someone who was organizing a launch to publicly do what they specifically forbade. This was something that they never had happen before. Frantically, Pat Miller, the president of the NAR at the time offered to send me a list of all active NAR members so I could check to see if the attendees were members and forbid them to fly. Yeah … right! NAR officials attempted to coerce certain members that they knew would be attending, asking them to write down names, take photographs, and generally "rat" on everyone that was there. To the best of my knowledge, no one volunteered to fink either before or after the launch.

LDRS-1 as well as LDRS-2 through 5 were all held on a farm field near Medina, Ohio. And not a real great flying field, either. There were houses nearby and lots of trees a short distance from the launch site. "So why did we launch there?" one might ask. Simple! The field was owned by Mike Wagner, who was a member in the local NAR section (SNOAR, or the Suburban Northern Ohio Association of Rocketry). It was actually listed as a private airstrip, so it was uncultivated, smooth, and big enough for most model rocketry activity.

LDRS-1 went off without a hitch. People came from all the surrounding states and one as far away as California to attend. There were a grand total of 47 people at the launch. Not 47 flyers, 47 people! For launching hardware we had the SNOAR model rocket racks and one launcher with interchangeable rods up to ½"! A far cry from the launch range at LDRS today! A lot of FSI E and F motor clusters were flown, along with clusters of D12's. Left-over Composite Dynamics motors were flown, along with Plasmajets and SSRS motors. The highlight of the launch was rockets flown with single composite Rocket Development Corp. H and I motors! Wow!

After the launch, the club newsletter, SNOAR News ran an article on LDRS-1 complete with pictures. As a result, every NAR members pictured was contacted by NAR officials about alleged "safety code violations," and several were expelled after so-called "disciplinary hearings".

With the success of LDRS-1, plans were quickly made to continue the launch. More launchers were added and better crowd control was implemented. The following year, more people came from the west coast, notably Gary Rosenfield and Korey Kline. LDRS-2 featured the first composite J motor flown at a LDRS, courtesy of Scott Dixon of Vulcan Systems, who attended, which was flown by the author. It also featured the first power shred at an LDRS, also by yours truly. Korey Kline flew a bunch of his high-power Ace Rocket kits. Aerotech flew a number of prototype high-rate motors.

In the next two years, the NAR zealots tried every which way to prevent LDRS from happening. They threatened to contact the FAA to check the waiver (I told them to go ahead), got in touch with the Medina city prosecutor, fire and police departments, even the Bureau of Alcohol, Tobacco, and Firearms (otherwise known as the ATF), in attempts to shut it down. They failed.

Each year LDRS got bigger, the motors and rockets got bigger, and the NAR saw its senior membership shrinking as more and more of them left model rocketry, ceased model rocket competition and entered the high power rocketry sport.

By the time LDRS-3 rolled around, the NAR was forced to admit that we might be right and started the first "Blue Ribbon Commission" for the study of high power rocketry. Pat Miller attended LDRS-3 to observe and walked away very impressed with what he saw. At one point during the fist day's activities, I offered to let him launch my rocket with clustered F100 motors, but he politely refused. It was only 150n-sec! Later, he told me privately that the degree of craftsmanship that he saw at LDRS, along with the way the range was operated was better than any NARAM he had been to.

Negotiations began after that with the HPR/LDRS committee, which had such notable high power people like Chuck Mund, Jim Dunlap, and SNOAR members Chris Johnston and Bob Geier. Guidelines were drawn up by the committee, along with a proposed safety code, and submitted to the Commission. Experiments were conducted by Trip Barber to ascertain the power limits of the new composite motors. Some high power manufacturers, including North Coast Rocketry, were contacted to give their input in certain subjects, such as motor design and airframe construction. Others donated materials for the testing. The Blue Ribbon Commission gave its findings, and out of this came the new revised NAR/HIAA Safety Code, which was undoubtedly the most profound change in the hobby since its inception.

At LDRS-4 the crowd on the field was exceeding 100 people. It featured the first Aerotech K motor flight and the first L motor flight, another Vulcan Systems motor in a minimum diameter airframe, which we never saw again.

Soon after this, the so-called "Son of Blue Ribbon Commission" was formed to study the true LDRS type of rockets, over and above the 3.3 pounds which were now called Model Rockets. Members of the Commission visited LDRS-5 and were impressed by the quality of workmanship of the rockets, the reliability of the motors, the vehicles in flight, and especially the strict safety rules which were enforced at the meet. The result of this was the new NAR code for high power rocketry which allowed NAR members to fly high-power rockets beyond the 3.3 pound weight limit.

After LDRS-4 we realized that because of motor and vehicle development, we had far exceeded the limitations of the flying field, and for the next year there was an attempt to hold LDRS-5 at El Dorado Dry Lake near Las Vegas Unfortunately, the FAA waiver was refused and hastily plans went ahead to hold it once again in Medina.

Unfortunately, LDRS-5 was the last national high power launch to be held in Medina, as the field we flew on was leased to a local farmer soon after that and plans were made to plow it for crops. As a club, we had just one more high-power sport launch there, just a couple of months after LDRS-5. I'm sure that we probably put a few rockets into the Medina town square, and I think that we were really beginning to scare the locals!

Also, after the problems that happened that year, both on and off the launch range, I was reluctant to organize any more events. Several people had attempted to use the launch to further their personal and political agendas and I became very discouraged, not to mention, totally burned out. Furthermore, North Coast Rocketry, the company that I founded and was operating out of my house was consuming increasing amounts of my spare time. With the request of Tripoli officials, I allowed the copyrighted term "LDRS" to be used by the Tripoli Rocketry Association for the name of their national launch. Others have followed the example that was started by LDRS and have organized other regional type events, some with more success than others. LDRS-6, held in Hartsel, Colorado, was the first national event sponsored by Tripoli in conjunction with Vulcan Systems, Inc.

I would like to believe that LDRS was a deciding factor in the Model Rocket Safety Code change, and that it was also a factor for the emerging interest in high power rocketry, as with LDRS came the development of many of the leading high power rocketry companies that changed the face of rocketry as we know it. Never again would we think of Estes-type model rockets when discussing rockery, Motors evolved from 13, 18 and 24mm “toy” black powder motors to 2,3, 4 inch diameter and larger professional expendable and reloadable composite motors. From clusters of D12’s to clusters of M motors. We now have a variety of “alternative fuel” hybrid motors. Rockets leaped from ounces, to pounds, to tens and then hundreds of pounds. From paper and balsa wood to fiberglass, carbon fiber and Kevlar. And there is no end in sight.

LDRS was the first, and set the example for others to follow. I can only hope that the number of high power launches continues to increase all over the country, as the sport of high power rocketry continues to grow

I urge the sponsors of future LDRS's to continue the tradition of well run meets stressing safety, as LDRS is the standard all others are judged by.