

## The Hamster Dance 2 and Balls-21 Report

What can anyone say about Balls? You have to see it to believe it. Every rocketeer should go to Balls at least once just to experience it. It's the world's best launch site. Where else can you see Q-powered Mach 4 all metal vehicles hitting 100K plus feet, P motor static tests (and cato's), R-powered EX hybrids, P to P staged altitude attempts, three-stage rockets with N motors in each stage, and of course, the annual beer keg loft and Party on the Playa? Many people work all year building a project that can only be flown at Balls. Many of them are so big, time consuming and expensive, that they have to be team efforts. It's a launch like no others. Tripoli L-2 members or better only. No NAR types. No safety check or weigh-in. You're on your own. Put your rocket on the pad and hand in your flight card. And what can you say about Brunos and Gerlach? And don't stare at the Burners!



The day before the start of Balls, the second annual Hamster Dance Weenie EX Launch was held. The rules for this launch is you can only fly with single-use Research motors, no metal cases, and the rocket must weigh less than five pounds. I attended this year with an all-fiberglass 54mm rocket which I flew with single-use 29mm I235 motors. Years ago, Propulsion Industries used to make a 29mm I290 motor which I thought was great. I obtained some 29mm paper phenolic tubing like what old single-use motors used to be made out of. My goal was to recreate that motor, and I came pretty close on my first try with the I235, which was a 450 n-sec motor. However, with the smoke grain, the motor was 21 inches long!



Unfortunately, the Hamster Dance launch was not held at the Balls site (because that would have made sense), but many miles to the north in another smaller dry lake, on top of a hill. The two arrows show the location of parking and the launchers. You could not access the launch site in a normal car, as you needed a truck or SUV with 4 wheel drive. Even with that, Gary Rosenfield's SUV (which I was in) almost slid off the trail on the way to the launch site and Gary lost control of the car at one point on the loose playa surface.



There were nine participants this year and eight of the motors worked (the one sugar motor failed), much better than last year's success rate. My all-black rocket (above left) hit 4100 feet, and was recovered successfully, something not hard to do on the dry lake bed. It was nowhere near the highest altitude of over 5000 feet, achieved by Gary Dickinson (above right). Gary Rosenfield (left) got the award for the highest flight with the lightest rocket. Andy Limper (right) got the best looking rocket award for his flying hot dog, even though it went unstable. Next year the plan is to have the launch at the old Smoke Creek launch site which was the site of many early high power launches run by RRI (the Reaction Research Institute) and visited by myself in 1981. It was after going to that launch that I decided to start a little high-power launch back in Ohio.

Balls started the next day to clear skies, no wind and temps in the 80's. This was the hottest (temp wise) Balls launch I've been to. Fortunately I had lots of sun block, beverages and a good hat. The closest launch pads are at 500 feet (for M motors) and they usually discourage motors less than K



power. I flew my Hamster Dance rocket twice more over the weekend, and it was actually the first rocket flown at the Balls launch on Friday. At any other launch, the flight of an M powered rocket always gets everyone's attention. At Balls, people won't even look up from what they're doing to watch an M flight! "Oh hum! . . . Just another M motor!" You have to fly something really fierce to get anyone's attention like the Warped Reality flight on a Skidmark N motor (right). A number of vendors showed up at the launch, many of them the kind that would only attend a large Research launch.



Chuck Piper (from the Rocket Research Institute and early Smoke Creek days) came with a 250 pound drum of AP and lots of other chemicals and metals for sale. I picked up 4 pounds of powdered titanium for \$5! How about NASA Standard Initiators (a \$2500 value) for \$1 each! Other Research dealers like AeroCon were also there along with conventional dealers What's Up Rockets and Bay Area Rocketry. The Blackrock Bistro was open all day and did lots of business from those of us who didn't get provisions in Reno before hitting the launch field. An FAA official was on site (a first) and was the last word on how high we could fly at any particular time. Once again, students from the Rocket Propulsion Lab at Cal State were at Balls. There were high hopes that they were going to launch their multi-stage high-altitude attempt, which they were expecting to fly higher than 400K. Unfortunately, they were unable to get the 419K waiver they requested for the flight, so we'll have to wait until next year to see if they can break the 380K record that the CXST team made 10 years ago.

We didn't see the large number of high-altitude multi-stage attempts that we saw last year, mainly because the "Higher than 100K" \$5000 prize had been claimed at Airfest two weeks earlier. Although there were a number of two stage rockets, some successful and others not so, there were no three stage rockets flown this year.

Punk Rocket Science successfully flew their O powered Nike Smoke:

<http://www.youtube.com/watch?v=6NbYgaREjzY&feature=related>

Team Numb flew a full keg of beer with an O6500 motor:

<http://www.youtube.com/watch?v=VbRJDU1L33c&feature=related>

Warped Reality flew on a CTI N2600 Skidmark motor:

<http://www.youtube.com/watch?v=aws21AEelRo&feature=related>

Friday was the best day to fly, and many flyers who wanted to do high altitude flights who waited until Saturday were disappointed when cloud cover above 16K limited the waiver to that altitude. At any normal east coast launch, a 16K altitude limit would be



great, but when you are expecting your rocket to hit 30-40K feet or higher, you're stuck. People waited with their rockets on the pads, some for as long as 5 hours before the waiver was lifted up to the 150K maximum early in the afternoon. Once the waiver was raised, and with blue skies overhead, many team rushed to get their rockets in the air before the range shut down for the day. Tripoli Pittsburgh's big project (above right) was the Phoenix, a 6" Q83000 all metal motor with an aluminum fin can and was expecting to hit 120K.

Les Derkovitz from NASSA and Tripoli Vegas was there with his NASSA Hornet, a 5" metal motor with a beautiful carbon fiber fin can (above left).

Unfortunately the Phoenix suffered a blown forward closure at motor start-up (right) which resulted in all but one of the fuel grains being ejected from the motor and left 100 pounds of burning AP on the playa. The NASSA Hornet's motor burned perfectly but the fiberglass/carbon fiber airframe above the metal motor/airframe failed at max Q, however the motor continued going up and was recovered after core sampling.

Mike Passaretti flew what was probably the first successful flight of a minimum diameter rocket flown with a CTI N5800 motor.

<http://www.youtube.com/watch?v=TMblrYpB9vw>



The Gila Monster flew on a large cluster surrounding a central M on the first stage, but it was underpowered and the second stage malfunctioned: <http://www.youtube.com/watch?v=DCAGsjQ8tqQ&feature=related>

During the day, an airplane flew search patterns over parts of the playa looking for the crash site of the beautiful all-metal R powered hybrid that was flown successfully but lost last year. Earlier in the day, another group located last year's lost rocket, and with the aid of a shovel and a truck with towing straps, managed to extract the remains of their rocket from the clutches of the playa.



Former TRA President, Ken Good proved that the third time is the charm when he managed to get his Drake 2 rocket (left) flown successfully. The Drake features electronically staged motors, but not in the conventional method. When the first motor burns out, it is ejected from the airframe and a second motor slides into the first motors place and is ignited. He now plans on the Drake 3, a 4 inch airframe using staged M motors.

One of the more interesting flights on Saturday, and the only RC glider flown at the launch was a model of a WWII German Me-163 Komet rocket powered fighter (right). It flew great and had a perfect touchdown right in front of the flight line. Hot and heavy flying continued until after 6PM



on Saturday.

One flyer dragged a Hypertek GSE out onto the playa in order to do a L3 certification flight with a Hypertek M1000 motor. Surprisingly, the tank fill didn't take much longer than normal in spite of the heat on the playa and the rocket had a perfect flight. It was the only hybrid flight of the launch as the usual big EX hybrid flyers didn't show up this year.

Sunday dawned with heavy low-level clouds and moderate winds. The FAA limited the ceiling to only 6K. Consequently, many people packed up their rockets, even if they were only expecting them to hit 10K. Only two rockets were flown in the morning and the range shut down at noon when it became apparent that the weather wasn't going to get any better. At Balls, you have to expect to get blown off at least one day out of the three. Fortunately, what we didn't get was the usual zero-visibility dust storm that often accompanies any high winds. Later in the day a heavy rainstorm hit Gerlach. The last place you want to be when it rains is on the playa, as the surface dirt, which has the consistency of talc, turns into slick mud.

Other highlights of the weekend included the annual Tripoli Gerlach meeting and spaghetti dinner. We found out that when you order spaghetti at Bruno's, it doesn't include meatballs. Tripoli Gerlach has only one meeting a year, at Balls.

All active members are expected to attend Balls and the meeting. Tripoli Gerlach has the distinction of being the Prefecture with the largest number of Lifetime Members, Level 3 certified flyers, TAPS and members with Tripoli numbers under 100. Anyone can be a member in Tripoli Gerlach and still retain membership in their local Prefecture.

Early Monday morning, tired and dusty, everyone packed up their cars, trucks and trailers and headed out of Gerlach and the opulent luxury that is Bruno's. Some of us (myself included) boarded planes heading back home from Reno. Plans are already being made for next year's LDRS launch to be held at this site.

Look for the LDRS-32 web site to be up and running on January 1<sup>st</sup>. [www.ldrs32.com](http://www.ldrs32.com)

Photo credits: David Wilkins, George Pike, Dave Cooper