TRIPOLI GERLACH Research Rocketry News

TRIPOLI PREFECTURE # 138

NOVEMBER 2012

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WWW.TRIPOLIGERLACH.ORG

TRIPOLI GERLACH Research Rocketry
TRIPOLI PREFECTURE #138

NOVEMBER 2012 Vol. 02 No. 06

PUBLISHED EXCLUSIVELY FOR
THE MEMBERS OF TRIPOLI GERLACH
AND ANYONE ELSE INTERESTED
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Tripoli Gerlach was founded as a National Prefecture under the Tripoli Rocketry Association, Inc. Devoted to Research Rocketry and the Black Rock Desert area of Nevada, we welcome all qualified Tripoli Members having a Level 2 certification or higher.

Our Executive Officers are;

Tom Blazanin (003)
Prefect
Valencia, PA
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Treasurer
N. Huntingdon, PA
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If you have anything to contribute in the way of information, articles, photos or whatever, please send them to Tripoli Gerlach Headquarters. Visit our WebSite on-line at;

WWW.TRIPOLIGERLACH.ORG

ON THE COVER Gary Dickinson, of Columbus, Ohio, won the ALPHA HAMSTER Award at this years HAMSTER DANCE II with a highest altitude of 5,168 feet. A complete report on the launch is found on Page 6.

END OF YEAR

This is our last issue of *TRIPOLI GERLACH NEWS* for 2012. Come January we will begin our third year as a Prefecture under the Tripoli Rocketry Association, Inc. A new venture producing LDRS 32 at Black Rock is in our future as well as conducting Hamster Dance III which will again bring a bunch of Rocket Scientists together for fun and laughs.

Also for 2013 we will also expand our page count in *TRIPOLI GERLACH NEWS* to 20 pages, expanding our coverage of stuff we like.

RENEWALS

January 1st is the beginning of our fiscal year and with that all Member's Dues are - due! All Tripoli Gerlach Members will be mailed a renewal form. If you haven't done so yet please fill it out and send it to our Treasurer Dave Rose along with your dollars.

Several members have already renewed at our 2012 Member's Meeting.

Those members listed below must renew their membership by January 1st, 2013.

Baumann	Karl
Brewer	Craig
Callahan	Jim
Canepa	Mark
Cooper	Dave
Derkovitz	Les
Dickinson	Gary
Freiheit	Ron
Gerrard	Doug
Graham	Francis
Grubb	Joe
Hagensick	Rich
Holmes	Paul
Kelly	Bruce
Koloms	Deb
Leenellett	Micheal
Limper	Andy
Meredith	Robin
Pearson	Chris
Pscolka	Joe
Rogers	Chuck
Rosenfield	Gary
Schoner	Bob
Walby	William

Print out the application on page 3 and mail in your dues today. If you're not a member, do the same and join us!.

MEMBERSHIP

Membership in Tripoli Gerlach is open to only National Tripoli Members with a Level 2 Certification or higher no matter where they reside. They must have a sincere and serious attitude about Research Rocketry and the desire to be active in an annual Black Rock participation to the best of their ability. Tripoli Members may join the Tripoli Gerlach Prefecture and still honor their home Prefecture with representation.

Tripoli Gerlach Membership is $20 a year with our year running from January to December. Renewals are due the first of each year no matter what time of year you initially join. Funds collected will go to Prefecture operations and production of future Black Rock Launches and activities. We have begun a line of Tripoli Gerlach Merchandise to aide in our fund raising cause. Please consider our cause and your purchase will be greatly appreciated. You do not need to be a Member to purchase.

While the main purpose of Tripoli Gerlach is Research Rocketry under the sanction of the Tripoli Rocketry Association, Inc., its second purpose at heart is the Black Rock Desert and the surrounding area. Members of Tripoli Gerlach should show an interest in this area and the promotion, exploration and preservation of the Black Rock Desert environment.

If you are interested in joining us and helping shape our future we'd love to have you on board. Print out the application on this page. Fill out all requested information and mail it to the address on the form. Allow two weeks processing

MEMBER'S PHOTOS

All members of Tripoli Gerlach are asked to go to the Tripoli Gerlach website at www.tripoligerlach.org and review their CURRENT MEMBERS information. Any information not found correct should be sent to TOM for updating.

Of prime concern is the photo. Click on the little camera icon to see your photo. If it shows NO PICTURE AVAILABLE AT THIS TIME please send us a photo to use. If you are not thrilled with the photo shown and would like another one, please send that on to us as well.

New people wanting to join Tripoli Gerlach can use the Application at the bottom of this page AND please include a photo we can use. The photo can be sent with the application or E-Mailed to us when you do mail in the form.

Send electronic photos to:

shadow@pghmail.com

NEW MEMBERS

We've added two new members for 2013 at the BALLS 21 launch:

NEIL MCGILVRAY
Columbia, MD
neilroc@comcast.net

GERALD MEUX Jr
Las Vegas, NV
kninja250@yahoo.com

MEMBERSHIP APPLICATION

Please fill out this form completely. It is necessary to supply us with your TRA number and certification level. Membership runs from January to December. Renewal will be January 1st,

YEARLY DUES ARE $20.00

Make Check for $20 Payable to
DAVE ROSE
13385 Lincoln Way
N. Huntingdon, PA 15642

If at all possible please E-Mail your photo to be posted to:

shadow@pghmail.com

NAME _____ TRA# _____

ADDRESS _____ CERT LEVEL _____

CITY _____ STATE _____ ZIP _____ EXP DATE _____

E-MAIL _____@_____

PHONE (_____) _____-_____ CAN WE PUBLISH (YES) (NO)

HOME PREFECTURE _____

PERSONAL WEBSITE _____

As a member I will abide by all rules set forth by the Prefecture as well as those set forth by the National Organization. I pledge to pursue a commitment to the Prefecture's designated Launches & Activities and support the Prefecture to the best of my ability.

_____
SIGNATURE

_____
DATE

TRIPOLI GERLACH
Research Rocketry
TRIPOLI PREFECTURE #138

www.tripoligerlach.org

TRIPOLI GERLACH 2012 MEMBER'S MEETING

The Second Annual Tripoli Gerlach Member's Meeting was held on September 20th, 2012 in the WayBack Room at Bruno's. The meeting began at 7:30pm with a Spaghetti Dinner for all. No meat balls were served as we specifically didn't say Spaghetti AND Meatballs!

ATTENDING: Waysie Atkins, Larry Benek, Tom Blazanin, Brandy Bruce-Sharp, Mark Clark, Dave Cooper, Les Derkovitz, Gary Dickinson, Ron Frieheit, Bill Good, Ken Good, Rich Hagensick, Paul Holmes, Deb Koloms, Michael Leenellett, Andy Limper, Jerry McKinlay, Robin Meredith, Gerald Meux, Chris Pearson George Pike, Chuck Rogers, Dave Rose, Gary Rosenfeld, Oliver Schubert, Dave Wilkins.

ABSENT: Cath Bashford, Craig Brewer, Mark Canepa, Francis Graham, Bruce Kelly, Joe Grubb, Jim Callahan, Karl Baumann, Bob Shoner, Bob Utley, and William Walby

First order of business was a call for nominations to the Executive Committee. No one stepped forward and the existing Executive Committee was re-elected for an unprecedented third term.

Tom Blazanin, Prefect
Deb Koloms, Secretary
Dave Rose, Treasurer

New member Gerald (Skippy) Meux was introduced to the membership and renewal memberships were discussed and opened. All existing memberships are due by January 1st, 2013.

TRIPOLI GERLACH NEWS was discussed next with the membership voting to continue the publication. We appear to get a good number of non Tripoli Gerlach people viewing our PDF Publication, and with time we

EXEC's Deb Koloms, Tom Blazanin and Dave Rose

may obtain a strong group of followers. Tom asked for input and articles and the membership half heartedly agreed to submit stuff.

A three fold flyer was announced to entice new members. It has a mini application with it. Members were asked to take some and spread word of the Prefecture and get more people to sign up.

Our successful HAMSTER DANCE II was reviewed. This year we had 10 Flyers and 13 spectators and again the launch proved a great time had by all.

Although HAMSTER DANCE is not formally a competition four awards were presented. (See the HAMSTER DANCE article on Page 6).

2012 ALPHA HAMSTER, that is the person achieving the highest altitude with a successful flight, was Gary Dickinson of Germantown, Ohio and he was awarded the 2012 Alpha Hamster trophy donated by Master Engravers of Las Vegas. In addition all four "winners" were presented free dinner certificates from Bruno's.

Tom Blazanin presents the ALPHA HAMSTER Award to Gary Dickinson for having the highest altitude (5,648') at HAMSTER DANCE II

Andy Limper, winner of the Best Looking Rocket at HAMSTER DANCE vowes the Weiner will return next year, bigger & better!

LDRS 32 was discussed. All members attending appeared to be willing to get involved in some way, shape or manner. It was decided the five day event would be Research on Thursday, Commercial on Friday & Saturday and Research again on Sunday & Monday.

It was also unanimous that it would be advertised and conducted as NOT a BALLS Launch. Large and extreme projects will be asked to be flown at BALLS.

Several other details were laid into the groundwork to be published on the LDRS 32 WebSite. The BLM's on site presence will be made certain and new vendor policies with the BLM will also be made clear.

Meeting was adjourned setting the date for our next Member's Meeting on the Friday evening of BALLS 22 - and YES there will be MeatBalls!

GERLACH STORAGE OBTAINED

Thanks to members Tom Blazanin, Dave Rose, Dave Wilkins and Larry Benek, Tripoli Gerlach has obtained a limited, yet substantial, storage facility in Gerlach. The location is on private land and accessible at all times through (who else?) Gate Keepers Tom Blazanin, Dave Rose, Dave Wilkins and Larry Benek.

It has been obtained on a yearly basis at a reasonable rate, renewable after the next BALLS launch. We've currently stored several large canopies, tables and folding chairs in preparation for use at LDRS 32.

The facility is indoors and approximately 12' x 18'. While it is indoor storage it is in Nevada and subject to "dust!" so anything stored does need some type of protection.

While obtained for Prefecture use to store equipment some space may be made available members wishing to store items between launches.

No motors, propellant, rockets or personal items will be stored here as the area is semi-secure - yet very safe.

September 20, 2012 saw the Second Annual Hamster Dance Launch come to fruition. What started as a joke for a fun Research Launch in 2011 continued with the fun and a strange determination of the participants to succeed without having everyone laugh at them – and as spectators laughed the flyers laughed just as much.

Today many people into Research Rocketry can build really fantastic rockets and rocket motors. The challenge with Hamster Dance is to build a single use motor and have it work in a rocket having a 5lb liftoff weight including "everything" AND no metal components other than quick links and electronics. As the many participants discovered it is not as easy as they think.

The other "reason" for Hamster Dance is to get flyers (and spectators) to experience more of the Black Rock Desert other than the big wide open Black Rock Lake Bed. Last years Dance was held at a small pristine dry lake known as Area $6^{7}/_{8}$ on the east side of the Black Rock Playa. Some people had trouble finding the place so this year we met at the BALLS range head once the BALLS launch was set up and caravanned to

The top of the mountain in Area 52 provided the parking and launch area for flyers and spectators

the launch site together.

The off road trek to Area 52, the site of Hamster Dance II, caused every driver, and passenger to curse the Launch Director, Tom Blazanin. However after reaching the launch site at the top of a small mountain in the middle of a nice size dry lake they all amazingly approved the site. The view from the mountain top presented a panoramic multi-colored view of volcanic mountain ranges and in the far distance, the Black Rock Playa as the majority of attendees have never seen before. All were amazed to stand at the cliff edges and peer down to the playa below in wonder that rockets would be launched here.

Dave Rose waits his turn while LCO Tom Blazanin waits for Chris Pearson to ready his rocket in the pad area atop Area 52's mountain.

To the Left: Gary Dickinson's winning ORANGE CRATE heads skyward.

On the Right Andy Limper's WEENIE ROCKET begins to write "Oscar Meyers" in the air as it heads for a "recovery" over the cliff.

Bottom Left: Spectators ramble about at the mountain top discussing the ride there and what a great launch site it was.

Bottom Right: Gary Rosenfield with his easily retrieved entry. All rockets were retrieved since all locations were easily spotted from atop the mountain. Even the WEENIE ROCKET on the side of the cliff.

Alpha Hamster Gary Dickinson

Chuck Rogers stands at the cliff's edge watching Tom Blazanin and GaryRosenfield set up the pad area.

Hamster Dance II had 9 official flyers and 13 spectators. Two pads were set up on the lower plateau while the LCO sat at the edge of the higher mount. Spectators sat behind.

With the success of HAMSTER DANCE II it was agreed by all to continue with HAMSTER DANCE III in 2013, This time at Smoke Creek!

George Pike

Andy Limper

Bill Good

Chris Pearson

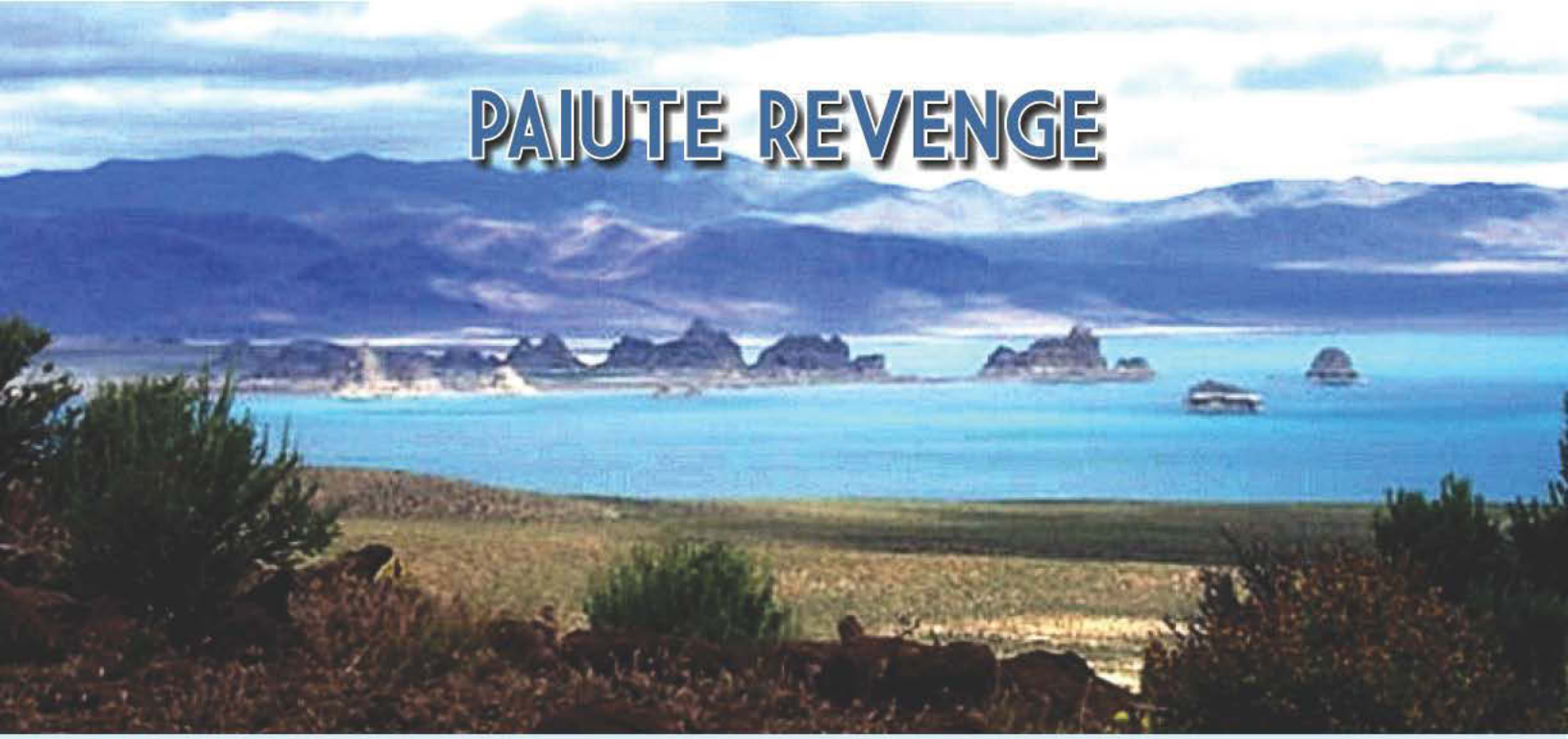
Larry Benek

Ron Fieheit

Gary Rosenfield

Dave Rose

PAIUTE REVENGE



Many of our Tripoli Gerlach members come out to Black Rock a week early, before our Annual Members Meeting, to trek the desert in search of unique places. The area abounds with some of the neatest sites of rock formations, environment and man made places of interest.

Most areas are open to the public on BLM land. Some stuff is open to the public on Indian lands. With a permit you can trek the reservation in relative freedom except for a few places banned to the forked tongued white man. Unfortunately these banned locations contain some of the most interesting site in the desert. Fortunately the entire Black Rock Desert holds vast other wonders.

One of the first areas to be banned several years ago is Anaho Island. It is an island in Pyramid Lake, Nevada on the Pyramid Lake Indian Reservation. It is located in the southeastern part of the lake, approximately four miles east of the community of Sutcliffe. It is often assumed to be the pyramid of Pyramid Lake, but it's not. The island is home to the Anaho Island National Wildlife Refuge, which protects a colony of American White Pelicans, one of the two largest pelican colonies in the western United States. It is uninhabited by humans, protected by law and banned from visitors.

Two other areas came under isolation by the Paiute for reasons of protecting the environment, supposedly from the environment destroying white man. Marble Bluffs can be seem from Rt 447 just before you make the big curve around a large Tuffa mountain as you leave Nixon and begin the run north to Gerlach. The Bluffs are visible on the east side and near the top of the mountain. Nothing really exciting about this area but to the Paiutes it apparently hold value.

The second area is known as the BeeHives. These are also seen from Rt 447. They are the domed Tuffa structures on the east side of the highway. It is obvious how they got their name. They were formed by Tuffa perking up through the ground and forming these Bee Hive looking structures.

The biggest area banned by the Paiutes is at the north end of Pyramid Lake, shown above. Known as the Needles this is the location of some very bizarre formation created by Tuffa seeping up through the ground. Being there is like being on an alien planet. The Tuffa formations have been reshaped by the action of

the Pyramid Lake water. The most unique place is the Needles area is Steam Geyser, a hot spring geyser right on the beach, close to the water's edge.

The reason for the Needles ban is someone (unconfirmed a white-man) tossed a dead cow carcass on the geyser. Now white-men can only visit it with a Paiute guide.

This year the Paiutes have added another site to their "No White Man Permitted" list. The Great Stone Mother and Pyramid Rock, for which the lake is named, is now forbidden land to the White-man. This is such a shame as it is a very serene area and almost spiritual to all who visit it. It breaths life into the legend of its beginning.

The ban is brought on due to graffiti painted on the rocks, (again by the white man). It is never spoken the graffiti might have been the work of delinquent Paiute youth. The actual wording of the ban does state basically the areas are closed to non-tribal members. Paiute youth are not members of the tribe until they reach a point of passage.

In honesty some Paiutes voice this opinion. The biggest culprit, and with much reference to the time frame of the land's abused points to BURNING MAN. It seems the Paiutes, much like the residents of Gerlach, are not big supporters of Burning Man.

Unlike Gerlach residents, who have Burning Man dollars pushed their way, the people of Nixon, the reservation town on Rt 447, have to get their Burning Man dollars with their speed limit! And they do collect!

Those members who don't get out to see all that Black Rock has to offer; another place special is gone. Hopefully in the near future those wishing to visit these places may have an opportunity, but for now enjoy the pictures!

MERCHANDISE

Check out our MERCHANDISE Page of our WebSite. In an effort to raise capitol for LDRS 32 we have a very good selection of items to show your support of our Prefecture.

T-SHIRTS • SWEAT SHIRTS • MUGS • LICENSE PLATES • DECALS

GRAPHIX & STUFF has agreed to give Tripoli Gerlach 100% of all the sales, minus shipping, of Tripoli Gerlach branded merchandise sold through the Tripoli Gerlach WebSite.
Check it out today and help support your Prefecture.

2013 ROCKETS OF HIGH POWER CALENDAR

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HEAT AND PRESSURE

You may not be able to learn how to perform complex calculations. But, it is important that you learn to think in terms of what is actually happening inside of a solid rocket motor when it is operating. Saying "the motor blew-up because the pressure was too high" gives no insight into how the pressure got that way. Such a statement only describes the end result. There are two primary failure modes in rocketry solid motors: excessive heat (BURN THROUGH) and excessive pressure (RUPTURE). Most of the failures seen in rocket motors result from one of these two conditions, and both, though separate, are directly related to each other.

BURN THROUGH: the result of too much heat being transferred to the hardware. Heat is transferred to the case (or other motor parts) until the structural integrity of the construction material is weakened to the failure point.

Heat transfer is determined by three factors:

1 - How much heat is present (average temperature)
2 - How long is the heat present (duration)
3 - How much pressure is present

Pressure can greatly accelerate the rate of heat transfer. A good example of this is the difference between a "torch" and a "blow torch". Pressure in a motor is critical because it can "kill" the motor two ways: Enough pressure can obviously blow the motor apart (RUPTURE) but slightly less can cause enough heat transfer to "bake" the casing to the point that its strength is compromised. When this happens even lower pressure becomes sufficient to destroy the construction materials by "burning through". When dealing with experimental propellants, a high metals content, without adequate shielding (liners), will lead to a burn through by the metal's combustion generating too much heat. Another factor of "burn through" is duration, or too much burn time. Even at what would otherwise be safely within temperature and pressure limits, sufficient heat can still damage the construction materials if the duration of operation is long enough.

CASE RUPTURE (bursting): The end result of the motors internal pressure exceeding the strength of any of the motors structural materials. One of the primary causes of excessive pressure is bonding failure between the propellant and the casting liner resulting in too much surface area exposed to the flame front. This has the effect of raising the Kn. This in turn, raises the internal pressure to more than the construction materials can withstand.

Note: There are two ways to raise Kn: restrict the nozzle or increase the propellants burn surface area. There are many other ways to raise internal pressure. A higher Kn is only one of the ways to raise pressure within the motor.

A burn rate that is too high will also create too much pressure. Excessive burn rates can be caused by any and all of the following factors:

1 - Excessive Oxidizer
2 - Excessive metals which create too much heat
3 - Too much burn rate catalyst
4 - Too much pressure

Pay special attention to #4. It sounds like double talk but . . .pressure will increase the burn rate and an increase in burn will increase pressure. This is because AP based solid fuel is "pressure sensitive". This is in fact what pressure sensitive means. A higher burn rate has exactly the same effect as an increase in the burn surface area. Sounds like double talk but each result in an increase in pressure.

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NO-MATCH EJECTION SYSTEM

In early 2005 Oliver Schubert developed a unique method to improve ignition of black powder ejection charges. With the one time use character of electric matches, their cost and their future availability, a new means of igniting black powder ejection charges was needed. Add to this the fact that e-matches can not be tested without destroying them, Oliver developed a new system based on a standard glow plug used on model engines.

Several variations have evolved through design and testing to develop a sturdy, reliable and full proof unit. Repeat testings proved battery life and more important the fact that the Glow Plug could withstand repeated use with ejection charges and have virtually little, if any, wear or deterioration.

The final version of NO-MATCH™ does not require any machining by the end-user. The new unit only weighs 1.8 oz and is just 2"x1.25" small (can be reduced to 1.75"x0.75" if the area for the stand-offs is not needed). It uses one CR123 battery, supplied with the unit, that lasts for over 500 ejections.

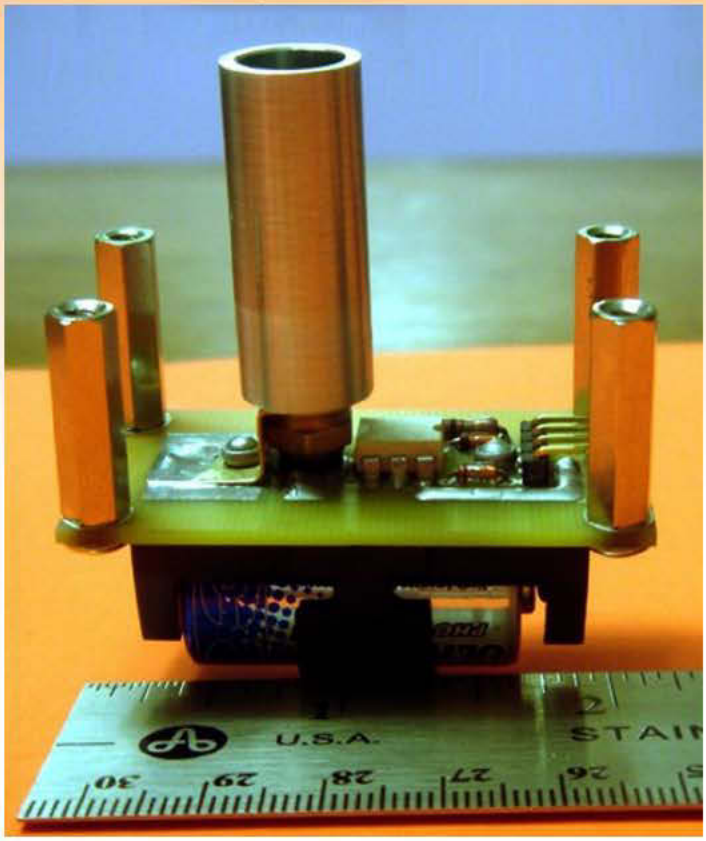
The unit is designed with additional electronics to support 2 altimeters and prevents the 2 altimeters from affecting each other.

The way the unit is meant to be mounted is below the bulkhead of the recovery chamber, supported by the 4 stand-offs, with the blast tube sticking through the bulkhead. Other variations are possible by the user to accommodate other airframe configurations.

The photo on the right shows the standard NO-MATCH™ configuration. The bulk head would sit on the four standoffs with the charge container protruding upward through the bulk head.

NO-MATCH™ has been designed to be highly reliable and extremely safe (especially when compared to electric matches). Like any device, failures - however unlikely - are possible and the following is reference of those (im)possible failures and precautions you should take incase such failures occur.

FAILURE
NO-MATCH fires because of a stray signal from the altimeter.
LIKELIHOOD
Depends on the altimeter



PRECAUTION
Shunt the outputs from the altimeter until you are ready to launch.
EXPLANATION
The stray signal would have to be at least 4.5v and 3mA and long enough to light the Glow Plug. Unless you shunt your electric matches, Electric matches have a much higher chance of accidentally firing than does the NO-MATCH.

FAILURE
NO-MATCH's Solid State Relay (SSR) fails to turn off after an altimeter initiated firing.
LIKELIHOOD
Very low
PRECAUTION
Verify visually that the glow plug is off before loading it with black powder.

Disconnect the NO-MATCH battery before loading it with black powder.
EXPLANATION
With this type of failure most likely the glow -plug will burn through before you even recover your rocket. If the glow plug did burn through before you are ready to reload the NO-MATCH would be very hot to touch.

FAILURE
NO-MATCH's SSR fails spontaneously and closes its contacts
LIKELIHOOD
Extremely low
PRECAUTION
Safety disconnect switch.
EXPLANATION
Even though installing a safety disconnect switch increases the safety of NO-MATCH your are reducing the reliability (and therefore the safety) of the overall recovery system by adding additional components (connectors, wires, switch).

FAILURE
NO-MATCH fires because of an electrostatic discharge, electric noise or a strong electromagnetic field.
LIKELIHOOD
Infinitesimally remote
PRECAUTION
None needed
EXPLANATION
Solid State Relays (SSR) are extremely immune to those types of interference. This characteristic of the SSR coupled with the inherent latency of glow plugs makes this type of failure infinitesimally remote.

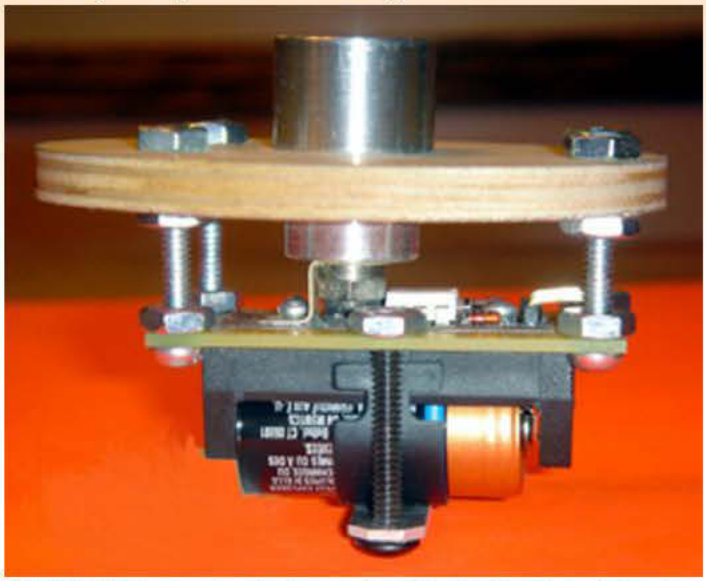
SPECIFICATIONS
SIZE: 2.125" x 1.25" (54mm x 29mm) can be reduced if the area for the stand-offs is not needed.
WEIGHT: 1.3oz (38g) with the battery
FIRINGS: >500 per battery
BLACK POWDER CAPACITY: ~3g (custom ejection charge holders available)
EJECTION CHARGE HOLDER THREAD: 1/4" - 32 TPI (5/32" [4mm] deep)
ALTIMETER CONNECTIONS: 2 - with isolating protection built in.
MAXIMUM TRIGGER TIME: 2 seconds (turning on the unit longer than that could damage the electronics and/or the glow plug.
TRIGGER VOLTAGE: 4.5v - 9v
TRIGGER CURRENT DRAW: 3mA - 6mA

MOUNTING
NO-MATCH requires no machining by the end user. It can easily be mounted as it comes from the manufacturer.

The recoil of the blast must not exert its force directly on the circuit board. This can be accomplished by placing the rim of the ejection charge holder against the bulkhead and adjusting the stand offs accordingly.

Do not "hang" NO-MATCH from the glow plug or the ejection charge holder. The glow plug is connected to the circuit board with very little structural strength. Strong G forces can rip the glow plug from the circuit board. The circuit board should be attached to a solid surface via the stand offs provided.

Protect NO-MATCH from ejection charge gases by either placing it outside the parachute chamber and



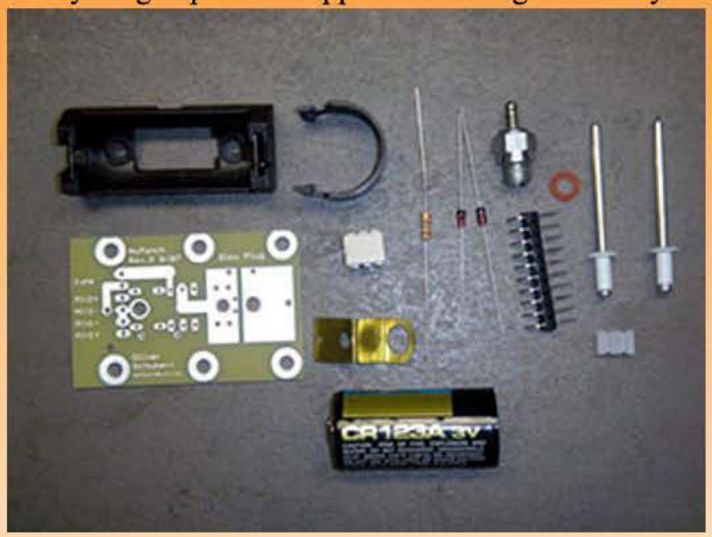
NO-MATCH mounted to the underside of a bulkhead showing the ejection charge holder protruding through held by adjustable standoffs.

only having the ejection charge holder sticking out into that chamber, as shown in the last photo OR by putting NO-MATCH in it's own sealed enclosure with only the ejection charge holder sticking out.

If NO-MATCH does get contaminate with residue from ejection gases, clean it with plenty of water (remove the battery and be careful not to damage the heating element of the glow plug) and then briefly submerge the unit in alcohol. The alcohol displaces any water that is left on the circuit board then evaporates.

NO-MATCH is available in several variations for multiple applications. It even comes in a do-it-yourself kit capable of creating any application variation.

Everything required is supplied including the battery.



	ELECTRIC MATCH	NO-MATCH
FIRINGS	1	>500
NON DESTRUCTIVE TESTING	No	Yes
RELIABILITY	Questionable, Can Not be Tested Without Destroying the Match	Very High since it can be Easily Tested Repeatily
SEALABLE COMBUSTION CHAMBER	Wires Must Be Potted With Epoxy	Yes
SECONDARY BATTERY	Recommended (if available)	Not Needed Since Its Built-In
ACCIDENTAL FIRING DUE TO STRONG RF FIELD DUE TO ELECTROSTATIC DISCHARGE	Yes Yes	No No
AVAILABILITY	Restricted (some require LEUP)	Unrestricted
COST PER CONSUMABLE	$3 - $5 (3 - $5 per Firing)	$5 Battery, $5 Glow Plug (<$0.01 - $0.02 per Firing)

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RCS Rocket Motor Components was founded by Gary Rosenfield in 1995 to offer AeroTech RMS-compatible parts for custom composite propellant rocket motor fabrication. These parts included molded phenolic nozzles, propellant casting tubing, phenolic and fiberglass motor casing material, phenolic and paper liner tubing, o-rings, casting plugs, forward & aft insulator washers, and delay/smoke charge insulator tubes

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LET'S VISIT RICH HAGENSICK

Member Rich Hagensick hails from Prairie du Chein, Wisconsin and is regularly seen at Black Rock with rather large and impressive projects - most of which work.

To the right is Rich with a P Motor that wowed the crowd at BALLS when its static firing went the wrong way.

Rich is into motor making quite extensively and has a very good track record. Although his motor making area is not shown you can see he means rocket business.

A Smithy Granite 1324 lathe with digital readout can be seen as well as an Ellis horizontal bandsaw. There is a Grizzly 14" vertical bandsaw, modified with a 3 phase motor and variable inverter so he can cut metal, or any other material, by varying the blade speed. A floor drill press is used quite a lot, and a Tormach CNC Mill (shown lower right) completes his machinery. A well stocked supply of material finishes his inventory.

DRESS CODE & POLICY

For 2013 the Executive Committee of Tripoli Gerlach, in order to create a better, more efficient, productive and professional environment and image for the organization, hereby publishes the following Dress Code and Policy for all personnel working for and at Tripoli Gerlach Headquarters. This could possibly flow into the membership.

It is advised that you come to work dressed according to your salary.

• If we see you wearing $350 Prada sneakers & carrying a $600 Gucci bag we assume you are doing well financially and therefore you do not need a raise.

• If you dress poorly, you need to learn to manage your money better, so that you may buy nicer clothes and therefore you do not need a raise.

• If you dress in-between, you are right where you need to be and therefore you do not need a raise.

SICK DAYS:
We will no longer accept a doctor statement as proof of sickness. If you are able to go to the doctor, you are able to come to work.

SURGERY:
Operations are now banned. As long as you are an employee here, you need all your organs. You should not consider removing anything. We hired you intact. To have something removed constitutes a breach of employment.

PERSONAL DAYS:
Each employee will receive 104 personal days a year. They are called Saturday & Sunday.

VACATION DAYS:
All employees will take their vacation at the same time every year. The vacation days are as follows: Jan. 1, July 4 & Dec. 25

BEREAVEMENT LEAVE:
This is no excuse for missing work. There is nothing you can do for dead friends, relatives or coworkers. Every effort should be made to have non-employees attend to the arrangements. In rare cases where employee involvement is necessary, the funeral should be scheduled in the late afternoon. We will be glad to allow you to work through your lunch hour and subsequently leave one hour early, provided your share of the work is done.

ABSENCE DUE TO YOUR OWN DEATH:
This will be accepted as an excuse. However, we require at least two weeks notice as it is your duty to train your own replacement.

RESTROOM USE:
Entirely too much time is being spent in the restroom. In the future, we will follow the practice of going in alphabetical order. For instance, all employees whose names begin with A will go from 8:00 to 8:20, employees whose names begin with B will go from 8:20 to 8:40 and so on.

If you're unable to go at your allotted time, it will be necessary to wait until the next day when your turn comes again. In extreme emergencies, employees may swap their time with a coworker. Both employees' supervisors must approve this exchange in writing. In addition, there is now a strict 3-minute time limit in the stalls. At the end of three minutes, an alarm will sound, the toilet paper roll will retract, the stall door will open and a picture will be taken.

After your second offense, your picture will be posted on the company bulletin board under the "Chronic Offenders" category.

LUNCH BREAK:
Skinny people get 30 minutes for lunch, as they need to eat more so that they can look healthy. Normal size people get 15 minutes for lunch to get a balanced meal to maintain their average figure. Fat people get 5 minutes for lunch, because that's all the time needed to drink a Slim Fast and take a diet pill.

Thank you for your loyalty to our organization. We are here to provide a positive employment experience. Therefore, all questions, comments, concerns, complaints, frustrations, irritations, aggravations, insinuations, allegations, accusations, contemplation's, consternation and input should be directed elsewhere.

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