

# Western Pyrotechnic Association Newsletter

Summer 2016

Vol 27-1



## Table of Contents

From the Board	3
WWB XXVII Cover Art	6
Winter Blast Roundup	7
Flaming Lotus Girls	18
WASP Whipround	25
DO IT Announcement	26
Rocket News	27
Let's Make Lampares	29



Cover: the Egg at Winter Blast - Caroline Miller

## Elected Officers of the WPA

President:	Chuck Eriksen
Vice President:	Greg Dandurand
VP Communications:	Pete Hand
Treasurer:	Jane Anderson
Secretary:	Dennis Miele

## THE SMALL PRINT

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## From your President, Chuck Eriksen

First, I would like to thank the membership for electing me president of the Board of Directors of the Western Pyrotechnic Association. I hope that I can live up to all of your expectations.

We have many items on the Boards agenda for this year including moving forward on the Moapa Manufacturing Site as well as planning for the upcoming Do It and Winter Blast 28. We are in the process of improving the web site to include the ability to use a shopping cart to make ALL payments for the conventions on line. We are also in the process of inventorying all of the WPA's equipment at both Lake Havasu and Hawthorn, and implementing a budget for the maintenance and replacement of the equipment as necessary.

It was great to see a surge in membership this past year and attendance at Winter Blast 27. We know that a lot of the new members came from the San Mateo Makers Faire due to the volunteer efforts of members who manned the table last year. Great job to Wally Glenn who spearheaded the effort. The Board is working on developing a Makers Faire committee to assist in developing a program which can be used at any Makers Faire events across the country.

The 4th of July is just around the corner. I know it's a busy time for all of you smoke junkies so I hope you all have a safe and fun time over the holiday weekend.

Go light up the sky,

**Chuck**



# A Peep from the Veep

Greg Dandurand

Well, here we go again. Two weeks until the Fourth, and it is 113 degrees in Phoenix. Can't wait to see what the 4<sup>th</sup> holds. Again, I would like to thank all the people who work hard to make WWB a reality. We can always use more help and the staff is always willing to mentor and teach up and coming club members. Please remember, that WWB and Do-It are not turn-key events, it requires the dedicated work of many people to make these events happen.

The BOD and the club move forward to Do-It and another Winterblast. The Maker Faire event passed us by, but we are working to have a more Board approved presence at any Maker Faire in the country (staffed by all club volunteers, of course). Hopefully we can have a template that can be used by anyone to staff a Maker Faire in their area. This planning and co-ordination can be done by area reps, but we are still fleshing out the program and budget. This is a good way to get the WPA attention with like-minded individuals. Please contact the BOD if you have any ideas or want to help. We can put you in touch with the right people.

Be safe this July 4<sup>th</sup> and have fun entertaining the masses.

# From the Editor

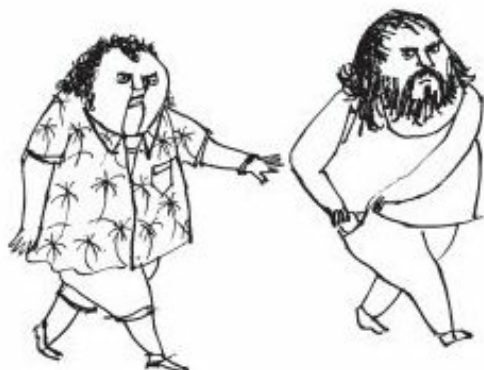
Pete Hand

Hello again, and welcome to the 2016 Summer edition of the WPA Newsletter. Another Winter Blast is behind us, and another Do It is ahead. At this time half our members are rushed off their feet preparing to shoot displays for the 4<sup>th</sup> of July, and the rest of us are looking forward to watching.

Behind the scenes the Board and the Winter Blast crew are already planning the next Winter Blast, John Noonan and his crew are working on further web site improvements, and the Do It crew is getting ready for September. There's always something going on in the WPA.

Highlights of this issue include our regular WWB roundup, with pictures from Mitch Piatt's Maltese shell workshop. Then we go behind the scenes with the Flying Lotus Girls for a look at their technology. It reminds us that not *all* pyrotechnics involves gunpowder. There's a how-to lampare article, and the usual business chit-chat to let you know what the Board has been up to. By special request I included the cover art from the WWB program, and I filled some space with things that made me smile.

Thank you to everyone who contributed photos and material - I can't do it without you. Now take a moment to kick back with a long cool one and enjoy the read.



*"Don't—they'll just spend it on drugs."*



## **Secretary's Notes**

I hope everyone's 2016 is off to a great start and all of you are happy and healthy. As we gear up for the 4<sup>th</sup> of July season, I thought it appropriate to reflect on my time as your Secretary. Two years before I ran for the position, I considered a possible run, and others asked me if I would. At the time I had many other things happening in my life and decided it was not the right time.

I will be totally upfront – as many of you know I always am. When I did run to fill in for the last year of Kathy's term, I agreed to run to help the Board. I did not have any agenda at that time. Many of us know what has occurred in the last few years with the Club. And I think the events of that first year on the Board had a lot to do with the great strides this Club has made in the past few years. What great strides do you ask? Here are some details:

The Club has more transparency than it has had since I've been a member (2002);

- We have more members returning to the fold. As one who processes member renewals I can tell you I have seen member renewals for lapsed memberships from 1997! This is directly related to the discussion you all are having about the Club and its future.
- Increased attendance at WWB. The Club's non-milestone years typically have much lower attendance than the milestones (a milestone year is an anniversary year such as the 25<sup>th</sup> anniversary). The Club's WWB attendance continues to grow in the past 3 years. In fact, the past 2 years each have had larger attendance than the prior year. THANK YOU for supporting your Club.
- The Sportsman's Gun Club expansion – moving the B Rocket line to the Gun Club is a boon for both the members and the Gun Club. We are exploring more options to continue this use.
- Moapa – Jason Creager has been doing a fantastic job in helping move this along. Many of you have expressed a great desire to use this manufacturing facility. So here is YOUR challenge – step up and help us put ATF rules in place for the magazine at Moapa. We get this in place then we are THAT much closer to getting this off the ground.
- Flaming Lotus Girls – Your President of many times Steve Wilson did a fantastic job in getting the FLG to come to WWB. A long-time fixture at Burning Man may have found a second home! (Check out the article Mills wrote about their experience!). Mills is now a member and I look forward to her continued presence.

So what is my agenda? Everything above! By doing more things in an open manner we all can see what is happening and where the Club is going. We are a GREAT Club with enormous amounts of creativity. We have members that want to build 16 inch shells. We have our wonderful member showcase (again an AWESOME job in organizing Blue!).

I am proud to be your Club Secretary – and I am GOOD at it too! If you have suggestions for additional thing we may want to consider, PLEASE – do NOT wait until WWB to talk us. We all have email addresses which are pretty easy to use. Better yet you can reach us all with one email: [bod@westernpyro.org](mailto:bod@westernpyro.org)!

**Dennis Miele**



# Winter Blast

## XXVII

Magic in the Sky

February 11-14, 2016  
Lake Havasu City, AZ

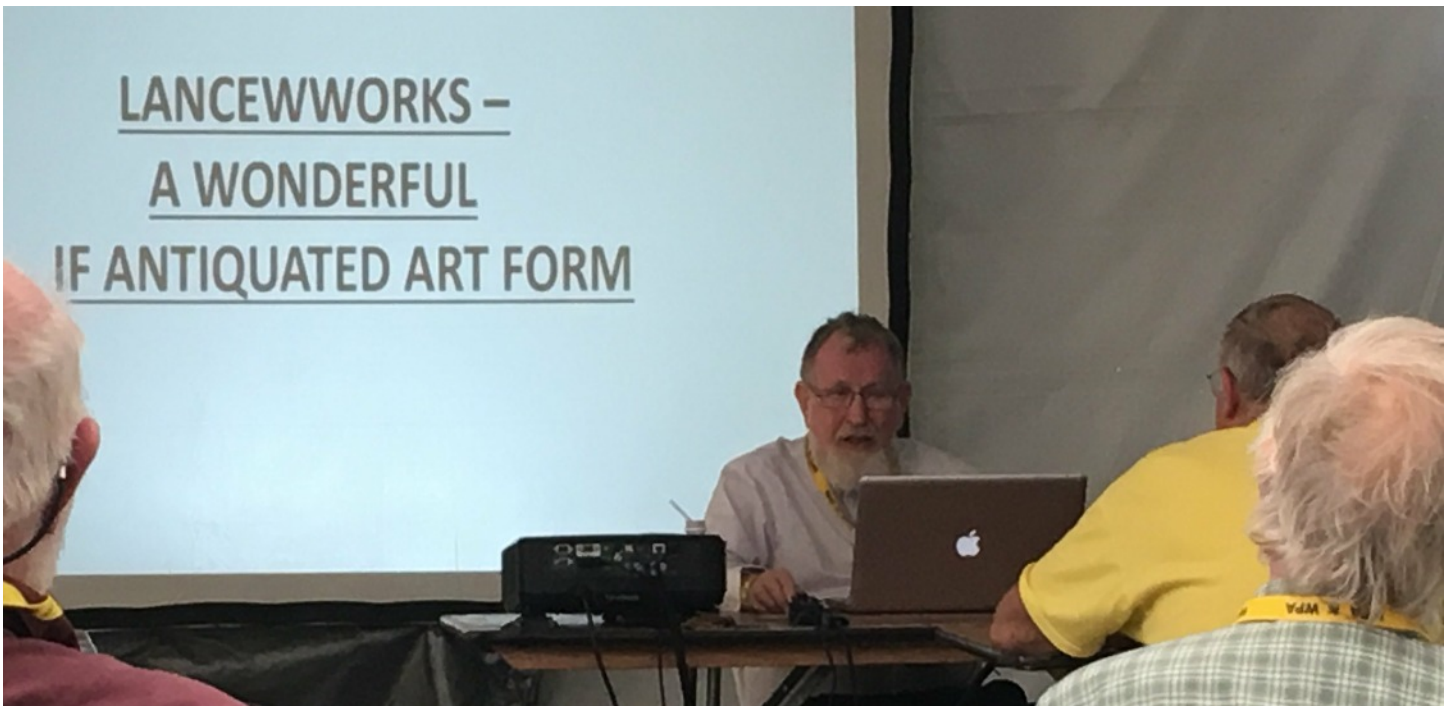


# WINTER BLAST XXVII

## Photo Roundup

Winter Blast this year was very well attended, with more than sixty new members signing up at the gate. Many of them first heard about the WPA through the efforts of Wally Glen, Mike Garrett and Dave X at the West Coast maker Faire. Thanks guys!

The seminars were well attended, sometimes packed out. Below - Bob Winokur teaches a seminar on lancework. Looks like his spell checker wasn't working when he wrote the powerpoint.



Below: Not Bob's work, but an illustration from his presentation. A 200 foot by 40 foot lancework from the 1890s. An ambitious project - 35,000 lances and nearly 3 miles of quickmatch.





The hands-on practical seminars are always popular. Here are a couple of shots from Steve and Kurt's rocket seminar. If you've never made a rocket, come over to the dark side. We have cookies.

Top: ramming one-pound black powder motors

Bottom: assembling and attaching headers





Meanwhile, Mitch Piatt was running a three day seminar on Maltese multi-break “Salami” shells. First the stars are stacked neatly around the perimeter of a light cardboard tube, and the center filled with burst. There is a hole in the bottom to accommodate the spolette for the next break.



The break is then pasted and wrapped and a top disk inserted, leaving tabs to be neatly pleated down. The tube sticking up in the center is the spolette to pass fire from the previous break.







The thin card that formed the shell body is carefully folded in and pasted down to the inner end disk



Another cardboard disk is pasted on top to hold the folds down





More paste on the outer disk



Then the outer paper is pleated down carefully and neatly. Phew, that was a lot of work. But wait - there's still something missing .....





Spiking, of course! Either this is a very well spiked shell, or an unusually cylindrical coconut.

Wrapping the shell tightly with pasted string gives it the containment it needs for a good break. Axial spiking is finished with what looks like 100% coverage, and now the radial spiking is going on.

When all that is finished, it all has to be done again two or three more times. *Lot* of work. Then the individual breaks are assembled end to end, with the spolette of each one entering the previous stage to take fire in turn. The last stage of these is normally a large salute, the bottom shot.

It takes a lot of force to drive one of these up in the air, enough that it might drive the first spolette into the shell and make it explode in the mortar, so it's arranged that the first timing fuse is at the top, lit by the quickmatch as the fire passes to the lift charge. That way the bottom, with the large salute, can be made strong and solid. It's not always strong and solid enough, and if it fails and the salute explodes in the mortar, it usually destroys the whole rack. After all that work we'd prefer this doesn't happen.





Two large and three smaller “salami” multibreak shells in the day magazine, waiting along with some 12 inch ball shells for the right time to light the fuse and duck.

Thanks to Mitch Piatt for the lesson and Scott Morton for the pictures!





Jack Eaves fires his six pound Civil War replica black powder cannon. This fires *serious* shells.



The B Line, all quiet and waiting for open shooting to begin after sunset





Seriously, if you want to see the **best** shells you have to come to Winter Blast.





Thanks for the pictures, Kelly Dreler.



*Random Thoughts Photos ~ Winter Blast 2016*



**DEVASTATING PYRO'S SHOWCASE**  
**at the 2016 Lake Havasu WPA Convention.**  
**An Amazing show thanks to the entire crew!**  
**Your hard work sure paid off!**



Kenny Chee and Devastaing Pyro produced our grand public display this year. We were hoping to see this 36 inch baby set off, but to everyone's disappointment it was an inert dummy.



A M Pyro and Pyro Spectaculars treated everyone to a roast pig barbecue, expertly prepared by Ernie Romero.

**(805) 953-5465**

# flaminglotusgirls

The Flaming Lotus Girls is a volunteer-based group of artists who make large-scale kinetic fire art. We began in 2000, as a group of six women and two men who wanted to design and build sculptural installations. Since then, we've grown to well over 100 members. Over half are women, but we welcome all genders.

Our work falls somewhere between sculpture and kinetics, and it always involves pyrotechnics and crowd interaction -- we invite everyone to become part of the art. Our sculptures are made of some combination of steel, copper, aluminum, glass and wood, and they range in size from pretty small to really, really big. Our flame effects blaze from 2 inches to 50 feet.

The Flaming Lotus Girls had been talking about coming out for Winter Blast for years, and this past February -- under the good tutelage of WPA member Dave X -- we finally made it happen!



Winter Blast is very different from the shows we're used to doing: we don't look like the typical Winter Blast attendee, we don't do fireworks, and what we represent is a bit outside the norm for this crowd. But from the minute we started unloading the trailer, people came over to ask us what we were about, what that hose was for, what fuel we used, what that pressure vessel held... People were genuinely interested in us. We got solid questions right off the bat, and quickly found common ground.

On Saturday afternoon, we gave a talk called "Shoot Fire Like a Girl" and explained to a fully packed tent all about how we operate, the fuels and colorants we use, the nitty gritty of our plumbing systems, how our control systems work, and how our Serpent Egg's blowdown shooter system works. We talked for over an hour and could've easily gone on longer, especially since the audience had plenty of good questions for us.

(Left: photo by Caroline Miller)





"Shoot Fire Like a Girl" seminar - photo by Bethany

Time	Look	Product	Firing Cue Number	Number per cue	Audio
0	Smoke starts in three positions around the Egg	60 sec white smoke	1	3 smoke with one ematch each	
0.05	Strobe effect starts on smoke clouds. Red- Green- Yellow	60 sec Red - Green - Yellow Strobs	2	3 pairs of two strobes. Strobes pairs will be quick matched together and lit with single match	
0.3	As smoke ends a tremendous series of loud explosions sound and create more smoke around the egg	Chain of 5-3" hanging bombardment.	3	1 chain of salutes. 5 - 3" hanging salutes chained together with quick match, matched with one match and suspended with bailing wire from t stakes.	
0.35	Egg opens				
	As Egg reaches its open position shower of colorful sparks start to shoot 6' into the air from the same three positions as the smoke and strobes.	Class C fountains	4	3 fountains each with one ematch	
	Egg Fires				
	After a few blasts of flame the egg falls silent for a awkward pause. Surprise... Another tremendous series of loud explosions sound go off and create more smoke around the egg	Chain of 5-3" hanging bombardment.	5	1 chain of salutes. 5 - 3" hanging salutes chained together with quick match, matched with one match and suspended with bailing wire from t stakes.	
	A new shower of crackling golden sparks start to shoot 6' into the air from the same three positions	Set of 3 silver gerbs	6	3 sets of 3 gerbs quick matched together and fused with one match	
	Egg shoots fire again				
	As last gasps of fuel are shot from the egg a final series of loud explosions sound go off and end the performance	Chain of 5-3" hanging bombardment.	7	1 chain of salutes. 5 - 3" hanging salutes chained together with quick match, matched with one match and suspended with bailing wire from t stakes.	

Our typical shooter shows do not involve carefully-timed cue sheets, or much coordination at all outside of our own fuel depot. But for our WPA shows, we were blasting off our big fire plumes in time with the fireworks, so we needed to be right in synch with them. On Friday night, we did a big show with Dave X. It began with him narrating a hilarious creation myth of how the Egg came to arrive in the middle of the Lake Havasu speedway. Then the Egg's shell blossomed open to smoke effects and creepy music, and the fireworks and shooter duet dazzled the crowd.

The next night, we did a completely different show with fireworks curator Craig Cutright and the Devastating Pyrotechnics crew. This performance was really unique for several reasons. It didn't rely on the classic and predictable fireworks music like American rock 'n roll, Disney hits, and other catch-all favorites — they chose a totally different artistic sound as their audio backdrop. Using fire art as a centerpiece grounded the performance nicely, as it brought the audiences' focus from a central spot on the ground up to the sky and back. Sitting in the fuel depot, we were 200' away from where the fireworks were launched from — it was so close we had to lay on our backs to see it all. It was a tremendous display.

(Left: cue sheet, photo by Denise)





The Egg is 200 feet away from the fuel depot, with its feed pipes buried in a trench for safety. Some civil engineering is required. Photos by Denise.







Coloring agents are mixed into methanol fuel by rolling the barrel back and forth. Then the contents are pumped into a pressure vessel that will force them out through nozzles in the Egg. Above: JDV and Caroline. Below: Denise and Liam. Photo credits: Denise, Caroline.







Dave X gets his fireworks ready while JDV whispers magical incantations into the controls box. photo by Caroline Miller.



The fuel depot, with propellant and propane gas cylinders. Margaret and Mills (Caroline Miller) look towards the Egg. Photo by Denise.





Above: valve gear. Below: flame tests. Photo: Caroline Miller







Above: Mills, Bethany and Margaret. Below: the Egg crew. Photo: Denise



Winter Blast was a very special event and we had a fabulous time. We are especially proud of our own FLG Dave X for bringing in the most new WPA members for the year, and for introducing us to this crazy mix! ..... **Denise Hill**

*Read more about what the Flaming Lotus Girls are up to at <https://flaminglotus.wordpress.com/>*



# ***WASP PURCHASE***

There has been some discussion among members this year about purchasing a WASP shell pasting machine for the club, and a donation fund has been started that already has several hundred dollars of contributions.

At the June board meeting the directors agreed to take over this project and complete the purchase in a timely manner, that is, in time for Do It 2016. We will be purchasing a WASP Super Stinger capable of wrapping shells from 3 inches to 16 inches, which will be available for all members to use at club events. When we open a facility at Moapa it will live there.



**\$\$\$ YOUR CONTRIBUTIONS ARE INVITED \$\$\$**

We are looking for a pool of around \$2000 to cover the WASP, its necessary accessories and a stock of gummed paper tape and other consumables. A computer has already been promised. If you would like to make a contribution to this project, drop us a line to [bod@westernpyro.org](mailto:bod@westernpyro.org) and we'll tell you where to send your money.

# DO IT

**DO IT** this year returns to its former schedule toward the end of September. The warm, dry, windless weather we enjoyed last year was just not exciting enough, so pack your down jackets, rain wear and lots of extra hold-down stakes and plan to join us from **September 22-24** (Thursday-Friday-Saturday) at beautiful Hawthorne Nevada for three days of the most fun you can have without breaking the law.

Setup is on Wednesday 21<sup>st</sup> and extra help is always appreciated. Cleanup is on Sunday 25<sup>th</sup> and if everybody stays to do their bit, we all get to go home a little earlier.

At the time of writing the cost this year has not yet been finalized, but will probably be raised by \$5 over last year to cover some additional costs. That would make it **\$65 per member** and **\$30 for a spouse or student member**. The cleanup fee stays at \$15 and as usual, all cleanup fees collected will be distributed among the members who stay to help clean up on Sunday. Final prices will be posted on the web site when online booking opens shortly.

**You must be a member to book online.**

However, you can sign up for membership on site at the registration tent.

**See you there!**







Dave Ferguson's Guinness World Record for the largest firework rocket was confirmed last year.

Dave and his crew of eminent rocket scientists built the monster rocket in Hawthorne and braved the howling wind and lashing rain to launch it, with its warhead of a 12 inch ball shell, at DO IT 2014.

But some people are never satisfied. Dave and the crew are developing an *even bigger* rocket and hope to break their own record at DO IT this year, this time with a sixteen inch shell on the nose.

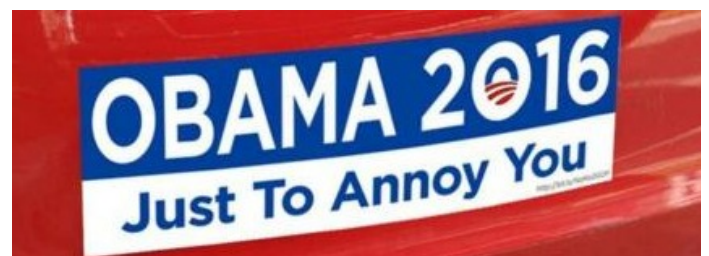
Unconfirmed rumors suggest that after seeing Elon Musk's slightly larger rocket make a safe landing on an ocean barge, Dave is planning to build a rocket that will return to earth after launching a 36 inch shell and make a safe tail-first landing next to the Afterglow tent at a future DO IT.

Dave built a mobile launcher, seen below with a little girl rocket on it, to ease the logistics of handling seriously big fireworks.



Ho hum, it must be another Presidential election year. I've spotted a few bumper stickers.

What do you mean, this isn't pyro related? It's downright **inflammatory!**





***Let's make***



***LAMPARES***

***Take a big flash salute, fix it to a bottle of gasoline, light it and toss it in the air.***

Lampare shells are salutes on steroids. They go off with a heck of a bang and a rolling ball of fire. You may remember seeing them as part of the Extreme Pyrotechnics public display at Winter Blast 16 in 2015, where they punctuated the music about two thirds of the way through. You probably haven't seen them at any other public display, though, because it goes without saying that they're *insanely dangerous*. They can't be transported, so Extreme Pyrotechnics built them on site. Very few amateur builders have ever made one, but if you would like to give it a try, there's a kit on the market from Steve Kursinsky and Phil's General Store (links and details at the end). It's for small 1.75 inch lampares that can be fired from a standard consumer-size mortar.

#### **What you get in the kit**

- Thick wall cardboard tubes, 6 inches long and 1¾ diameter
- Punched and unpunched end disks
- Plastic bottles that fit the cardboard tube and hold 2 ounces of gasoline

#### **What else you need**

- Time fuse, ¼ inch
- Black match to cross-match the time fuse
- Ingredients to make flash powder
- Gasoline
- Lift powder (2FA)
- E-match, quick match or fast visco
- Lots of hot glue
- A 7 inch piece of PVC pipe, a funnel, and a few consumables

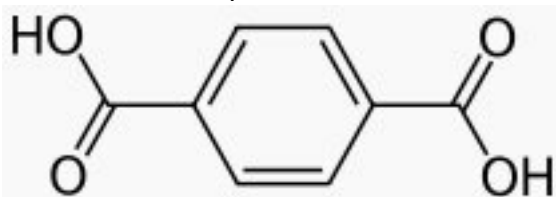
Now you can burst these with standard 70:30 flash powder, but it's recommended to use **TPA Flash** for safety. TPA flash is flash powder where half of the aluminum is substituted by terephthalic acid. It was developed for the US Military as a safe flash, insensitive to handling. It can be safely screen mixed and granulated, and it will not explode unconfined. It's not much good for crossettes or cap plugs but in these shells, confined by ¼ inch walls, it does a great job.

#### **TPA Flash**

- |                         |    |
|-------------------------|----|
| ● Potassium perchlorate | 70 |
| ● Terephthalic acid     | 15 |
| ● Dark aluminum         | 15 |

For those unfamiliar with it, terephthalic acid is a benzene derivative, a precursor for PET plastics and polycarbonate plastic bottles. It's a white powder, non toxic and not particularly flammable, though it

Terephthalic acid



burns well at high temperature. It's available from some of the usual chemical suppliers and is considerably cheaper than dark aluminum, making this kind of flash powder quite economical. It is a little difficult to light, though, so your time fuse needs to be cross matched. You can't rely just on the fuse spit to ignite it.

Kevin O'Classen (you may know him online as "Nessalco") made a YouTube video of making and granulating this flash, ending up with a burn test of over a pound of it. Unconfined, it takes six seconds to burn, much slower than the worst gunpowder.

<https://www.youtube.com/watch?v=3fyoMKt9CYw&feature=youtu.be>

It's not necessary to granulate the powder for this application, but it makes a good general purpose burst for small shells and for that, granulation is an advantage.

Anyway, let's make lampares. I'm assuming you have Phil's kit, which has parts for five. There's a YouTube video for this, too, made by Steve Kursinsky, and I'll be using some still frames from it to illustrate this tutorial.

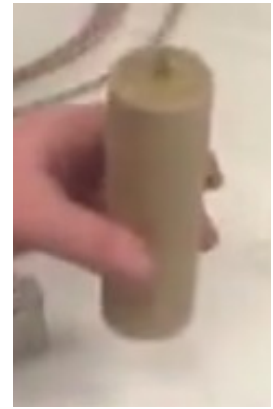
<https://www.youtube.com/watch?v=tKt7AJF8yE8&feature=youtu.be>

Start by filling the bottle with gasoline, using a small funnel. Fill the bottle to the very top and screw the lid down tightly. Wipe off the inevitable spill and set the bottle aside to evaporate dry. It goes without saying that you should do this out of doors, away from naked flames. You can add a little motor oil to the gas if you like, for a darker, meaner fireball. 10 to 25 percent works.





Now prepare the time fuse. Cut about a 2 inch length and mark off one inch in the center to give about a 3 second delay - the timing is not critical. Punch or slit through one of the marks and insert a one inch length of black match, then push the long end of the fuse through the pierced cardboard end disk until the black match is resting on the cardboard. Tack it in place with a small amount of hot glue, keeping it away from the black match. Then push the disk, matched side first, into the stout cardboard tube until it is about 5/16 (a little over a quarter inch) inside the tube. It helps to have a piece of plastic pipe to push it out from the other end in case you push it too far in. The time fuse should be sticking out from the tube by more than an inch. Run a bead of glue around the edge of the disk and then fill the space between the disk and the end of the tube with hot glue, making sure it wets the cardboard tube and has no voids, until the glue is level with the end of the tube. It takes a *lot* of glue - you'll need about a stick per lampare so have plenty on hand. Steve made a pipe spacer half inch shorter than the cardboard tube to line the disks up consistently.



When the glue is cold and hard, punch or slit the time fuse at the other mark, which should be sticking out, and cross match it to take fire from the lift. You could do this later to avoid the possibility of damage, but I would have cold sweats about it accidentally igniting when the tube is full of flash and gas.

When you're done fusing tubes, mix the TPA flash, For five lampares you will need 100 grams. Weigh out 70 grams of potassium perchlorate and screen it through a 40 mesh onto a sheet of paper, to get the lumps out. Then weigh out 15 grams of terephtahlic acid powder, mix it with the perchlorate and screen the mixture together two or three times to make sure it's completely incorporated. This is quite safe - the mixture is barely flammable. Finally weigh out 15 grams of Indian Blackhead or similar dark aluminum and either screen it once or twice with the perchlorate, or if you prefer, diaper it in by rolling the mixture on the paper. This is flash powder, but not particularly sensitive. *Never screen any other kind of flash powder.*





Make a long narrow paper funnel. We're going to use this to place the flash powder at the bottom of the tube, on the fuse, without getting any on the side walls. At this time it might be a good idea to drop a couple more 1 inch lengths of black match into the tube, to make certain of ignition. Optional, but it's what I do.

Push the paper funnel down to the bottom of the cardboard tube, then weigh out 20 grams of TPA flash powder in a dixie cup and pour it carefully down the funnel to the bottom. Do not set the tube down after doing this - keep holding it.



Finally take the bottle of gasoline and push it base-first into the cardboard tube. It's a snug fit and it will displace the air like a piston as it goes in, so do it slowly so that it doesn't blow out a cloud of flash powder with the escaping air. It may slide slowly down on its own, but if it sticks push it down gently until it rests on the flash powder at the bottom. Don't force it or you may damage the fuse.

Push a solid end disk down until it's resting on the bottle cap, then run a bead of hot glue around the edge of the disk and fill the tube with hot glue until it's level with the end. Yeah, lots of glue needed.

The lampare is now finished. Stand it upright until the glue cools and hardens - easier said than done with a time fuse sticking out of the bottom, but with a dixie cup and a little ingenuity you'll think of a way. It will be ready to lift and leader when it's cool.





Lift and leader in the usual way, but don't over-wrap the tube because it's a snug fit in a 1.9" mortar. If you use quickmatch it may need a little encouragement to drop all the way down. It should be a slack fit in a 2 inch mortar. It's suggested to lift these with 19 grams of 2FA, but you may need less if you use a finer or hotter powder. It goes quite high with a 3 second fuse and 19 grams and for a better effect you may want it quicker and lower, but you *absolutely do not want* one of these to return to earth too soon with the fuse still burning, so start with the recommended lift until you know how it will go.

Talking of mortars, these should **always be fired from HDPE tubes**, never fiberglass, because if one of them CATOs it will take out a whole rack and a fiberglass tube will shatter into flechettes. So stand well back.



Video of these in action - <https://www.youtube.com/watch?v=6oOydJHnPiA>

**Phil's General Store** - [http://www.ihaveadotcom.com/cart/index.php?main\\_page=index&cPath=72](http://www.ihaveadotcom.com/cart/index.php?main_page=index&cPath=72)

Phil sells a set of five Lampare kits for \$10.95, and terephthalic acid for \$5.90 a pound.

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I will be making these at Do It, and I have enough TPA to make about 100, so come by my tent and I'll share.

**Pete Hand**.

