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APRIL 2006, VOL 17-1

WESTERN PYROTECHNICS ASSOCIATION NEWSLETTER



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WPA Newsletter

April, 2006

Volume 17, Issue 1

Editor's Privileged Verbosity By Tom Calderwood

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Thank you for taking time to read through this newsletter. We have some very fun articles as well as some interesting projects. As usual, if you choose to follow any of these articles, you do so at your own risk. Come on—that's what Do It and Winter Blast is for!

In my last note, I made a plea for volunteers.

And at Winter Blast, you all came through.

Thank You!!! This is truly a volunteer organization, and without your involvement we would soon wither on the vine.

And speaking of withering, there are a couple of articles in this newsletter concerning laws on the books that (once again) challenge our hobby. I encourage you to read these articles and take the time to write your senator/representative. We saw what happened when a very foolish (and dangerous) individual decided to use his house in Lakewood, CA, as a

fireworks manufacturing and storage facility. After this fellow made the national news, a law was proposed to ban *all* fireworks in the city of Lakewood. The law was brought up at a city council meeting and it was unanimously voted down. A local paper ran a survey about consumer fireworks and asked for submissions. Some of our members took it upon themselves and chose to get involved.

We need more of this action! Our hobby is under fire from government and private organizations, and individuals. We need to keep vigilant and stay involved. If you see a survey or hear of a city law concerning fireworks, please post it to the WPA Email List.

Thank you for your involvement with the WPA. Remember to Stay Green and don't forget to smell the smoke!

Tom Calderwood
WPA V.P. of Publications

Important Notice:

The Western Pyrotechnic Association, Inc., also known as the WPA, is a non-profit group of fireworks professionals and their apprentices. This newsletter is a vehicle for their exchange of information in this craft and the right to publish this information is guaranteed by the Constitution of the United States of America. Nonetheless, readers are urged to learn and obey all laws and regulations of all federal, state, and local jurisdictions and of their agencies and representatives. Some information herein may contain incomplete descriptions of fireworks techniques based on the experience of its author(s) in a controlled environment with circumstances, and conditions different from the reader. Readers must form their own opinion as to the application of this information. This information is considered documentary in nature and no opinion is given as to its suitability or use. No warranties are made either expressed or implied, including but not limited to warranties of the accuracy of the information herein. The WPA is not responsible for the opinions of authors or mistakes in printing. All information is intended solely for viewing by members of the Western Pyrotechnic Association, Inc. and its associates. The WPA's entire liability and anyone else's remedy shall be a refund of the subscription price. In no event shall the WPA, or its officers, or the editor, be held liable for any damages whatsoever arising out of use or inability to use the information in this publication, even if said parties have been advised of the possibility of such damages. This publication is published by and is the sole property of the copyright owner, and is not to be sold or reproduced in whole or in part without written consent of the editor and publisher. The contents of this newsletter are Copyright 2006. All Rights Reserved by the Western Pyrotechnic Association, Inc., or the author(s), if so indicated, and is re-published by permission of the copyright owner. Any previous agreement to allow any one to re-publish any material from the WPA, Inc. Newsletter is revoked and void as of March 1, 1995. Reproduction without permission will be deemed a purchase and implied authorization by the user to accept billing and make payment of a minimum \$50 user's fee per instance of use. Distribution is limited to paid subscribers. Submission of written material, graphics, and photographs dealing with pyrotechnics or fireworks, related technologies or activities of, and information to the benefit of the members of the WPA, Inc. are gladly solicited. All submissions become the property of the Western Pyrotechnic Association, Inc., and may be edited or rejected for any reason. No payment is made for submissions and submitted materials cannot be returned.

A Letter From Your WPA President

By Russ Laurie

Fellow Pyro's: Here we are with the first newsletter of the New Year! I want to thank everyone who was involved with WWB18. It was truly a great week for all. Many thanks to all the staff that worked so long and hard throughout the year to make WinterBlast happen.

It was a WinterBlast of firsts. It was the first time Boom Boom has shot a show for us (well at least the first time since I've been involved with the club). Great job, Fred, and all who helped to put together that awesome show. Another first was A.M. Pyro's Sunday display. Aaron brought the La Rosa Family with their incredible Sicilian made multi-break shells, as well as those beautiful Japanese shells. It was a pure pyro treat for all who witnessed those truly unforgettable shells. Thanks Aaron! Other firsts: The shell pasting machine that was arranged for by Steve Wilson, Student shells had their own racks, guns and shooting site, Grandpa Miller vending the food, and Outlaw Pyro as first time vendors. Even though it wasn't planned that way it worked out well. Lots of first time members attended as well.

I also want to thank all the regular patrons who come out year after year and vend or put on shows for us all to enjoy. We could not do this without you and your support. The WPA BOD thanks you immensely.

At this time, I would like to thank the people of Lake Havasu City for

inviting us back, and all the City staff that help make this event possible.

Now looking forward into this new upcoming year, DO IT will once again be held at SARA Park the 2nd weekend in October so mark your calendars. I'd hate for you to miss out. Your BOD is hard at work looking into various ideas on to improve our Pay Pal system for online payments. We are still looking into acquiring a major sponsor for Winterblast, and working with the City to figure out the parking problem at SARA Park. We're also looking as to how we can make WinterBlast even bigger and better than previous years. (The idea of maybe adding another day to the event has been tossed around.) So if you, the members, have any ideas that you would like to see or improved, send us your thoughts as this is your club too. We work for you.

I would like to welcome our new BOD members and first timer Pete Wood. I'm looking forward to working with the new BOD throughout the year and working towards another awesome time at DO IT and at WinterBlast.

Thank you all for all you do to make this club what is and remember to "Smell some smoke" and "Stay Green"

Russ Laurie
WPA President

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Secretary's Musings By Rita Oesterle

WWB 17 was great and very well attended from all areas.

First and foremost, thanks to Don Oesterle, Dallas Oesterle, Ann Huffman, Jane Everett, Roxanne Crooks, and Jean Starr for their many hours spent helping at registration. Without you, the lines would have been very long for those registering on site.

A special thanks to all members who prepaid and to all the vendors who had all their paperwork in beforehand. It really speeds up the on site process.

I love to see stats on the areas and thought I would pass them on.

(The spouses attending were not all WPA spouse members, but 95% of the WPA spouse members did attend WWB 17)

We have 670 current members which include 28 student memberships and 78 spouse memberships

I hope this bigger than last year for WWB hold true for this year's DO IT. Let's all get together for a "big" DO IT in October.

Rita Oesterle
Secretary

Area	Total Membership	WWB 17 Members	WWB 17 Spouses
Alaska	10	8	2
CA Central	127	92	26
CA Northern Bay	105	80	12
CA San Joaquin	82	60	19
CA Southern	56	44	11
Canada	25	20	7
Eastern	92	56	8
Hawaii	3	3	0
Northwest	50	39	8
Rocky Mountains	55	33	14
Southwest	59	44	15
Texas	5	3	2
Foreign	1	1	0

A Blast at Winterblast 17 by Kief Adler

I'm going to leave it to others to describe the event. The purpose of this article is to thank people, so let's get right to it.

Fred May and Fireworks by Boom Boom (with product supplied by Wizard Fireworks, Hong Kong) put the thunder in Thunder by the River with Saturday night's public display. Thanks for rocking the river and giving all of us something to see.

Thanks to Fireworks America, Wolverine West, Premier Pyrotech-

tics, Dave Glass and Scott Danielson for their shows. And what would Winterblast be without Bill Zuber and his gas bombs?

A special thank you to Larry K. Linton and Nils Nehrenheim for organizing the cracker tepee along with Raymond and Bucky Brown, Kyle Read, and the two Chuck Horners. You guys brought the atomic to firecrackers. It was great.

To Aaron Mayfield of A.M. Pyro, welcome to the WPA and thanks for showing us some beautiful product in your closing show on Sunday. Can't wait to have you back!

Special thanks go to our corporate members: Combined Specialties International, Pyro Novelties, Raytech Animation, Firworks America, Richard Rasmussen, Flying Phoenix and Premier Pyrotechnics.

Our Afterglow Sponsors: Fireworks by Boom Boom, Firelinx, Harry Gilliam, Russ Laurie, Devon Dickenson, Steve Wilson, Lynden King, Pyro Novelties, Combined Specialties International, Dennis Miele, Marshal Seaborn, Ken Keagy and Pete Wood. The Afterglows were phenomenal and I sure wish Havasu had a bigger room for them!

Our cracker wall sponsors, who are WAY too numerous to mention, paid for a wonderful demo.

My personal thanks to Lynden King, Winterblast 17's Chairman for his humor and leadership and to the WPA's Board of Directors, past and present, whose guidance through the year makes our events possible. Special thanks to Don Oesterle for his 7 years on the Board and my own thanks for that life membership I was given. I will cherish it.

I had one hell of a great time! On to Winterblast 18!!!!

Kief "Slacker #2" Adler

Notes from the Treasurer By Ann Huffman

Thank you to all the Convention Chairs, Co Chairs and Staff who worked so hard to put on a Great Winterblast this year. Also all the volunteers who helped. Thank you to our out going vice president, Don Oesterle for all his hard work over the last seven years. And to Welcome our new Vice President, Pete Woods. I am looking forward to working with Pete along with the rest of the board over the next two years. We had many new memberships this past year along with all of you who renewed again. I want to Thank all of you. Winterblast maybe over for this year but we have Do It coming up in October. Lets all try and make this the biggest Do It ever. Many Thanks to all of you for your support in the club..

Ann Huffman, WPA Treasurer

WPA BOD Minutes Emergency Meeting September 9, 2005

Call to Order 8:30 pm

Conference Call attendees: Russ Laurie, Tom Calderwood, Rita Oesterle, Ann Huffman and Donald Oesterle.

Guest attendees for the DO IT 2005 segment: Kevin Bollinger and Peter Wood

1. Approval of minutes from the Aug 25, 2005 BOD meeting were approved by the BOD.
Motion by Russ Laurie; Seconded by Tom Calderwood
2. Meeting is for approving to have DO IT 2005
There are 93 paid members as of this meeting. This includes several members who paid full price knowing they would not be coming.
Actual costs from DO IT 2004 were \$10,711.42
Motion made to have DO IT 2005
Motion: Russ Laurie, Seconded: Don Oesterle
3. DO IT 2005 update by Kevin and Peter:
 - a. There will be 2 porta potties with daily cleaning.
 - b. 2 20x20 tents with 3 sides
 - c. 50 8' tables + 150 chairs ordered @ chairs = 1.43/chair 11.25/ table
 - d. Buzzard Logo approved. Logo will be on the back side only. No pocket and color is to be white. BOD reminded that the vote for DO IT shirts was voted in at General Meeting 2005.
Motion: Russ Laurie Seconded: Tom Calderwood
 - e. Fire Dept was contacted by Pete Wood.
 - f. Pyronovelities to be contacted about logo decision. Inquire about art work already paid for last year applied to discount for this year.
Action: Kevin Bollinger
 - g. U Haul trucks to be replaced with trailers or pickups. Budget item cut from \$600 to \$450.
 - h. After glows will not be a budget item. It will be a "bring your own" option.
 - i. No staff shirts
 - j. Security is 1 person 24 hour coverage
 - k. Dr. Pyophile (Chris Spurrell will give a presentation for the LHC Fire Department)
 - l. Pete Wood has requested debit card access for deposits for DO IT items.

(Kevin Bollinger and Peter Wood left the Telecon at this point.)

4. Theme for Winterblast 2006 to be "Thunder On the River"
Motion: Russ Laurie Seconded: Don Oesterle
Action: Don will inform Kief Adler
5. BOD members asked to post to digest pleading for members to sign up for DO IT 2005.
6. Shirt Deadline is Monday Sep 12 2005.
7. Tom Calderwood will keep contacting Tim Thompson for getting the newsletters.
8. This will be the last telecon before DO IT. Communication will be via email.
9. Bank Balance as of Sept 9, 2005 is \$32, 219.57.
10. Adjournment @ 9:30—Rita Oesterle, WPA Secretary

WPA BOD Minutes Nov 28, 2005

Call to Order 8:02 pm

Conference Call attendees: Russ Laurie, Tom Calderwood, Rita Oesterle, Donald Oesterle, and Ann Huffman.

Guest attendee for WWB: Kief Adler, Lynden King, Mike Hill

1. Approval of minutes from the Nov 1 meeting was approved as amended by the BOD.
Motion by Donald Oesterle Seconded by Ann Huffman
2. WWB Budget of \$93,200 is on the conservative side. Estimated expenses are now \$72,000.
 - a. Mike Hill requests that the vendor chair give the vendor table count to him beforehand. Mike wants a better control over tables. Trash Containers-WWB will use the ones out at Sara Park. Truck Rentals- use Budget rentals. We can rent cargo vans for product movement for less.
WWB 17 Budget as proposed oked.
Motion: Russ Laurie Seconded Tom Calderwood
3. Staff compensations are approved at the general meeting on Sunday at WWB.
 - a. This approval is for the Comps for the current WWB and to be used as a guideline for the next WWB. Lynden has 3 volunteers to be in charge of the sign up sheets each day. There is to be a volunteer outside of the registration area. Posters would be a great help in reminding members to sign up so we can have open shooting run the full times listed on the schedule.
 - b. The medical chair position is eliminated.
Randy Baranek is a paramedic and Mike Hill is an EMT. In addition, the fire department has a medical person on site each night.
 - c. Motion to approve the comp policy for WWB 2006 was carried
Motion: Rita Oesterle Seconded: Russ Laurie
4. Site Issues
 - a. Fire suppression
Ken Keagy will bring his quad with a trailer which has a water tank and pump.
 - b. Brush clearance. We would like it extended. This would enable the children's show to be placed farther out from the B line and the main show set up.
5. Guns, racks, and blast shields
Some of the staff members will arrive on site early with the necessary tools to build/repair racks and Blast shields.
Kief will check the inventories of the 20' DO IT container and the WWB containers.
We will use the guns and racks from the DO IT container and put them back in the DO IT container afterward.
A move of the DO IT container from Greg Boyd's property to SARA PARK as its permanent site was suggested.
Action: Mike Hill
6. Fire Extinguishers
Mike Hill has kits to repair the repairable WPA fire extinguishers. WWB will buy approximately 25 fire extinguishers from the source Pete Wood suggested. They will cost around \$17 apiece.
7. Gators
They are now harder to find to rent. Mike Hill suggested we use 6 passenger limo-gators for the transport of product and people to

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the bunkers. This will save time. Mike will try to locate 9 gators for use by site, security, and other staff in addition to 3 limo-gators.

Action: Mike Hill

8. Insurance
We have not heard from ATF&E.
Ann requested from Kief the # of staff members so she can get the insurance for WWB coverage.
9. Program is still on schedule according to Tom Calderwood.
10. Seminar update: Steve Wilson has it in progress. He will be revising it up until the event.
11. Shell Building Class
There shall be a \$5 fee for all persons actually Building shells during the shell building classes at SARA PARK. This includes members and spouses. The seminar giver is responsible for collecting this fee. The announcement of the fee will be on the schedule, the program, website and the digest right before the event.
Motion: Tom Calderwood Seconded: Don Oesterle
12. Black Powder
The pre ordered black powder will be shipped to the site
Action: Kief Adler
13. Staff food
Grandpa Miller will be the staff vendor. Each day the staff members will get the ticket for the next day at the staff meeting. It is good for 1 meal. The drinks and extra are available at the staff tent. If Ann can find out from the staff when they want the meal, she can get the meals from the vendor and deliver them down to the staff tent. The tickets will change every day.
14. Meeting Adjourned at 9:23 pm.
Rita Oesterle, Secretary WPA

Minutes of Annual Meeting of the Western Pyrotechnic Association
February 19, 2006

1. Call to Order: Meeting was called to order at 10:10 am. Russ Laurie, president, presided. All members of the Board of Directors were in attendance as well as at least 10% of the general membership to meet the quorum requirements.
2. Approval of the WPA 2005 annual meeting minutes: The minutes, having been published in a WPA newsletter, were approved.
Mike Hill moved; Kief Adler seconded
3. Winterblast 2006 Comp policy approval:
Kief Adler explained that Ramada Inn comped 1 room for every 20 booked by WPA. This lowered the cost to WPA by approximately \$1400.
WPA comp policy motion passed
Rich Vidmar moved; Bob Damjanovich seconded
4. Treasurer's Report:
WWB 17
Donations from public \$1,836 (through Saturday)
Auction 3,000
Public Display by LHC 17,500
DO IT 2005 profit 1,390
5. Registration for WWB 17
Pre-registration included 436 members, 131 spouses and 161 children/helpers. On site registration included 60 members (18 new members),

18 spouses, and 16 children. The total attendance including those coming in under Corporate Sponsor was approximately 900.

6. Old Business:
 - 6A. Doug Mawhorrr reported that WPA Bylaws do not currently disallow membership to any member who threatens to sue WPA ..Our waiver of liability applies only for injuries during an event, not for slander.
It was suggested that the BOD work with Doug Mawhorrr to look into amending the WPA By laws to incorporate a non-slander clause.
 - 6B. Corporate Sponsorship of Winterblast
We are looking for a member to be in charge of looking for a corporate sponsor. Also needed are members to volunteer to be on the adhoc committee for this.
7. New Business:
 - 7A. John Steinberg informed us about the Consumer Products Safety Commission (CPSC) and its lawsuit against Firefox and other companies selling chemicals. He asked for donations to the Fireworks Alliance to help defray the costs of setting up a software tool, fighting the of civil suit against Firefox and legislative changes on the federal level.
WPA members donated \$5,162 during the meeting to support this cause.
Half of the proceeds from the auction will go to the Firefox support fund.
 - 7B. Parking lot problems at SARA PARK
This is a Lake Havasu City problem. Lyons Club of LHC collects the \$ charged. Kief is going to talk to the city about allowing only motor homes belonging to WPA members for next years' WWB. The parking lot is not included in our paid use for SARA Park. If we take over the use of the parking lot, WPA will also be responsible for the liability incurred including the drinking problem, trash and children safety.
Kief has repeatedly asked LHC to use shuttles between the city and SARA Park to reduce the traffic situation.
 - 7C. Life membership award
Kief Adler was awarded life membership.
Kief has been on the BOD and has been active in all aspects of the WPA.
Congratulations Kief!
 - 7D. DO IT 2007
John Dicks gave a presentation for Hawthorne, NV as a possible site.
Hawthorne, 50 mile East of Carson City, NV, is a town of about 3500 and is a Naval undersea warfare weapon storage, and army weapons depot. From San Francisco it is a 300 mile drive, from San Diego a 485 mile drive Elevation is 4,320 Ft. There is 1 casino with 100 rooms and about 150 rooms total in the town for DO IT. The site, a race tract, is ½ mile from the town and has a curfew of 10:30 p.m. The nearest airport is Reno NV with approximately a 100 mile drive to Hawthorne.
 - 7E. Not enough vendors at Winterblast 17
Fred Olson, Heart of Fire vendor, encourages every member to recruit more members. Hopefully, this will lead to more vendors at the events.
 - 7F. Don Oesterle received a well deserved thank you for all his years of service to the BOD and WPA in general.

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The President's Corner*

By Joe Bartolotta

*(ed. note: Joe Bartolotta is the president of Fireworks and Stage Effects, America. The following is a reprint of a letter he sent out just before the holidays in 2005.)

2006 is on us already. What is 2006 going to bring us in the fireworks industry?? One thing I think we can rely on is more regulations. I don't know about you, but I've had enough. Most of us realize regulations are a necessary evil. The trouble is we are an industry that is regulated heavily by agencies that know very little about what we do. We are also an industry that has little say about the regulations we must live with. I don't need to tell you how rough it's been since 9-11. Is it going to ease up?? Not without you and I doing something about it.

Let's understand how the regulatory agencies work. First of all, they don't regulate unless directed by Congress to do so. They are directed by Congress to create regulations that will make our

country safer. To them, they are just doing their job. Complaining to your local BATF agent or the DOT guy that inspects you will do no good, they are just doing their job as they see it needs to be done.

You, that's right YOU, have the power to change that. It's easy to sit back and expect the Organizations that we belong to, support with our dues and direct at meetings to take care of us. Let's get real, that's not going to happen unless you make it happen. To make a difference, each of us must contact our state and federal representatives. You vote for these people, they work for you, they should want to help you out. If they are not receptive, simply Don't Vote For Them anymore and let them know that. Tell them what you are going through, how hard it is to make a living, that regulations cost us money. Inspections cost us time and money, we are a small business. Stress the fact that we know we need regulations, but

within reason. The increase in this area since September 11, 2001 is on the verge of driving us out of business.

Each one of us in this business must contact our representatives. Call them, write them, but contact them NOW. Use your own words, you know what you are going through. Naturally, we, the board of the NFA, will continue to contact the representatives that we need to work with, but most of them are not that interested in working with us as we are not in their state or district within the state, but you are. When they hear from you and then we come along representing you, they are more apt to listen and want to talk with us as your representing organization. We must get some relief and take the stranglehold around us off before it's too late.

ACT NOW, DON'T WAIT.

Joe Bartolotta

(ed. note: The following are two examples of letters that were included with the article that you can use to contact your congressman. Please try to refrain from "copy/pasting" the documents. These are guides only.)

(Example #1)

Dear Honorable: _____

I am in one of the most patriotic and entertaining businesses in our Great Nation. I am in the fireworks business. We provide the entertainment that allows people of our country to express their independence and freedom. Unfortunately, since the cowardly act of terrorism launched against us on September 11, 2001, my business is rapidly becoming one which may end up being a victory for terrorism, extinct.

Our business has always been heavily regulated by federal and state laws. In the past years, the amount of increased regulations and regulatory activity is driving us out of business. As a small business owner, every regulatory visit, every new regulation, costs money. Many times it is impossible to keep up with the ever changing regulations and during an inspection I am now open for fines and violations.

I am asking you for help. I believe our country needs rules and regulations. However, in order to keep our country great we must not enact regulations just for the sake of regulations. Many regulations have changed or been added in the past years to keep "explosives" out of the hands of terrorists. In our industry, we are in complete agreement and pledge our support for this goal. However, terrorists are not after "fireworks", a low explosive. Yet every new regulation that has the word "EXPLOSIVES" in it directly affects us as even something as simple as a sparkler is a 1.4G explosive. Our regulatory agencies can only do what they are directed to do by our congressional leaders. Are you really intending to restrict our industry this much? I think not!

We need your help to survive. We need your help to continue to give America what the people want, fireworks on July 4th and on many other special days and occasions.

As Thomas Jefferson once said: "The course of history shows that as the government grows, liberty decreases".

We want to continue to work to keep America safe from terrorism, but our industry, our business, needs help before the regulations close us down for good.

Respectfully,

(Example #2)

Dear Senator (or Representative) _____:

I am writing to you today as a concerned citizen, a patriot and a member of an industry that is synonymous with the words "Independence Day." The industry that I speak of is pyrotechnics and I doubt that any other group has been affected as severely by government regulations since September 11th, 2001 as we have.

The fireworks industry has always been regulated by all levels of government, as well it should be. Unfortunately, since regulation of our industry has fallen under the eyes of the ATFE, and has been grouped together with explosives regulations, we are now being regulated into extinction. Can you imagine celebrating Independence Day, or many other holidays and promotions without fireworks? Neither can I, but that day may be coming sooner than we thin

The fireworks business has always been heavily regulated by federal and state laws. However, in the past few years, the amount of increased regulation and regulatory activity is driving pyrotechnic companies out of business. As a licensed, California Display Operator, I am in danger of possessing a license that I will no longer be able to use. It is one thing to change laws, it is another to legislate a business into extinction.

I am asking you for your help. I believe our industry needs rules and regulations. However, we must not enact regulations just for the sake of regulations. Many regulations have changed or been added in the past several years to keep explosives out of the hands of terrorists. In our industry, we are in complete agreement and pledge our support for this goal. However, terrorists have no interest in fireworks, a low explosive. But every new regulation that has the word "explosives" in it directly affects the pyrotechnic industry.

I am asking for your help to keep the fireworks industry alive. I need your help to ensure that America will always celebrate Independence Day, as well as other important and festive events, with fireworks in the sky. In order to provide for this, we need to separate fireworks legislation from explosives legislation. I am seeking your leadership in getting this started. Will you help us?

We all want to work to keep America safe from terrorism, but our industry, our business, needs help before the regulations close us down for good.

Respectfully,

From Your WPA Vice President By Pete Wood

I sincerely hope that some of you might find this informative if not equally disturbing. There always seems to be something new around every corner, that faces the fireworks industry and enthusiasts. If the residents of California reading this, could find who wrote this, and the contact info for the same, it might justify a letter writing campaign to let him (or her) know where those of us affected by this stand.

Amendments to rules that are obviously stringent and restrictive enough already. And the justification for this is? The lunacy of power and misinformation .

Pete Wood
WPA VP 2006

No. 2039
California legislature—2005–06 regular session
February 14, 2006
ASSEMBLY BILL
Introduced by Assembly Member Tran

An act to amend Sections 12700, 12702, and 12721 of the Health and Safety Code, relating to fireworks. legislative counsel's digest AB 2039, as introduced, Tran. Fireworks. Existing law generally regulates the sale,

possession, use and transportation of fireworks. Existing law provides that, subject to exceptions, any person who violates any of those provisions, or any regulations issued pursuant to these provisions, is guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than \$500 nor more than \$1,000, or by imprisonment in the county jail for not exceeding one year, or by both that fine and imprisonment.

This bill would additionally provide that, subject to exceptions, any person who violates any of those provisions or any regulations issued pursuant to those provisions involving any dangerous fireworks item, as defined, or any combination of any dangerous fireworks items, having the total net weight of explosive material of 7,500 grains or more, is guilty of a public offense, and upon conviction thereof would be punished by imprisonment in the state prison, or in the county jail for not more than one year, or by a fine of not more than \$10,000, or by both the fine and imprisonment.

By expanding the scope of an existing offense, this bill would impose a state-mandated local program.

Existing law provides that any person who sells, gives, or delivers any dangerous fireworks to any person under 18 years of age is guilty of a misdemeanor, with specified punishment, and that any person who violates those provisions with any dangerous fireworks item, as defined,

(continued)

From Your WPA Vice President (continued)

By Pete Wood

or any combination of any dangerous fireworks items, having the total net weight of explosive material of 7,500 grains or more, is guilty of a public offense, and upon conviction thereof would be punished by imprisonment in the state prison, or in the county jail for not more than one year, or by a fine of not more than \$5,000, or by both that fine and imprisonment.

This bill would increase the maximum fine that could be imposed to \$10,000.

Existing law provides that the State Fire Marshal, his or her salaried deputies, or any chief of a fire department, or his or her authorized representatives, any fire protection agency, or any other public agency authorized by statute to enforce the State Fire Marshal's regulations, may seize any fireworks, as described, and may charge any person, firm, or corporation, whose fireworks are seized pursuant to this section, an amount which is sufficient to cover the cost of transporting, storing, and handling the seized fireworks.

This bill would include authorization to charge for disposing of the seized fireworks, as specified.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement. This bill would provide that no reimbursement is required by this act for a specified reason.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: yes.

The people of the State of California do enact as follows:
12345

SECTION 1. Section 12700 of the Health and Safety Code is amended to read:

12700. (a) Except as provided in Section 12702, any person who violates any provision of this part, or any regulations issued pursuant to this part, is guilty of a misdemeanor, and upon conviction shall be punished by a fine of not less than five hundred dollars (\$500) nor more than one thousand dollars (\$1,000), or by imprisonment in the county jail for not exceeding one year, or by both such that fine and imprisonment.

(b) Except as provided in Section 12702, any person who violates any provision of this part or any regulations issued pursuant to this part involving any dangerous fireworks item, as defined in Section 12505, or any combination of any dangerous fireworks items, having the total net weight of explosive material of 7,500 grains or more, is guilty of a public offense, and upon conviction thereof shall be punished by imprisonment in the state prison, or in the county jail for not more than one year, or by a fine of not more than ten thousand dollars (\$10,000), or by both that fine and imprisonment.

SEC. 2. Section 12702 of the Health and Safety Code is amended to read:

12702. Notwithstanding the provisions of Section 12700:

(a) Any person who violates this part by selling, giving, or delivering any dangerous fireworks to any person under 18 years of age is guilty of a misdemeanor and upon a first conviction shall be punished as prescribed in subdivision (a) of Section 12700.

(b) Upon any second or subsequent conviction of the offense, the person shall be punished by the penalties of a fine of not less than five hundred dollars (\$500) nor more than one thousand dollars (\$1,000) and by imprisonment in the county jail for one year. The person shall not be granted probation and the execution of the sentence imposed upon the person shall not be suspended by the court.

(c) Any person who violates this part involving any dangerous fireworks item, as defined in Section 12505, or any combination of any dangerous fireworks items, having the total net weight of explosive material of 7,500 grains or more, is guilty of a public offense, and upon conviction thereof shall be punished by imprisonment in the state prison, or in the county jail for not more than one year, or by a fine of not more than five thousand dollars (\$5,000), or by both the fine and imprisonment.

SEC. 3. Section 12721 of the Health and Safety Code is amended to read:

12721. The State Fire Marshal, his or her salaried deputies, or any chief of a fire department, or his or her authorized representatives, any fire protection agency, or any other public agency authorized by statute to enforce the State Fire Marshal's regulations, may seize any fireworks described in this part. The State Fire Marshal, any chief of a fire department, any fire protection agency, or any other public agency authorized to enforce the State Fire Marshal's regulations may charge any person, firm, or corporation, whose fireworks are seized pursuant to this section, an amount which is sufficient to cover the cost of transporting, storing, and handling, and disposing of the seized fireworks. When the State Fire Marshal, other enforcing officer or agency described in this section, or a court determines that a person's, firm's, or corporation's fireworks are illegally or erroneously seized, or if legal proceedings do not result in a conviction for violation of any provision of this part, any funds collected pursuant to this section shall be refunded, or if charged but unpaid, canceled.

SEC. 4. No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district will be incurred because this act creates a new crime or infraction, eliminates a crime or infraction, or changes the penalty for a crime or infraction, within the meaning of Section 17556 of the Government Code, or changes the definition of a crime within the meaning of Section 6 of Article XIII B of the California Constitution.

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POWA Point #1:

A Presidential Executive Order recognizing eligibility for non-commercial Class B hazardous material endorsements (Fireman's Endorsements) for all government licensed pyrotechnicians driving 1.3G and 1.4G fireworks in recognition of the fact that licensed pyrotechnicians are performing a public service being responsible for the fireworks and public safety and not commercial drivers.

POWA Point #2:

A Presidential Executive Order recognizing ATF, DOT and EPA must work closely with the two major fireworks trade associations (APA and NFA) to create a simple and practical set of requirements for the fireworks trade with the goal of preserving the American heritage of patriotic law abiding citizens celebrating our liberty "with fires and illuminations" (John Quincy Adams).

This ad sponsored by POWA

Using the Color Spectrum for Star Composition Combinations

By Tim O'Neil

When I first took up pyrotechnic chemistry as a hobby, I had a great collection of exotic powders, and felt that by combining these hard to get oxidizers, or unbelievably fine fuels, someday I would find that perfect color. But by doing commercial production, some formulas became impractical, and I became desirous of a way to cut down inventories in chemicals, and still do the colors that I enjoyed. So I developed three base colors that all other colors could be created by mixing these safe to combine compositions. What make's them safe to combine are base ingredients that are shared by each composition, and a lack of conflict between the compositions except a few variables.

The basis for this is the simple red, green, and blue portions of the spectrum to make different colors. By making combinations of red and green, you are able to develop incredible yellows that are as vibrant as the old happy face

color. Truer gold can now be made. By combining blue and red, I was able to make purples that looked like they were created for royalty. Not to leave out the lovely turquoise by mixing across blends.

Developing color mixes had to be based upon formulas with common ingredients. This actually helps the person who does this as a hobby, just as much as it does for those looking to do manufacturing. It allows you to concentrate a portion of your pyro budget for specific chemicals that you know will be used. It also allows you to make combinations not only of the base mix, but favorite mixes to gain exciting and new formulas based on them. It allows you to use your formula book in the same way a painter develops their palette.

Well let us take a look at the base formulas (all parts by weight):

Red Star Mix	
Strontium Nitrate	48
Pottasium Perchlorate	8
Parlon	17
MG/AL 50-50	10
Carbon	5
Sulphur	5
Red Gum	2
Dextrin	5
(Water or Water/Alcohol mix to bind)	

Green Star Mix	
Barium Nitrate	48
Pottasium Perchlorate	8
Parlon	17
MG/AL 50-50	10
Carbon	5
Sulphur	5
Red Gum	2
Dextrin	5
(Water or Water/Alcohol mix to bind)	

Blue Star	
Copper Oxide	14
Pottasium Perchlorate	66
Red Gum	10
Parlon	5
Dextrin	5
With the greater use of red gum, mixture becomes very sticky when wet. Can be rolled or cut into stars effectively, but is hard to pump.	

By combining the base formulas, you can create great combinations. An example would be one we call Florence Yellow. This uses a combination of green and red in an 84/16 mix to create a gorgeously bright yellow, very unfamiliar to those using a sodium based blend.

The best bet is to take these formulas, work with them, and develop the bases. Then start mixing combinations and testing the colors. All of these formulas need to be primed, and I use a simple green mix powder with dextrin, along with a little fine titanium for that extra something to guarantee a good light.

Hopefully this will cut down on the amount of chemicals some find themselves using, and the amount of formulations needed to make those exotic colors.

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Black Match Recepte

By Mike Smith

Shell Cross Match and Passfires:

Use 7-8 strands single filament cotton tea bag string or similar or 4 strands of cotton crochet string (size 10) for cross match. Pull through a sizing die made from a piece of solid brass round stock 3/4" diameter and 2 to 3 inches long drilled and reamed smooth with a .100" hole. A glass eye dropper or ketchup spout with a .100" opening can be utilized as well

For Shell Leader Match:

Use 16 strands of single filament cotton or 6 strands of cotton crochet string (size 10) pulled through a sizing die with flat rectangular shaped opening. The shape of the leader match when dry should resemble a shoelace 5/16" or so wide. Round shapes can be made as well.

Hot Slurry Mixing: Do not use an open flame or exposed heat source for this procedure.

For cross match Meal "D" or BP milled with Willow charcoal is preferred. To cement the slurry mixture to the cotton strands and make the match stiff use 2% Gum Arabic and 2% dextrin together to equal 4%. The Gum Arabic/Dextrin is mixed with water and dissolved by warming in a double boiler. Twice the weight of BP is added to the binder solution and mixed well to make a hot slurry. Conversely, the weighed amount of water used is equal to 50% of the BP used.

A water bath is necessary to keep the temperature of the slurry near a constant 98 degrees C. Higher heating temperatures will cause an excessive amount of Potassium Nitrate from the BP to dissolve into solution. This causes larger crystals of Potassium Nitrate to form when the match is drying resulting in less vigorous combustion. If no heating is applied, the slurry becomes too thick and won't penetrate the cotton fibers. When using Meal "D" or other commercial grain powder heating is required to get the grains to properly dissolve.

For leader match: A straight 4% Dextrin can be added to the BP ingredients and ball milled together, and then add plain water while mixing using the above hot slurry mixing method.

Option: For cross match, and the same for leader match, one may try adding the dry Gum Arabic/Dex binders to the BP ingredients and ball milling them together.

Reference: The amount of water (usually less) can be adjusted to suit your preferences.

On page 198 in Shimizu's Art & Science book, 3% Gum Arabic is dissolved in 40% water by weight and heated in a water bath to make the match slurry. For this, one would assume the amount of BP added to the Gum/water binder is 100 parts by weight.

Typical Match Frame:

Douglas Fur molding 1.500 by .750 varnished with "L" brackets to reinforce corners with an overall frame size 2 feet wide by 3 feet long. Install two holes and center them in the longer pieces to accommodate a 5/8" wood dowel for a bearing axle. Having one frame for cross match and the other for leader match is a good idea.

How Much To Make:

Determine size of match frame and number of windings on the frame with spacing of say 1/2" to 5/8". A frame 2 feet wide by 3 feet long will accept a total of 38 turns of match cotton with 5/8" spacing. This will total 76 separate 3-foot pieces or other lengths depending on preference.

The weight of BP needed to coat a single 3-foot piece of cross match is approximately 8 grams. Ten grams is the approximate amount needed for a 3-foot piece of the heavier leader match.

To ensure all the cotton gets coated the amount BP is calculated so that some excess slurry is available during the application process. Adjust this amount more or less if needed.

Batch Method Procedure:

After deciding how many windings of black match one wants to see finished with proper spacing on their match frame. Unwind that same length of cotton from the frame and wrap it around the tapered middle section of an inverted plastic flowerpot that's a foot or so in diameter. Tie the bundle of match cotton loosely in 4 sections then remove it and place it aside. One may then use masking tape, secure a layer of heavy Kraft paper around the flowerpot for the next step.

The whole object of this is to prevent the strands of cotton from becoming tangled while soaking in the BP slurry or when winding the strands back onto the frame while they're being pulled through the sizing die.

Next, place the bundle of cotton in a coffee can or stockpot of a convenient size and pour in the right amount of hot match slurry. After the bundle of cotton is well saturated remove it and place it back on the tapered section of the upside down flowerpot then cut away the 4 holding ties.

Beforehand this "inverted flowerpot dispenser" needs to be centered and secured on a vertical metal rod attached to a base that spins freely. The drain hole in the flowerpot provides a convenient center of axis. For ease, one can simply attach the flowerpot to a revolving condiment dispenser, most of which use ball bearings.

Next, find the outer end piece of the bundle and pass it through the sizing die, then attach it to the far side of the match frame. While holding the sizing die in the left hand start revolving the match frame with the right. Apply a little tension to each 3-foot section wound on the frame so the pieces don't droop and cement themselves to adjacent strands while drying.

Notes for Success:

Beware of excessively twisting the strands of cotton in the pot of match paste. One problem that can occur with the batch method is having the coated strands tangle while pulling them through the sizing die as the match is being wound on the frame.

Important, use the same type of cotton or fibers that have equal stretch and breaking strength. Make sure all surface areas of the match frame and axle bearing exposed to match paste are covered with wax paper. Be sure to place a plastic drop cloth on the floor to catch any drip.



Mike Smith—testing Fountains On A Stick

WWB View From a Newbie

by Paul Wilson (#2448)

I just got back from Winter Blast – my first pyro convention. From what I'd heard, there would be seminars on making devices, good fireworks displays, chemicals to buy (avoiding shipping), and discounted fireworks.

What did I find at WWB? Nearly eight hundred pyros in one place at the same time. There are other people with this odd fascination; I'm not alone. And hundreds of people for a long weekend is a great size - I could do a lot without feeling overwhelmed.

"People were making amazing stuff, doing it right, and I got to watch."

I did all the things I'd heard about. I went to lectures on color

theory and on using magnalium, and to hands-on seminars on making stars, *and* on making ball shells, *and* on making canister shells, *and* on making black powder rockets. And I found mini-pyros – there are other people who like "little"! There was even a seminar on senko hanabi; I'd been trying to make them for months.

The varied displays – open shooting of commercial product or fireworks made on site, choreographed display operator demonstrations, and the public show – meant that there was fire in the sky for more than five hours every night. I saw product and effects I'd never seen or imagined. Each year's sky-painting, I learned, is available on DVD.

I preordered some chemicals. I hadn't counted on helping to set up Firefox's sales tables, making friends along the way. I preordered some consumer fireworks. I hadn't imagined that working a few hours as a safety volunteer meant I'd see *a lot* of fireworks, and let me to trim labels off my favorite spent cakes and then buy them. And another volunteer made these amazing cakes...

Which brings me to the things I hadn't really known about. I wandered around the *eighty clumps of pyros making things* in the manufacturing area. People were making amazing stuff, doing it right, and I got to watch. And I loved watching the quarter or so of attendees who mostly enjoyed buying and shooting consumer fireworks - in a safe place, with safety instruction, under supervision and wearing safety gear. If only there was more of this

outside of Winter Blast, there might be less fear.

As a newbie, a few friends from home – and their friends – gave me a "home base". I had to be outgoing, to volunteer, and to ask questions; in return I learned and I got to know people. Basic information is available on the WPA website. A prior year's program gave me an idea of what happens when and where. The seminar schedule and other events come to clarity on the WPA listserv *slightly* ahead of Winter Blast. A wonderful home video at <http://video.google.com/videoplay?docid=8331385636053873335> gives a very good sense of this year's event.

Was it fun? Oh yeah. Will I go again? Yes...as soon as I explore what I came home with this year...

Paul is from Portland, Oregon and has been at this for a year and a half; he was offended as a kid that colored sparklers don't have colored sparks. Now he's a certified display operator and his ATF license application just went into the mail.

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Making Rocket Batteries for the 1997 Winter Blast

Public Display by Kurt Medlin

This article was originally written in 1997 a few months after Winter Blast VIII. For one reason or other, I never got around to preparing the pictures and submitting it. Having recently discovered it collecting dust in the corner of my hard drive, I thought I would finish it up and present it for your amusement. -KCM

For last year's Winter Blast Public display*, Steve Wilson asked if I could make two, 10-rocket batteries of black powder rockets to use during the "Rocket's red glare" section of the Star Spangled Banner. Steve specifically requested three things regarding the effect:

**Actually Winter Blast VIII (1997)*

- 1) The heads should go off as the rockets are still ascending, or at least before the rockets start to veer over
- 2) The heads should break hard, like a shell
- 3) The breaks should be of bright red stars (preferably metal fuel such as magnesium), that burn out quickly

Although this article is primarily intended to be about the construction of the heads, I will also discuss the approach I took to achieve the other artistic goals.

The Rocket Motors

After some more discussion with Steve it was decided that one pound rockets would be a good size for the effect he desired. For the rocket composition, I chose my standard one pound mix:

Potassium Nitrate	60%
Charcoal (air float)	10
Charcoal (80-mesh)	20
Sulfur	10

I sometimes substitute 2-5% of the 80-mesh charcoal with 36 mesh charcoal. This mix is similar to what a lot of people use in the one pound size, and I make no great claims for originality. It has plenty of power and creates a nice tail, although much depends on the particle size of the potassium nitrate, the origin of the charcoal and the mixing techniques. For a more complete discussion of this particular mix and how to adjust it, see the article titled "Universal Skyrocket Formula" in WPA Newsletter No 4 Vol. 1 (May,

1992) Regarding the specific batch used for these rockets, the chemicals and mixing were as follows:

K-Power fertilized grade potassium nitrate was ball milled with cab-o-sil to pass a minimum 100 mesh screen, but the actual particle size was probably in the 120-160 (100 mesh is the finest screen I have and it easily passed through). The air float and 80 mesh charcoals were the type commercially available in 50 lb. sacks and is said to be made from "mixed hardwoods." The sulfur was fine commercial grade that appeared to be in the 100-200 mesh range. Mixing was accomplished by first passing the sulfur and then the nitrate through a 40 mesh sieve on to a piece of 50 lb. Kraft paper. Then the charcoals were weighed out and placed on top of the nitrate and sulfur without being passed through the sieve. The mix was then blended by hand briefly and then passed together through the 40 mesh screen four times. I then added 6% water, kneaded it in thoroughly, and granulated it through window screen onto a piece of Kraft paper to dry. Once it was thoroughly dry the rockets were pressed. The damp granulation step was done primarily to keep the dust to a minimum during the pressing of the motors, but it also has the effect of speeding the mix up a bit as well as slightly enhancing the spark tail. If you try this mix, you may want to press your first rocket without the wet granulation to see if it is already sufficiently "hot." Rockets that are "on the edge" of bursting when made with a non-granulated comp may very well explode when made with the same comp after it has been granulated. Again, much will depend on the particle size of the nitrate and the charcoals as well. Those of you who make and use your own "hot" charcoals from woods such willow or maple will probably have to make further adjustments.

The rocket motors were pressed on a 2-ton arbor press using as much pressure my father could exert with is 6 foot, 190 pound frame! Yes, I had my 66-year-old father press all the motors. My father has been my pyro-accomplice since I was about 10 years old and we're still at it together.*

**Roy Medlin passed away in March of 2003.*

"Although this article is primarily intended to be about the construction of the (rocket) heads, I will also discuss the approach I took to achieve the other artistic goals."

Making Rocket Batteries for the 1997 Winter Blast Public Display (cont.)

by Kurt Medlin

Achieving the first artistic goal of having the rocket break before veering over was a matter of adjusting the increment of comp pressed above the spindle, since this is the increment that separates the trust producing cavity portion of the motor from the heading. This increment of comp above the spindle does not produce any meaningful thrust and basically functions as a time delay allowing the rocket to coast up to (or past) its zenith before burning through a hole in the top clay plug to light the heading. Conventional wisdom holds that one i.d. of comp (3/4" in this case) pressed above the spindle should put you in the ball park timing-wise, depending on the power of the motor and the weight of the heading. Getting the rocket to burst before its zenith is a simple matter of making this last increment of comp something less than one i.d., but this is a tricky proposition - this increment also serves the important function of preventing the heading from being ignited immediately at take off. If this increment above the spindle is too thin, the rocket will "blow-through" at take off, meaning the increment of comp above the spindle was not thick enough to prevent the fire from the cavity portion of the motor from blowing right through into the heading at, or soon after, take off.

I have always liked my rockets to break before veering over, so I knew from previous experience that a 3/4 i.d. increment of comp above the spindle backed by an increment of clay at least one i.d. thick (preferably more), would give me the timing I wanted without the danger of blow-through at take off.

The Stars

Although I have made magnesium based stars in the past, I do not use them extensively, tending towards either resin fueled colors stars, or stars with only a few percent metal such as the Veline color system. While a complete discussion of the trials I went through to find a red mag star I was happy with is beyond the scope of this article, suffice it to say I remembered why I don't often bother using Parlon bound stars if I can avoid it! (Such a gooey mess...) Since I had to make a fairly large batch for me (two kilos), out of convenience I ended up using the magnalium mixture below and a more 'convenient' non-aqueous binder than Parlon and acetone. With straight magnesium it would have been a more intense and pure red, but that would have meant getting into dichromate coatings and messier non-aqueous binders. For my purposes, it ended up fitting the bill nicely.

Strontium Nitrate	50%
Potassium Perchlorate	10
Saran	15
Magnalium (200-400)	15
Hexamine	5
Shellac	5

The stars were mixed using a 40 mesh screen and bound with 18% denatured alcohol (the 5% shellac in the formula acting as the binder). Pumped stars 5/16" in size were made using a star plate to get a quick and even burnout. I used Veline's "Super prime" to prime them after they were dry:

Potassium Perchlorate	55%
Charcoal (air float)	20
Wood meal (-70 mesh)	6
Red Iron Oxide	5
Magnalium (200 mesh)	5
Potassium Dichromate	5
Dextrin	4

The stars were primed by placing them in a stainless steel bowl, *lightly* misting them with water, and sprinkling on the prime while rolling the stars in the bowl.

The Rocket Headings

The request was for the rocket heads to break hard, like shells. I tend to favor the Italian school of shell building, so naturally I decided to make small cylindrical shells for the rocket heads. The approach I took was a variation on the Italian-style shell inserts used in shell-of-shells called "pupadelles." The variation was to replace the time fuse normally used in pupadelles with a small tube that had a piece of black match running through it (that way it would light at the end of the rocket's flight without any additional delay.) The basic technique can be found described in detail in the second part of the Fulcanelli article on cylinder shell building that appeared in *Pyrotechnica XI*.*

**For those of you not familiar with the two part Fulcanelli article that appeared in Pyrotechnica IX and XI, Traditional Cylinder Shell Construction, it is the most complete description of the Italian school of cylindrical shell building to be found in the English language. I highly recommend it for anyone interested in learning the fundamentals, as well as some advanced techniques of this style.*

Making Rocket Batteries for the 1997 Winter Blast Public Display (cont.) by Kurt Medlin

I decided to use a 1-5/8" diameter case former to roll the pupadelle casings. This is an odd sized former for pupadelles that I had around for no particular purpose other than Steve Majdali gave it to me! At any rate, it seemed to be a good size for this application: slightly bigger than a standard pupadelle, insuring a full break, but small enough to only hold about half the weight a one pound rocket can carry, thus insuring the rocket would still be ascending when the heading broke. I decided to set the finished (inside) length of the case at 2½ inches. (From this point forward I shall refer to the pupadelle as a shell since technically it is no longer a true pupadelle).



Figure 1

Each shell casing was rolled from one strip of 40 lb Kraft paper 5 ½" wide by 21" long, with the grain running the 5" direction, and one strip of 125 lb tagboard 2 ½" wide by 10½" long, with the grain running the 2 ½" direction. These lengths resulted in four turns of Kraft paper and two turns of tagboard when rolled around the 1-5/8" diameter former.

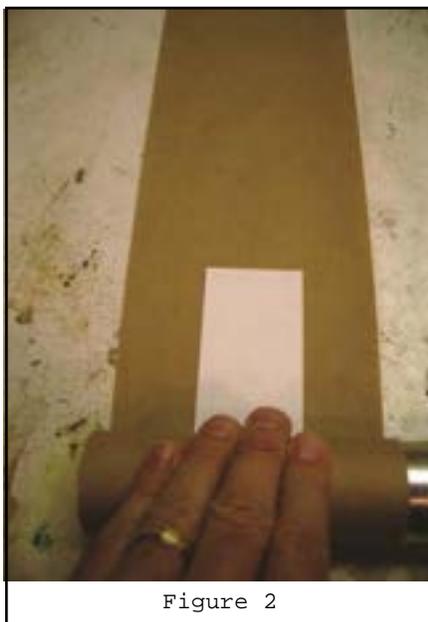


Figure 2

To roll the casings, a tagboard strip was centered on top of a Kraft strip with the edges aligned together on one end (figure 1 and 2). Starting with the end where the two edges are aligned, the

two strips are rolled together around the former and pasted on the outside edge with white glue.

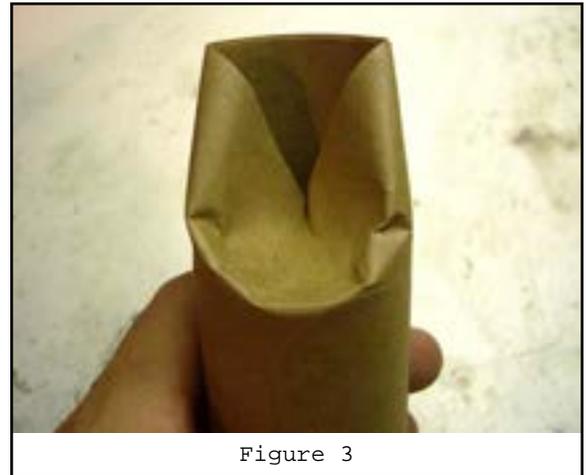


Figure 3

The case was then slid up over the end of the former so that the edge of the tag board was flush with the end of the former, with the Kraft overhanging by approximately 1½ inches. The overhanging end was then closed using a triangle fold. The triangle fold was made by first pushing one side of the overhanging Kraft inward and all the way down against the end of the former (figure 3). Then the edges of the overhanging Kraft were pinched inward and the overhang Kraft bent over the end of the former. I then placed a dab of glue under this outer fold and rapped the end of the former on the workbench to consolidate the folds. This outer fold has a somewhat triangle-like appearance, hence the name, "triangle fold". When done correctly, the result is a neatly formed, flat set of folds as shown in figure 4.



Figure 4

Before removing the case from the former, I used an awl with a ¼" shank to make a hole in the center of the triangle fold (the end of the case former has a hole in the center to facilitate this step). Figure 5 shows the triangle fold with a hole punched through the center.

Making Rocket Batteries for the 1997 Winter Blast Public Display (cont.) by Kurt Medlin

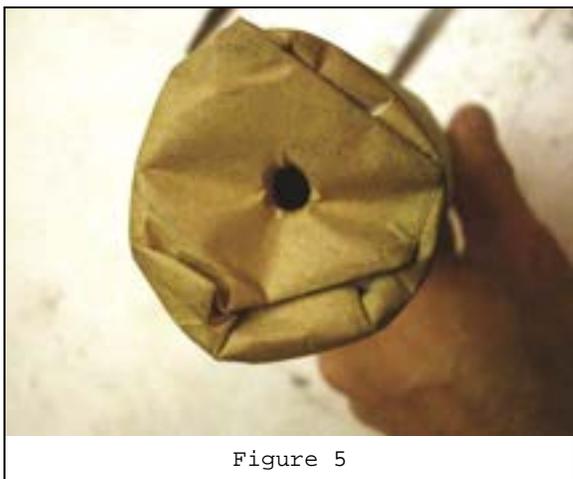


Figure 5

The little tube that goes in this hole is there to protect the piece of black match that will communicate the fire from

the rocket motor to the contents of the shell. I rolled this little tube myself using a 3/16 inch rod and a strip of heavy Kraft (70 lb) 1" wide by 6" long (the grain running the 1" direction), pasted on one side with wheat paste. It was important that this tube be fairly thick and strong for its size because this tube was used to tie string against when the shell was "spiked" (more about that step later).

The tube was pushed through the hole so half was inside the case and half outside, and then secured with a bead of white glue. At this point the case was removed from the former and a piece of high quality eight ply black match about two inches long was slid into the tube so that 1/2 inch was on the outside and the remaining 1 1/2 inches was on the inside (figure 6).

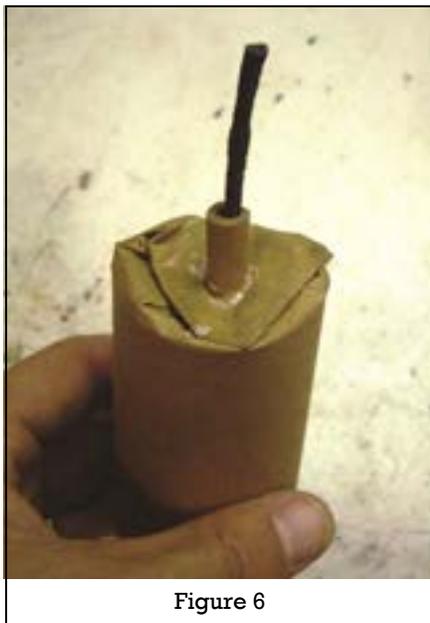


Figure 6

The case was then placed open end up on a work surface that had a hole to accommodate the tube and match protruding from the other end. The case was then filled approximately 1/3 full with the red stars and then approximately 1/2 teaspoon of -8 +16 mesh "hot" polverone*. 4FA or 1g grade commercial grain powder could also be used. The case was then gently bounced up and down to settle the stars and polverone into a

compact configuration.

**My "hot" polverone, it was made with willow charcoal that had been ball milled with the sulfur until it was the consistency of talc. After mixing the ball milled willow charcoal/sulfur mixture with fine mesh potassium nitrate and an additional 3% dextrin, 20% water was kneaded in and the mix granulated through an 8 mesh screen. Once dry, it was re-screened through the 8 mesh to break up the lumps and the fines sifted out through window screen. The resulting polverone was very close to commercial quality black powder and worked quite well in this application.*



Figure 7

More stars and polverone were added to the case and consolidated in the same manner until they came up to the level of the tag board as shown in figure 7. After lightly tamping the full case with a flat end of a 1 1/4" dowel to even out the contents, the overhanging Kraft was closed using a triangle fold and glue as before. The folds were consolidated with the 1 1/4" dowel producing the same result in figure 4.

The finished shells were then "spiked" (wound with string) using one strand of 8-ply cotton string that had been rubbed with wheat paste. The shells could have been spiked with dry string, but experience has shown me that pasted string does produce a better result and is worth the (minor) extra effort required to treat the string with paste. To spike the shells, first the outside end of the string was tied to the little fuse tube with a clove hitch. Then eight vertical passes of string were laid evenly around each shell as follows: First the string was wound around once, and then turned 90 degrees around the fuse tube and wound all the way around again so that there were four evenly spaced vertical windings. Then the string was brought around the fuse tube again and laid evenly between the first

Making Rocket Batteries for the 1997 Winter Blast Public Display (cont.)

by Kurt Medlin

four windings. This was repeated until there were eight vertical windings.

The horizontal windings were done by bringing the string back down over the side wall to the bottom of the shell in a spiral fashion. After making one complete turn around the bottom, the string was then wound around and up the circumference of the shell in a spiral pattern forming little squares with the vertical windings (figure 8). Once at the top, the string was tied off with a reverse loop pulled tight against the spiking horse, and the excess string cut off.



Figure 8

The whole process of spiking is easier to actually do than describe, but hopefully the picture of the end result will help make it clear. As an aside on the role of spiking a shell of this design, its function is to provide strength to the otherwise flimsy walls of the shell casing, and is the reason these little shells broke hard with just black powder mixed in amongst the stars.

At this point, the shells were essentially finished once the pasted string had dried.

Finishing the Rockets

The finished shells were attached to the rocket motors using hot glue as shown in figure 9. Since these shells were not going to be fired from a mortar, there was no need to cover them in pasted paper to prevent the hot gasses of a lift charge from getting through the casing. However, once the hot glue had cooled, I did past two turns of 40 lb Kraft around each head,



Figure 9



Figure 10

smoothing the overhanging paper over the top of the head and around the bottom where the head meets the rocket motor (figure 10). This last step was done as much for aesthetic reasons as it was to provide a measure of insurance that the heads would stay firmly attached, although the smoother surface of the heads may have also aided in the aerodynamics of the rockets' flight.

The rockets were launched from racks electrically by placing an electric match half way up the rocket core and securing the wires to the rack such that the match was held in the proper place.

The foregoing instructions may seem like a lot of effort to go through to get such a simple effect, but to me the reward in making a firework has always been in the process of working with basic materials such as paper, string paste and powder to shape them into instruments that produce beauty in light and sound. In my experience, the effect of a well constructed firework is always worth the effort. KCM

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*Thank you ALL for your
continued support
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WWB 17

By Greg Dandurand

This is the city, Lake Havasu, Arizona. It was dry on a Thursday afternoon, sun shining and temperature comfortable as I pulled into town. The locals were going about their business, unaware of the craziness unfolding down in Sara park. My job? To make sure the rules were followed, butts kicked and names taken. The name's Greg, and I carry a badge. This year I'm on Pyro Patrol, one of the Fusee Fuzz, Nitrate Narc, Shell Security, Visco Volunteer, Rocket Ranger, Cracker Cop, D-meal Dick. I guess being on the safety staff is like being promoted to trustee at the asylum. I'm just kidding, it was nice to have WWB senior staff has some faith in me.

I was kind of bummed as the blues-mobile would not be making the trip due to severe mechanical difficulties. However, that feeling was negated at the prospect of a rental vehicle. No curb too high, no ditch too deep. The perfect stunt machine. Sliding sideways into the curb at Sky Harbor Airport in Phoenix, My cadre of pyro pals marveled that I had purchased a new car. "Nay Nay", I said, as I started smoking the tires in anticipation of the weekend. We had an uneventful trip to Sara Park.

Rita Osterle and her staff were handing out credentials with the finely honed precision that comes from years of experience. Along with the

staff credentials and staff shirt came the coveted orange parking pass. That was worth its wait in gold. Several attempts by unscrupulous members trying to weasel it away (you know who you are!) resulted in slaps on the wrists, with a stern look from me. Over in the staff area, Bill Daly (assisted by the lovely and talented Margaret) handed out radios like Tic-Tacs, except I never had to sign for a Tic-Tac before, and the last time I stood around and talked into one, people just looked at me funny. The staff tent was set up and Ann Huffman was to provide dinner for the staff (most staff were on site all day). That was one of the nice perks of giving of your time for the weekend. Remember, senior staff is on-site days before to set up, and days after to return Sara Park to a state acceptable to Lake Havasu City. Please make sure you thank your staff and board members. No one gets paid, and most of these people work harder at WWB than they do at their day jobs.

I checked in with Lynden King and Kief Adler to find out my duties and responsibilities. I was to be assigned all weekend to B line safety. I hiked around to check out the layout and found that one of the display operators had showed up before WWB staff and laid claim to about half of our area. That made things interesting, but not impossible to work around. He had originally claimed most of manufacturing and the C line, but a frontal assault mounted by troops with Saturn Missile Batteries duct taped to the front of golf carts pushed him back across the 38th parallel. A shaky truce was observed, with the area between B and C lines becoming a no-mans-land. For safety reasons it was shut down while shows were being shot, allowing us stuck down there a different perspective on the

(Continued Next Page)



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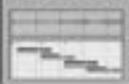
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WWB 17 (continued)

By Greg Dandurand

shows.

I left the site for a while, running into town to check into the Ramada and securing a place to sleep. It is nice to stay at the host hotel where going back to room after the Afterglows was just a short walk (or stumble as the case may be). I saw several familiar faces in the parking lot and stopped to say hello and catch up on things since I had seen them last.

Looking at my watch, I excused myself to return to Sara Park for the three o'clock staff briefing. In the tradition of Rogers and Hammerstein, with a little Martin and Lewis and some Abbott and Costello thrown in, Kief and Lynden covered all the pertinent information for the weekend's events. We laughed a little, shed some tears, and the meeting ended on a high note with everyone holding hands for a rousing chorus of Kumbaya.

Randy Baranack was the Safety Chairman. He grabbed the safety staff after the meeting and went over the rules. I gathered my gear and caught a limo ride to the B line. The club rented two six passenger golf carts to move people around, which was a great idea. There were a lot of positive comments on it and I think the club will do it again next year. The B line was quiet at first, with only one or two people wandering down to see what was happening. I'd like to take the space right now to thank all the people who rotated in and out to help me make the B line run smoothly. I like to think of my job not as the "heavy" so to speak, but almost like the ringmaster in some bizarre three-ring circus. Some handholding is necessary, but for the most part our job was that we (the safeties) educate and inform. Also, people seem to get tunnel vision when lighting a fuse and we just watch their backs, providing situational awareness to prevent something dumb from happening.

We were on the far B line right next to the buried electric fired mortars. Over the course of the weekend, that caused a couple of tense moments, when (several different times), homemade stuff detonated in the guns or were extremely low breaks. Through some weird psychic ability, I predicted most of them and was able to prevent people from being down on the line when it happened. Randy and I coordinated better and we alternated when to use our respective lines. Next year, I think there will be more separation between the electric and hand-fired lines.

The shows were phenomenal, with Aaron Mayfield's display (featuring Italian salami shells) outstanding. The hard work and dedication that goes into each one of those shells is evident when it breaks and the colors fill the sky. Fred May's Grand Public display was spectacular and the longest one yet, at over thirty minutes. Wolverine West and Premiere Pyrotechnics shot some demos and the wall of crackers this year was actually a teepee of crackers. There was no rain, so all shows went off with very few glitches. I was so busy I didn't even get to wander to the class C tent. Many thanks to

all our vendors for class C, class B, and chemicals who come from many miles to make our event happen. Remember, with no chems or product, we would all be standing around just looking at each other.

The trade show at the Aquatic center had a few empty tables this year, but everyone seemed to be horse trading and buying the wares from the peddlers. There was one interesting panel discussion that I attended. Tom Handel moderated, with Fred May giving an impassioned speech about how the BATFE and the DOT were putting the little guy out of business with their regulatory practices. He was very animated and was able to stir up the crowd with his idea of a boycott of major cities on the Fourth of July by not shooting shows to get some attention to the way the BATFE and DOT does business. He really put his heart into it, and when he finished I looked at the Statue of Liberty in a whole new way. Her robes were actually a Nomex suit, holding a cue sheet on a clipboard cradled in one arm, with a lit fusee thrust skyward, in the other She was ready to light the largest Fourth of July show ever. She even had on her protective helmet, but no safety glasses, I could overlook that. After he spoke, other members of the panel had a chance to respond to his topic. Joe Bartolota, John Steinberg, and Greg Smith responded to Fred's remarks. They had a few good things to say about his speech, and recommended that we all keep working together to help the industry help us.

I didn't make the business meeting this year, but Pete Wood was elected our new VP, with Russ Laurie and Ann Huffman retaining their current board positions. I got this info second hand, but am sure of its reliability.

The afterglows were quite a feast, with plenty of food for everyone. I don't remember who to thank for the micro brews that were provided for the club. Later, I went in search of the impromptu parties that were held in various rooms. In one room we ended up in a discussion about if God were a pyro, would he be a rocket man or a fireworks guy. The rocket people held that he would identify with the straight path of a rocket, showing the most direct way to enlightenment. On the other hand, the fireworks people argued he would want to share the beauty of the shells with everyone to make all people happy. Both sides agreed that he would stay for clean up, as He is humble. Then the discussion changed topics and we talked until quite late.

Again, I would like to thank all the Board members, the site host, the chairmen for safety, security, and everyone who volunteered some of their time to make this event possible. This club is run by its members, and we all had an enjoyable time. Thank you for digesting my airy persiflage, I look forward to seeing everyone at DO-IT!!

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