

# WPA

Western Pyrotechnic Association, Incorporated

## Newsletter

# WPA: To Be Or Not To Be

## Steve Wilson Becomes President As Dave Steinau And Larry Homan Resign

WPA founder Steve Wilson has assumed the duties of President upon the resignation of Dave Steinau in July. Dave cited his new work responsibilities as the principle reason for his resignation. He did not abandon the WPA, taking on other responsibilities that he considered essential to the continued running of the Association. At the time of Dave's resignation and Steve's ascension, Mark Devon had been offered the empty vice-president position and apparently he had accepted.

Larry Homan, the WPA publications

vice-president and editor of the newsletter, also resigned. He cited uncertainties about officer insurance, a condition of his original agreement to accept the position. He also mentioned the Executive Committee's inability to control the expenditures of the Association. No one has been appointed to fill the vacant office. He agreed to act as editor until a replacement could be found.

Dave Steinau has been acting as temporary treasurer, an interim appointment, since August. Sam Zarcoff reportedly resigned the position when the duties were

not surrendered by Mark Wray at the past Winter Blast as provided by WPA By-laws. An effort is being made to persuade someone to accept the treasurer's duties at the earliest possible date. It is uncertain who is acting as treasurer as inquiries produce multiple answers. Steve Wilson reports that Arlene Dixon had agreed at the time of publication to assume the position, if it is vacant.

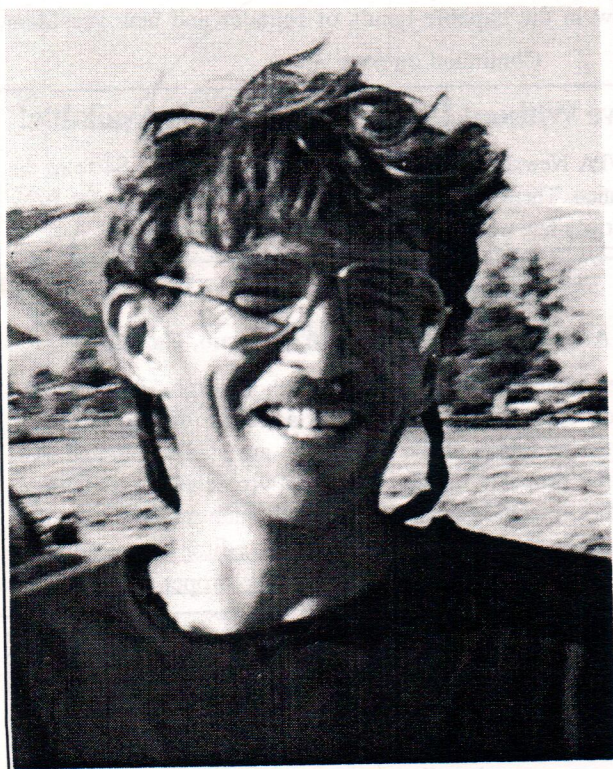
Currently, attempts are being made to gather all materials and records of WPA financial activities and determine the overall financial condition. As of the publication date, a treasurer's report had been submitted by 1995-96 WPA treasurer Mark Wray and is published elsewhere in this issue. Mr. Wray was given additional time at the business meeting at Winter Blast VII to complete the necessary preparation.

The status of several positions remains uncertain. The By-laws call for an executive committee of five members, the elected officers, to preside over the operations of most WPA activities. At the time of publication, it was uncertain if two or three or four executive committee members remain. At least three are needed to make decisions, particularly concerning WPA expenditures of over \$100. This rule has been largely ignored by members in the past.

According to acting treasurer Dave Steinau, current records (August) show about \$13,900.00 in WPA bank accounts. The amount of outstanding liabilities not reflected in this figure is uncertain. There are continuing expenses for the newsletter and the lawsuit. By itself, the above amount is more than sufficient to sustain the Association throughout the year and finance the prerequisites of the Winterblast VIII. Sev-

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### New WPA Semi-secretary Dave Steinau



July 4, 1995 at 5:30 p.m. 1100 shell show with 100% continuity. Steaks on the grill. What happened?

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For 1995-96 And  
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The Western Pyrotechnic Association Newsletter is a publication of the Western Pyrotechnic Association, Inc. Membership dues are \$30 per year. Requests for membership forms should be sent to: W.P.A., 2230 Aralia St., Newport Beach, CA 92660

#### Officers

President.....Steve Wilson (707) 485-5122  
Vice-President.....Vacant  
Secretary.....Forrest Rhoads (714) 640-5395  
Treasurer.....Dave Steinau, maybe  
Publications .....Vacant

#### Area Vice-Presidents

Southern.....Jill Cayot (818) 348-1048  
Valley.....Frank Guidi (209) 591-3763  
North.....Tom Cloud (510) 778-1455  
Arizona.....Mark Devon (408) 725-0943

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## Notes from the Overground

Larry Homan, Editor

Internal difficulties have unnaturally delayed the publication of the WPA newsletters this year. Despite those of you that think that is a good thing, I am persevering. First, issue 8-1 waited for the inclusion of promised material that never materialized. The original Issue 8-2, ready at the beginning of June, 1996, was delayed so long by financial and political uncertainties that its publication is now considered pointless. Some material from that issue has been reprinted in this issue. Several technical articles or notes were released for publication elsewhere. Parts of 8-2 that were considered dated have been abandoned altogether.

Not the least of the uncertainties was my resignation as the Publications Vice-president for reasons little understood by people not working on newsletters for pyrotechnic organizations. The primary reason was the failure of the Association to provide insurance for the officer's activities, not an insignificant consideration in this era of self-perceived as under-rewarded attorney-want-to-be's. For a time the availability of funds for this purpose was unpredictable. Now the availability appears more certain but the resolve is not.

A secondary reason was, despite being a member of the executive committee and on reasonably good terms with the other officers, I was rarely aware of what was happening in important areas of the Association's activities. The membership would be amazed about how many significant acts are done without the knowledge or approval of the full executive committee. I do not think I was alone. Nor do I attribute this to any intent or lack of effort by any other officer(s). I think good e-mail resources for all the officers, with the combined intention of informing by each individual, would help make the tasks of being an officer more efficient, not to mention comprehensible. I just don't see the point in having the responsibility but no control. Why should I worry when by action or inaction I have little effect upon the activities of the Association.

The WPA is now in the capable hands of founder and new President,

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### If You Can't Live Without It, The Newsletter Is Available!

Former issues of the WPA Newsletter from 1995-96 are available for \$4 from the Secretary of the Association. There should be five issues for 1995 and two for 1996. Supplies are limited. Allow a few weeks for delivery. They make good gifts.

### Submissions:

Larry Homan, Acting Editor, P.O. Box 162, Fresno, Ca. 93707

Submissions of written material and 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 and such material may not be returned. No payment is made for submissions. The editor knows nothing about subscriptions. Contact the WPA secretary for the proper information.

## Newsletter Exchange Available

Any editor of any fireworks or pyrotechnics publication, who would like to exchange issues, please contact the editor and let me know that you are there. We are happy to oblige anyone with an interest in fireworks. There might be a delay in receiving your copies. Notify the secretary if you haven't received one.



# Ye Olde Public Notice

October 5, 1997

Please let it be known to all, that you must be a WPA member in good standing to attend all future Western Winter Blasts. This comes as a result of a vote by the membership at the last general WPA meeting.

**Wanted: Convention Chairman for Western Winter Blast VIII.** Will pay \$1000.00 for services rendered, plus up to \$1000.00 in discretionary funds for a leader and his/her staff to put into motion our next convention. Integrity, good will and a little experience are recommended. Will train if necessary. Call Steve Wilson at (707) 485-5122 for details.

**Wanted: One Public Display of Fireworks** to be executed on Sunday, February 16, 1997 in Lake Havasu City. Come knock our socks off for \$10,000 with anything you can think of. This offer will be awarded to the company or agent that can provide the best fireworks bid. Emphasis in evaluation of bids will be given to origin, size, quantity and techniques used. The WPA can supply insurance for the display, minor hotel accommodations for principal crew members and eager, sometimes knowledgeable slave labor to assist in display setup. For more details contact Steve Wilson at (707) 485-5122.

## Notes from the Overground

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Steve Wilson. I believe he has the vision and energy to repair some of the damage that has been done to the Association in recent years. There is nothing critical but there could be some improvements. I am sure Steve will make the necessary changes. Despite rumors to the contrary, the Association is solvent, without major problems and under sound leadership. There is no reason to expect any major changes in the character of any activities. The occurrence of the next Winter Blast is almost assured. The will and financial resources necessary are intact. Founding members are rallying. Vacant positions will soon be filled. I hope.

I am something like the guest editor for the current issue. I have attempted to get something in the mail, although purposefully not like previous efforts. I am suspending most technical articles until some changes are made. Again there has been a wait for material deemed essential. As I type this, I am waiting for four articles from the people who should have their stuff here first. This is the thing that decides how many newsletters the members will receive a year. I wish it was simply a matter of my typing it, but it is not. I have wanted this newsletter to reflect the activities of the WPA, but it has not. The documentation of club activities, whatever they might be, is not seen as a priority for the members. I read several other club newsletters. By example I know that such activities can occur. And they can be documented in an interesting way in a association newsletter. The FPA and CPA are excellent examples that we might want to consider as a group.

I enjoy writing the kind of material that I have contributed to the WPA Newsletter. For that reason I intend to continue to do

so, only for a different publication. That publication will be of my own creation and responsibility. I expect it to be regularly published and full of pyrotechnic information for those interested. There is an announcement of its publication elsewhere in this issue.

Now would be a good time for anyone wishing to contribute to the activities of the WPA to volunteer their services. There is something like a lack of enthusiasm and effort complicating the operation of the Association. It is nothing fatal but certainly worrisome to those who hope a viable pyrotechnic association presence can be maintained in the West. In particular, a convention chairman, the person who coordinates the Winter Blast, is sorely needed.

There are still some important issues to be resolved. I do not believe a 250 member organization can plan a fireworks event for 1000 participants, particularly when the attendees are not liable for Association activities. There are a number of activities at Winter Blasts that, if gone wrong, could cause considerable second-guessing if not financial distress to associates. The issues of membership—both who and for what term—needs to be addressed. With the current rules, it is now to the benefit of an aspiring Blast attendee not to be a member. We have discussed this before. We have voted on these matters in meetings of the executive committee and at the business meeting. Yet it still remains unresolved.

The responsibilities of the officers and organizers need to be spread more widely to prevent the kind of frustration and burn-out I have witnessed. There needs to be more contribution and activities at the local level. I have no complaints about the contributions to the Newsletter, members have been more than generous and I promise to begin using more of it.

There also should be more financial control. It is not so much that I think there is any wrong doing, but I don't like the fact that contrary to the by-laws, no budget for the Winter Blast is ever submitted (who approved the cement pouring at the site or the purchase of the container) nor are all expenditures of over \$100.00 approved by the executive committee (even if disallowed, they often occur). There are multi-thousand dollar expenditures made which I have never had any influence over. What's the point in being an officer? I wonder why we have spent \$6000 on an attorney to defend against a liability that, if it exists at all, has been estimated to be \$2500. I also object to \$500 conference calls to discuss these issues. I don't think that there is anything intentional in the problems; we just need some people who have the time and determination, and whatever gives a person the patience to deal in politics with a smile, to focus on the tasks at hand. I don't.

The strengths of the WPA have been in three areas 1) Local groups 2) A readable newsletter 3) The Winter Blast. Doing what is necessary to insure the viability of these functions should be, as always, the primary agenda of the WPA.

I have been amazed at the success of the WPA and the Blasts. It has been none of my doing; I have been one of those who has mostly enjoyed. I admire the Southern California guys who started this. I really can't think of any bad experiences I have had as a WPA member; and I have had many good ones. It just disturbs me that when I want to make a contribution as an officer, it is much to my benefit not to do so. As much as I enjoy the Winter Blasts, it is much to my benefit to attend as a nonmember, a decision that a surprising number of colleagues have made. This is not right and I hope that it changes.



# Treasurer's Report

Western Pyrotechnic Association, Incorporated, Treasurer's Report

Period of February 1, 1995 through January 31, 1996

with

Cumulative WWB6 Report and Cumulative WWB7 Report

The Western Pyrotechnic Association, Incorporated, saw a decrease of monies within the treasury for the above recorded period. This loss was primarily due to expenditures for Western Winter Blast 6 (WWB6) coming late into the next accounting period, as well as some expenditures from WWB5 and WWB7.

## General Funds Account

**Period of February 1, 1995 through January 31, 1996**

### Revenue

WWB6	\$16108.47
Membership dues	8285.00
WWB7	5560.00
Miscellaneous	409.34
Interest	128.23
<b>Total</b>	<b>\$30491.04</b>

### Expenses

WWB6	\$24245.39
WWB7	9310.06
Newsletter	5568.39
Telephone	2524.81
Storage	2495.00
WWB5	942.37
Office Supplies	917.98
Postage	777.35
Miscellaneous	618.59
Software	471.67
<b>Total</b>	<b>\$47871.61</b>

## Expenditures and Revenue for WWB6

**All dates inclusive to present.**

### WWB6 Revenue

Bed Tax Revenue	\$1000.00
Registration	23028.00
Vendors	1,375.00
<b>Total WWB6 Revenue</b>	<b>\$25908.47</b>

### WWB6 Expenditures

Public Display	\$7695.37
Shoot Site	5739.58
Insurance	3010.00
Cleanup	2593.00

Miscellaneous	2493.99
Transportation	2208.75
Registration	1783.64
Security	1133.00
<b>Total Expenses</b>	<b>\$26657.33</b>

**Total Income** (\$748.86)

## Revenues and Expenditures for WWB7

**as of July 28, 1996**

**are as follows:**

### WWB7 Revenue

Registration	\$32390.00
Vendors	1550.00
Miscellaneous	1105.00
<b>Total Income</b>	<b>\$35045.00</b>

### WWB7 Expenses

Public Display	\$11945.22
Shoot Site	9838.28
Insurance	3603.05
Tent/chair rental	2813.75
Registration	2345.00
Transportation	1645.60
Security	1628.00
Safety	1581.33
Seminars	1081.15
Medical Standby	816.20
Communications	763.75
Cleanup	496.00
Telephone	308.36
Miscellaneous	281.27
<b>Total expenses</b>	<b>\$39146.96</b>

**Total Income** (\$4101.96)

All outstanding WPA bills were paid as of 7/28/96. The current treasury stands at \$14,862.52. This is comprised of \$6920.06 in a CD account, and \$7,942.46 in an interest bearing checking account. Treasury records are now with Mr. Sam Zarcoff. Continued from page 11

Respectfully submitted,  
Mark L. Wray, Past Treasurer WPA

*The WPA is On-line at these addresses*

**wpa@cruzio.com**

**www.valleynet.com/~coldfire/**

*Larry Homan is at*

**pyrodesign@juno.com**

*Talk to me, Baby!*



## Ex-President's Corner

### Adios, Amigos

*Parting is such sweet sorrow*

Dave Steinau

Hi Everyone,

I'm sure everyone is wondering what's been going on with the WPA. Well, to put it mildly, it was quite a summer. A lot happened (and is still happening) that has and will directly affect our organization. I'm not sure where to start, so I think defining and detailing the current state of the WPA will probably work best. Hopefully this will answer a few questions.

To begin with, I have stepped down as President and have been elected by the other officers to serve as Treasurer. The reasons for this are 1) I don't have the time to be an officer any more, and would rather pass it on than screw it up and 2) We needed a Treasurer immediately. I was to try to make sense of our financial situation. Sam Zarkoff stepped down as Treasurer due to Mark Wray's reluctance to turn over the books and records in a timely fashion. Sam's patience ran out after 6 months. Mark then instructed Larry Homan to quit putting out Newsletters until we could discover if we could any longer afford them. Thus the delay in publication. He also wrote a check to PyroSpectaculars for \$5715.00 out of our Treasury to pay for the 24" gun which was destroyed at WWB VII. All of this was done without any right or authorization, in fact Mark was told specifically not to pay for the gun until the officers could confer on the matter. I picked up the books from Mark Wray (formerly WPA Treasurer) and discovered a balance of about \$3900 according to the checkbook. After speaking with our bank on numerous occasions, I have found we have a larger balance than the checkbook indicates, and (maybe enough to do a Blast next year.

Larry Homan has retired from being the Publications VP, citing concerns over liability issues, and is now (merely) Newsletter editor, although the title "Your Highness" also works. There is no Vice President at the moment. Major changes, and this is just the beginning. Forrest Rhoads is still Secretary, thanks Forrest!

Our Treasury is heavily depleted as a result of the Lawsuit and the 24" gun. We have about \$9000 to put on the Blast this year. More important, we have no Winter Blast Chair Person or organizer. Needless to say, there won't be a major Public Display this year. We will have a Winter Blast, but it's going to require a lot of cooperation and help from the members to pull it off.

Which brings up my last point in this article, and that is, the WPA needs your help. I'm stepping down because (at this point) I don't have the time to do this job well, and feel it should be passed on to someone who does. The Revaks have done a great job for four years, and they just can't take on the Convention Chair position again. Larry is trying to acquire a life, and is spending all his time calling 900 phone numbers these days, so his time is worth at least \$1.99 a minute (way out of our price range). If no one steps forward to assume some responsibility here, well, then the Blast might just disappear. We've not going to have the budget we normally do, and it looks like a big Public Display is the first thing to go. Other MA-

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## An Open Letter to the W.P.A.

Ron Dixon

I was opening the old files from Winter Blasts Past (try saying that six times at the after glow!) and had a flash back to Winter Blast I and Winter Blast II.

I remember the energy so many people put into the Association and the absolute frenzy of excitement about our first Blast at Mesquite and the first Blast (numerically the WWB II) to be held at Lake Havasu City. I recalled the efforts of so many people, including Steve Wilson, Kevin Brueckner, Kurt Medlin, Bob Weaver, Ken Nixon, Mark Alkire, Frank Bolton, Chuck Branch, Richard Cole, Arthur Tilford, Mark Wray, Ken and Bonnie Kosanke, Larry Homan, John Dicks, Dennis Monoccio, Clive Jennings-White, Steve Haller, Steve Cassorla, Steve Merrill, Jean Starr, Dianna Dump, Steve Majdali, Bill Daly, Kevin Kelly, Fred May, Forrest Rhoads, Mike Gill, Dan Hyman and the generosity of Rudy Schaffner, Chuck Gardes, Doc Barr, San Diego Fireworks, Pyro-Spectaculars, Gary Hansen, Flash! Fireworks and many others that have eluded my brain cells from the great after glows subsequent.

Wow! What A Country! What an Organization!!

It seems now that OUR organization is caught up on the types of activities that we swore we would never let occur. People are finger pointing, making statements without checking the facts, alienating individuals and the list goes on and on.

I recall an old friend, born on a great day in August, now a successful entrepreneur, said it best when he said, "Welcome to the WPA-Please check your ego at the door!" Some one left the barn door open and failed to have Big Dick Cole act as door man!

There are enough of us ole' timers that are concerned about the big ship Lollipop to let her sink in the middle of a squall. Most of us have manned the bilge pumps in years past and can certainly do so again if the Captain gives the orders.

What I am proposing is quite simple. Let's all check our egos at the door; take a big WPA eraser and wipe the board clean; make a list of who is willing to do what; and a list of what need to be done to make Winter Blast VIII the absolute best yet. Then let's have some solid people with the energy and enthusiasm brought to the first Winter Blasts to return the vitality to the Western Pyrotechnics Association that has brought it world acclaim. I do not think the Association is as some claim 'a sinking ship' or a trolley off the track', but rather just in need of a little tune-up.

Remember-the Association is only going to return what we put into it. ask not what the Association has done for you, but what have you done for the Association lately. Let's huddle as a team, as the Great Association we truly are and get it done!

See ya at WWB-8. Stay Green. Ron.



## You Might Be A Pyro When

Judd R. Herberger

**These are the first signs that you have something to worry about; or should I say that your neighbors do?**

■ You start drinking coffee because you need more storage cans.

■ You take up gardening because it looks funny when you live in a high-rise condo and get deliveries of 50 pound bags of fertilizer.

■ Strangers say..."I see from your fingernails, that you are in the printing business.

■ You love it when your dog has gas, because it reminds you of the star compound you are currently tumbling.

■ When you go to the supermarket, you always spend some time on the aisle called "Kitchen-Gadgets".

■ When the weather-man gives the relative humidity on television, you think of drying time, not rain.

■ You love the smell of a backed-up sewer, because it reminds you of that super charcoal comet mix you made last week.

■ Every time you reach into your pocket, your dog hides under the bed.

■ When you meet a little-tipsy Cindy Crawford at the bar, you only ask her about the special effects in her last movie.

■ You would rather spend an evening with Clive Jennings-White, Bill Page and Mike Swisher than Demi Moore, Julia Ormond and Terri Hatcher.

■ You can't decide if summer is better because of the drying time or winter because of the earlier darkness.

■ You know the fastest route to drive away from every remote area near your home.

■ Anything powdered is a potential fuel.

■ You attempt to make up with your wife after trashing her Cuisinart by offering her a vacation at the PGI convention.

■ You call your pyro advisers more than your mother.

■ No day is quite right without some pyro literature or material in the mail.

■ You've dried something in your house while you were sleeping.

■ You once had to paint the garage, the car, a fence, a wall after a fireworks experiment.

■ You wish you could get pyro tools for Christmas.

■ No one gets to go in your storage shed behind your house.

■ You've been asking for paper bags at the grocery for years.

■ Your wife's best knife has been missing for months.

■ You think all the time about the old man who taught you to roll your first.....eh...firecracker.

Got any examples of your own? Send them in to the editor.

## Remembrance Of Things Past

### First Pyro Wedding



*Catherine Strangis and William Daly, now Mr. and Mrs. with Tom Mattrocce (what's he doing there?) were married at the 1990 Auburn PGI convention. In the original 1990 photo, not this better 1996 one, they are standing only feet from where Bill Ofca's No-Match pyro event occurred at the recent Charlie Hill Fireworks Festival in New York. Too bad they couldn't have waited. What a send off that would have been, getting started with a 850 device bang. I was standing to their right only six years later, so I should have added my picture. Almost like I was invited. Sorry, I had to drink your gift. This was the first pyro event wedding, so Bill tells me. Both are now California licensed operators, well-known WPA members and active WWB participants. Bill is an operator at Universal Studios and Disneyland. Cathy is a Los Angeles County EMT.*

### Didn't Receive The Current WPA Newsletter?

Anyone who is not now reading this section has probably not received the most recent issue of the WPA Newsletter. There is a new absolute policy: if you don't pay, then you don't receive. Because it takes time to process applications, your present copy may be delayed. Contact the WPA Secretary about any subscription problems. If you're really mad, contact WPA President Dave Steinau.

## Write The Eighth Time

These are not mistakes, apologies, admissions of responsibility or corrections but instead think of them as

## Improvements and Clarifications

as well as sharing the blame. I don't open my own mail anyway.

*Contrary to statements in a previous newsletter, not only did I see a thirteen time report shell made by an old Italian shell-maker, I was assured by two others that it is done all the time. You can resume making your own without fear that you are violating some historical trust. However, I wasn't wrong because*



## Officer's Corner Editorial

### New WPA President Steve Wilson Speaks Out To Blast or not to Blast

A few weeks ago I heard the rumor that we were not going to have a Winter Blast VIII. After a little investigation, it was easy to see why such a rumor might have some validity. For starters, during the upheaval of our officer structure, no one had bothered to check with Chris Revak to see if he wanted to take on yet another convention host assignment. Nor had we asked anyone else to take on that thankless task.

At the time of this writing (9-19-06) we still have no convention chairman, no hotel reservations [Clive Jennings-White has registered at the hotel for the event. Ed.] and no booking of the S.A.R.A. Park Raceway. Nor have I been able to get anyone except Richard Cole to accept a single Blast committee position. This is pathetic. It disgusts me that so many of you have inquired about the Blast, yet no one is willing to take on a position to insure that it can even happen. Shame on you all!

The Western Pyrotechnic Association is currently in a standstill waiting for its members to get off their collective asses and get to work with the tasks at hand. We are not just looking for individuals to come to the Blast and put in their two hours. We need committee members to volunteer to completely handle areas of need. Those areas which haven't changed any over the years are Convention Chairman, Site Co-ordination Chairman, Safety Chairman, Seminar and Scheduling Chairman. There are a few others, but they escape me at the moment.

I will attend the WPA regional meeting at Mark Devon's house on September 29th. I will be happy to share the job requirements with you for all available positions. I will need a significant number of you to come forward and volunteer for a position. I'd like to see some new faces in this respect although I'd be thrilled if a couple of our experienced veterans of past conventions chime in, too.

It seems redundant to mention again that this is your organization and your convention. To blast or not to blast.....that is the question. Only you guys have the answer.

## Ex-Presidents Corner

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JOR changes are also needed.

So...sorry this isn't a little cheerier, but it's kind of where things are at. I hope this might have cleared up a few issues. These actions have resulted in a lot of dialog and energy being generated among our members. It's time for all those capable, talented and interested individuals, who had so many ideas for improving the Blast, to step forward from the bleachers and sidelines and actually implement some of those suggestions. There should be a newsletter out soon with further updates. Feel free to call or e-mail me with questions, comments, responses, but be patient. I'm on the road a lot these days.

Thanks to all of you who have put in so much time, energy and support over the last several years, and it's been a truly incredible experience.

Thanks and Stay Green,

David Steinau

## Frequently Asked Questions

Will the Newsletter burn?

The newsletter is hot but harmless. Light gloves should accompany light readers. We have considered nitrating the Newsletter as a favor for our more paranoid readers. Just keep out of the light of day.

Has the editor actually ever made any fireworks?

I have decided not to have a vote on this question. It involves a complex collision of definition, interpretation and opinion. Adverse to public display, I reserve my best efforts for my fireplace. A closet works very well up to five-inch. Never, but never, admit to anything but experimentation. Anyway, I prefer telling you how I would do fireworks if I actually did it. Just glue it.

Poem to my Firework  
by T.M.

I shot my multi into the air;  
it fell to earth in someone's hair.  
Where? Yes, hair. All afire  
with the colored flames.  
The spectators exclaimed,  
"Smell the human smoke"  
and exploded, timed perfectly.  
With shouts of glee  
the kids went insane,  
danced around the smoldering debris,  
and prayed that we could do it again.  
As all parents of wild-eyed kids rue,  
I went to jail as all pyros eventually do.

Haven't I read some of this before?

If you read other pyrotechnic literature, you may have. I was told by a wise man that as one ages, one needs only one good book. When one reaches the end, one has forgotten the beginning, so can safely begin anew. Does this sound like you?

Why hasn't my Newsletter arrived?

- a) What newsletter?
- b) It's the same place your check is.
- c) Is that a bad thing?
- d) Please call Steve Wilson.

Will there be a Winter Blast this year?

Yes, but we haven't decided if we are going to tell you where it is going to be. How big is your backyard, anyway?

Why doesn't the Newsletter have a centerfold?

It is difficult to maintain resolution when blowing up firework pictures to the size of Pamela Andersen.



## Pyro Celebrity-Gary Lillich

Gary Lillich has had a great interest in Class C (consumer fireworks) ever since he popped his first firecracker as a five-year-old. His family would consistently celebrate the fourth of July the good ol' American way—with "lots of fireworks", usually ordered two months in advance to make sure the family had plenty. His favorite item as a youngster? Zenith buzz bombs—they would send chills down his back as he watched with awe as they steadily climbed up into the air, then gave off a loud bang high in the sky.

Growing up on a small farm in northwest Kansas, Gary often drove the old "Johnny-Popper," a 1947 John Deere Model D tractor. Driving around and around plowing the fields gave Gary lots of time to think and dream. His dreams were to have a retail fireworks stand and to not have to be on the farm forever. (He lost out on both counts—he never had his own retail stand; and his warehouse is still located on the same family farm where he spent his childhood.)

Gary graduated from St. Francis High School in 1966. That same summer, he began a small wholesale fireworks business under the name of "Lillich Distributing Company." The first year, he supplied fireworks to a total of two small stands! At first, Gary used his meager profits to help subsidize his college expenses.

As an undergraduate student (and later as a graduate student), Gary continued to gradually expand the wholesale business.

At Kansas State University, Gary received a BS degree in Poultry science and a masters degree in food products technology. Instead of going to work immediately after graduate school for the food industry, Gary answered a desperate call from a small high school needing a math teacher (just 4 days before school was to begin). So, in 1974, he shifted gears, became a high school math teacher overnight, then took the extra education hours necessary, and eventually became a certified secondary math teacher. (How many fireworks people are there with a degree in poultry science who can teach the course Series & Differential Equations?)

After the big bicentennial year for fireworks (1976), Gary took a year off to help his family open a supermarket in his hometown of St. Francis, Kansas. He went back to graduate school to earn more math credits, then taught eight more years at Mulvane HS.

For several years, the fireworks busi-

ness complemented nine months of the school year. However, spring was a very hectic and stressful time for the family, finishing the school year, while starting the fireworks season. In 1986, Gary felt it was time to take a break; taking a year leave from teaching to travel with his family to the Philippines and pursue other interests. After the leave, Gary has maintained his teaching certificate, but has taught little. He now concentrates on fireworks, organized barter, and other business interests.

In 1978, Gary changed the name of his company to the more familiar "Flash! Fireworks." The first to use the name "Flash! Fireworks", his logo was created by an avid pyro from Oregon, John Sinclair.

In 1983, the business became a family business, with Felicia and Valerie as welcome additions. Since then, Flash! Fireworks has been primarily a small family business.

Gary attended his first PGI convention in 1974 (Grand Haven, Michigan), and is one of a select few who has attended most conventions. He is tied with Rob Berk in missing two conventions; Don Wackford still has them both beat by not missing any. In 1976, Gary helped provide class C for the Grand Junction convention, and has consistently been a PGI convention vendor since. Over the years, Gary has presented several seminars, and was part of the first group to complete shooter certification.

Ask Gary about the "good ol' days" of vending and he can share some good stories.

Before 1980, no building or tent facility was available for sales. Every afternoon, lots of boxes were unloaded on the ground for members to select goodies from. After dark, all boxes were loaded back into the truck. The 1978 site, Centuria Race Track, near St. Croix Falls, Wisconsin, presented a significant challenge. Just as members began swarming over the boxes picking up packages, the sky opened up and began to rain. The quick cooperation of several pyros helped save the fireworks for a dryer evening.

Gary and Felicia attended the first Winter Blast (both as WPA charter members, and as a vendor), and got rained out both nights near Mesquite, Nevada. Even with the dismal weather, Gary and Felicia have made every Blast since. With seven Winter Blasts and 22 PGI conventions, the 1996 PGI convention will mark the thirtieth pyro convention Gary has participated in as a vendor (the 23rd for Felicia). Currently, Gary is also a member of APA, NFA, and is president of the Kansas Fireworks Association.

Gary's main emphasis as a vendor has been to accumulate as many items as possible for members to fondle, examine, and test at the Winter Blast. He wants the selection available to be the very best anywhere. Although only a very small number of items are consistently good, sellers and collectors have picked up many unique ones from Gary's tables in the class C vending area. Some items no longer available, fetch collector prices far above their convention price.

Even though things sometimes get hectic setting up in the vendor tent, Gary and Felicia consider the Winter Blast to be one of their favorite highlights of the pyro year.

### The Best of the Best Stuff Available-Gary's WWB VII Stuff





# Autobiography of a Pyrotechnist

## Dr. Takeo Shimizu

I was born in 1912 in the small village of Takamata in Yamaguchi Prefecture which is in the middle part of Japan. My father was a farmer. After I finished primary school I then studied at a middle school in Hagi, a famous town which produced a number of loyalists of the Restoration Period of Meiji, Shoin Yoshida and Shinsaku Takasugi, etc. Hagi faced the Japan Sea and I could hear the sound of the rough sea while I lay in bed at the dormitory of the school on quiet nights.

At school I studied English for the first time. My teacher, T. Ito, had a great respect for English gentlemen. While I was in the fourth year class an accident happened to me. I was severely scolded by him and with that I did not do my English homework. I then became slow with the progress of my English. Many of the school boys dreamed of becoming military or naval officers to perform our duty for our country. I passed the famous severe entrance examination of the Military Academy, although I was not so tough but rather delicate.

The Military Academy was divided in two courses. The preparatory course of two years and the regular or one year and ten months. Between the two there was a duty in a regiment for six months. The preparatory course was for liberal arts and the regular was for military affairs. The students were divided into small learning groups of about thirty people.

Soon after I entered the preparatory course, the teacher read my paper as a superior style in a lesson of composition. I was very much delighted, however, such a case never came again in all my life at the Academy. I only once won at Judo with my friend, Mr. Kondo, who looked much tougher than me, however, I never won in competitions or games in all other cases. Therefore, even at present I have no passion for games of chance. After the preparatory course I arrived at the Saseho Heavy artillery Regiment in Nagasaki-ken. There I met Lieutenant K. Eguchi and other young officers. They were men of great diligence and would read books of tactics even on their horses. They did not like to spend time on worthless matters. After the duty of hard

training I was certainly changed into a more diligent young man when I returned to the Academy to study further in the regular course.

All of the students, called cadets, wore a uniform with shoulder-straps of sergeant and the gorget patches with numbers of regiment. They also seemed changed from the idle students in the preparatory course. I liked the regular course because I was not bothered by mathematics, and physics, etc. I was good in the lessons of tactics, weapons, and surveying. In July 1933 I came down from the Academy at Ichigaya Hill with a diploma. I started again for my post with the Saseho Heavy Artillery Regiment and November I was commissioned a sub-lieutenant. Young officers in the regiment were trained with cannon firing. When the black smoke from a shell was found before the target, we had to increase the range of the next shell so that it would fall behind the target. It might seem easy, but for me it was very difficult because I would suddenly forget the position of the black smoke. I was very disappointed and though I might not be suitable as a company commander on a battlefield. I decided to change the direction of my future life and began the hard study of mathematics, physics, and chemistry in spare moments from my duty.

In November 1934 all officers of Artillery and Engineers of my contemporary came back from the regiments and entered the Military Artillery and Engineer Academy. We were taught mathematics, physics, chemistry, metallurgy, electrical engineering, and ballistics, etc. So many things were stuffed into our heads by the cramming system of the Academy. After the regular course of one year and the higher course of one year I was selected to learn more at Tokyo University.

In April 1937 I entered the School of Explosives at Tokyo University. In my class five other students from regular high schools gathered. Professor Nishimatsu, who was the highest authority of the day on manufacturing explosives, was chief. Professor Dr. N. Yamaga, who was a rear admiral in the Navy, lectured on interior ballistics. Assistant Professor S. Yamamoto

lectured on manufacturing explosives. Their speaking was terrible and the students suffered to note their lectures.

I felt most of the lectures in the School of Explosives were not of much interest. Therefore, I often visited the School of Chemistry, where Assistant Dr. Morino was studying the Raman Effect. I learned quantum mechanics with the help of Professor Dr. K. Higashi, who was an authority in the chemical structure of molecules. Dr. Higashi gave me a book, "FUYU NO HANA" which means "WINTER FLOWERS" in English, by Professor Nakaya (1902-1962). It gave me a deep impression that I knew how to do experiments without any noble instruments of high cost, but using only the human head with excellent success. I named such a method "Terada's Style". The late Dr. Terada (1875-1935) was a famous professor in the Faculty of Physics in Tokyo University. Dr. Nakaya was a student under Dr. Terada and had most faithfully succeeded Terada's school. Although I had no personal acquaintance with Dr. Nakaya not Dr. Terada, I decided to succeed Terada's school in my future life. Therefore I thank Dr. Higashi who gave me such a direction until today.

In April 1940 I graduated from Tokyo University and arrived at my post at Ohji Factory of Explosives of the Tokyo Second Military Ordnance. I worked there as the section chief of manufacturing nitric and sulfuric acids. There stood a nitric acid plant producing twenty tons per day. Large absorption towers of 18-8 nickel-chrome steel were in use at that time. There were other sections for manufacturing TNT, picric acid, nitrocellulose, and tetryl and about a thousand people worked at the factory. I learned the controlling method of a chemical plant which moves continuously in the day and night with few people. Lieutenant Abe and Mr. Kojima who had a special sense on chemical plants helped me. Thus I started with this very interesting work as a chemical engineer. I feel it was the most happy days of my life.

After the daytime duty in the factory was over I studied in my home at Saginomiya in the western part of Tokyo. I read papers of philosophy by professors Dr. Nishida and Dr. Tanabe of Kyoto University. They founded what was called the "Kyoto School". I learned the dialects. I also learned Buddhism and the Old and New Testaments by translations in Japa-

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## Shimizu

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nese. I intended further to read them in originals and began to study Sanskrit, Pall Hebrew, and Greek. I thought the principle of Buddhism might be:

"All things change with time and go in the worse direction when making no human effort."

In 1941 World War II broke out. I was in the ballistic section of the Institute of Explosives of the Second Tokyo Ordnance. All the officers in the ordnance felt uneasy because Japan was already fatigued by the long war in China. However, our work proceeded with no confusion. Everyone knew that battle is very foolish work for human beings, which are not different from animals. Men made many inventions in the war, however, there had been no invention which decreased the pain in their lives.

In 1942 I had an additional post, as teacher at the Artillery and Engineer Academy, where I gave lectures on interior ballistics to the young officers in the higher course. My students returned from the battlefields. I completely rewrote the textbook which had been a direct translation from a French one. I discovered a similarity rule to obtain velocity, pressure, and time, as functions of four parameters. When the war was over in 1945 I was a lieutenant colonel and the leader of the ballistic section of the Institute of Explosives. My military life was over with the defeat of Japan.

I had lost my spirit to survive, however, I had to live to support my wife and two children. I decided not to make explosives any more and selected to live in my birthplace, the village of Takamata. My parents were already dead and my junior brother was killed in the battle in the Philippines. Few relatives supported me. I bought farm fields of two and a half acres from which I could obtain rice and vegetables for one year's living. I built a small house of my own, a shack, without any help of a carpenter.

The house faced the south. There was a hill of Japanese Cedar behind the house. After a walk of ten minutes going up through cedars I would see a vast wild field. Before my house there were rice fields of two and a half acres from which I could

obtain rice and vegetables for one year's living. I built a small house of my own, a shack, without any help of a carpenter.

The house faced the south. There was a hill of Japanese Cedar behind the house. After a walk of ten minutes going up through cedars I would see a vast wild field. Before my house there were rice fields and eleven houses. The village was surrounded by copse hills through which a road and stream passed outside. In the daytime my wife and I labored in the rice and vegetable fields and in the night I read sutras of Buddha under the light of an oil lamp while my wife and children were sleeping in bed. In spring and summer I enjoyed the twitters of birds. In the autumn my garden was full of flowers of cosmos. In winter it snowed deeply, and I heard the voices of hunted rabbits while I was weaving charcoal containers around the fire. I became very idle in writing letters and I acted rudely to people in acquaintance against my will. No radio or newspaper was in the house, and I could escape from troubles among people. The most terrible times were the rain storms and blizzards in the night. When attacking, I protected my family against the rain or snow by binding the doors and pushing them from the inside, however, it came into the rooms and fell onto the beds through the roof of cryptomeria barks. At last I fell into financial difficulties and had to sell books from my library with the help of my friend, Professor Namba of Tokyo University. One day I suddenly lost my eyesight. I thought I could not work anymore, fortunately I recovered in about a month. My wife fell ill, perhaps it came from an unbalanced diet. She had to go to her father living in Osaka. I had to bring up my children by myself.

One day in the autumn of 1951, when the sun was shining in the blue sky, I received a letter from Professor S. Yamamoto of the School of Explosives Tokyo University. Dr. Yamamoto recommended Hanabi, fireworks, to me. I did not know anything about fireworks, but felt it might be very interesting and I accepted Dr. Yamamoto's request. Dr. Yamamoto was the only one who was concerned with fireworks at that time as a scholar in Japan. Dr. Yamamoto asked me to suppress accidents in this field and to make the traditional technique more scientific.

In November 1951 I obtained a position at Hosoya Fireworks Co. in Tokyo through the introduction of Dr. Yamamoto. I had there two duties; to learn the manu-

facturing of fireworks from the president, Masao Hosoya, and to modernize the factory in business and technique. Mr. Hosoya very kindly taught his secrets in the technique called the "Machida School". I analyzed the technique of Japanese chrysanthemum shells and Dr. Yamamoto recommended that I submit the paper as a thesis for a degree. In 1958 I was granted the degree of Doctor of Engineering with the paper "The Design Conditions of Chrysanthemum Shells".

My senior, A. Kawai, who was a friend of Dr. Yamamoto, asked me to help with his work, the manufacturing of rocket propellants at the plant of Dainippon Celluloid Co. in Kochi village in Hyogo-ken. Therefore, I often visited the plant and helped Mr. Kawai in designing rocket propellant. In the plant there were not many people, but two very superior assistants, Matsumoto, and Matsuda.

In 1963 I changed my position to the Perfect Liberty Religion Order in Osaka, accepting the offer from the founder, T. Mild, who planned to build a new factory and an institute of fireworks. However, the plan was not realized because of financial reasons. I had been very much disappointed. Dr. Yamamoto had passed away in the same year and I lost my largest prop and stay in fireworks. I had plenty of time every day and decided to learn languages from the NHK Broadcasting. I had a secret desire to live in some foreign country to build a fireworks factory. I learned English, German, French, Spanish, Russian, Chinese, and by books, Italian, and Arabic. I used to walk from my house to the PL fireworks office memorizing Arabic letters. I was often interrupted by the kind PL teachers who offered to bring me by car.

In 1967 I got my present position in the factory of Koa Fireworks. The factory was built by my old friend, the late N. Mizogami, who built a small laboratory for me. The factory was mainly producing maritime distress signals. I continued the study of fireworks finding time intervals at the work until today following the request of my old teacher Dr. Yamamoto. therefore, very often, even on holidays, I am not working at home, but in laboratory at the factory, which is fifteen kilometers distant from my house.

In the past some friends from overseas countries stayed overnight in my home

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# Reviews

**Larry Homan takes full responsibility, but please send all comments to his agent, Dave Steinau.**

**It has been said that there isn't a piece of pyrotechnic literature that Larry Homan doesn't like. That is not precise: there isn't a firework or a pyrotechnist that Larry doesn't like. The former is simply a route to the latter two.**

I wonder if there is some time limit on reading pyro literature and then writing a review. If there is, I intend to ignore it. I hope to read the article on multi-break shell building in *Pyrotechnica* some day. It's on my list. I keep accumulating this stuff and just read it as it falls out of the piles on my shelves. Anything I need to review, I keep in a handy pile on the floor, hoping to trip over it.

Issue number three of the **Journal of Pyrotechnics** has been out since early summer; and since then I have been reading it, then rereading it. I wrote a review for WPA News 8-2 but it has had to wait until now. Not only is this a particularly stimulating issue but the cumulative effect of several issues is beginning to form an impression: this journal is worthwhile even when you find yourself not quite in agreement. Even my modest publishing efforts have given me new respect for such complicated efforts such as the KJOP, as I know it-sort of like our own pyro radio station.

The first article is about the mysterious subject of electrostatic ignition. I say mysterious not because little information exists on this subject, on the contrary, but because after reading mountains of this stuff the principal experts often dismiss their own work as not quite applicable, when asked questions about its implementation in safety programs. I think the secret in this subject is to consider it something like a self-enclosed world, like chess, deep and rational, consistent and heading in the direction of complete, but of uncertain reference-all efforts to use it sound like metaphors.

Unexpected ignitions have plagued fireworks manufacture since its advent. The inherent dangers of uncontrollability and unpredictability have made some pyrotechnic processes uneconomical even for the military. An example is the mixing of potassium perchlorate and flake aluminum for

flash and sound mixtures. What I always wonder is if this data can be correlated with friction and impact sensitivity results. The authors have made the effort. The techniques are interesting in themselves. One can learn a great deal about the theories of ignition and producing the energy to make them occur.

The examples of phosphorous and zirconium as fuel generate certain unusual results. Any amount of oxidizer with phosphorous acts as a diluent. Zirconium has a similar but not exclusive result. The former fuel has a long practical history in matches and the later in electric matches. Those of you interested in the manufacture of electric matches might attempt to use such safety testing to develop potential bridgewire mixes.

In the second article Monona Rossol touches on an important subject-the environmental hazards of indoor fireworks. Disappointingly, this is not a scientific article, it lacks useful facts, but the author makes several important points. His "Hazard Assessment", "Precautions for Pyrotechnic Use" and "The Most Important Precaution" sections are well worth reading. The subject is worthwhile, but there was something about the tone of the article that put me off. I think that actual conditions are not accurately represented, industry concern not appropriately depicted, the health hazard information unreliable, the exposure analysis lacking and his lack of understanding of special effects practices rather obvious. But the important thing is that he is correct about there being a health hazard about which not enough has been done. Hopefully, articles like these will stimulate more investigation and improvement. You should read it and come to your own conclusions.

There is an article about perceived aerial shell burst sizes, an effect well-known to display operators, but who often do not have the expertise to do the analysis. A simple model is given. What is interesting in these articles is to discover if any unexpected results occur which might change perceptions about current practices. The authors do a good job of analyzing the implications of their model. Particularly useful is inclusions of NFPA distances as a nonignorable rule, something it is fast becoming. What is lacking is a quantification of the variations inherent in display fireworks due to lift, mortars, environmental conditions, etc., and its implications for the usefulness of their model.

The Kosankes include further data on

shell drift, this time the effect of longer mortars is highlighted.

The final article is a review of ammonium perchlorate composite rocket motor design basics. Like many such articles, up to a point, the more you already know about the subject, the more you can get out of the article. It does cover the subject, but I think it would profit from at least one diagram of motor parts and a better development of the concepts of thrust and specific impulse. What the author doesn't tell you is how messy such motor manufacture is and that it needs special equipment (vacuum and oven). This is a good area for apprenticeship. Remember one of the top rules of pyrotechnics: Don't let what you are doing stick to your face.

This issue is well worth the money. It is informative and stimulating, what more could you want. The sticker price is \$25.00 but I believe at certain times and in certain locations Bonnie Kosanke allows discounts. So all you need to do is travel to one of the pyro conventions to save \$10.00.

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A new edition, the third, of **Fireworks The Art and Science**, by Takeo Shimizu, has been published by Pyrotechnica Publications. It would seem incredible to me that anyone interested in fireworks, particularly spherical shell construction, would be unfamiliar with this book. If such a reader exists, then this is the book for you. It is an extensive look at fireworks manufacture in Japan, written by a man who has worked in the industry, has excellent technical credentials and exhibits a keen and insightful fascination with what makes fireworks perform. No fireworks library would be complete without a copy; and the latest edition would be a good choice because it includes some new material. This work is not comprehensive nor entirely accurate as to Japanese manufacturing practices (in fact, I have heard it politely criticized by prominent and not so prominent Japanese manufacturers); yet, to my knowledge, it remains by far the best available book which has been translated into English. There is sufficient technical

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## Review

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chemical and physical information to interest the prepared, with enough accent on technique to satisfy the manufacturing aspirant. The material is introductory in nature and a good prologue to further study, some of which Dr. Shimizu provides elsewhere (often in other Pyrotechnica publications). It would be my first choice of books as a gift to an new fireworks enthusiast.

I thought it would be interesting to make a page by page comparison of the first and third editions, not so much to locate differences but as an excuse to read this book once again. The table of contents appears identical, except in the latest edition an appendix appears. This appendix devotes itself to a consideration of the stability of fireworks compositions which contain at least pairs of soluble inorganic compounds. If a product formed from ions of the original constituents is the least soluble combination, then the characteristics of this new species must be warily predicted or observed. This section may be based on the work of Clive Jennings-White. In *Pyrotechnica XVI* (1995), which is cited in the references at the end of the appendix.

This book needs to be read several times. Along with **Fireworks from a Physiscal Standpoint**, also a Pyrotechnica publication, it constitutes an excellent primer on spherical shell building. One would think that the basics illuminated within would constitute a minimum level of expertise for American shell builders, but I have often heard explanations from accomplished builders that ignored this available information. I have a regular and annoying experience with an accomplished star-roller I advise: he always compares my advice with what he reads in Shimizu. It is very disconcerting that my opinion should be compared to an expert's. I recommend all of you that have this book to reread it soon; I am going to do so. Those of you who do not have it should commit to a reasonable level of fireworks involvement and purchase it today. Then read it for the first time, very carefully and with an open mind, so that you will be able to reread it again next year and discover more things that you didn't know. Also you will be able to intelligently criticize my advice next time we discuss round shell construction—a worthwhile ex-

perience for anyone.

The book is hardbound with 344 pages, containing some photos but many drawings, diagrams and tables.

The third edition can be ordered from various resellers or directly for \$65.00 (plus \$4.50 handling) from

Pyrotechnica Publications  
2302 Tower Drive  
Austin, Texas 78703  
(512) 476-4062  
PyroPubs@aol.com

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### **Introductory Practical Pyrotechnics**

Thomas I. Perigrin  
Falcon Fireworks  
PO Box 940  
Athens OH 45701

This is a new book, purportedly for beginners; I got only a cursory look at it. Most of the book contained sections on the making of specific items. Part of the book was devoted to more technical considerations. I did read carefully a reprinted section on fountain making acquired at the New York Fireworks Festival. Not rich in formulas or interesting techniques, it was what it claimed to be—an introductory text for those who know little about fountains. It does provide a more thorough discussion than the average fireworks text, which generally assumes mastery of the basics. Mr. Perigrin is correct when he points out that fountains are a good place for a beginner to learn pyrotechnic fundamentals. It was where I began; so if you want to end up like me, whatever that is, this is a good text to study. I would recommend a couple of more diagrams, giving the nomenclature and key relationships. For beginners, I like to emphasize safety, theory basics, universal characteristics and expected behavior. The author includes a section on troubleshooting, a practical utility. Since I haven't read the entire book, I must reserve judgment. But it looks like it might be a useful addition to the amateur's collection, if not also interesting for the more experienced user—one can't have too much pyro literature. However, with anything, a beginner should review any projects with an experienced pyrotechnician before attempting them by himself. Accidents have a way of happening to the uninformed or careless or for that matter, anyone working with fireworks. About two hundred pages, if I re-

member correctly. Many photos.

Also for sale for \$35.00 from

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## Shimizu

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in Kawagoe-shi, which is thirty five kilometers distant in the north-west from Tokyo: Miss Sigrid Wied, Dr. F-W Wasman, W. Zink from Germany, Pierre-Alain HUBERT from France, and Mrs. Pettit from the USA. Recently my wife fractured a vertebrae and I can not invite guests to my home any more. My work room has been recently confused. The book-shelves are full of books and the residual books are scattered on the tables and floor. On the shelves there stand the complete works of philosophy by the late Dr. Nishida, and the same of the late Dr. Tanabe and of the late Kenji Miyazawa on his poets, the Testaments in various languages, books concerning Buddhism plus technical books, etc. They are covered in dust and will sleep until I have more time.

## To Be Or Not To Be

Continued on page 1

eral key members of the groups that do the most in producing the Winter Blasts have given preliminary indications that they will not be available this year. Volunteers are needed to assure the continuance of this premier event.

The ability of nonmembers to attend this year's Blast is still uncertain. Although new membership requirements were voted upon at the last business meeting, considerable debate as to their nature and effect have stalled implementation. The implication at that time was that all attendees must be members. Further, the membership year was modified to a calendar year with renewal beginning in November. This was done to relieve the pressures on the Secretary, Forrest Rhoads, to both handle renewals and registration for the Blast. Early discussion about preparation for WB VIII has centered around reducing the size of the event, excluding nonmembers and eliminating the purchased public display.



# Methods of Slowing Quick Match Burning

K.L. and B.J. Kosanke

In the first article in this series, the method of construction and manner of functioning of quick match was discussed. There it was reported that while black match typically burns at a rate of about one inch per second, quick match typically burns 10 to 20 feet per second. There are times, however, when this is faster than desired for quick match, such as when used to fire a small finale. The techniques used to control (slow) its speed of burning is the subject of the current article.

Recall from the initial article that the reason quick match burns rapidly, is that fire (burning gas) races down the "fire path" between the black match and the loose fitting match pipe. Therein lies the answer to slowing its rate of burning. Whenever the fire path in quick match is tightly closed, its burning must temporarily transition from propagative (fast) burning to parallel (slow) burning.

There are a number of similar methods used to close the fire path of quick match. Probably the most common is simply to tie a string (or light cord) very tightly around the quick match at the point where a momentary slowing is desired. The string collapses the paper match pipe compressing it tightly against the black match. Accordingly, the quick match burning propagates rapidly along its fire path until it is closed by the string. At that point it must burn slowly, layer by parallel layer under the string and compressed match pipe. Then, when the fire path re-opens, the burning again propagates rapidly. For this method of slowing to work, the fire path must be totally closed. Otherwise some fire will race through any small gap between the black match and match pipe, and there will be much less slowing of the burning.

Several common methods to close the quick match fire path are illustrated in Figure 1 and Photo 1. Instead of tying a string tightly around quick match, other items such as a plastic electrical cable tie can be used. Another method is simply to tie the quick match itself into a tight knot. If a longer delay is desired, more than one tie can be made around the quick match, or a long continuous wrap of string can be used, or

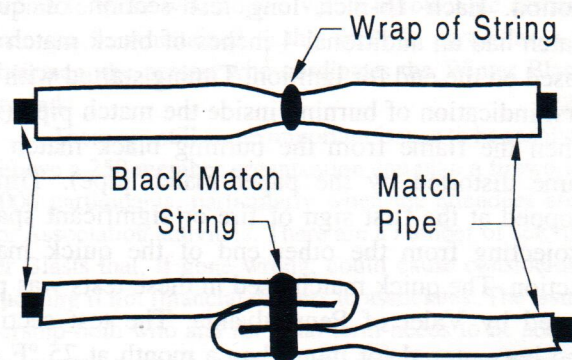


Figure 1. Some common methods used to slow the burn rate of quick match.

Table 1. Quick Match Delay Times.

Condition	Burn Times <sup>(a)</sup>			Average <sup>(b)</sup> Delay Times (s)
	Longest	Shortest	Average	
Unaltered	21	17	19	≅ 0.0
Single string tie	45	21	33	0.2
Quick match knot	52	30	44	0.4
"S" tie	79	26	48	0.5
Cable tie	100	24	47	0.5
1/2" string wrap	109	42	65	0.8

(a) Burn times are in VCR fields, each 1/60 of a second.

(b) Given the observed large variations in burn times, the reported averages (in seconds) must be seen as only very approximate values.



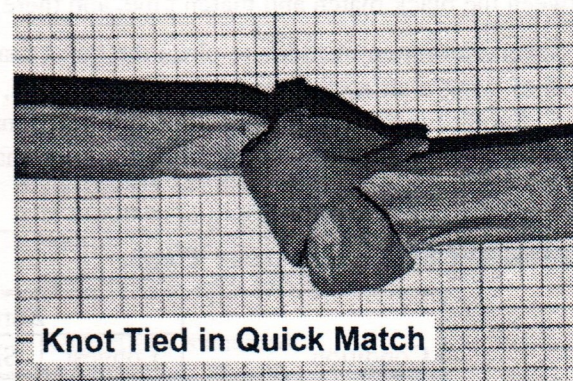
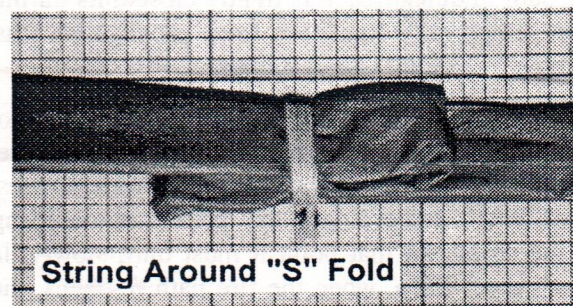
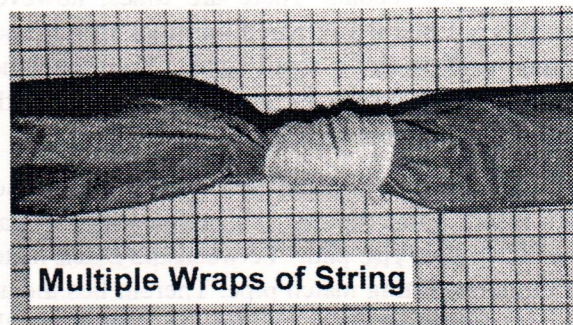
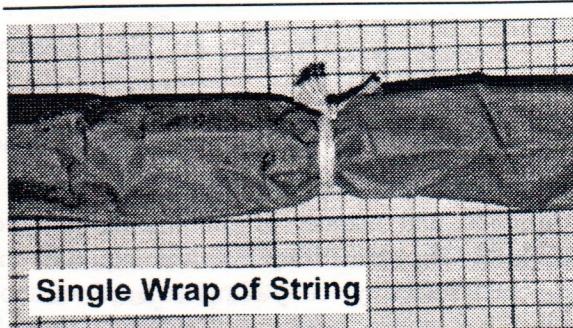
the quick match can be tightly tied in the shape of an "S" with string.

The approximate length of delay for these methods was determined by videotaping the burning of quick match sections and counting the number of 1/60 second video fields, while watching in slow motion. Each 16-inch long test section of quick match had an additional 4 inches of black match exposed on the end for ignition. Timing started with the first indication of burning inside the match pipe (i.e., when the flame from the burning black match became distorted by the paper match pipe). Timing stopped at the first sign of fire or significant sparks projecting from the other end of the quick match section. The quick match used in these tests was produced by Valet of Pennsylvania. The test sections had been stored for more than a month at 75 °F and 35% relative humidity. The results of these tests are reported in Table 1. In each case the longest, shortest, and average times of three tests are reported. The relative unpredictability of these slowing methods can be seen by comparing the longest and shortest burn times for each method in Table 1. In part this must be the result of variations in the length of tightly compressed match pipe around the black match. The variability was probably exacerbated to some extent by the low relative humidity, causing the match pipe paper to be relatively stiff and unyielding.

The subject of humidity will be specifically addressed in a future article; however, one effect is the amount of delay commonly achieved using the various quick match slowing methods. For quick match that has been subjected to high humidity for a few days, the delays reported in Table 1 can be twice as long. Another factor affecting the amount of delay achieved using the various methods is the quality of the quick match. That which is fiercely burning, with a heavy or dusted black match and a thick match pipe, will be the most difficult to slow.

To some extent, an operator may be able to control the speed of a finale during the chaining operation. See Photo 2 of a short finale chain with paper wraps (often called buckets, and made from coin wrappers) and which are used for attaching the leaders of shells in the chain. Also see Figure 2 for a cut away illustration of one bucket. At the chain end of each bucket (left in Figure 2), if the string is tied VERY tightly, a brief delay will be introduced (such as suggested in Table 1). Whereas, if the buckets are only tied tight enough to hold the fusing together, there will be significantly less delay at each tie point.

When long delays are desired, it is possible to add a length of time fuse such as illustrated in Figure 3. Here a length of time fuse has been cut, punched and cross-matched (usually with thin black match). It is the length of fuse between the cross-matched points that determines the amount of delay. The piece of time



*Photo 1. Quick match slowing achieved using some common methods.*



fuse is inserted into a very thin-walled paper tube, made with two or three turns of kraft paper. The time fuse is tied into place near both of its ends. To install the delay element, first the quick match is cut. Then the two ends of quick match are inserted into the two ends of the delay element and tied securely. It is important that the string ties on the time fuse be quite tight to keep fire from passing under the strings and around the time fuse.

As one gains experience with a particular supplier's quick match and the methods of slowing quick match burning, it should be possible to control its burn rate to accomplish most needs, providing a high degree of timing precision is not required. In the next installment in this series of articles on quick match, the effects of moisture (humidity) will be discussed.

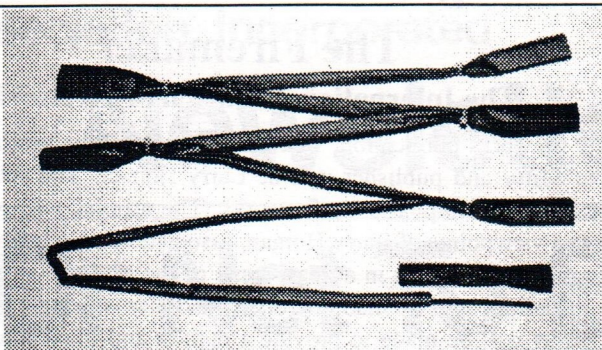


Photo 2. "Finale Chain" shown with "buckets" for attaching shell leaders.

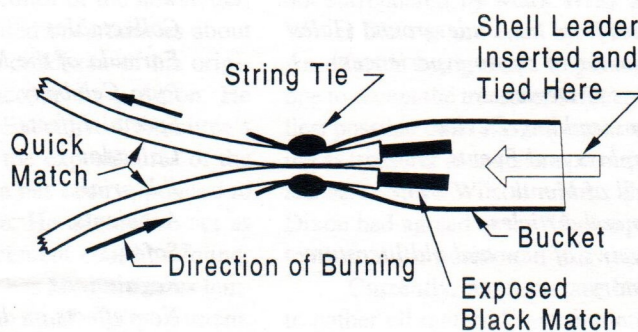
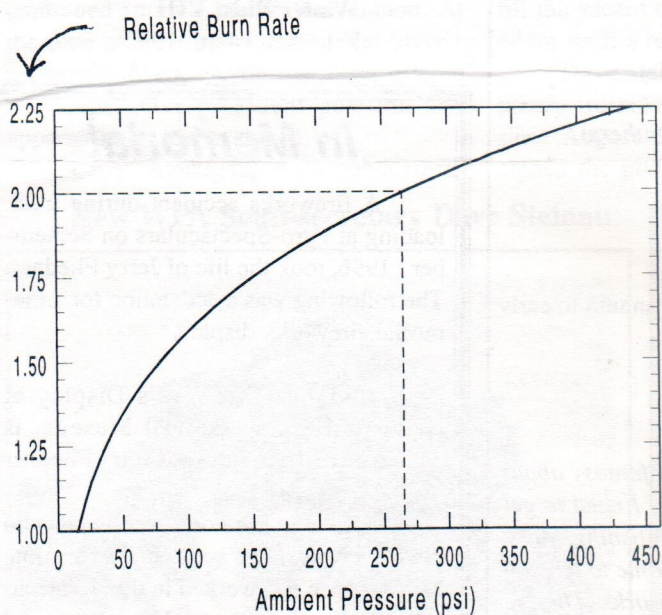


Figure 2. Cut away illustration of one "bucket" in a finale chain.

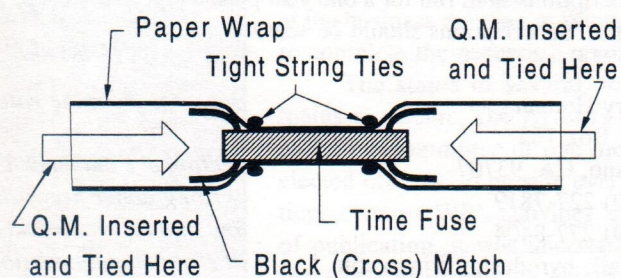


Figure 3. Cut away illustration of the method for attaching a length of time fuse to quick match (Q. M.).

NOTE: There was an error in the graph in Figure 1 in the previous article in this series. The vertical axis should have been labeled "Relative Burn Rate" and the values should have been from 1.00 to 2.25 with the dashed line at a value of 2.00.



# Announcing A New Fireworks Publication

## The Firemaker

### The International Journal of Fireworks

A new fireworks publication, **The Firemaker**, will be available in the next few months. The editor and publisher will be Larry Homan. The subject matter will be pyrotechnics with an emphasis on fireworks. The articles will reflect primarily the experiences and viewpoints of Larry Homan, associates and contributors. There will be a regular format with articles in at least some of the general areas listed below each month. Contributions will be made by others and also accepted from interested readers. Every effort will be made to provide a regular and interesting dose of fireworks information, both technical and practical. Some of these titles will be familiar to you from the WPA Newsletter efforts of Larry Homan. However, the editorial policy will be different since the publication will not be primarily aimed at any particular group or answerable to any particular constituency.

*Notes from the Underground (Tales from Larry's pyro experiences)*  
*Class C Device*  
*Unassembling Device*  
*Displays and Events*  
*Shell of Month*  
*General Articles*  
*Reviews of new and old literature*  
*History*  
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*Letters to Editor*  
*On-line*  
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*Pyro Celebrity*  
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*Editorial*  
*Accidents*  
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*Regulations*  
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*Photos*  
*Diagrams*  
*Charts*  
*Graphs*

Subscriptions shall run for a one year period and shall cost \$25 per annum to early subscribers. Subscriptions should be sent to:

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(209) 277-8404  
e-mail: pyrodesign@juno.com

#### Message from the editor:

*Help me! I am stuck in this fantasy about writing about fireworks and I need to get out into the real world of publishing. Make it economically possible for me to tell you all the real secrets of fireworks. They've threaten to kill me if I do, but I don't care.*

## Open Letter to WPA Members from Rudy Schaffner

I understand some people are wanting to cancel this coming year's Winter Blast 8. It would be a BIG MISTAKE. We are always trying to prove to the Fire Authorities and the Government Agencies that we are a Professional group. Dropping out a year wouldn't look good and only make it easier to miss another year.

The Winter Blast is the only chance many Pyros have to test their product or even shoot Class C. What do we want to do, go back to scouring the vast California Desert to find a small secluded spot to have secret Pyro Seminars? I don't think so.

The Winter Blast is the only chance many future Pyros may have for hands on experience. I say we should all get organized and carry on the Winter Blast tradition. Call me if you need any help.

## Calendar

### WPA or Fireworks

**Deadline for UN Shipping**  
October 1996

**Florida Fireworks Festival**  
Fifth Annual Fall  
Oct. 31-Nov. 3, 1996

**Guy Fawkes Day**  
November 5

**St. Barbara's Day**  
December 4  
Patron saint of gunners and pyrotechnicians

**Proposed Fireworks Day**  
Longest Night of Year  
Alternate: Larry's Birthday  
December 20, 1996

**Winter Blast VIII**  
February 14-16, 1997

## In Memorial

A fireworks accident during truck loading at Pyro-Spectaculars on September, 1996, took the life of Jerry Fliedner. The following was a dedication for a memorial fireworks display.

Tonight's Firework's Display at Newport Harbor Nautical Museum is dedicated to the memory of Jerry Fliedner

A veteran fireworks technician who died last week in an accidental explosion. Mr. Fliedner, 57, worked in the pyrotechnic industry for 29 years. He was beloved and highly respected by his peers and his audiences around the world. One year ago, this month, Mr. Fliedner was an advisor for the fantastic fireworks show we held at the Museum's Christening Gala. He is survived by his wife, three daughters and one granddaughter. This evening's show is the first event staged by Pyro-Spectaculars since the accident, which state fire officials said did not appear to be the company's or Mr. Fliedner's fault.

Submitted by Jean M. Starr, Pyro-Spectaculars