

LALS ENGINE BOOSTER

December 2012

Celebrating 56 Years

www.lals.org



G Scale in action.

Holiday Party December 28

The Museum's annual holiday party is scheduled this year for Friday, December 28 at the Smokehouse Restaurant in Burbank. No host bar opens at 6 pm with dinner at 7 pm. The party will again be held after Christmas to get a better price and location for the affair and to minimize conflicts with other events of the holiday season.

The event this year has been planned again by Martha Figueroa.

Newly elected directors will be installed at the event, and awards given to members who have especially helped the Museum this year. The cost for each dinner is \$30. Reservations are due by December 20. Please see back page of the *Booster* for more details.

President's Message



By Les Kovacs, President

Merry Christmas everyone and happy railroading. It's the end of the year and the end of my term as president.

I really want to thank everyone for their help and support. Coming up in the new year our club will be facing some new challenges. I know you will give the new board support as you have given my board.

Don't forget the club is made up by its members not just its elected board, so please do your part. Lastly, our Christmas party will be at the Smokehouse. There is still time to make your reservations.

See you there. Les

Public Service Calendar

December

- 23 Public Rides
- 30 Public Rides

January

- 1 **New Year's Day**
- 6 Public Rides
- 13 Public Rides
- 20 Public Rides
- 27 Public Rides

Equipment Safety Inspection January 5

The Museum's annual equipment inspection is scheduled for Saturday, January 5. You can look on the board in the old picnic area to see if your equipment must be inspected this time.

Members should be at the Museum on that day to have their equipment inspected or make arrangements with Wolf Fengler for an inspection at a different time.

Splinters from the Board



By Chuck Mohr

December 3, 2012

Election of new officers

for 2013 The new Board elected its officers: President: Sam

Calderwood; Vice President: Gary Baker; Secretary: Roger Bacon; and Treasurer: Tim La Galy.

Party Requests: The Board approved one party request by Robert La Salle on February 13 for 70.

General Superintendent: Steve Ruatta talked about all the help he had taking down Halloween. We have removed two birch trees with two more to go. He needs two or three new carts and wheelbarrows, which he was authorized to purchase.

New business: All members must comply with park rules, particularly including not feeding of any wild life. Tim LaGaly will head up a team to look in to

the new electrical systems.

John Goulding thanked, Miles, Thaine, Roger, and Rob for their help in installing the new grill. Miles stated that Engine 3100 is being worked on by Sam and Wolf and will be running soon. Martha Figueroa asked for donations for the 2012 Holiday Banquet and Officers Installation on December 28.

Time to Renew!

It's time to renew your membership! Mail your renewal and dues to the Museum no later than February 1. Paying in time ensures you will be in the Roster.

Your dues are your ticket to a year of fun and fellowship at LALSRM and help support the Museum.



The *Engine Booster* is the monthly publication of the Los Angeles Live Steamers Railroad Museum, a non-profit 501 (c)(3) organization. © LALSRM

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Email submissions to booster@lals.org.
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New Gold Line extension bridge over Foothill Freeway completed last week.

From the Super



By Steve Ruatta
General Superintendent

Ahh, the Christmas Season. When a young man's fancy turns to... Getting ready for the rains? You bet!

So this means we need to clean out the gutters and drains. Clean off the roofs and make sure everything will drain where it is supposed to. This also means that "erosion season" will be upon us shortly. We will spend some Saturdays moving dirt off the tracks by the mountain division. Come out and burn off some of those Holiday calories.

We're going to get a few more carts and wheelbarrows. The ones we have get a lot of use and many of them show their age. If there is a tool we should get that will make our lives easier, send me an e-mail and I'll see what we can do. (I'm leaning towards a D9 – we'll fix that hill once and for all!).

We will be losing some dead trees for a while. Andrew Chaves is taking and supplying ideas for replacements. We cut down some birches last week (Thanks Jeff G and Lisa and Brian!) and the trunks were full of borer tracks.

When you come out and work, don't forget to fill out a time card – located in the UP caboose. Also write your name in the "who's been workin' on the railroad" section of the red notebook in the patio next to the telephone and you can get your name listed in this fine publication.

Finally, this is the end of my fourth year as General Superintendent (Time flies when you're having fun!). It is challenging and requires a bit of organization and some time. It's like having a really big yard, with trains running through it and lots of visitors every week. If you think you would like to give it a shot, let Sam or me know.

More smoke and happy steamin'

Member Schedule

December

- 23 Public Rides
- 28 **Holiday party and officer installation**
- 30 Public Rides

January

- 5 **Safety inspection**
Change Direction
- 6 Public Rides
- 7 BOD Meeting 7:00 p.m.
- 13 Public Rides
- 19 Work day; General Meeting
- 20 Public Rides/Disney Barn/
Steam Plant; Small Scale
Sunday/Gourmet Lunch
- 27 Public Rides

Proper Care of Steel Live Steam Boilers

By Kevin O'Neill

As far as water chemistry goes, old fashioned and state of the art meld on this for hobby boiler water treatment. These guidelines work as well for small code steam boilers. We have several commercial accounts for quite a few years now, and corrosion has been reduced greatly and a fuel savings has been gained.

In all these cases we have set up on batch feeding in the makeup tanks or tenders. Due to the cost of chemical pumps for continuous feed this has not been done in almost all cases. Slugging or batch feeding is fine in most cases and can be controlled for a day's run for a hobby or commercial boiler.

Boiler Water Ph

Boiler water ph for steel boilers is critical for acid wasting not to occur and cause damage. Remember, proper water treatment cannot repair the damage done and only slow boiler corrosion. In most jurisdictions in North America the water is basic or at least above 7.0 or to 7.5 like the water at LALSRM. In only a few areas including Mexico have we found acidic water and have needed an Alkalinity Booster or the use of TSP for hard water. Remember TSP breaks down to caustic as it softens the water. TSP is only used as a last resort and never with riveted boilers.

Acid wasting is reduced at the Ph of 8.5 and corrosion will be reduced in a safe range until a Ph of 12.7 is reached and above that Alkali corrosion will commence. For steel boilers we usually recommend a Ph from 10.0 to 12.0 as a safe range. We have found with regular boiler blow down you will have a Ph of a safe range at the end of run with proper additions of chemistry added to the boiler and tender on initial filling.

Softening Agents

Softening agents as well as dispersants have now taken the place of TSP and Phosphates for our uses and are considered nonhazardous. You will find that most softened water such as that at LALSRM have

been found to contain a minimum of 2 ppm of total hardness. This has to either be consumed or held in suspension or it will result as scale on the generating sections of your boiler. We had recommended in the past to placing the softeners in series to do polishing and when the inlet softener exhausts place the polishing or second softener in its place. This would give you a measurable micro hardness. This is the case for most of our commercial accounts.

With the use of hard water our Raw Water Treatment we have an extra amount of Surfactants as well and we use no Corrosive Polymers. When softening the water in the boiler the work and chemical feeding is increased yet you most monitor end of run test results carefully along with a heavier blow down schedule. With alkali make up water this will help maintain the boiler water Ph.

Oxygen Scavenging

This is one of the most important items along with boiler water Ph. The makeup water at LALSRM contains anywhere from 5 to 6 parts per million of dissolved Oxygen. Polymers Are Not an Oxygen Scavenger and since this treatment has tested negative for Sodium Sulfite and

Tannins it has no Oxygen Scavenger. As long as you have 10 ppm of oxygen scavenger or above that at end of your run you should be fine. On our treatment at end of and during test runs in our shop boiler we have found close to Zero parts per million of dissolved Oxygen. Our shop boiler has a sample cooler which makes collecting a sample easier than catching off the Tri Cocks or Boiler Blow down. In most cases we catch a sample off the boiler Blow down at the end of run after the boiler has been allowed to cool.

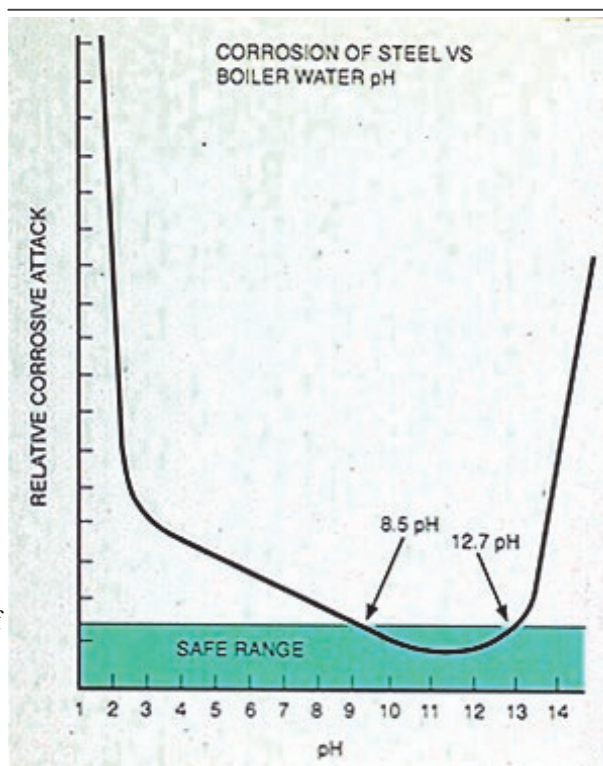
Sodium Sulfite is your best choice in oxygen scavenger and will bind with the chlorine with your incoming softened water. Chlorine is an oxidizer and can and will harm your boiler in time. We have tested the water at the club and on a couple of occasions it tested close to 0.8 parts per million.

Hydrazine is not discussed due to the obvious environmental and health hazards it poses. There are safer organic knock offs yet they should also be avoided as they are consumed in the boiler water they produce ammonia which will consume brass and copper in your valves and fittings.

Boiler Conductivity

The upper end on boiler water conductivity is 3,500 micro mohs at 100 psig gauge pressure. If you exceed this number you will most likely have very damaging carry over as well as a buildup of salts and dissolved solids. This will shower boiler water over you and your passengers as well as act like a grinding compound in your cylinder valves and cylinders.

We use this number as your limit on cycles and no longer base it on Chloride levels in the LALSRM make up water. The conductivity has proven reliable enough to use to measure cycles. Remember you are adding chemical to your boiler water which will raise your overall conductivity. This would only be an arbitrary number that we would use. It is hard to control when doing end of run sampling.



(Continued on page 4)

Proper Care of Steel Live Steam Boilers

(Continued from page 3)

Boiler Pacification

On most hobby boilers this is ignored for the most part and is standard in the Industry on all commercial and industrial installations. On most startups on steamers running below 1,000 psig you use anywhere from 200 to 500 parts per million of Sodium Sulfite to help form that magnetite layer. You also need to run the pH closer to 12.0 for good pacification and this must be done on softened or demineralized water.

At LALSRLM on any of the steel boilers we can adjust a chemistry packet for a 10.0 Ph and 200 parts per million plus on Sodium Sulfite residual. This will guarantee you a start of season pacification that can be maintained with proper chemistry and a dry layup. This can be done on an afternoons run with ease. Wet layup is done on the larger boilers and must be

tested and cared for properly or corrosion and damage will occur.

This has proved very successful with a number of hobby boiler operators. We have also provided end of run testing to monitor given boiler chemistry and to monitor corrosion. When a boiler is in corrosion you will find boiler material in the blow down. What happens is as metal is being dissolved as you run throughout the day the dissolved steel will reach its saturation index and drop out of solution. That is why you will find small chunks of iron type debris at the end of your run. We have found this from standalone polymer based treatments on numerous occasions. This rarely happens on an alkali based treatment to that severe a degree. This will occur if you add the acid polymer to our treatment and will result in damage. *Please do not mix chemistries with ours or any other without proper guidance from a*

professional or you may have a severe chemical reactions and severe damage to your equipment. This has happened.

Zinc Cathodes

These are meant for use with water tanks, underground lines, underground storage tanks, ships hulls and steam condensers handling brackish waters. This is why you will find higher than normal zinc levels as some jurisdictions still mount zinc cathodes inside the storage tanks and in some cases a small electric charge is applied. These are really not meant for boiler use as they do decay and give off CO2 which will cause carbonic acid in dry storage in damp weather. In fact in the boiler code the last time we checked zinc is not allowed in steam boiler construction anywhere. Placing a charcoal filter with a fine screen mesh is recommended before your water softener. Zinc has a habit of

(Continued on page 5)



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Proper Care of Steel Live Steam Boilers

(Continued from page 4)

leaving a lite coating on copper and steel boiler surfaces. Only testing can tell you what any coating can be and can be trace chemical and hardness that was held in solution.

Boiler Anodes

Boiler Anodes are made of Magnesium and Not Zinc. We have had numerous contact by Live Steamers who are telling us they are installing zinc blocks in there boilers. The correct Anode is Magnesium and is the Sacrificial Anode to mild or boiler steel. This may be screwed in on your water leg and we also recommend the use of a tell-tale wire that runs through the anode and lies on the bottom of the water leg. Your boiler as all boilers due to the construction and chemistries involved have a minor amount of battery action involved. The best way to resolve this is with a sacrificial anode on all steel boilers. We have found micro current on ground leads for utility boilers. You must do an internal inspection every month or so until you get a handle on your boiler chemistry.

Corrosion Coupons

This is something we have recommended in the past that has been ignored which most likely would have caught a serious corrosion situation that occurred. The corrosion coupon may be either mounted on a wash out plug or from hanging down from the steam dome. What is done is track how many hours you run, document your water treatment and way your test coupon with a jewelers scale in grams. The Corrosion coupon must be submerged at all times in the boiler water and best if the tab is bolted to the steam dome of a boiler and extend below the water line. It must be arranged so it may be unbolted from an extension from the inside of the steam dome. The tab may be mounted or screwed into a washout plug as well. You must record a starting weight before it is installed and record the

weight each time it is inspected and reinstalled.

Proven Design

If you are using a proven design it may be best not to tamper with it. Kozos design is a proven design and works well and should not to be altered. It may be scaled up and down with no problem. We have seen the Kozo boiler design altered with severe and negative results to the locomotives operation. Injector and auxilia-



Boiler Anodes

ry take offs from the boiler are best at the highest point off the drum or the steam dome. Dry Pipes Do Not Scale down and result in condensation collecting and causing slugs of water to be sent out when a valve is opened to an injector or auxiliary. When buying a locomotive it is best to take an experienced live steamer to take a look inside and out, and view the steamer in operation. A novice should always go with this advice as going against this you do so at your own risk. Always open the steam dome, wash out plugs, drain valves and have a thorough inspection done by someone you know and trust. Ask to see inspection and water treatment records and don't take no for an answer. Try and find out what water treatment was used if any. As to witness a quick wash out and screen all debris that come out. If a steam locomotive doesn't run correctly re-piping it is probably not going to fix a boiler internal or steaming problem. We see the same effect on the throttle dry pipes and the best solution we have found is Cagney's design. The dry pipe is mounted under the

jacket and down to the cylinder after the throttle off of the steam dome. When the throttle is closed these lines slope down to the cylinders and remain dry, warm, and thoroughly drained.

Wet Lab

We offer the services of full corrosion and wet lab to back to back our chemistry and specialize in hobby and commercial boilers, operation, and fitting out as well as water treatment testing and control. We would recommend any firm who can back the chemistry they offer with testing and corrosion study. If a firm only offers a standalone polymer then we would recommend not using it. There are some firms that sell chemical and leave the outcome to the end user. The chemistries should cover mild steel hobby and code boilers. We will get into copper boilers at a later date. We offer a standalone softening agent for copper

boilers as well. If using softened water this should be used as well in conjunction as all softeners leak hardness. This is also a great additive in conjunction with our chemical treatment of steel boilers. As any water treatment firm we offer advice to slow the corrosion with spot checking and the like. The implementation is up to the end user along with your own testing, observance, as well as chemistry, and blow down adjustments under normal operation.

Instructions and MSDS's

When using any chemistry it is best to first read all instructions and MSDS's. As noted on the before mentioned polymer treatment those that have been using it have not been even following the instructions as well. Some MSDS's do not clearly state what is in it as you can usually figure it out by the warnings. If it causes cyanosis or is a neuro toxin it is best to be avoided. That usually means it is a polymer and the full strength product the hobbyist version is made from is a real nasty.

(Continued on page 6)

Proper Care of Steel Live Steam Boilers

(Continued from page 5)

TSP and Phosphates are highly corrosive by themselves and when used or misused can raise your boiler water Ph to 14.0 very quickly if not closely monitored and are usually named in the MSDS. Chelates when used as a standalone chemical when overfed will start dissolving boiler metal after it is done consuming all the hardness held in the boiler water and are also usually named in an MSDS when above trace amounts. NAOH should be avoided at all costs and is dangerous and corrosive and named as Caustic in an MSDS. Caustic can come in a liquid or powder. Chelates are fine when blended in trace with surfactants and dispersants.

Our treatment usually levels off at around a 12.0 when administered correctly and list the surfactants and sulfites in the MSDS. Ours treatment has been classed as nonhazardous. If you are not given an MSDS or instructions with a chemical you should call the vendor and insist on sending you a copy. You are in your right to do this so you may protect yourself, family or even coworkers. In this state it is called "Right to know."

Environment

It is always best to stick with a non-hazardous treatment. You do not want to blow down or drain any boiler that could carry something harmful onto the ground. Some firms feel that if they water down an

item it can be classed as nonhazardous, we do not follow that mindset.

Years ago I knew a gentleman that was an electrician for the city. They used to give him oil for his steamer to run on an occasional weekend. Unfortunately today that would be frowned on as transformer oil up until the 1990's contained PCB's. Back when I worked for a local Utility the electric shop used to pour the used transformer oil in underground bunker for fuel oil storage. It held over a million gallons of oil and was heated year round. That is all gone now since burning fuel oil in a Utility boiler is not allowed by the local South Coast Air Quality Management District. If you look at old photos of the San Fernando Valley from the 1960's and the 1970's you will know what I mean. The smog used to bum our eyes as kids it was so bad. Emissions are being cut to almost nothing these days which is good for us and our air.

Asbestos

This is something you either want to abate or just stay away from. There are a number of other products such as Kaowool cloth, fiber or board you can use. If you suspect something has asbestos in it do not buy it if it is a locomotive because then you are stuck with it. Abatement is very expensive never mind the obvious health hazards.

There was a man who did some illegal abatement inside the city limits of Los Angeles and he got into a bit of trouble. This was a year or so ago and was on the news and in the local papers if you recall. He was sentenced to a couple of years in jail for just doing it yet alone refusing to stop doing it. It is also considered a public safety hazard as well when exposed to atmosphere.

It is illegal to bring asbestos onto Los Angeles City or County property under any condition for at least the last fifteen years. As a vendor for both that is something you have to be aware of. When they write a specification the valve packing should be nonhazardous or is it safe to work in a drinking water system. It has to also be lead free on a law that went into play a couple of years ago.

Follow Up

We have had some interesting questions and choose not to print them and answer them individually as they come in and feel free to email us. However please feel free to send in any questions you may have in regards to water treatment. I'm sure someone can come up with an answer and if you are interested in safe and friendly water chemistry please contact us at aksteamtech@yahoo.com or if there is something you would like to see addressed and printed.



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Who's been Working on the Railroad

November

Tom Akins	Les Kovacs
Glenn Austin	Don Kallgren
Steve Altmayer	Dean Kleig
Gary Baker	Miles Kristman
Jim Baker	Glenn Lane
Roger Bacon	Robert LaSalle
Ron Bergmann	Roberto Lopez
Mel Bresee	Thaine Morris
Ray Burden	Ron Nelson
Sam Calderwood	Steve Ruatta
Bob Crone	Michael Soibelman
John DePhillip, Jr.	Nick Suncin
Aaron Emmer	Doug Ward
Rick Gross	Fanny Wollman
Gene Heiman	Doug Young
J. Ken Inasy	<i>And many more</i>

Los Angeles Live Steamers Railroad Museum

In Griffith Park, 5202 Zoo Dr.,
Los Angeles, California

Mailing Address—PO Box 2156
Toluca Lake, CA 91610
Phone (323) 661-8958

Website - www.lals.org
General Info - info@lals.org
Booster - booster@lals.org
Membership - membership@lals.org



2012 Officers and Directors

President	Les Kovacs
Vice President	John DePhillips Jr.
Secretary	Chuck Mohr
Treasurer	Tim LaGaly
Directors	Peter Fuad
	John Goulding
	Collin Westphal
	Doug Young

SUNDAY EXTRA BOARD

Engineer Conductor Road—Owner
November 4, 2012—609 Riders— High 91°

Peter Fuad	Bob Quinn	City of LA—Fuad
A.J. Smitrovich,	Lisa Lipton	Norfolk Southern— Murphy

November 11, 2012 —785 Riders— High 66°

Peter Fuad	Bob Quinn	City of LA—Fuad
Paul Hammond	Andy Blake	Santa Fe—LALSRM
Michael Romanucci	Bob Crone	SP PA1—LALSRM

November 18, 2012 —478 Riders— High 67°

Ron Hitchcock, Andrew Chaves	Robert LaSalle, Harrison Hitchcock	SP PA1—LALSRM
Peter Fuad, Don Kallgren	G. Pschaida	City of LA—Fuad

November 25, 2012—677 Riders— High 71°

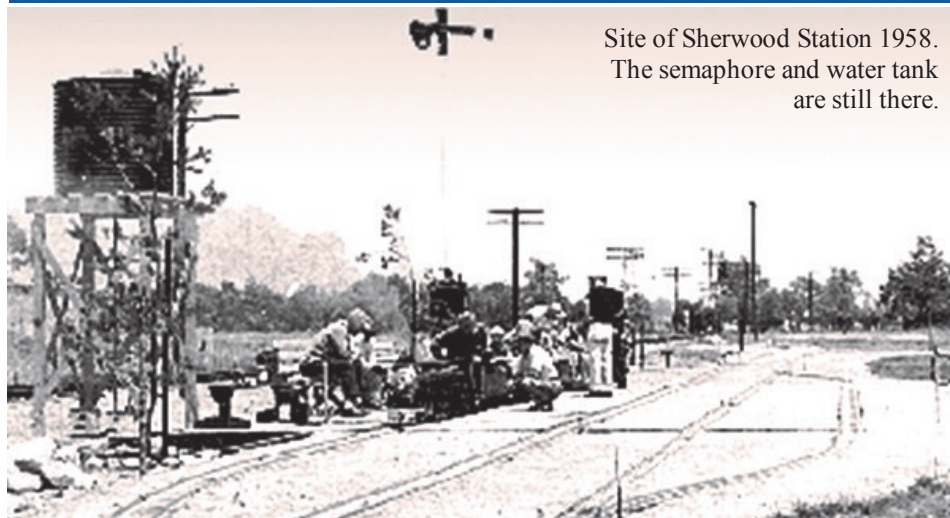
Peter Fuad	Bob Quinn	City of LA—Fuad
Ron Hitchcock	Christie Edinger	SP PA1—LALSRM
A.J. Smitrovich	Andy Blake	Santa Fe—LALSRM

November Safety Coordinators, Station Masters, Tickets

Safety Coordinator	Collin Westphal. Michael Murphy, Andrew Chaves, Bob Crone
Station Masters	Ron Hitchcock, Bob Crone, Andrew Chaves, Andy Blake, Gail Woodward, Benjamin Gonzalez, Larry Mitchell, Nene Jensen
Souvenirs and Tickets	Chuck Mohr. Flemming Nielson

Riders: November 2012 — 2549

2012 to date — 39,136 Last Year to date — 38,485



Site of Sherwood Station 1958.
The semaphore and water tank
are still there.

2012 Holiday Banquet and Officer Installation

RSVP by December 24!



The Smokehouse
4420 West Lakeside Drive
Burbank

Friday,
December 28, 2012
6:30 pm (No Host Bar), 7:30
p.m. Dinner Served



Menu:

The Smokehouse Prime Rib •
Chicken Buena Vista
Pasta Primavera

Make your reservation by December 24!
For more info, please call Martha Figueroa at (626) 232-7053 or (626) 573-0017
Detach, complete, and mail portion below with your payment.

Member Name(s): _____

Guest Name(s): _____

Number of Dinners at \$30 per person:

_____ Smoke House Prime Rib Dinners \$ _____

_____ Chicken Buena Vista Dinners
\$ _____

_____ Pasta Primavera Dinners \$ _____

Total \$ _____

Please make checks payable to LALSRM and send to:
2012 LALSRM Holiday Banquet c/o Martha Figueroa
3442 Charlotte Ave., Rosemead, CA. 91770

