
*A lucky individual received this unique cap to keep his head warm. Find out who it is in this issue!*

# The CallBoy

February 2022

Pat Young CallBoy Editor
10349 Glencoe Drive
Cupertino, California
95014

# The CallBoy Newsletter

**Official Publication of the Golden Gate Live Steamers, Inc.**



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| Tilden Park<br>2491 Grizzly Peak Blvd,<br>Orinda, California 94563 | Pat Young, Editor<br>phty95014@yahoo.com<br>**February 2022** | A 501(c)(3) Non-Profit Museum<br>www.ggls.org or<br>www.goldengatels.org |


## Officers

| | | |
|---|---|---|
| President: | Jon Sargent | 510-233-6481 |
| Vice President: | Rich Croll | 510-227-9174 |
| Secretary: | Matt Petach | 408-256-2883 |
| Treasurer: | John Lisherness | 510-647-8443 |
| Safety: | Jerry Kimberlin | 510-809-7326 |
| Director at Large | Mark Johnson | 510-889-9451 |

## Ombudsperson

Lisa Kimberlin 510-214-2595

## GGLS Trust Fund Members

John Lisherness
Jerry Kimberlin (elected March 2015)
Ken Blonski (elected December 2019)

## GGLS Committee Chair people

| | |
|---|---|
| Bits & Pieces: | Sheldon Yee |
| Boiler Testing: | Jerry Kimberlin |
| Building: | Rick Reaves |
| CallBoy Editor: | Pat Young |
| Engine: | Paul Hirsh |
| Grounds: | Andy Weber |
| High Track: | Sheldon Yee |
| Librarian: | Pat Young |
| Membership: | Sammy Tamez |
| Public Train: | Walt Oellerich |
| Refreshments: | Walt Oellerich, Sheldon Yee |
| Rolling Stock: | Rich Croll |
| Round House: | Michael Smith |
| Security: | Jon Sargent |
| Signals: | John Davis |
| Technical Talks: | Charlie Reiter |
| Track: | John Lytle |
| Web Site: | Pat Young |

## Club Correspondence

All correspondence to the Golden Gate Live Steamers should be sent to the secretary, Matt Petach at his email matt@petach.org

## Membership

To qualify for membership, attend 2 monthly meetings. At the first meeting, please introduce yourself and obtain a membership application from Membership chairman or Secretary. At the second meeting, return your completed application, the yearly prorated club dues, together with the $25 initiation fee and you are officially a member.

## CallBoy

Articles, pictures, photographs, items for sale or any other information that would be of interest to the club should be sent to Pat Young, the CallBoy editor at phty95014@yahoo.com

***Deadline for submittal to next month's issue is the 19th!***

## 2022 Calendar of Club Sponsored Events

02/13 General Meeting/Board Meeting
02/19 BAEM meeting
03/13 General Meeting/Board Meeting/swap meet
03/19 BAEM meeting
04/10 General Meeting/Board Meeting
05/15 General Meeting/Board Meeting
05/21-05/22 GGLS Spring Meet/Open House
06/12 General Meeting/Board Meeting
07/10 General Meeting/Board Meeting
08/14 General Meeting/Board Meeting
08/27-08/28 PV&A, SVLS and GGLS Joint Meet
09/03 Club reserved for John Smith
09/11 General Meeting/Board Meeting
09/17-09/18 Fall Meet/Open House
10/09 General Meeting/Board Meeting
11/13 General Meeting/Board Meeting
12/11 General Meeting/Annual Meeting/Board Meeting

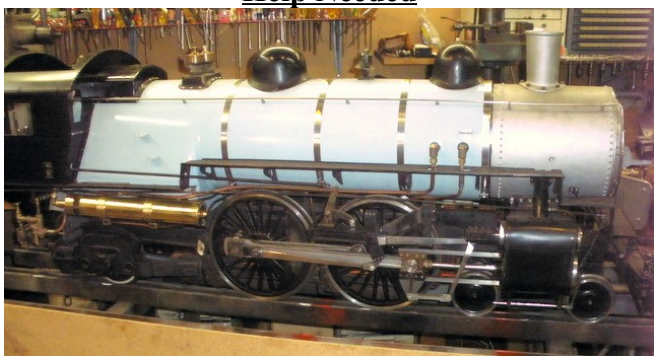
## Announcements

The Chili Run was a success, and Jon thanked those who provided food and helped with the serving.
Pat Young gave kudos to Lisa Kimberlin, Jo Ann Miller, Sarah Buhre & Bruce Anderson for organizing, distributing and general herding of attendees thru the club house in a safe and orderly manner. He also thanked those who provided food & participated.


Roundhouse and storage building rents were due by December 31st. Annual membership dues are due NOW. If you have not paid your dues yet, please pay Lisa Kimberlin NOW.


Please sign & turn in the Release & Indemnity Form (if you haven't done so already).

## Help Needed



John Lisherness is almost finished restoring the GGLS' Heintz Atlantic #3003, which will become available for members' steam engine use & training.

He is requesting help to replace the painted numbers on the side of the cab. If interested, please email at lisherness.john@gmail.com

## Guests and New Members

New members Carolyn & Conrad Fok were introduced. If you see them at the track, say "Hi" to them!

## Steaming Activities

Steaming activities: Bruce Anderson announced that his 0-4-0 Harley, had a good run yesterday at the track. More can be found in this issue.

## Minutes of the General Meeting

The meeting was called to order at 10:08 AM by President Jon Sargent. There were 20+ members present.

### Officer Reports

**President:** Nothing to report.
**Vice President:** Nothing to report.
**Secretary:** Nothing to report.
**Treasure:** Absent.
**Safety:** Jerry Kimberlin reported that the new Safety Rule books are at the printer. He will distribute them to those members who have turned in their release forms next meeting.
**Director at Large:** Absent.
**Ombudsperson:** Lisa Kimberlin requested that anyone who either contracted COVID 19 or tests positive to let her or another Board officer know.

### Committee Reports

**Security:** Jon Sargent reported the security system is fine. He is investigating a problem with the WI-FI hotspot.
**Buildings:** Rick Reaves informed us he is waiting for better weather to paint the water tanks. He also noted that the new gutters are scheduled for February.
**Grounds:** Absent, but it was noted that we are in winter operations mode and water shutoff rules apply now.
**Roundhouse:** Michael Smith reported that the new 2022 roundhouse log has been posted.

**Signals:** John Davis reported that all the mechanical relays have been replaced on the turnout controls and he noted that a short push on the button is all that is needed. Please see the Track Switch Control Changes article in this issue for more details.
**Ground Track:** Absent.
**High Track:** Absent.
**Locomotives:** Paul Hirsh reported the engines are OK except for some work being done on the Hunter Atlantic.
**Locomotive Class:** Paul Hirsh said that because of the upswing in Covid 19 cases, the January classes have been canceled. They will be rescheduled at a later date.
**Rolling Stock:** Nothing to report.
**Public Train:** Walt Oellerich noted that Colton Snell and Lew Breon were both back.


He also showed off his new hat that Sarah Buhre crocheted for him.
**Callboy:** Pat Young (by email) noted that the last December 2021 Callboy was our holiday issue and he hoped everyone enjoyed it.
**Web Site:** Pat Young (by email) reported that he did the annual cleanup of dead links on our ggls.org web site and everything should work.
**Library:** Nothing to report.
**Builders Group:** Pat reported that John Lisherness sent in a video link on how a Lego motorized car goes thru advancing iterations to overcome increasingly difficult terrain it encounters. A cute video that everyone should enjoy viewing.
**Membership:** Absent.

**Old Business**
**Revised Standing Rules:** The Revised Standing Rules have been posted on our website and on the clubhouse bulletin board. They change the permitted use of club locomotives, so please review them.

**New Business**
**BAEM:** Anthony Rhodes announced that the Bay Area Engine Modelers (BAEM) prefers to meet on the third Saturdays. So far, the plans are for January 15, February 19 and March 19 in our clubhouse. More will be added as the year progresses.
**Hoists:** Richard Croll reminded members that the train hydraulic hoists must be lowered completely when not in use. Someone left the large one raised sometime after New Years day, and after it rained there was surface rust on the piston.
He noted that it cost around $180 to replace the seal, plus several hours of work. Keeping the hoist lowered should help the seal life.
The meeting was adjourned at 10:25 AM.

## Minutes of the Board Meeting

The meeting was called to order at 10:47 AM by President Jon Sargent. Also present were Rick Reaves, Jerry Kimberlin and Richard Croll. Mark Johnson & Matt Petach were absent. Ombudsperson Lisa Kimberlin also was present.
**Minutes:** Motion was made by Rick Reaves, seconded by Jerry Kimberlin to approve the December minutes. Motion passed.

**Old Business**
**Credit Cards:** No report.
**Policy on Club Locomotives:** Jon Sargent showed copies to paragraph 2.13 from the policy manual and suggested it be eliminated. The Board concurred, and Jon will have web person Pat Young remove it from the website. He will also have Pat remove the two old East Bay Regional Park District (EBRPD) special use permits.

**New Business**
**Safety Committee:** Jon Sargent asked what the "Red Hats Team" was. Jerry Kimberlin noted that was the Safety Committee, but that has been removed from the Safety Rules. Paul Hirsh was asked to be the second in command of the Safety Committee, and he agreed.
**Ash Cans:** It was noted that the garbage can for locomotive ashes has disappeared. It was noted that Joe Osborne said he would bring a replacement.
**Shop Foreman:** Jon Sargent noted that the standing rules mentioned the "Shop Foreman" position. It was noted that we did not have one, and Richard Croll volunteered to take the job. His offer was accepted.
**EDD claim:** The club received a verification of claim form from the California Employment Development Department (EDD). The named member was present and confirmed that he did not submit it. The Vice

President will contact EDD.
**Release forms:** Jon Sargent is maintaining a list of who has returned the forms and will monitor it.
Meeting adjourned at 11:25 AM.

## Track Switch Control Changes

Submitted by John Davis

As noted in the January meeting minutes, all the mechanical relay bars (except in the yard) which reversed the motor to the track points have been replaced with a solid state circuit. What this means to you is the following:
1) Always look at the track points to make sure they are aligned to the desired track.
2) To switch the track points to the opposite direction, press the actuator switch for NO MORE than half a second. Verify the track points are properly aligned. If the engineer before you kicked the track points manually, then the points won't move the first time you press the electrical switch. After half a second, you can press the electrical switch again to move the track points.
Advantages of the solid state circuit:
1) When the signal system is powered up, all the track points will be set to a default condition (the main line, whether that be the inside or outside loop).
2) If you press the electrical switch very quickly, the actuator motor for the points will still be activated for half a second resulting in more reliable switching.
3) Regardless how long you press the electrical switch, the actuator motor will only be powered for half a second preventing burn out the point actuator motor.

## Bits and Pieces

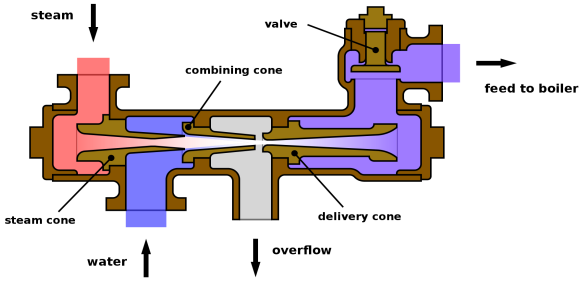
Submitted by Pat Young
Photos from Bruce Anderson

Charlie Reiter presented a pair of wagon wheels that were temporarily assembled as proof of fit.
It is made of cherry wood, encircled with a stainless rim and is for an American La France fire pumper, in 1.5" scale. He has never made wagon wheels before but have wanted to give it a try.
Also for the same project he also made 2 brass flywheels made by laminating 3 layers and silver brazing.
Charlie hopes you had a nice holiday season and that the 2022 new year is one of accomplishment.

## How an Injector Works

By Dick Bagley, Riverside Live Steamers
Reprinted with Permission
Submitted by Bruce Anderson

*I found this article while going through our CallBoy library at the Club House. I thought it was interesting and possibly worth adding it to our library.*
*John Lisherness pointed out that the numbers referenced in this article are all hypothetical and more info would be needed to design OR diagnose an injector (jet sizes & cone tapers). And a builder could spend a very long time learning about making injectors.*
*He thought that these days, the more practical approach is to buy an injector directly from Anthony Duarte at his website:*
*www.eccentricengineer.com*




The usual explanation is that an injector works because the steam imparts sufficient velocity to the water to overcome the pressure of the boiler. That is true, but is simply a statement of fact and gives no clue as to how we might have discovered the answer. So, now you have your finger on the puzzle. The answer tells you "why" an injector works and now you should just like to know "how" it does it.
We'll first take a look at some of the goings on the inside of a boiler. Assume the internal pressure to be 180 pounds. That will be 180 pounds per square inch whenever it is measured. A thermometer placed inside will show that the surface water and the steam are at the same temperature, 379°. But the steam contains

more heat than the water. After the water is heated, it requires still more heat to break up the drops of water to make steam. This heat is stored up in the steam and is known as the transfer of energy. The stream not only exerts a pressure of 180 pounds per square inch, but can also expand eight to twenty-six times its original volume. Water under the same pressure would be discharged in a solid jet with no expansion. One pound of steam is capable of much more work than one pound weight of water because of the heat which has been used to change it to steam. This can be seen by comparing the velocities of discharge from a steam nozzle and a water nozzle, both under 180 pounds of pressure. Steam will expand while issuing, and reach a velocity of about 3600 feet per second (fps) at the end of the nozzle. Water, having no expansion, will have a velocity of only 164 fps, only about 1/22 of that of the steam.

If a steam or water jet comes in contact with the body in front of it, the tendency is to drive the body forward. The force which tends to move the body is called "momentum" and is equal to the weight of water or steam discharged by the jet in one second multiplied by its velocity per second. If one pound of steam is discharged per second, the "momentum" will be 3600; 1 multiplied by 3600 equals 3600. It would require 22 pounds of water to do the same, because 22 multiplied by 164 is nearly 3600. Both are discharged under the same pressure, but the steam has 22 times the force or "momentum" as the water jet could easily enter a boiler at 180 pounds of pressure if we could reduce it to the size of the hole of the water nozzle.

So we've hit a little problem. Our steam jet expands. Even at the most narrow part of the nozzle, it is more than 16 times larger in diameter than a water jet discharging the same weight per second. The trick, then, is to change the steam to water without reducing its velocity. The simple way to reduce its size is to condense the steam. Water is good for this purpose, and we need some water in the boiler — so why not? To condense the steam and utilize its velocity the water must be brought into close contact with it without interfering with the direct line of discharge. A funnel, or "combining" tube, suitably placed, will compel the water to enter evenly all around the steam jet. The mouth of the funnel must not be too large or too much water will enter and swamp the jet. If too small there will not be enough water to condense the steam. The effect of condensing the steam is to reduce the diameter of the jet. Therefore the combining tube must be a smooth converging taper to lead the combined jet of water and condensed steam into the smaller hole of the delivery tube. The effect of the impact of the steam is to give the water its momentum, so that a solid stream will issue from the end of the tube.

Each little drop of water entering is driven faster and faster by the vast number of little atoms of steam, moving hundreds of times as rapid, until the steam and water combine into one swiftly moving jet of water and steam, which contracts sufficiently in diameter to enter the small delivery tube.

The combined jet now passes from the end of the combining tube into the delivery tube.

The delivery tube is merely a nozzle. Remember now what we said about nozzles and velocities in our fourth paragraph. First we need to know the velocity of the combined jet at the end of the combining tube. If the steam nozzle discharges one pound per second at 3600 feet velocity, the momentum is 1 multiplied by 3600, or 3600. If the vacuum caused by the condensation of the steam lifts and draws into the combining tube, ten pounds of water per second at a velocity of forty feet, its momentum is 400. Add this to the velocity of the steam and we have a combined velocity of 400 plus 3600, or 4000. The weight of the combined jet is eleven pounds. When it enters the delivery tube its velocity should be equal to 4000 divided by 11, or 363 feet per second. Since the steam and water do not meet in exactly the same line of discharge, there is a loss of momentum, and the velocity in the delivery tube is only 198 feet per second. But the jet only needs a velocity of 164 feet per second to enter the boiler carrying 180 pounds pressure. The actual jet in the delivery of steam, because of the velocity of a jet of water under a head of 206 pounds would be 198 feet per second. This excess is more than enough to overcome the friction of the delivery piping and the resistance of check valves.

Perhaps that answers your question, Merrill. And as a little added feature, we also know why hot injectors fail, or — most often — why we cool an injector sometimes, in an effort to make it work.

Thank you..., if you got this far.

Dick Bagley, Riverside Live Steamers, Inc.

## Osborn Family Adopts 0-4-2 "Taurus"

by Bruce Anderson

Joe Osborn purchased Bob Cohen's 0-4-2 "Taurus" before the holidays. His son Andrew instantly took a liking to it. And Andrew is a freshman in mechanical engineering at Cal Poly, San Luis Obispo.

The family, Joe, Eliza, along with a family friend, Joseph & Andrew took it for a spin on the day after Christmas.

The locomotive has a definite British flare to it and seems to have run well during their several laps around the track.

Joe hasn't been too active in the club since I've joined but I have a feeling we'll be seeing a lot more of him, his family, and of "Taurus" in the future.

## Progress on my Bass Beam Engine Locomotive

By John Faucon

I have shown you most of the work on the steam cylinders and steam chest in a previous post of my build installment (May 2021 Callboy) that will require more work, but those will be shown in later build installment.

This build installment shows the 2 halves of a single beam and the dog bone, which connects the 2 halves of a single beam. The overall length of each beam when assembled is 22 inches long.

I have also shown a single A-Frame being drilled for its connections points, which supports the beams and most of the other steam related components less the steam cylinders, pistons and steam chests. The A-Frames are 17 inches tall and 8 inches wide at the base, and 1 inch thick.

The most important thing to keep in mind is the greater number of parts required to build this type of a steam engine (vertical boiler) from the 1830s versus a more contemporary steam engine with a horizontal boiler, which combines many of the functions and parts from the beam engine into 2 drive cylinders and related components to deliver the required rotational force to the drive wheels. It is this difference in the number of parts that has caused me and to some extent, my builder too, to under estimate the time required to build a 2.5 inch scale beam steam engine for 7.5" gauge track use. It takes 9 months to birth a baby, almost 2 years (22 months) on average to birth a baby elephant, but this engine may take 4 years to deliver, and like an expectant father, the waiting is the hardest part!

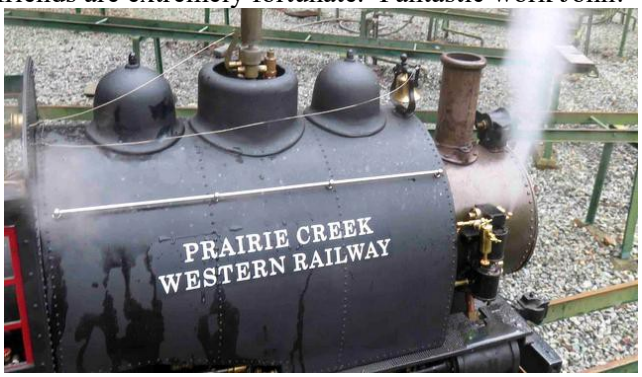
## Happenings Around the Track

By Bruce Anderson

James Bradas brings Bill Brower's 3 ½" gauge 4-8-0 back to the high track during the Chili Run. I wish I had had my digital audio recorder along to capture more of the history of this locomotive. I scribbled what I could on a grocery receipt, possibly James could do a write-up for a future CallBoy. Wonderful work James!

Richard Croll works to extend one of several steaming bay tracks. It was found that several tracks just barely held onto the turntable bridge. The current thought is very slow ground movement has occurred over forty+ years to pull the tracks away from the turntable. Many thanks to Richard and his team for fixing this!

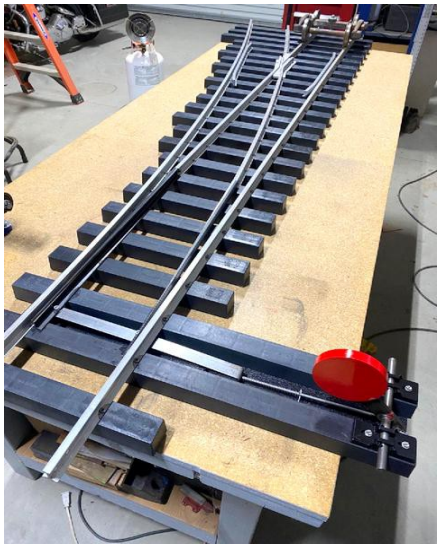
Although John Lisherness already had a full plate, he took some time to rebuild this locomotive for some friends during COVID. It would appear that his friends are extremely fortunate. Fantastic work John!




After several tweaks, my 0-4-0T "Harley" had a really good run recently. The injector worked cleanly after disassembly and cleaning. The axle pump worked after a second disassembly and cleaning. And Harley's newly installed Gumz steam pump worked! Meanwhile the pseudo-rivets, stanchions and hand rails gave Harley some panache! Step by step…

## Track Progress

From Dan Swanson



A few weeks ago I assembled a left handed switch kit and painted the handle weight red.

I also setup a 40' radius test curve and placed a section of track on top of it using aluminum rail and accuties. This a small part of the planned 900-foot long loop in the back forty of the property. The switch will connect the Main Line to the shop lead.

In addition to trying to lay track out here which is now on hold because of the inclement weather and loose soil, I am trying to build a jig to start building 10' track sections of track. I am also trying to finish items on the engine, repairing a RSC leaking fiberglass tender which the leaks were discovered upon the first filling by my machinist working on the engine. I bought the RSC tender back in 1987 so I think I am out of luck for the warranty. Fortunately the RSC mogul runs. I also have a propane car to assemble as well along with all the chores and projects I have to do.

## Surprise for Mel

From Shanna O'Hare


It's January 16th at the club. It was Mel's 84th birthday so I surprised him with a lemon bar cake & candle.

Happy Birthday to you and many more...