

# ***THE CHRONICLE***

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**NEWS OF THE RIVERSIDE LIVE STEAMERS**

March 2024



## **Having Some Fun!**

**Tiffany Love takes a break from her Station duties to enjoy a little throttle time behind Sean Hagen's 2-8-0. Sean is seated behind her with Anthony McBride covering Brakeman duties**

**SAFETY FIRST**



## It's A Hobby...

I'd like to thank the members that have made it out to the January and February work days.

Both days were under the threat of rain in the week leading up to them, with the work day in January getting rain by the time lunch rolled around. The small crews that made it out were able to get quite a bit done both days. A special thanks to Chris Enright and his wife Larrane for camp cook services on the January work day, and Bill Hesse for volunteering to pick up lunch in February.

The start of Spring is just around the corner but based on the February 25<sup>th</sup> run day, soccer season is in full bloom. Though adult softball leagues at Hunter park start in the evening, practice and pick-up games happen at anytime. Keep an eye out as you travel past the play fields, watch for distracted adults as well as kids.

There is a lot going on in the next few months at the Club. Let's start with a **Spring Meet** reminder. Mark your RLS calendar for April 26<sup>th</sup>, 27<sup>th</sup> and 28<sup>th</sup>. Vice President Tom Crue will be in charge of the event and Tom can use your help! If you like to help with the Meet Breakfast please let Tom know.

**April 7th:** The Clubs first Operational Meet is scheduled for April 7<sup>th</sup> (see Randy's update in this months Chron)

**April 20<sup>th</sup>:** Work Day Evening Run - Starting at 3:00pm. Members that participate in the Work Day will be invited to stay for an evening run.

**May 5<sup>th</sup>:** Operations Meet - If all goes well at the April Operations Meet then we'll hold a second one on May 5th

See you out on the railroad!

- Brook

## 2024 RLS Dues are past due!!

If you haven't gotten them in yet get you dues in!!



Per the Club Bylaws, you can be dropped from the Club and may be subject to the initiation fee to restart your membership.

Get your dues in!

## Outside of the Club Events...

**The Great Train Show** March 2nd & 3<sup>rd</sup> 10am-4pm Victorville, CA at the SBC Fairgrounds. Onsite Admission: \$12.00 for Adults on Saturday, \$11.00 for Adults on Sunday. Cash only at the door. Saturday tickets good for both days. <https://www.greattrainshow.com/gts-show-landing-pages/victorville-03-24>

**Nevada Northern Railway** March 1-3 "Winter Steam Photo Spectacular" 3-day weekend photographing steam-powered freight and passenger trains - Ely, Nevada. More information: <https://nnry.com/winter-steam-photo-weekend-spectacular-hands-on-history/>

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## Along the tracks

February Workday was cut short by rain;

however, some alignment work was accomplished out on the mainline.

Wintertime in Southern California is the perfect opportunity to align and level track since the ground is moist and easy to lift and tamp.

Our track is just like the BNSF mainline down the street, the track structure is always moving. Alignment and leveling is much more enjoyable in the wintertime than the sweltering summer months.

March 16<sup>th</sup> is our next workday at RLS, just a short six weeks from the Spring Meet on April 26, 27, 28, 2024. Plan now to join your fellow members getting ready for the Spring Meet.

Chris Enright will be Chef for lunch at Noon on March 16th, Board Meeting starts at 1:00PM. All are welcome to attend.

If you are interested in future dates to help with the lunch, please let me know at [rich@wmp.net](mailto:rich@wmp.net) or (575) 756-4413. The Club pays for the groceries, so we just need a cook.

*-Rich Casford, Roadmaster*

## Special Events

### FIRST TEST RUN OPERATIONS

### MEET APRIL 07, 2024

Hi All R.L.S. Members,

Your Special Events Committee has been working on starting an Operations Meet. Our first test run for organizing this is going to be April 07, 2024. Keep this date open and join us in practicing for this event in order for us to see if this is doable. Committee members are planning on opening this up to other clubs to come join us and to also run on Saturday and

Sunday in the future, but only if we can get this to work.

Currently, we have the engines set up, however, we can use more train crews. We would like to see four crew members on each train if possible. A Conductor, Engineer, and two Brakemen if we have enough members show up. If you're not sure of where you will be, just show up. We will find a position for you.

This is our tentative plan. We will start setting out the cars around 8:00 am and be done by 9:30 am. We would like everyone participating to be at the club for the morning briefing from 9:30 am to 10:00 am. Start Card Order Running 10:00 am to 13:00, Lunch 13:00 to 14:00, Card Order Running 14:00 to 17:00, return cars and equipment to compound 17:00 to 18:00. Remember, this is our first test, so somethings may change on the fly!!!

Wesley Peterson and Scott Horgan have been doing an amazing job on getting things set up and organized for this event. I sure didn't have a clue where to begin from making Time Tables, Car Cards, and Signage just to mention a few things. This is going to be a learning curve for all of us, but I really think it will be fun for all. So, bring out the whole family and get them involved! This is family time!!! R.L.S. has never done anything like this in the past and we hope that you all come out and participate in this event. The more members that come out, the more that learn and participate means less of us don't feel like we're out at Big Rock in events like this.

We haven't come up with what we are going to do for lunch yet, but if anyone has an idea please get back to us. We will have more information coming out in an email blast to all the R.L.S. Members before the Operation Meet Test Run.

*-Randy Chase, R.L.S. Special Events Committee*

**SAFETY FIRST**

## From the Safety Supervisor:

Here is some food for thought and a reminder to glance at your rule book regularly.

I would like to point out a rule regarding switches. Rule 210 reminds us to approach ALL switches at reduced speed, prepared to stop! This also means you should be carefully looking at the points BEFORE you pass over them. A switch set to float can have points that look closed but in fact can open as the vibration of the train passes over them.

Looking at the handle position will let you know if its floating. If you remove a switch lock it is very important that when replaced it lays down flat! If the lock is left upright and is hit by passing equipment it tears the switch box aluminum cover off and someone has to labor to replace components and repair the damage. Please lay those locks down.

Cheers,

Richard

- Richard Ronne, Safety Supervisor

## Run Day February 11th

Operations Supervisor and Secretary Bob Roberts was on the job for the first Run Day in February. As it happens this was also Super Bowl Sunday so park guests were few and far between. Sean Hagen and Anthony McBride helped out with



passenger services at Hunter Station, the Hunter train crew was engineer Adams in the morning with Board Member Tom Crue taking care of Brakeman duties, afternoon was covered by Brakeman Dan Williams and Engineer Chris Neiman.

Freight trains were represented by Mike Harris on his 2-6-0, Richard Mill running the Kennemer Mogul, Gus Farwick fired Ron Wilkerson's Mikado, Doug Prescott made a few laps with Nick Ellis as Brakeman, Wes Peterson was at the throttle of #97 and Randy and Jonathan Chase gave number 3003 a little exercise.

Bill Hesse and Tiffany Love stepped in to cover the Station Master duties for the day. 26 members made it out throughout the day to enjoy the railroad.

## Run Day February 25th

This was the busiest Run Day of the year without a doubt. Railroad service included 11 engines operating Eastbound Figure-8 with one additional locomotive (Casford's #2926) out on the steaming bay for maintenance. We had over 30 members in attendance with 10 guests while the public trains boarded 721 first class passengers for a scenic grand tour of the railroad via Panorama Point.

Hogger of the Year Sean Hagen began mainline operations with his #733 2-8-0 and Anthony McBride as his relief engineer promptly at 0800 hrs. #5057 was the second train to depart Allen's Valley with RLS President Brook Adams as



engineer, Jim Woods as brakeman, and Paul Lucero with an assist. The Hunter second shift was operated by Bob Roberts as engineer and CEO Adams switched to the brakeman position. Awaiting passengers were mesmerized by Station Master Glenn Maness on the mic, T. Love at the merch cart, Marty B. at the 4-track crossing, with a rare appearance by John Gurwell at the candy cauldron. Both public trains and all crew members effectively delighted passengers old, young, and every age in between with a unique

experience found nowhere else of this scale throughout the Inland Empire.

Freight operations were as equally productive as the passenger division. Road 2 kept the tracks free of brush and debris near Summit Siding while 9 freight locomotives occupied the RLS mainline including Ronne's #919, Rohrbach's vertical, O'Guinn's #78, Chamberlain's #573, Stephen's #7081, Prescott's #476, Harris's #76, Peterson's #3000, and Miller on the #573. Rail operations were smooth, high, and dry with the exception of Engineer Bob Chamberlin intentionally gettin' hosed down by Dale at the Hunter



Station water box. No other crimes against engineers or suspicious incidents were reported by train crews.

Weather conditions were perfect with cool and cloudy skies and temperature in the 60s most of the day. The mainline was packed down pretty well from all the recent rain, however several crews did report a few areas of track concerns. The northwest track leaving Hunter Station had a few bumps and downward slopes before the diamond crossing and a few more bumps and slopes were reported just past the sidewalk on the parallel track near the #2 basketball court. There were also some alignment issues from vehicles crossing over the track between Big Pine and the fence near the southern parking lot. These issues did not hinder rail operations, but train crews should always look out for potential hazards and report them.

-Chris Neiman, Operating Superintendent

## **Blast From The Past**

Last Run Day while firing the Hunter locomotive with engineer trainee Jerry Roth the topic of injectors and how they work came up. I provided a "nuts and bolts"

explanation of how they function and Dave Bunts tossed in a little history of Baptiste Jules Henri Jacques Giffard and how he theorized the concept of an injector back in 1850 before getting a French patent on 1952. Though sufficient for the moment, I thought everyone might benefit from a deeper dive. So, from the January 1976 Chronicle, here is an article from then president Dick Bagley - Enjoy!!

*RLS President Dick Bagley,*

### **HOW AN INJECTOR WORKS.**

This is written for my old friend, Merrill Davis. He asks that it be in writing so that others, like himself, that may not have found satisfactory explanations in the various hobby publications and do not know where to find it in technical books may benefit.

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, Merrill, the answer tells you "why" an injector works and now you would just like to know "how" it does it.

We'll first take a look at some of the goings on inside of a boiler. Assume the internal pressure to be 180 pounds. That will be 180 pounds per square inch wherever it is measured. A thermometer placed inside will show that the surface water and the steam are at the same temperature, 379 degrees. 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 in the steam and is known as a transfer of energy.

The steam not only exerts a pressure of 180 pounds per square inch, but also can 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 pound pressure. Steam will expand while issuing and reach a velocity of about 3600 feet per second at the end of the nozzle. Water, having no expansion, will have a velocity of only 164 feet per second, about 1/22nd of that of the steam. If a steam or water jet comes in contact with a 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 second multiplied by its velocity per second. If one pound of steam is discharged per second, the "momentum" will be 3600, because 1 multiplied by 3600 = 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 and could easily enter a boiler at 180 pounds 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 swap 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 ahead faster and faster by the vast number of little atoms of steam, moving hundreds of times as rapid, until the steam and water thoroughly 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 of the steam 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 430. 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 tube is able to overcome a pressure of 206 pounds per square inch, or 26 pounds above that of the steam, because 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

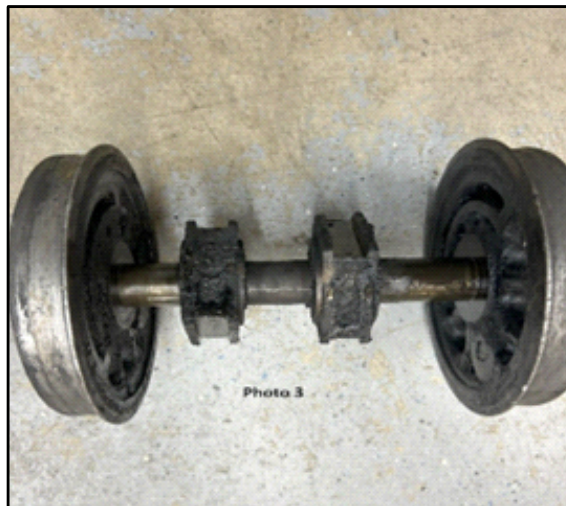
# From the Back Shop

By Dan Williams  
Update on the C16



I started the process of removing the drivers from the frame. To do that I need to remove the pedestal binders, which are held to the frame with 8-32 Allen screws with lock washers. The screws were very tight. I had a difficult time using regular Allen wrenches, so I tried my ratchet Allen wrench. The hex bits fit snugly into the Allen hex socket, giving a solid hold on the screw. With a lot of grunting and colorful words, I was able to remove all the pedestal binder screws. I purchased a set of Allen drivers from Chapman Manufacturing (Photo 1).

I then lifted the frame and removed the fourth set of drivers. I will remove the axles from the driver and hopefully the crank pins. I need to build a fixture to hold the drivers in my 20-ton press. I have a fixture I made to remove truck wheels, which is not large enough for the drivers. Once the drivers are removed



from the axle, I can inspect the journal boxes to determine if it is possible to insert needle bearing. Photo 2 shows the drivers. Photo 3 shows the journal boxes, which are free to move on the axles. Since I did not have the fixture to remove the axles, I decided to work on the brakes.

When I took the chassis home, I only found one set of brakes which were on the fourth set of drivers. I tested the brake cylinder to make sure they work, which they did. It looks like there were brakes on the first and second set of drivers. Photo 4 shows the brake hanger, what's left of the brake shoe and the pins for the clevis forks.



Many years ago the Chula Vista Live Steamers had freight wheels, brake shoes, freight journal boxes and truck side frames cast in Tijuana. I have an extra set of brake shoes which I will use for this project. Photo 5 shows the shoes which are cast in aluminum.

**SAFETY FIRST**



I then cut the wheel on a band saw which gave me eight separate brake shoes. Photo 6.

Then drilled 3/16 holes for 10-32 Allen screws which will attach the brake shoe to the brake beam and proceed to mill the shoes for the brake hangers. Photos 7 show all the completed brake shoes.

Next is to make the brake beams. The brake beam that was on the fourth set of drivers was made with  $\frac{1}{4}$  x  $\frac{3}{8}$  inch steel bar. I did not have any of that size handy, so I made the beams out of  $\frac{3}{16}$  x  $\frac{3}{4}$  inch bar. I used  $\frac{3}{8}$ -inch round bar, threaded for the 10-32 screws, that will be braised to the beam. Photo 8 shows the original beam and the two beams I will use for the first and second set of drivers.

The pins that hold the clevis forks are  $\frac{1}{4}$  diameter. I made eight from  $\frac{3}{8}$ -inch round stock. After I turned each pin to the correct diameter, I cut it on the band saw. To make sure my fingers did not get in the way and to hold the round stock, I used my drill vice to hold the rod. Photo 9.

Having made pins for other projects, I needed a way to center the hole for the carter pin. I saw a photo somewhere for a fixture that I could use to drill center holes on round pins. Photo 10 shows the fixture I made for drilling number 43 drill holes in pins. Photo 11 shows the eight pins with the center holes.



Next time, I will have the fixture made to remove the drive wheels. From there measure the location for the crank pins and confirm if needle bearings can be used. If needle bearings can be used, then new axles will need to be made.



## March Calendar "Who is it ?"



Top Left: Sierra Cacace at the throttle with Wes Peterson as Brakeman.

Top Right: Jonathan Chase, and Randy Chase double-head pulling Dean Willoughby's passenger set.

Lower Left: Randy and Jonathan Chase in the foreground, Doug Prescott, Scott Horgan and Nick Ellis in the background

Lower Right: Pat O'Guinn leaves Allen's Valley as Peggy Borchert, Patty Ruyle, Steve Borchert and Jim Kreider look on

**Thanks to Rich Casford, Chris Neiman, Joan Adams, Randy Chase, Richard Ronne and Dan Williams for the photos and articles in this months Chronicle.**  
If you have photos, an article or anything else you'd like to submit to the Chronicle please email the Editor at: [editor@rlsrr.com](mailto:editor@rlsrr.com)

## *Upcoming Important Dates*

### April 7<sup>th</sup> Operations Meet

**March 10<sup>th</sup> Run Day Westbound  
Outside Loop**

**April 14<sup>th</sup> Run Day Eastbound  
Outside Loop**

**March 16<sup>th</sup> Work/Fun Day 8:00am to  
3:00pm, Board Meeting 1:00pm**

**April 20<sup>th</sup> Work/Fun Day 8:00am to  
3:00pm, Board Meeting 1:00pm  
Evening Run 3:00pm to ??pm**

**March 24<sup>th</sup> Run Day Westbound  
Figure Eight**

**April 23<sup>rd</sup>, 24<sup>th</sup>, 25<sup>th</sup> Spring Meet**

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The railroad is located at Hunter Park, 1496 Columbia Ave., Riverside, CA.  
Call (951) 779-9024 during a Run Day or Work Day for more information.  
Public Run Days are the 2nd and 4th Sunday of every month, Work Days (Fun Days) are held the Saturday following the first Run Day of the month.

### THE RIVERSIDE LIVE STEAMERS BOARD OF DIRECTORS

#### Officers

President: Brook Adams  
Vice President: Tom Crue  
Secretary: Bob Roberts  
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Director: John Gurwell  
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