STACK TALK

SEPTEMBER 2015

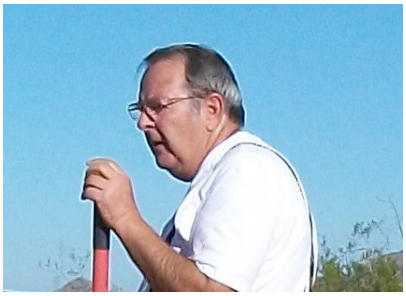
The Official News Letter of the Adobe Mountain Railroad Phoenix Arizona, Operated by the Maricopa Live Steamers Railroad Heritage Preservation Society,

UP-COMING MEETS

2015 FALL MEET OCT.29, 30, 31 NOV 1

2016 OPS MEET JAN. 14, 15, 16, 17

2016 SPRING MEET MARCH 17, 18, 19, 20

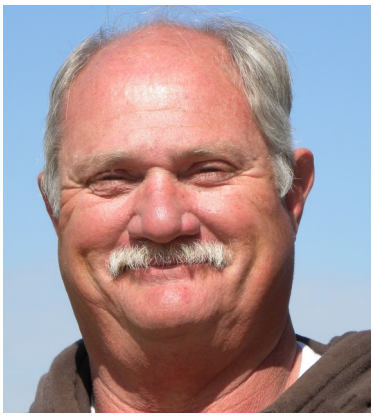


I was told that there was a work party this past weekend, I am also told that a large number of member came out to enjoy the warm day and get the park ready for the year ahead of us, stone spread, trees trimmed, fence painted, concisions set up and ready, bridge put in, track work and a lot more that. Thank you for all the hard work. Sorry that I was not there to help, maybe not.

Remember your engineers test, it is easy, it only takes about 10 min. everyone needs to get this done for the New Year, it's on line.

I am also told that the singles are all up and working, camers are working, great job, I am sure that took a great deal of work.

There was so much done that it is hard to give credit to everyone that deserver it.



Well another month has gone by and work continues on railroad , bridge between lizard lips and perryview is installed and line is open.
work continues on arthcoo branch washout repair.
Station is coming together and almost ready for runs, which start September 13th, make sure you are sign up to give us a hand on Sunday runs. if you can(we need you).
If you can we still need your help in getting the par looking good for the runs and meets coming up along with the Christmas runs .
Just wanted to say thank you to all that help out Saturday getting Friendship park looking good(we got a lot done).
Just a heads up we have seen in the last month a lot more snakes out so if your out in the park (kick before you pick up) and keep your eyes on the look out.
Make sure you drink plenty of water, and work safely.
We have started getting registration in for the fall meet please make sure you register for the meet, and sign up to help out , we cant have these meets without your help,

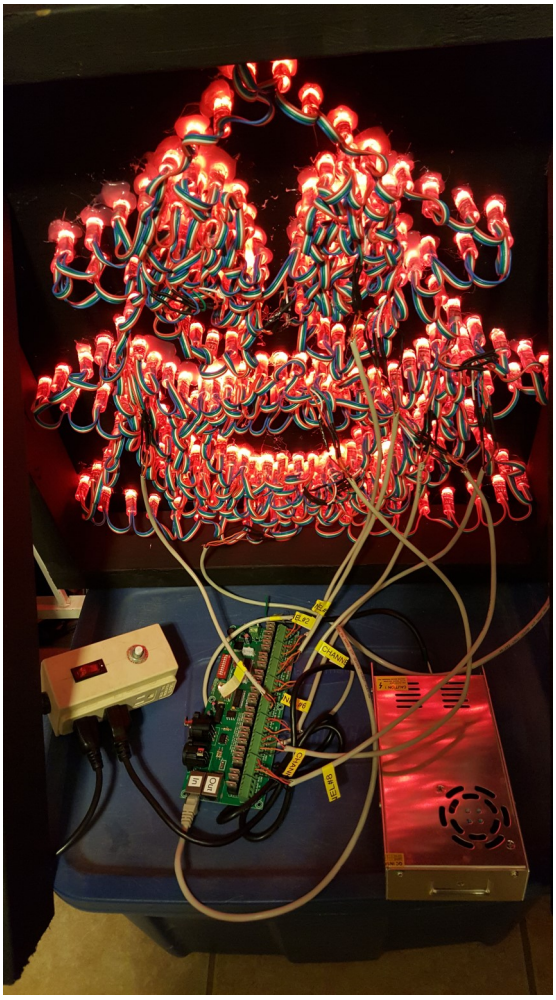
Well that's all for now, see at the park.

Just a side note and concern when using club equipment please make sure you check the equipment out before using , weve had the golf not charging and battery's without water, this goes also for the tractor and trencher as well.
This summer we had some strong winds come through the park if you have a container please check it out make sure nothing has come loose.

Pete

Work continues on the concession area at the station, getting ready for the Run Season starting on September 13th

Front ***back***



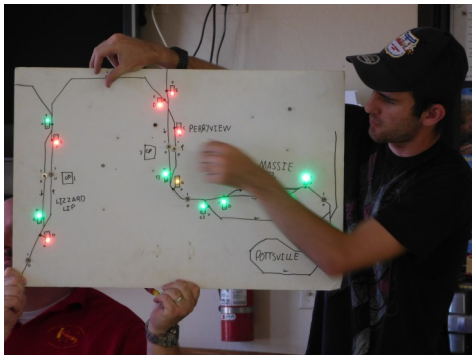
I'll Fred, Donna, Jim-Zim, Dewey, Terry and others got the first Singing Christmas tree face built and wired this week. There are four faces that are each two feet square. Each face uses almost 300 LED's that have to be wired in to a 27 channel controller and 29amp 12 volt power supply. Now start the process of **configuring the controllers and programming the faces to sing to the music that go along with our 16 Smart LED arches for Friendship Park.**

We can still use some donations of working boom boxes with FM radios. These will be positioned around Friendship Park to provide the music and adjustments to make it crowd friendly (not too loud).

Thanks to the crews for all their hard work.

hank

PS: Since we provide a public service, Steve Thompson, the owner of Masterlink Cabling has agreed to donate some of his technicians time to crimp and test our network cabling next month (when it cools off a little). I don't want the show to have issues due to a poor crimp job by me.



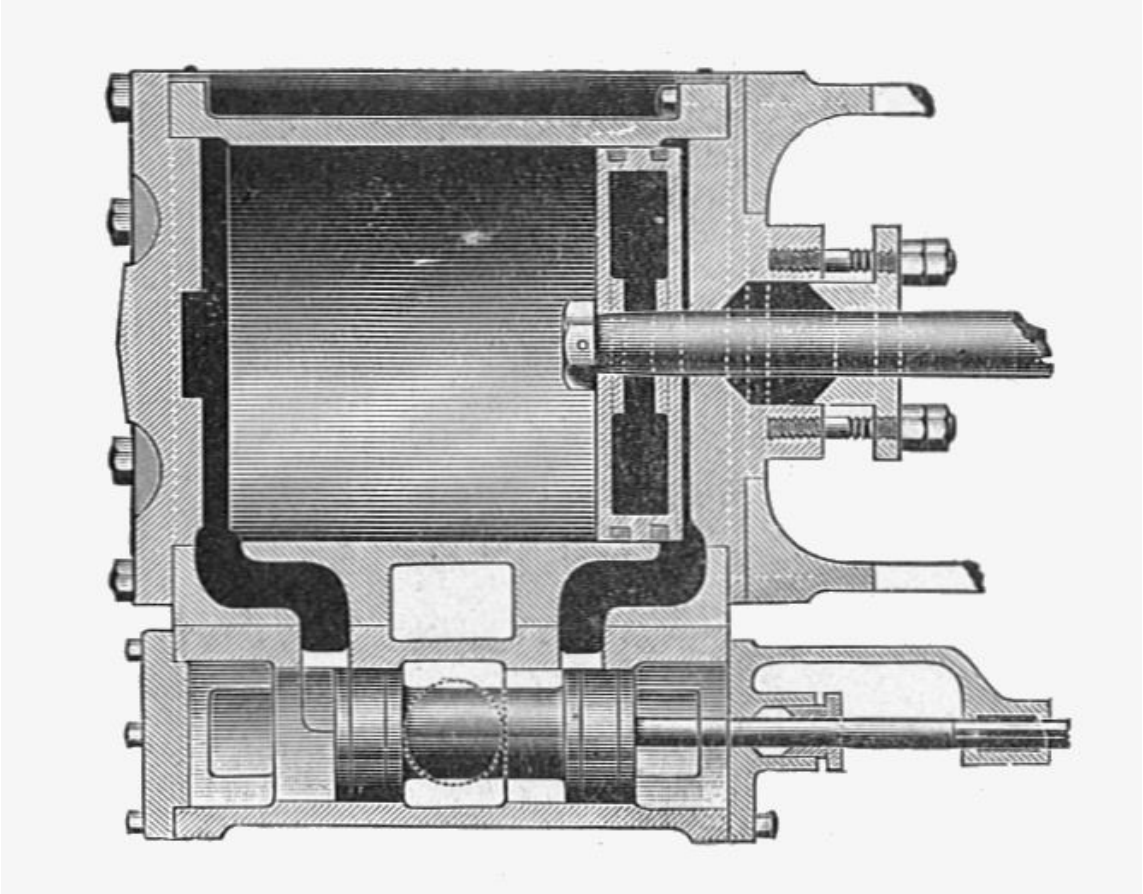
Dakota Clemens has been working on a new signal system for our rail road. It should provide better track detection and durability. It will be set up on the Pottsville Branch first to see how well it works.

STEAM LOCOMOTIVES

PISTONS

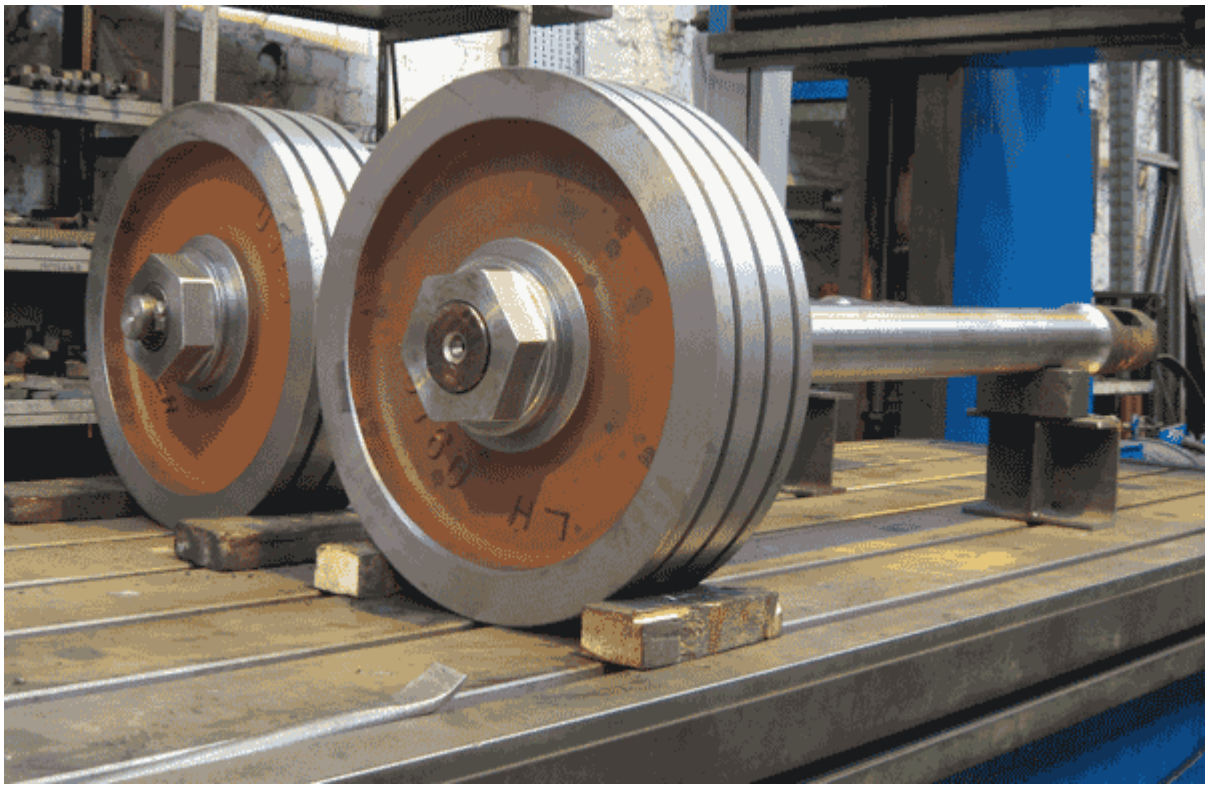
Sincere apologies for missing the last installment, will try to keep up to date in the future.

This month we will look at pistons and the various aspects of their function. The drawing below (albeit inverted) shows a typical cast iron piston, notice it being hollow, this was to reduce weight, reciprocating mass you know. Anyway these used staybolts put through them to give the walls strength. One dangerous aspect of this type is that if you use any significant heat on the nut you run the risk of having the piston explode. In order to prevent that, drill several small holes, putting plugs in them when done.



The next picture shows a steel piston and rod. You will note the nut which is threaded onto the piston rod. The rod has a taper which the nut pulls into the piston insuring a secure fit. A close examination of the piston rod at the crosshead end notes a taper and an elongated hole. The taper fits into the crosshead, the hole lines up with a similar one in the crosshead, then a tapered key is driven into the slot

whish pulls the rod into the crosshead. This was always a fun job as we got to use the BIG sledge hammer and just wail the livin' daylights out of it!! Very satisfying!!



The next image shows the different forms of snap rings used on pistons. Putting these on entails a bit of skill and a modicum of luck. Some pistons only used two rings, the one above will be more difficult as it has three. We will discuss more about rings next time.

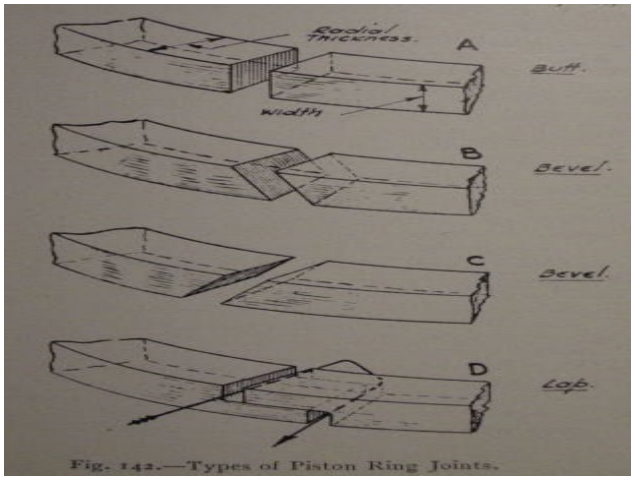
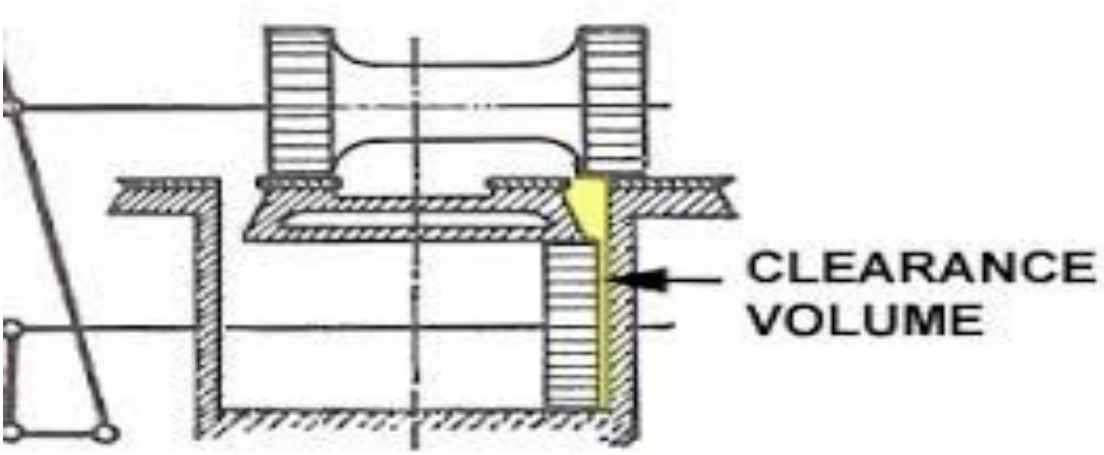


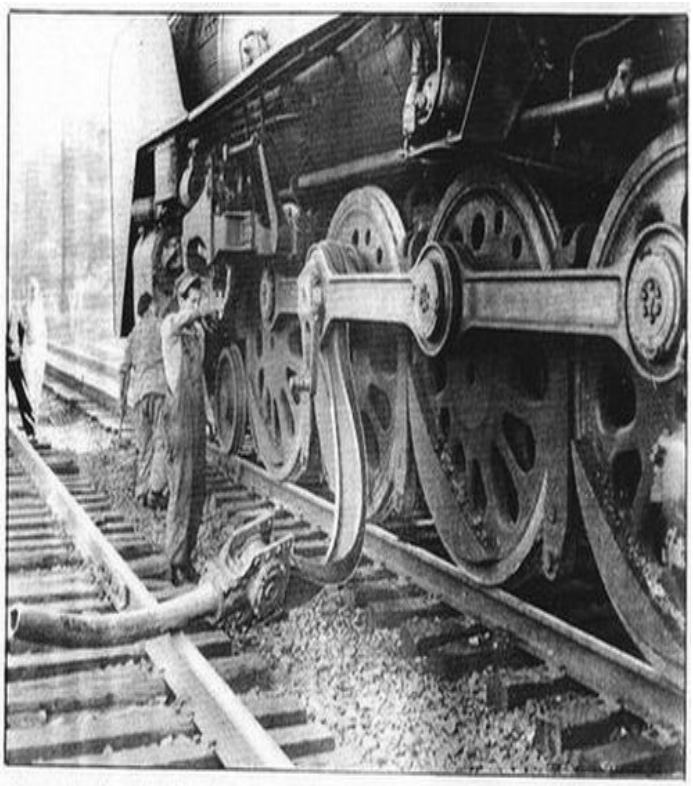
Fig. 142.—Types of Piston Ring Joints.

A very important aspect of pistons is their position in the cylinder, obviously needing to be centered, however, they also need to be engineering to come very close to the face of the cylinder head. This area is referred to as clearance volume, needing to be minimal, since any excess will require more steam to be used each time the piston makes a stroke. On Up 844 this was 7/16” by the drawings.



This last picture clearly shows a modern aspect where the piston rod is hollow. A NYC Niagara (4-8-4) running at speed, must have given the fellows in the cab a few moments of anxiety!!!

Well, that’ll do for this time. Take care, Dave



This week's photo from The Dispatch archives was taken in October of 1949. A major wreck on the New York Central was narrowly averted when the piston rod on the fast Lake Shore Limited broke while the train was rounding the bend at Red Bank, about one mile west of the Oneida station. The train came to a grinding halt near the railroad tower just west of the station. Shown is the bent and broken piston rod which had snapped off the cylinder which is only partially visible near the front of the engine. The rod, pivoting violently, smashed against the boiler of the engine and ties under the track. Workers cut it loose and the engine was towed to Syracuse.

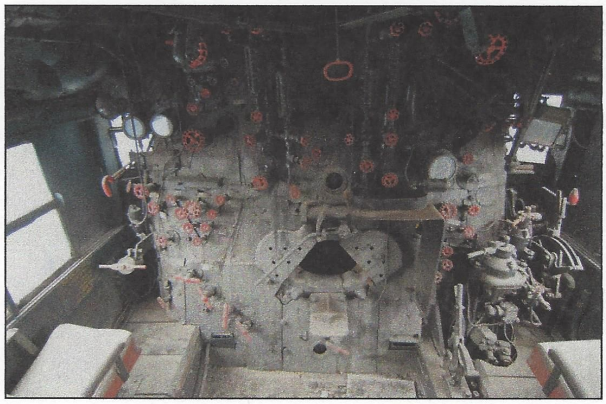
Dave Griner

The Railroad

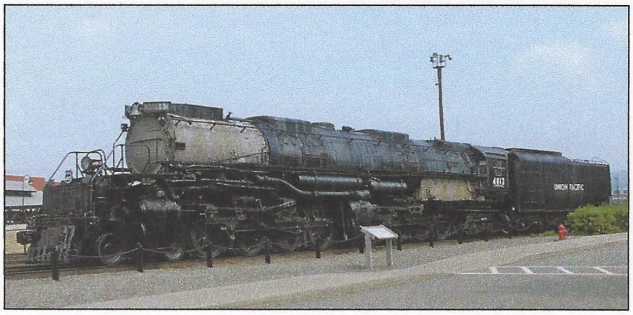
The Big Boy and the Wreck of 4005

By: Gabe Zorbas

The Big Boy, a machine of immense size and power. It is among one of the most well known locomotive classes ever built. The size of 85 feet (132 feet, including tender.) the Big Boys (4-8-8-4) were behemoths, capable of pulling a massive amount of freight. So large were the Big Boys that they were almost twice the size of a modern diesel-electric engine. The Big Boys, however, ***were*** practically two locomotives, joined together. This was called an articulated engine, meaning it had two separate groupings of driver wheels, each set with its' own pistons. The engines were often described as "Mallet" type articulated locomotives, however, a true Mallet has compound expansion, using the steam to power the locomotive in multiple ways, while the Big Boys used simple expansion, using the steam just one way to power the engine. The Big Boys also featured a set of 4 pilot wheels, which directed the train, and 4 trailing wheels to help support the massive boiler. The locomotive itself weighed 381 tons, or 190 average size cars. At the rear of the engine was its' large cab, with its' intimidating amount of dials and controls, these locomotives must of required constant attention by both firemen and engineer. I'll save the rest of the mechanics for Dave to explain!

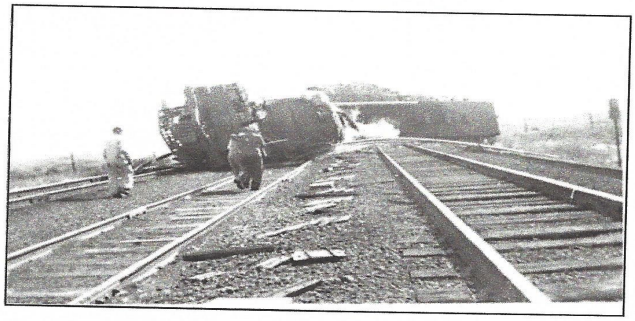


The Big Boy's served the main line between Green River, Wyoming and Ogden, Utah, Over the Wasatch Range. Although the grade for most of the route doesn't exceed 0.82%, eastward from Ogden to the Wasatch Range the grade can reach 1.14%. The locomotives were built to maintain a cruise speed of 80 MPH (130 KPH) while hauling a large amount, though they rarely exceeded 60 MPH (95 KPH). At the time of the introduction of the Big Boys, diesel and electric began to overthrow steams reign as the primary choice



for railroads. Despite this, the Big Boys survived in service until 1959, lasting longer than most steam engines did. This is in no small part due to the locomotives extremely well performance and it's impeccable safety record. However, its' service history was not spot clean.

On April 27, 1953, disaster struck at the Red Desert siding. The morning started out with a routine tour of duty, 4005 was hauling 62 freight cars and a caboose. Little did the crew know that down the mainline another event was unfolding. A track gang and a foreman traveled by motorcar to pick up some switch ties. When the group arrived at Red Desert, they were approached by a sheep herder, who needed assistance getting his sheep across the tracks. The foreman assigned two men to flag each direction of the track. He also ordered that switches of each side of the passing track to be opened. (That means that the switch is in a middle position, not thrown to either side, which will always lead to derailment.) This would cause the signals to indicate a stop order. As one of the men opened up the siding switch, he saw 4005 roaring down the track, the workman tried to close the switch before the engine could pass… but it was too late. The engineer applied the emergency brake, however, at the time 4005 was going about 50 MPH (80 KPH). The engine, tender, and first 18 cars turned on its' side, The massive and near full tender smashed into the cab of 4005, destroying it completely. Although the engineer and brakeman were killed instantly, the front brakeman survived the wreck and gave an account as to what happened. "The switch, they threw it right in front of us, they didn't give us a chance. I felt the engine rock. I don't know how many times it rocked. The next thing I knew I felt the steam hitting me in the face and I thought I was a goner…" The brakeman died two days later from burns. The rear crew in the caboose knew nothing as to what happened, and were the first ones to call the dispatcher. Rescue crews had a terrible time trying to get to the wrecked engine, as steam hissed out of 4005 for well over a few hours. The Big Boy was eventually repaired and returned to service.



A later investigation found the foreman, Kenneth M. Mayfield, and the section worker that threw the switch, Ralph Vicenty, who was only one hour and forty five minutes into his new job, responsible for the accident. Mayfield was determined ultimately responsible for putting an inexperienced section worker in charge of throwing the switch, which the section worker knew little about how to operate.

Every April 27, the crew is remembered at the Forney Museum of Transportation in Denver, Colorado, were 4005 is on display, with some scars received from the wreck still visible on the engine.

Friendwhip Park is one of many areas that members have been hard at work to get ready for the new season.

MARICOPA LIVE STEAMERS
PHOENIX, ARIZONA

ENGINEER
CERTIFICATION

This certifies that

YOUR NAME HERE

is a certified engineer at the Maricopa Live Steamers

This certification expires on
May 31, 2016

Engineer cards expired on May 31st, so now it is time to take your test

It can be taken online at Maricopalivesteamers.com