



The PLS GAZETTE

P.O. Box 26202
Collegeville, PA 19426-0202

FIRST CLASS



The PLS GAZETTE

July–August 2013

A newsletter of the Pennsylvania Live Steamers, Inc.

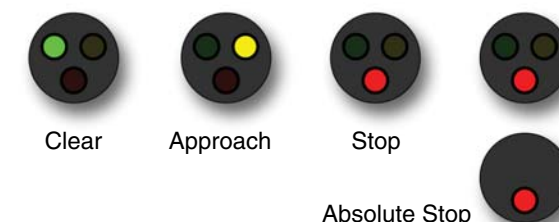
JULY–AUGUST TOPICS: Signals for East Rahns Siding 1 Fall Meet 2 Haines Stone Donation 2 Donations 2 Membership Gauge 2 Membership News 2 Engine for Sale 3 Electric Locomotive from Scratch 4 1" Car Barn Is Placed 7 Sucessful Picnic 7

Signals for East Rahns Siding

Those of you that have been to PLS in the past year know that there has been a lot of work underway to place more than 100 feet of 1 ½ inch siding track between the east side of the lower tunnel and Mercer Bridge. Photos of this track work called the East Rahns Siding have appeared in several past *Gazettes*. Most of the track work including the entrance and exit switch was completed in the spring, but the siding is still not ready for safe operation as the signal system is still to be completed. George Cooper, a member of the signal team, thought it would be of interest to our membership to know a little about what it takes to signal and switch to the East Rahns Siding.

Before reviewing signals for the East Rahns Siding we should take a look at basic PLS signaling practices. The majority of our railroad uses a three block system to let operating engineers know where a train is on the track in front of them. A single RED signal indicates a train is in the next block beyond the signal. A YELLOW signal advises the engineer a train is two blocks ahead and a GREEN signal indicates the track is clear for the next two blocks. RED, which may be passed without stopping, alerts the engineer to be prepared to stop in a short distance and YELLOW advises slow to approach speed as there is a train not far ahead. Signaled blocks have no set length with blocks based on the visibility of the track in front of the engineer and on

PLS Signal Aspects Used



ascending grades allowing the engineer time to control train speed and spacing so his or her train does not have to stop on a grade where restart might be difficult.

There is one very important exception and that is where two signal heads stacked one on top of the other is displaying RED over RED. This is an absolute signal and is used where visibility of the track ahead is obstructed or where two active tracks cross, merge or turnout and the train on the crossing/merging track has the right of way. The engineer must stop and wait for a YELLOW approach signal or a GREEN clear signal before proceeding.

The East Rahns Siding presents visibility, turnout and merging situations that requires signaling to address all three situations. Those of you that have ridden on the 1 ½ inch main line know that the lower tunnel obscures visibility of the track ahead. Most engineers treat a RED signal at the tunnel entrance as absolute. Almost all stop on RED prior to entering the tunnel even though a complete stop and wait is not required. One reason to stop and wait is that no engineer wants to get caught in a tunnel backup with a smoking steam locomotive. The East Rahns siding turnout switch is now located just a short distance from the tunnel exit and when a train has switched to the siding the end of the

train needs to clear the switch before a train on the mainline can safely pass. Even a very slow moving train popping out of the tunnel might have a difficult time stopping before reaching a train entering the siding or still sticking out on the mainline track.

There are currently two blocks between the entrance to the tunnel and the far end of Mercer Bridge. These two blocks are supported by three lamp-control circuit boards, two power supplies and several hundred feet of underground wiring. The new signaling for the siding will use all of the above hardware plus seven new circuit boards, one three-relay interlock circuit board, sockets and holders for all the old and new circuit boards, five new signal heads, three new concrete support bases, one new goal post supporting four signal heads, one electric switch actuator, a pushbutton stand for selecting the siding, more than 200 feet of buried ¾ inch conduit and more than 2000 feet of wire when stretched end to end. There is also miscellaneous boxes and hardware to put all of this system together. It is easy to see that this is a labor intense and a considerable signal upgrade project. All signal heads are of PLS design and components must have material purchased then machined and assembled prior to

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Fall Potluck
August 31, 5:30 P.M.

2013 Fall Meet Information

The Fall Meet will be held on August 31st and September 1st. As usual, running may start on Friday afternoon, August 30th. Volunteers are needed for gate duty, station duty, and kitchen duty. Please sign up for a time slot when you arrive at the meet.

Our Snack Sale area needs donations of baked goods—kindly help us out.

Please note: during the meet, the clubhouse refrigerators are used for food and drinks sold by PLS throughout the weekend. Should you need refrigeration for either personal use or items brought for the pot luck dinner, please use your own cooler if at all possible. Thank you.

A Generous Stone Donation from Matt Haines

Many of our PLS projects are successful because of the generosity of its members and the crushed stone being used for our new Building 8, the one inch car storage building, is no exception. Let us all say thank you to our Associate member Matt Haines and his dad Jim Haines for the donation of 40 Tons of stone that is helping to make this project successful.

— Frank Webb



Ron Shupard

Donation Acknowledgements

PLS wishes to thank the following for donations received during June and July: Matt Haines, Jim Haines, Steve Leatherman, Joel Nagle, and George Lord.

Pennsylvania Live Steamers, Inc.

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2013 PLS Calendar of Events

Sunday, August 4	Run Day Rain Date
Saturday, August 17	Board of Directors Meeting - 9:30 AM Membership Meeting - 12:30 PM Afternoon/Evening Run*
Sunday, August 25	Run Day - Members & Guests
Friday, August 30	Fall Meet - Members & Guests
Saturday, August 31	Fall Meet - Members & Guests
Sunday, Sept. 1	Fall Meet - Members & Guests
Saturday, Sept. 21	Board of Directors Meeting - 9:30 AM Membership Meeting - 12:30 PM Afternoon/Evening Run*
Sunday, Sept. 22	Run Day - Members & Guests
Sunday, Sept. 29	Run Day Rain Date

Membership Gauge

As of July 31, PLS has:

- 106 Regular Members
- 263 Associate Members
- 7 Honorary Members

Club Membership News

PLS welcomes new Associate members Richard Fiore, Frederick R. Poust III, Brian Ziegler, Thomas Tomasello, Thurston Reinhart, Steven A. DePrado, Stephen Desirey, Charles Yeiser, and Michaela Reynolds, plus Minor Associate member Scott Fulop.

Car Barn Is Placed

On Wednesday, July 25th, all the rails were installed in the car barn. Shown are Jim Salmons, John Bortz Jr. and Bruce Saylor who were in the barn installing the rails made of angle. You have to look close to see John who is still in the barn. Also helping but not shown is Walt Mensch.

— Ron Shupard



Successful PLS Picnic

The PLS picnic held on July 20th 2013 was a success even though the weather was HOT, HUMID and Threatening. I would like to thank all those that brought side dishes and other goodies for all to eat and enjoy. I would like to give a special thank you to Jonathan Riehl and his family for making the excellent homemade ice cream, just what we needed on a very warm and humid July afternoon! Our picnic can not be successful without the help of its members and I would also like to thank Kathy Parris, John Geib, Jim and Sharon Connelly, John Bortz Jr and thank you to Erich Boldt for helping out with the cooking; it sure was hot out in front of that grill!

— Frank Webb





Ron Shupard




The panels for eight windows and two doors had the windows cut out using a milling machine and finished with a file. The roof was rolled slightly and the edge curves were bent in a brake.

I added an air compressor for air brakes from Tom Bee. The controller is a wireless remote Syren25. It works just fine. I have pulled eight cars and three adults around PLS track. I also pulled my complete passenger train. The locomotive weighs just under 300 pounds with two batteries installed.

My first test run was on the Fourth of July 2013 on PLS track. Another test was made on July 6th.

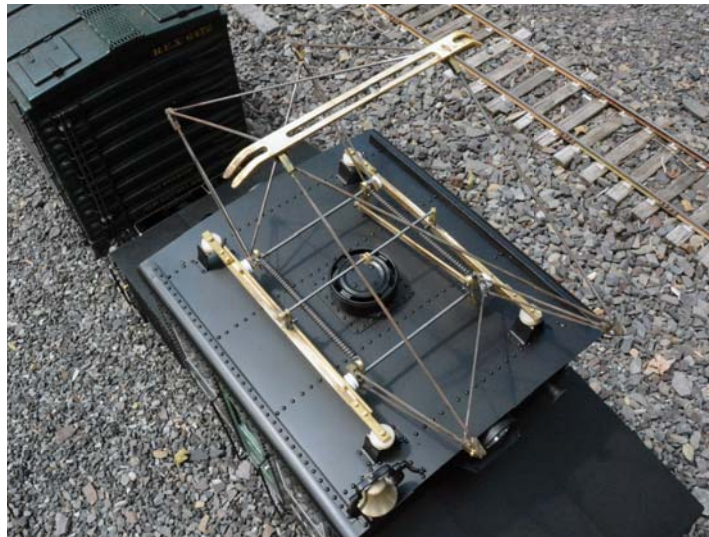
I was amazed that it only took me less than 10 weeks to completely build this loco. (I was away for two weeks on a live steam ramble in June). Completion came with the addition of a hand-made pantograph which alone took nearly a week to plan and build. By the way, there are 1038 real aluminum rivets on the locomotive!

I enjoyed the challenge. Building this was a far cry from building steam locomotives. 



Mike Thomas - RailPictures.net

The Idea for the Project: A picture found on the Internet.



Allen Underkofler

Finishing Touches: The pantograph is installed.

Signals for East Rahns Siding

(Continued from page 1)

installation. Each lamp-control circuit board has 118 components and 269 solder connections. All 118 components must be purchased, assembled and tested.

What will the new East Rahns signals look like? The single signal head at the tunnel entrance will now have two heads, one over the other, that will indicate the normal condition of the mainline blocks ahead, but with the addition of a second signal head will allow a RED over RED absolute signal when the block following the signal is occupied. This will now require trains to stop at the tunnel entrance until the condition of the track shows YELLOW approach or GREEN clear. When a train exits the tunnel the engineer can use the post-mounted push buttons to select the siding if not occupied. The RED over RED condition will also exist until a train entering the siding has cleared the switch and fouling point. The fouling point is a track or switch intersection where trains on both tracks do not have enough room to pass side to side. Once a train has cleared the fouling point the electric switch will auto-return and the signal will show the condition of the mainline track ahead, YELLOW or GREEN. The signal head on the signal bridge will not change. A new goal post style (two-masted) signal will be added just before the entrance to Mercer Bridge

and adjacent to the East Rahns Siding exit switch. The goal post will have four signal heads with the left upright arm signaling the mainline track and the right upright arm signaling East Rahns Siding. These signals will manage the mainline track and the merging of trains returning to the mainline from the siding. When a train on the East Rahns Siding moves forward into a section of the track near the exit switch the signal system electronics will look at the track from the fouling point of the East Rahns Siding entrance switches to the new goal post and if clear will allow the train on the siding to proceed onto the mainline. The mainline signal on the signal bridge will go to YELLOW to reduce the speed of any train approaching the signal. The mainline goal post signal will go RED over RED stopping any train before the East Rahns siding exit. In addition to the standard block signal lamp control electronics there is a block within a block or sub-block between the East Rahns Siding switch and the signal bridge. Once a train enters this sub-block it will hold the East Rahns siding signal RED over RED until the mainline track is clear from the siding's entrance switch to the block on the south (exit) side of the new goal post. The purpose of the sub-block is to allow an engineer on the main line to have good visibility of the signal bridge and not be at or under it when a train on the siding makes a request to enter the mainline causing bridge signal to change when he or she

can not see. The engineer would than be faced with a RED over RED signal at the goal post and may have not had a chance to see a YELLOW approach signal at the signal bridge advising him or her to reduce to approach speed.

The purpose of the East Rahns Siding signal project is to assist engineers with the safe entrance and exit from the siding where visibility is obstructed and merging situations exist.

There are other aspects of PLS signaling that have not been fully addressed above, an example is the 1 ½ inch track signal at the exit of the tunnel that goes under our driveway at the front of the property. This signal can present a RED over RED over RED. The top signal head is the mainline signal, the middle head is the station switch signal and the bottom is the switch to the yard track. Not stopping for these RED over RED signals can result in a train being switched to a siding when the mainline track is expected. The result could be a derailment or a crash into the back of a train taking the siding. RED over RED is an ABSOLUTE stop.

Many PLS members have put hundreds of hours of work both at PLS and at their homes in making the East Rahns Siding project possible and many more hours will be added before the siding is fully ready for safe operation.

See you on the Mainline,

Frank Webb - President

Loco for Sale – 7 ¼" 16-HP Rail Systems SW1500 Switcher

Rail Systems SW1500 Switcher

16-HP V-Twin Engine
New 2008 7-1/4" Gauge

\$7,995

Extras include:

Electroshift Drive System
Vacuum Train Brake System
Cutting Bar on Front
Hydraulic System Temp Gauge
Remote-Reading Fuel Gauge

Painting/Lettering: Reading RR # 2752

Pete Brown 610-291-9902



An Electric Locomotive— *from Scratch*

Building a Critter from Photos and Plans

By Bruce Saylor, Construction Photos by Bruce Saylor



Bruce's new critter complete with hand-crafted pantograph at the club picnic on July 20.

Allen Underkofler

Several years ago I picked up a box of ten 24-volt DC electric motors. I thought I may be able to use them in an electric locomotive. But what would I build?

The motors had no markings so they would not work.

In 2012 I remembered a group of 0-6-0 electrics that were used at the Locust Summit Breaker and were abandoned in 1957. I last saw them in 1963. I found a photo on the Internet and wow, what an ugly locomotive— a

square box! This engine looked like a steeple cab, but had a solid frame and drivers, unlike a typical steeple cab which has two sets of diesel-like trucks under it. With everyone else having an 0-4-0 or diesel-like unit that look like they all came out of the same cereal box, I wanted something different.

The photo of the engine I found on the Internet was dated 2009. I decided to go look for it. John Bortz and I went to Locust Summit and asked a guy where it might be. We walked all over

the mountain, no luck. Went back to the guy who said that it may have been scrapped. I talked with Paul Rice and Steve Gilbert and, through satellite views and phone calls, we found where it had been moved— behind a welding shop.

I called the company where it was located, talked to the boss and got permission to go see it. I took 108 photos and many measurements. It was December 13 and 27 degrees!

Another friend, who prefers to



Philadelphia & Reading Coal & Iron Co. (P&RC&I Co.) Electric in service at the colliery at Locust Summit, Pennsylvania, the world's largest anthracite breaker at the time.

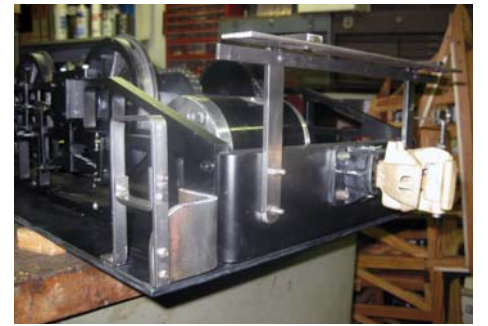
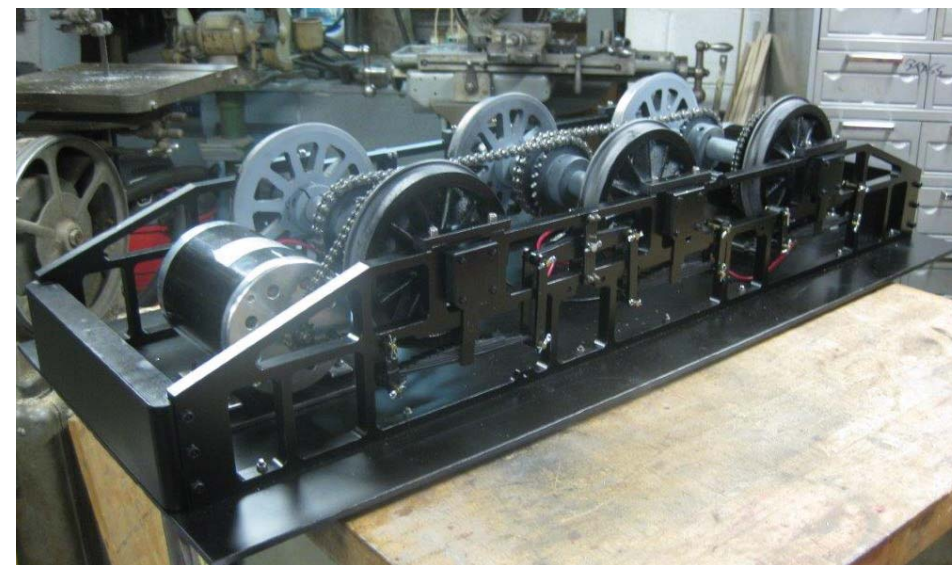
remain silent, found several drawings for this locomotive for me, but none showing the open frame were included. An order sheet with sizes, colors and other information was of great help. Several other contributors scattered across the country sent me information that was very helpful.

There were three of these critters made by Baldwin/Westinghouse in 1929 and delivered to the new breaker in 1930. They had builder's numbers of 61130, 61131 and 61132 and were numbered 305, 306, and 307. All had pantographs. One, 305, was delivered with a group of batteries. I know



306 also had a side pantograph that extended to a parallel track should it need to go out from under the wire.

The challenge was on. I took the measurements of the open frame and made drawings of it. I had a drawing of the bumper (pilot beam). Wayne Godshall of Godshall Machine Works cut out the frame and bumper on his newly acquired CNC milling machine.



I bought couplers and pockets from Dave Sclavi.

I received the frame from Wayne on April 14, 2013. I assembled the frame and bumpers and mounted the three axles. Wheels are 5 1/4 inch trailing truck wheels from Mike Venezia for a LE Pacific. The wheels can be re-gauged to 7 1/2 inches. The 2,350 watt drive motors are scooter motors. The gearing is 5:1. I made the springs and they are all equalized. The air tanks and all plumbing are functional. I sent the drawing for the louvers to another friend, Scott Lindsay, in Tennessee who builds locomotives and cars. He made the four louvered panels.

Beyond that I had to make drawings for the rest of the locomotive from which I made all the steel panels.

