



The PLS GAZETTE

A newsletter of the Pennsylvania Live Steamers, Inc.

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Green Signals Ahead

Important Message from the President

Welcome to the NEW YEAR – 2021 and let us hope that this year is better than the last - 2020. There is no question that last year was difficult for everyone and it looks like this year is getting off to a slow start, but being somewhat optimistic, the Board of Directors (BOD) has put together a near normal calendar/schedule for the entire PLS operating season. A copy can be found in this Gazette. As most of you know our fiscal year begins on April 1st and runs thru March 30th. The March Meeting, our Annual Business/Membership Meeting, is our most important meeting of the year as we have several very important items of business to transact. Regular Members will vote for three Officer positions (President, Secretary and Treasurer) and three Board of Directors positions. The nominating committee, consisting of Pete Brown and Steve Leatherman, has contacted all Regular Members and identified qualified candidates that said they would run for the open positions. Thank you Pete and Steve. A list of those running for office can be found in this issue of the PLS Gazette. We will review and vote on the 2021 Budget and review the calendar for the New Year. There will be a reading of the minutes from last November's Regular Membership Meeting including a review of Old Business and New Business. This is an opportunity for all members to get caught up on what has been going on at PLS over the winter months.

One Old Business item that will be presented and reviewed is an item that dates

back to 2017 when Bylaws changes were presented. Those proposed changes were divided into two parts with Part one (1) changes voted on and approved by the Regular Membership. Part two (2) changes were discussed but deferred to a later date. We had a further delay due to the passing of Lee Nonnemacher who worked on the changes along with Bob Blackson. Over the past months the BOD dusted off the Part two (2) changes to the Bylaws, updating a few paragraphs and adding two new Articles to better align the Bylaws and define how we conduct business at PLS. Time and weather permitting we will read the part two (2) changes to the membership at the March meeting and take a straw vote to determine if the membership agrees with the proposed changes that the BOD is recommending. A majority vote will move this along to the next step. The next step is a mailing of the proposed Bylaws changes to all Regular Members. Again, being optimistic, we hope our new year will start as planned and we will be able to vote on the Bylaw changes at the April Regular Membership meeting. Please do not think we are rushing a vote to change the Bylaws. Several of the additions are due to items that were missing and made evident by the virus situation and it is in the best interest of PLS to do our best to fix these shortcomings. Recognizing that the March and April meeting are two (2) of the best attended of all Membership Meetings held each year it gives us the best representation of the Regular Membership with the largest number of Regular Members voting.

As of this writing it looks like our March Meeting will be held out-of-doors. Masks and social distancing will still be the required. Following these guidelines we

should be allowed to have our meeting in March, but as with all the best laid plans, the current situation may change... for the better or for the worse. If we miss our meeting on the third Saturday in March due to rain, snow or other disaster we will try again on the fourth (4th) Saturday of March. If we are unable to have a meeting in March we will try again to have our Annual Business/Membership Meeting on the third (3rd) Saturday in April. Remember last year we did not have our Annual Business/Regular Membership meeting until July!

Last running season we canceled all scheduled events and with that cancellation no Associate Members entered PLS property. Regular Members did manage to get some very limited use of our Railroad, but very few or no visitors from other railroads were allowed on PLS property. It would be great if we could avoid a repeat of last year, but this can only happen if the State of Pennsylvania allows organizations like PLS to have gatherings. It will also require all members of PLS to step up and help with keeping all Regular Members, Associate Members, Honorary Members and invited guests safe and healthy. This will require a strong Gate presence and as you know Gate Hosts come from you our members. Please do your part to help keep PLS safe, the more volunteers we have, the shorter the time anyone will have to spend at the Gate. In addition to making sure all that enter PLS property has completed and signed a liability waiver, all will need to answer a few additional questions about their health as related to COVID-19. Depending on the current situation at the time of opening our Gate we may also require taking the temperature of all that enter PLS

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PLS Elections

PLS Elections will be held during the **Annual Membership Meeting on Saturday March 20th, 2021 at 12:30 P.M.** Voting will be by secret ballot to elect a President, Secretary, Treasurer and three Board of Director Members. This election year we have twenty six (26) eligible members that were qualified to run for office of which when asked if they would be interested in running we had 8 candidates.

Nominees for the open office positions are as follows:

President: Frank Webb

Secretary: Mark Cahill

Treasurer: Bob Morris

Board of Directors: Pete Brown
Steve Leatherman
Steve Mallon
Paul Rice
Bruce Saylor

Membership Renewals

Past Due

As a reminder, membership renewals were due by December 31, 2020. In order to remain a member, we must have your paid renewal. If you do not renew, this will be your last issue of *The PLS Gazette*. Please take the time to complete the renewal notice that you were sent in early December and forward it with your dues. For Associate Members, please return your completed renewal forms even though your dues have been waived for this year, although any donations will be greatly appreciated. If your renewal notice has been misplaced, you can receive another one by e-mailing: secretary@palivesteamers.org or writing to PLS Inc. at the address at the bottom of Page 2 of this issue. **Please do not forward dues without the renewal form.** We must have the signed renewal form completed

for our records. Your membership cards will be sent to you when your dues are received.

Membership Cards

Membership cards for all members who have returned their completed renewal forms have been mailed. Guest cards, for those who completed the guest release form, were also included. If you have sent your renewal and have not yet received your membership card, OR if you need another renewal form, please email:

secretary@palivesteamers.org

or write to PLS at:

P.O. Box 26202, Collegeville, PA 19426

Upcoming Events

Saturday, Feb. 13 Board of Directors Meeting - 9:30 AM

Saturday, Mar. 20 Board of Directors Meeting - 9:30 AM
Membership Meeting - 12:30 PM
Annual Elections

Saturday, Apr. 17 Board of Directors Meeting - 9:30 AM
SPRING CLEAN-UP in AM
Membership Meeting - 12:30 PM
Afternoon/Evening Run*

Sunday, Apr. 25 Run Day - Members and Guests
Boiler Testing
(Rain Date May 2)

*Note: Rides may not be available at afternoon/evening run days following membership meetings due to possible limited participation by equipment owners. All members and their guests are welcome to attend with the understanding that rides are not guaranteed at these events.

Club Membership News

PLS welcomes new Associate Members Dale Woodland and Alysia Brown. Also, Gary Erwin has applied for Regular membership.

Membership Gauge

As of January 31, 2021 PLS has:

104 Regular Members

151 Associate Members

5 Honorary Members

Pennsylvania Live Steamers, Inc.

President	Frank Webb	77 Roundwood Circle, Collegeville, PA 19426	president@palivesteamers.org
Secretary	Mark Cahill	22 Tice Lane, Perkasio, PA 18944	mark.cahill@verizon.net
Treasurer	Robert Morris	3034 Black Swift Road, Norristown, PA 19403	rmorris1171@verizon.net
Gazette Editor	Lawrence Moss	815 Maplewood Drive, Harleysville, PA 19438	LarryMoss@outlook.com

Board of Directors: Jim Salmons, jshay@verizon.net; Pat Murphy, patrickmurphy129@gmail.com; George Cooper, georgecoop@comcast.net
Ross Magee, mrmagee@gmail.com; Jim Miller, jbmiller@msn.com; Paul Miller, pava77@comcast.net

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grounds. Any refusal to responding to our questions will result in being denied entry to PLS property. We currently have 8 hand sanitizing stations, but very limited restroom facilities. We will have at least two (2) Port-a-Potties that are cleaned once a week. Here again we need you, our members, to step up and help keep these limited facilities clean and safe.

It is an assumption that as we progress into the running season, the situation with the virus will improve. It is likely that more people will be vaccinated and cases will be on the decline but new concerns of virus variants have raised new questions and concerns. To date, PLS has done a good job of staying clear of any serious outbreaks of the virus at PLS. If we are careful, vigilant and disciplined we should be able to run the PLS Railroad and stay safe and healthy and have some fun too, but if we let our guard down we could end up with a disaster. We must all remember, and understand that this virus has killed ~ 500,000 souls in the United States and this war is not over yet. Please do not let your guard down and be careful for yourself and for those around you while at PLS.

In the above message a lot is said about the Calendar, the March and April Business/Membership Meetings and the running year in general. Please note all dates must be considered tentative and are subject to change. We will use the PLS email BLASTS to keep you informed of any changes in our schedule. For those that do not have email we will use USPS mail or call you directly.

Hope to see you at the PLS Railroad,

Frank Webb, President





New Lapel Pins

Only \$5.00

See Kathy Parris or Bob Morris

Whistle Blowers

(Letter to the Editor)

I saw the article by Mr. Freer in the November-December issue of the "Gazette" regarding Rule 14L, as to when the whistle sounding sequence for grade crossing warnings was changed from a two longs and two shorts sounding to two longs followed by a short and a long.

In regards to the Reading & Central Railroads of New Jersey, this new sequence went into effect in 1936 and was the result of changes made to the standard whistle code by the Association of American Railroads Operating Committee.

This was done to improve safety for motorists and pedestrians at crossings as a result of litigation where it was argued by lawyers for injured parties that in the old sequence of soundings, the short whistle blasts were not sufficient to give proper warning.

In Volume 1, Issue #5, of the October 1936 issue of the Reading & Jersey Central Magazine, then Reading President E.W. Scheer of the joint companies penned an editorial on page 8, explaining the changes in the whistle code for Rule 14L.

In this editorial, President Scheer noted that since the new whistle sounding sequence for Rule 14L went into effect in 1936, there was a reduction of 48% in the number of accidents, a 72% drop in the number of persons killed and a 48% reduction in the number of persons injured.

I hope that this information settles the whistle sequence date change question.



Yours truly,

Gregory Buchala

Member, NJ Live Steamers

Donation Acknowledgements

PLS wishes to thank the following members for donations received during December and January: Henry Blanco White, James Meadowcroft, Carl Miller, Richard Moore, Richard Poletto, Rick Stoughton, Robert Clark, Mayland Crosson, Wayne DeVilbiss, Thomas Diedrich, Robert Gray III, R. Buzz Heidenreich, Ronald Heller, Edgar Hendler, Peter Jessup, Lee Kendter, Ronald Klinger, Elmer Knapp, Catherine Madlinger, Gary Madlinger, Brooke Moore III, John Morris, James Rich, James Robinson, Morton Schoenberg, William Stone, Kenneth Thomas, Wayne Baldwin, John Caldwell, Marc Carpino, Paul Miller, Michael Moore, Lawrence Moss Jr, Robert Small, Ernie Anastasi Jr, Walter Berko, Gretchen Dellatorre, Russell Fox, Byron Hawthorn, Mark Layton, John Matsko, Roman Pawlowski, Kathy Phillabaum, Albert Rieger Jr, David Staplin, Gita Talmage, H. Robert Wallace, Robert Watson, Buddy Borders, George Cooper, Michael McDevitt, Daniel Siegle, Richard Bamford, Susan Borders, Carl Bruhns, David Bucher, Ronald Cicchini, Elizabeth Emmert, Carl Essig Sr, William Fluck, James Larkin, Will Lindley, Mary Mercer, Edward Moninger, Robert Moser, Chris Rood, John Schlacter, Richard Speak, Carmen Visalli, John Wessels, Robert Blackson, David Brush, Ken Chermak, Brittany Grimm, David Laird, Robert Morris, Duane Quenzel, Joseph Rohanna, Robert Bergey, Livingston Morris, Alan Redeker, Deborah Voynar, James Zaleski, Tom Zimmer, K. Ross Magee, Patrick Murphy, Kathleen Parris, Harry Quirk Jr, Jim Salmons, John Sommer, Alan Haney, Dave Johnson, Robert Kimmey, William Krayger, Nikolaus Kwasnjuk, Joy Pedrick, Roger Ravier, Zachary Rose, Neil Sardinias, Dolores Stahl, Jeffrey Stahl, Joseph Tanski, Theodore Xaras, Domenic Zampogna, Frank Webb, Thomas Gmitter, Kirby Haskell, Bruce Barrett, Peter Brown, Edward Kabak, Steve Leatherman, James Stapleton, John Blake, Judy Braddick, Ronald Colonna, David Haring, Roger Kain, Charles Leeds, William Leister Jr, John Souder, Chris Becker, Doug Brooker, Joseph Kavanagh, James Milo, John Mitchell, Don Maleta, Jared Schoenly, Charles Bloxsome, Stan Richmond, Steve Mallon, Alysia Brown, Joseph Sabat, and Dennis Tiley.

Pennsy Camelbacks

By Bob Blackson

The Pennsy's camelbacks were the product of a race to Atlantic City. In the latter nineteenth century, the Pennsylvania Railroad (PRR) and the Philadelphia and Reading Railroad (P&R) competed aggressively for fares between Philadelphia and Atlantic City. Railroad rivalry to serve Atlantic City began in the 1870s, and, by the turn of the century, the PRR and P&R had consolidated predecessor lines into their adversarial subsidiaries, the West Jersey & Seashore Railroad (WJ&S) and the Atlantic City Railroad (ACR), respectively. The intense competition took place on several levels such as time in transit, fares, schedules, and comfort on board. For an extra charge of 50 cents, riders could board a train at PRR's Broad Street Station for a direct, all-rail ride to Atlantic City via Frankford Junction; the Delair Bridge, which opened in 1896, over the Delaware River; and West Haddonfield, bypassing the congestion at Camden, New Jersey.

Most of Philadelphia's 1.25 million residents, however, preferred to take a ferry to Camden, either a PRR ferry to the Federal Street terminal or a P&R ferry for the longer ride to Kaighn's Point. From Camden to Atlantic City, the ACR ran the shorter route of 55.5 miles compared to 58.3 miles for the WJ&S. For approximately 25 miles the two lines ran parallel, and locomotive crews relished racing the competition. Time on the trains to Atlantic City, nevertheless, ran about the same, until 1896.

In 1895, with the Delair Bridge under construction, the P&R ordered from Baldwin Locomotive Works two locomotives for the ACR capable of hauling between Camden and Atlantic City a train of six cars in 50 minutes or eight cars in 60 minutes.

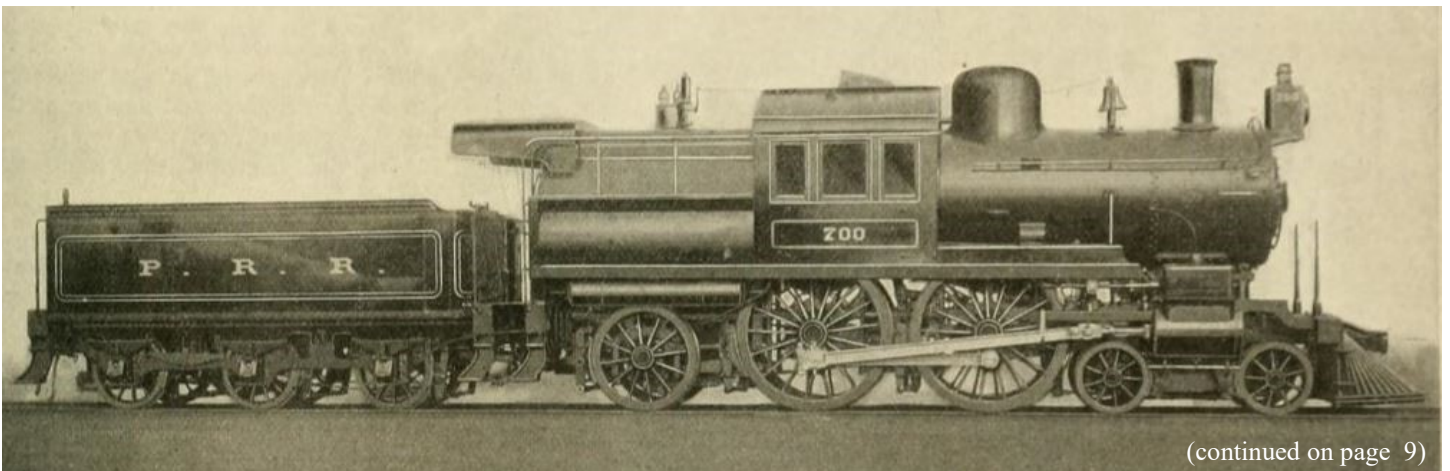
The locomotives delivered in April 1896, road numbers 1026 and 1027, were camelback Atlantics (4-4-2) with 76 square feet of grate area permitted by the wide firebox behind the cab, 200 psi operating pressure, Vaucrain compound cylinders, and 84.25-inch diameter driving wheels. Assigned to the *Boardwalk Flyer*, the locomotives set new speed records between Camden and Atlantic City. Over a two-month period in 1897, running every weekday, engine 1027 with five or six cars made the run in an average time of 48 minutes, an equivalent of 69 mph. ACR patrons could board a ferry at the foot of Walnut Street in Philadelphia and arrive in Atlantic City in about an hour. Two additional Baldwin Atlantics were ordered for the 1898 excursion season. The P&R management was delighted to advertise the superiority of their trains using broadsides, brochures, and newspaper reports of record-breaking speeds. The advertising won patrons and paid dividends, much to the chagrin of PRR brass three blocks away at Broad Street Station.

The PRR had rostered American (4-4-0) Class D16a locomotives on the WJ&S since 1895. This subclass was equipped with 80-inch drivers for speed and had a heating surface of 1,905 square feet, larger than the 1,836 square feet on the ACR Atlantics, but burned anthracite in a Belpaire firebox on a narrow grate of only 33.2 square feet and had an operating pressure of 185 psi. While the D16a could

achieve bursts of exceptional speed, the locomotive lacked the steaming capacity to compete effectively over the long haul with the ACR's camelback Atlantics. The PRR's pride and reputation were on the line.

A response was overdue when PRR Chief of Motive Power Theodore Ely charged Mechanical Engineer Axel Vogt to design a locomotive for the 1899 excursion season to outperform the ACR Atlantics. To provide for a larger steam plant, Vogt adopted an Atlantic (4-4-2) design, a camelback, classified E1, with fixed trailing wheels to support a longer boiler and wide firebox above the frame and behind the cab and the 80-inch drivers. The firebox, with a grate of 69 square feet for burning anthracite, combined the Wootton brick arch and combustion chamber with Belpaire staying and flat crown sheet. The boiler contained 353 1.75-inch tubes contributing to the 2,320 square feet of heating surface to generate steam for the 20.5 by 26-inch cylinders at an operating pressure of 185 psi.

Ely, Vogt, and F. D. Cassanave, General Superintendent of Motive Power, all had a hand in fashioning features of the E1. The design included a cast steel frame, Stephenson valve gear, and balanced slide valves to reduce friction. Reciprocating components were kept as light as possible, including fluted main and side rods. The pivot point for the pilot truck with 36-inch wheels was located to reduce wear on the flanges of the leading drivers. The sand reservoir and steam dome were placed inside a single, large casing atop the boiler.



(continued on page 9)

PLS Tentative Calendar of Events for 2021

January

Saturday Jan. 16 Board of Directors Meeting - 9:30 AM

February

Saturday Feb. 13 Board of Directors Meeting - 9:30 AM

March

Saturday Mar. 20 Board of Directors Meeting - 9:30 AM
Membership Meeting - 12:30 PM
Annual Elections

April

Saturday Apr. 17 Board of Directors Meeting - 9:30 AM
SPRING CLEAN-UP in AM
Membership Meeting - 12:30 PM
Afternoon/Evening Run (See Note)

Sunday Apr. 25 Run Day - Members & Guests -
BOILER TESTING
(Rain Date May 2)

May

Saturday May 15 Board of Directors Meeting - 9:30 AM
Membership Meeting - 12:30 PM
Afternoon/Evening Run (See Note)

Sunday May 23 Run Day - Members & Guests

Friday May 28 **SPRING MEET** - Members & Guests

Saturday May 29 **SPRING MEET** - Members & Guests

Sunday May 30 **SPRING MEET** - Members & Guests

June

Saturday Jun. 19 Board of Directors Meeting - 9:30 AM
Membership Meeting - 12:30 PM
Afternoon/Evening Run (See Note)

Sunday Jun. 27 Run Day - Members & Guests
(Rain Date July 4)

July

Saturday Jul. 17 **Annual PLS Picnic - Noon**
(Train rides will be available from Noon until 3 PM)
(Picnic Rain Date Sunday July 18)

Sunday Jul. 25 Run Day – Members & Guests
(Rain Date August 1)

Note: No meetings in July

August

Saturday Aug. 7 **Perkiomen Community Day**
Run Day - Township Residents

Saturday Aug. 21 Board of Directors Meeting—9:30
Membership Meeting - 12:30 PM
Afternoon/Evening Run (See Note)

Sunday Aug. 22 Run Day - Members & Guests
(Rain Date August 29)

September

Friday, Sept. 3 **FALL MEET** - Members & Guests

Saturday Sept. 4 **FALL MEET** - Members & Guests

Sunday Sept. 5 **FALL MEET** - Members & Guests

Saturday Sept. 18 Board of Directors Meeting - 9:30 AM
Membership Meeting - 12:30 PM
Afternoon/Evening Run (See Note)

Sunday Sept. 26 Run Day - Members & Guests
(Rain Date October 3)

October

Saturday Oct. 16 Board of Directors Meeting - 9:30 AM
FALL CLEAN-UP in AM
Membership Meeting - 12:30 PM
Afternoon/Evening Run (See Note)

Sunday Oct. 24 Run Day - Members & Guests
(Rain Date October 31)

November

Saturday Nov. 20 Board of Directors Meeting - 9:30 AM
Membership Meeting - 12:30 PM

Friday Nov. 26 Turkey Trot Run – Gauge 1 only -
(Rides not available)

December

Saturday Dec. 11 Board of Directors Meeting - 9:30 AM

Note: Rides may not be available at afternoon/evening run days following membership meetings due to possible limited participation by equipment owners. All members and their guests are welcome to attend with the understanding that rides are not guaranteed at these events.

Management of Small Live Steam Locomotives

Part 2

By Bob Thomas

Last time the basic characteristics of a successful live steam locomotive were described and detailed recommendations for building a reliable, sustainable fire were presented. Our tiny powerhouse now stands ready to give us our first thrilling run!

EXPRESS RUNNING

If the engine has been designed with correct “drafting,” boiler pressure will gradually increase soon after you start running as the fire begins to burn vigorously due to the strong draft created by exhaust blast through the stack. Since you began with plenty of water, the bypass can remain open for the time being so the boiler will not get a double-whammy from the new fire and cold water. Heads will turn as your iron steed begins a gallop with a (temporarily) a perfectly regulated balance between power output and steam generation. However, all that steam is coming from boiler water, so when the level drops to a quarter-glass, close the bypass valve so the axle pump begins feeding replacement water. This will actually have a beneficial effect, because the cold feed water will compensate for increasing steam pressure due to the ever-hotter fire. The length of run over which you can maintain the balance of heat generation, water feed, and power output will depend on the size of your locomotive, quality of your coal, number of passengers, and how hard you drive your engine.

An experienced engineman can run indefinitely by firing “on the run.” But if you are a beginner, it might be best to consider stopping to tend the fire so when you sense that the fire is beginning to decline, check the water level and if it is less than $\frac{2}{3}$ -glass, close the bypass so your run will end with the boiler somewhat over-filled with hot water. Turn on the blower as soon as you stop, but only strong enough to clear combustion gasses from the firebox. The bypass valve should have been already closed as you braked to a stop. To be safe, put the reverse lever in mid-gear. Examine the fire, which will be thinned somewhat but burning brightly. If it appears to still contain a large amount of unburned coal, just give it a moderate raking and add only enough coal to the firebed to restore normal level. Increase the blower draft. On the

other hand, if the fire is well depleted, rake vigorously, add required additional coal, and open the blower further for strong draft. Remember: *Keep the firedoor open only long enough for the bare minimum time required to tend the fire!*

Having stopped with a full boiler, you can now confidently get going again without waiting for the new coal to begin burning and pressure to build up – the exhaust blast will take care of that as soon as you resume running. Open the bypass, move the reverse lever to full forward gear, close the blower valve, and you’re off and running once again. Unexpected stops, due to slow traffic ahead, for example, will naturally have to be handled as they come. If it looks like you will be standing for some time, take the opportunity to feed water with your tender hand pump, steam pump, or injector and trim the fire. When traffic clears, you will be all set to pull out.

The three fundamental principles of small engine management, which are illustrated by the previous narrative, can be summarized as follows:

Start long runs with **new coal**, a **full boiler**, and **bypass open** to assist the locomotive to recover from the recently replenished fire without the added burden of cold feed water.

During the run, as water level drops, **close the bypass** to maintain water level with cold feed water, which also compensates for increased heat output from the hotter fire.

End every run with a nearly “**full glass**” of water to store heat in the boiler that will carry the locomotive through rebuilding of the fire in preparation for the next run.

The sequences just described assume you are running on a ground level track with an engine too small to fire “on the run.” If you operate on an elevated track, or ride on the tender of a large locomotive (ugh), all bets are off, because then you will be able to enjoy the opportunity to fire while running, prototype-style, and you should be able to keep going until a stop is dictated by track conditions or the need to take on coal or water. However, the basic recommendations still apply: Start out with a full boiler and new fire, and from then on, *alternately* add water and coal, never both at the same time if it can be avoided. That will balance the effects of one operation against the other, resulting in a consistent, well-paced ride.

REFINED RUNNING

Running a small locomotive as described is satisfying, but it’s possible to exploit a technique that will turn your experience from satisfaction into exhilaration! A property of valve gear called “cutoff” determines the percentage of stroke that steam is admitted to the cylinders. With the reverse lever fully forward, steam is admitted to the cylinder for almost the entire stroke; excess steam still in the cylinder at the end of the stroke is released to the atmosphere. The resultant exhaust blast sounds great, but it’s inefficient to send unused steam out the stack. Adjusting the valve gear to 25% cutoff (by moving the reverse lever toward mid-gear) admits steam in short “whiffs” during only the first quarter of each stroke. Once in the cylinder, that small volume of steam continues to produce power by expanding against the piston for the remaining three-fourths of the stroke. Engine efficiency is greatly increased, resulting in a marked reduction in consumption of coal and water.

To take advantage of short cutoff operation (generally known as “linking-up”), start your train as usual by slowly opening the throttle with the reverse lever fully forward. After the train gets rolling, move the reverser toward center while simultaneously opening the throttle to maintain speed. The optimum cutoff for any set of running conditions, such as boiler pressure, number of passengers and track grade, is just slightly forward of the point where the locomotive tends to lose power and generate intermittent drawbar pulsations. The throttle should be wide open for best performance when linked-up. From then on, the throttle remains wide open, (except for slowing to accommodate track conditions) and engine speed is controlled by moving the reverse lever forward when ascending a grade, and back toward mid-gear when descending. The engine exhaust will become almost silent (no waste steam going up the stack!), and you will observe a dramatic decrease in the amount of coal and water used by the engine, as well as a substantial increase in the distance your train will run on one firing. But beware, because the exhaust blast is so soft, it might be necessary to open the blower a bit when running with shortened cutoff to provide sufficient draft to maintain a good fire.

THE “BYPASS VALVE”

The preceding accounts frequently called for the engineer to “open” or “close” the bypass, as though everyone understands what that means. Personal experience indicates they do not, so the following explanation is offered: Most miniature locomo-

tives have a water pump driven from an eccentric on a driver axle. Output from the "axle pump" feeds two paths, one through a check valve to the boiler, and the second through the bypass valve back to the tender tank. The pump will feed water into the boiler continuously when the locomotive is moving and the bypass valve is *closed*. When the boiler doesn't need water, the bypass valve is *opened*, then, due to resistance from boiler pressure, the water from the pump finds an easier path through the bypass valve back to the tender.

SHUTTING-DOWN

When you think it's about time to stop running, head back to the steaming bay with a weak fire, a full boiler at relatively high pressure, and bypass closed. Stop the engine at your spot in the steaming bay, put the reverse lever in mid-gear to prevent an inadvertent runaway, open the fire door, and turn the blower on just enough so hot gasses don't "backfire" into the cab. That will "kill" the fire. As soon as the remains of the fire are cool enough, dump the ashes by whatever means you use, but keep in mind that the boiler is still hot and charged with high pressure steam and scalding water. If your engine has a copper boiler, by all means, clean out dirt and minerals deposited from feed water by fully opening the blowdown valve as rapidly as possible. Be sure to warn bystanders in advance to keep clear before opening the valve! If your boiler is made of steel, consult several owners of locomotives so equipped to evaluate storage practices. Some engine men blow-down their steel boiler while still hot, as with the copper type; others prefer to fill the boiler full to the brim with cold water in an attempt to forestall prolonged exposure to oxygen (although this seems to ignore the presence of oxygen occluded in the water!), sometimes adding a rust inhibitor. . . take your pick.

CLEANUP

The appearance and longevity of your locomotive will be extended if you take the time and effort to thoroughly clean and lubricate it at the end of every run day. The first job in cleaning a locomotive is to remove ash remaining in the flues and smokebox. This should be done immediately after every running session, while the engine is still warm, unless you are confronted by sudden rain or other unexpected diversion. Corrosive and abrasive ash, if not eliminated will gradually spoil the appearance of the locomotive, if not materially deteriorate vital components by inevitably finding its way into running gear, where it will raise havoc with bearings and sliding surfaces.

The most effective method of eliminating ash is with compressed air, but care should be exercised to prevent scattering cinders and dust around the steaming bay. Uncouple the tender and remove the smokebox door or, if possible, the entire front of the smokebox. If the blast nozzle has a large diameter exhaust hole, it's a good idea to temporarily plug it to prevent fine ash particles from entering and winding-up in the valve chamber. Drape a cloth over the front of the smokebox to confine the imminent dust cloud. Every steaming bay seems to attract at least one character who blankets the area with a filthy cloud of fine ash – please don't be one of them! Construction of a suitable air lance will be described later in the "Accessories" section. Line-up your air lance at the firebox end of a flue, then press the air gun trigger while gently pushing the lance through the tube all the way up to the smokebox end to discharge all ash and any large cinders that might have become caught in the flue. Do this for each individual flue, using a flashlight if necessary, to ensure that every flue is cleared. Pay special attention to the lowest row of tubes and, also do your best with the superheater flues, although insufficient clearance might prevent the lance from passing completely through these flues. Remove the cloth and blow accumulated cinders out of the smokebox and off the pilot beam. If there are obstructions in the firebox, such as an arch, thermic syphon, or a combustion chamber's water tubes, simply reverse the direction of air blast by inserting the lance through the smokebox (with a cloth draped over the cab). When you are finished, remember to remove the blast nozzle plug, if used. Finally, use the lance to clear out the cab area of ash and coal chips and softly blow away other traces of ash from the running gear and around the trucks and driver spokes.

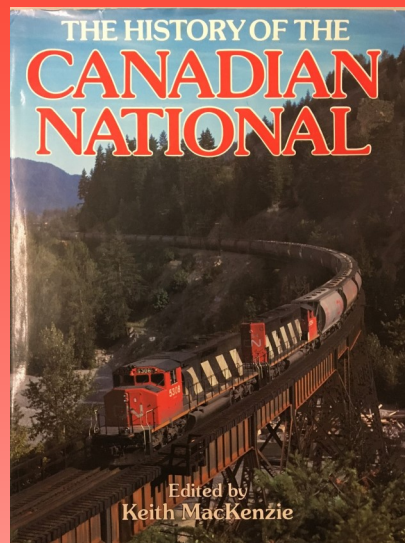
After ash accumulations have been removed, thoroughly wipe-down the rods, valve gear, and the superstructure with a soft rag. A light application of WD-40™ or other rust inhibitor will help preserve exposed metal surfaces, but beware of a hard opaque coating sometimes built up by those chemicals. Try to clean the locomotive while it is still warm so you can wipe away spots of congealed steam oil. Now step back in silent admiration of the soft patina worn by your iron horse in repose as you contemplate the feats just performed by your faithful steed!

Next time:

Minor modifications for optimizing locomotive performance and considerations for selection of coal and water.

PLS Library

Book of the Month



Book Review

From the inception of the 23 mile Champlain & St. Lawrence Railroad Company in 1836, this lavishly illustrated book tells CN's story - really the story of the development of Canada.

For Information contact:

Joe Gotlewski Librarian

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PLS Proposed Budget for Fiscal Year 2021

Income	Expenses	
100 • Donation	200 • Utilities	233.20 Gazette Printing 415.00
100.10 Run Day 750.00	200.10 Electric 2,575.00	223.30 Other Printing 175.00
100.40 Pot Luck Dinner 250.00	200.20 Oil 850.00	223.40 Computer 100.00
100.90 Other Donations 4,500.00	200.30 Septic Tank 800.00	223.50 Internet 1,465.00
Total 100 • Donations \$5,500.00	200.40 Portable Toilets 1,760.00	223.60 Community Support 100.00
120 • Dues	200.50 Telephone 350.00	223.70 Waiver Sheets 75.00
120.10 Regular Members 8,800.00	200.60 Dumpster 1,000.00	223.80 Web Page 700.00
120.20 Associate Members 5,600.00	200.70 Miscellaneous Utilities 0.00	223.99 Misc. Communication 150.00
Total 120 • Dues \$14,400.00	Total 200 • Utilities \$7,335.00	Total 223 • Communications \$3,565.00
130 • Items Sold	210 • Miscellaneous Expense	224 • Corporate
130.20 Coal 25.00	210.20 Picnic 375.00	224.10 Legal & Prof. Fees 500.00
130.50 Soda Sales 1,525.00	210.30 Pot Luck Dinner 300.00	224.11 Delaware Corp. Tax 50.00
130.60 Snacks Non-Run Day 40.00	210.40 Security 250.00	224.20 Office General 150.00
130.70 Snacks Run Day 850.00	Total 210 • Miscellaneous Exp. \$925.00	224.30 Property Tax 4,300.00
130.80 Kitchen Sales 1,250.00	220 • Maintenance	224.40 Sales Tax 100.00
130.90 Table Sales Taxable 1,400.00	220.10 Backhoe 750.00	224.60 Office Postage 330.00
130.91 Table Sales Non-Tax 850.00	220.11 Machine Shop Supplies 50.00	224.70 Insurance 4,600.00
Total 130 • Items Sold \$5,940.00	220.20 Building # 1 375.00	224.80 Corporate Printing 50.00
140 • Storage Track Fees	220.30 Buildings # 2-8 650.00	224.99 Corporate Misc. 200.00
140.30 Building # 3 Rental 3,636.00	220.40 Gauge 1 250.00	Total 224 • Corporate \$10,280.00
140.60 Building # 6 Rental 2,460.00	220.50 Track 2,700.00	225 • Sales
140.80 Building #8 Rental 432.00	220.60 Mower 400.00	225.10 Kitchen 575.00
Total 140 • Storage Track Fees \$6,528.00	220.70 Signals 750.00	225.20 Snacks 350.00
Total Income \$32,368.00	220.80 Gas Mowing 300.00	225.30 Soda 450.00
	220.90 Gas Track 50.00	225.40 Table Sales 1,000.00
	220.91 Club Locomotive 15.00	Total 225 • Sales \$2,375.00
	220.92 Landscaping 475.00	226 • Special Projects
	220.925 Tree Replacement 2,500.00	226.19 Caboose Painting 1,500.00
	220.93 Tree Trimming 4,500.00	226.35 Bldg. #1 Updates 1,750.00
	220.94 Fire Extinguishers 250.00	226.75 75th Anniversary 2,000.00
	220.99 Misc. Maintenance 500.00	Total 226 • Special Projects \$5,250.00
	Total 220 • Maintenance \$14,515.00	Total Expenses \$44,245.00
	223 • Communications	<i>Excess of Income</i>
	223.10 Gazette Postage \$385.00	<i>Over Expenses..... (\$11,877.00)</i>

(continued from page 4)

A speaking tube between the fireman on the open platform behind the firebox and the engineman in the cab astride the boiler had a whistle mouthpiece to facilitate confirming signal aspects. The tender was a three-axle affair with the last two equalized, and it was equipped with a scoop to replenish the 4,000-gallon cistern at a rate of 3,500 gallons in 10 seconds at 68 mph. The editors of both *The Railroad Gazette* and *American Engineer and Railroad Journal* penned complimentary reports of the E1 including a photograph and dimensions of the locomotive.

The PRR Juniata shops at Altoona delivered three examples of the E1 assigned road numbers 698, 700, and 820. Number 698 underwent tests on the New York Division, including a train of ten cars, 410 tons less the engine, between Broad Street

Station and Jersey City on June 20, 1899, with the results exceeding expectations. In service on the WJ&S, the free-steaming, PRR camelbacks set new records celebrated by articles in *The Railroad Gazette*. On July 18 an E1 with seven cars ran the 58.3 miles from Camden to Atlantic City in 51 minutes. On the 20th an E1 headed an eight-car train, “[t]he largest number of cars heretofore hauled to Atlantic City on a similar schedule,” the *Gazette* enthused. On the 31st an E1 with eight cars made the run in under 51 minutes. Headlined by the *Gazette* as “A Fine Run,” E1 No. 698 sustained speeds in excess of 90 mph highballing to Atlantic City on September 11. The races between the ACR and WJ&S crews continued, but the records were being set by the PRR.

The 1899 E1 triplets proved to be the only camelbacks that the PRR would build or roster. The experience on the WJ&S raised serious safety concerns. The fireman rode in a precarious position on an open platform exposed to the elements, and the engineman sat against the boiler, summer and winter, and above the rods, which could fracture. Connecting the crew with only a speaking tube compromised the PRR practice of calling across the cab to confirm signal aspects, and it left only one person in the cab to address any malfunction. In 1900 the PRR redesigned the locomotive to locate the crew together in a cab at the rear. The camelbacks were tested on other divisions, assigned to the Long Island Rail Road, and scrapped in 1911.



In Memory of Ruth Morewood

It is with much sadness that we tell you long time Honorary PLS Member Ruth Louise Morewood passed away on December 6, 2020. Ruth was born in Newtown, New Jersey on October 27, 1923 and was a graduate of Newark State Teacher’s College with a degree in Elementary Education. Ruth’s husband, Bill Morewood, was a long time member of PLS. He passed away in 2007. Bill will always be remembered as the Designer of the 3 1/2” gauge 3/4” scale Raritan and a great supporter of the live steam hobby and community. She faithfully accompanied Bill on almost all his visits to Rahns to run his *Raritan*, socializing with her many live steam friends of long standing while Bill tended to his iconic locomotive.

Our thoughts go out to the entire Morewood family.



Save these New Dates

September 3-5, 2022

For the 75th Anniversary Fall Meet

“The Meet You Will Always Remember”



The PLS GAZETTE

P.O. Box 26202

Collegeville, PA 19426-0202

FIRST CLASS



We received several photographs of the diesel and electric trains that ran on New Years Day but no photos of the actual engineers who were all too busy taking pictures of the trains. The owners were (from left to right): Bruce Saylor, Paul Miller, Steve Leatherman, Roy Nelson and his son David, Steve Mallon, and Larry Moss. It was crisp and cold but not too windy, so a good run was had by all.

Photo by Steve Mallon