



The PLS GAZETTE

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



The PLS GAZETTE

A newsletter of the Pennsylvania Live Steamers, Inc.

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FIRST CLASS

From Along the PLS Main Line

Time marches on. In another month, autumn will officially arrive. Vacations will be over and children will be back to school. Before then, however, PLS has a couple of events to help prolong that summer feeling. Our regular run day will be held on Sunday, August 26. Then, the following weekend will be our Fall Meet to be held on Friday, Saturday and Sunday, August 31 and September

1 and 2. Running at the meet weekend usually gets going around noon on Friday and will continue until Sunday afternoon. There will also be running on Friday and Saturday evening and members who haven't experienced nighttime operations at PLS may want to come out and see what it's like. Saturday evening will also feature the pot luck dinner which has been popular with attendees in recent years. Hopefully, you can find the time to come out to one or more of these events.

In conjunction with the meet, I would like to remind regular members that we must have coverage at the gate

during normal hours. It is sometimes hard to find volunteers to do this. Just a couple of hours of your time will help us greatly. And as always, kitchen volunteers will be welcomed. Also welcome will be donations to the snack table.

The annual PLS picnic, held on Saturday, July 28, was a successful affair, although attendance was slightly lower than it has been in recent years. The threat of bad weather is the most probable cause for the reduced attendance.

(Continued on page 2)



Equipment Storage Building Gets New Tracks

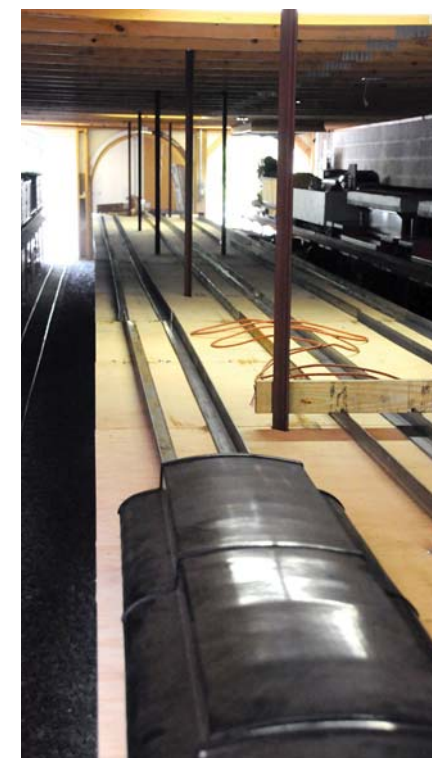
A much needed three additional tracks are being added to the second level of the equipment storage building, to create a total of eighteen tracks. (See President's message for more details.)

— Lee Nonnemacher

Near right: The rails are in place on the new second level deck. (Allen Underkoffer).

Top right: Installation progressing on the new equipment storage tracks. From left: Paul Quirk, John Bortz, Jr., Bruce Saylor, Jim Rich, Dave Sclavi and Jim Salmons.

Bottom right: The string shows the centerline for the new ramp, similar to the existing two, that must be built to access the new second level tracks of the storage building. (Both, Lee Nonnemacher)



From Along the PLS Main Line

(Continued from page 1)

However, the rain held off until about 7:30 PM so in the end it really didn't cause too much problem. I want to thank all those who attended and those who provided the swell side dishes and desserts that everyone enjoyed. And I want to especially thank "Big John" Geib for his effort in this and recent years toward coordinating the picnic and flippin' the burgers while the rest of us had fun. John is retiring from this position which leaves an opening for anyone who wishes to become involved for next year. Anyone?

The equipment storage building (the long, low building for those unfamiliar) is currently undergoing an internal addition. Three additional tracks are being added to the second level which will bring the total to eighteen. Each track is capable of storing a complete train of between sixty and seventy feet in length. When completed, the new tracks will all be occupied by equipment belonging to members whose names have been on a waiting list. Because it's on the second level, a cantilevered support structure, the concept of member Bruce Saylor, needed to be fabricated. Walter Mensch made detailed drawings, structural steel was ordered, and Jim Salmons welded up the eighteen individual support structure members in his shop. Installation of the internal structure is just about complete. The installation crew has consisted of, at various times, John Bortz, Jr., Walt Mensch, Eric Peffel, Paul Quirk, Jim Rich, Jim Salmons, Bruce Saylor and Dave Sclavi. Next will come the ramp and track necessary to

gain access to these new second level storage tracks. [See feature on page 1.] Projects like above are what keep things fresh and interesting for many of our members, whether in the planning or execution areas. There are also the mundane tasks such as building

maintenance and property maintenance that must be tended to. We welcome anyone who is able and wishes to participate.

Safe Steaming,
Lee Nonnemacher – President

Correction

The print version and the initial online version of the last issue of the *Gazette* contained an error in the caption at the top of Page 7. The locomotive there is owned by Eric Peffel, not John Geib. John owns its sister engine, a New Haven Pacific which is currently out of service for repairs.

Donation Acknowledgements

PLS wishes to thank the following members for donations received during June and July: John Caldwell, M. J. McCloskey III, and Ronald Marburger. Thanks also to the Jerusalem Lutheran Nursery School and Day Care.

Pennsylvania Live Steamers, Inc.

President	Lee Nonnemacher	1474 North Wales Road, Blue Bell, PA 19422-3687	president@palivesteamers.org
Secretary	Robert Blackson	303 North Tulpehocken Road, Reading, PA 19601	PennsylvaniaLiveSteamer@comcast.net
Treasurer	Walter Mensch	1348 Sheep Hill Rd., Pottstown, PA 19465	
Gazette Editor	Allen Underkofler	Box 609, Kimberton, PA 19442-0609	pls@apunderkofler.com

Board of Directors: John Bortz Jr., jonyx@netzero.net; Sharon Connelly, connellywood@verizon.net; Bob Freer, W3YLT@Juno.com; Paul Rice, ricepaul@verizon.net; Jim Salmons, jshay6@verizon.net; Ron Shupard, shusmoke@aol.com.

Pennsylvania Live Steamers, Inc. • P.O. Box 26202, Collegeville, PA. 19426-0202 • 610-454-0477 • www.palivesteamers.org

2012 PLS Calendar of Events

Saturday, August 18	Board of Directors Meeting - 9:30 AM Membership Meeting - 12:30 PM Afternoon/Evening Run*
Sunday, August 26	Run Day - Members & Guests
Friday, August 31	Fall Meet - Members & Guests
Saturday, Sept. 1	Fall Meet - Members & Guests
Sunday, Sept. 2	Fall Meet - Members & Guests
Saturday, Sept. 15	Board of Directors Meeting - 9:30 AM Membership Meeting - 12:30 PM Afternoon/Evening Run*
Sunday, Sept. 23	Run Day - Members & Guests
Sunday, Sept. 30	Run Day Rain Date

which curves smoothly at a set radius and then flattens out (makes a tangent with) the straight track so that the trains make the transition from curve to straight without a sudden jerk. The second major consideration in track design and maintenance is keeping the track both straight and level. As the terrain moves up and down along the line of proposed track the changes in elevation are often too steep for real or miniature trains. Therefore you must stretch those steeper grades over a greater distance including some of the level track in order to bring the grade down to a more acceptable level of around 1%. That would be a change of one foot of elevation for each 100 feet of horizontal distance. If you don't pay careful attention to these considerations, your ride on the live steam train can make you think you are taking a trip on the legendary *Toonerville Trolley* which was somewhat similar to participating in a rodeo contest.

Bob's background comes in very handy in this situation. PLS members use surveying instruments to accomplish this task but also much paperwork must be done before they can even begin to pound stakes into the ground. Oftentimes on workdays you will find Bob poring over his paperwork with track diagrams spread



Above: Bob's one-inch scale D&H RS-3 diesel built from a kit. **Below:** Bob selects a route in the the yard area during the July 18, 2009 club picnic.

around him and pounding on his scientific calculator—he gave up his slide rule years ago.

Once the preliminary paperwork is done, the surveying instruments and the stakes are taken out and the work moves to the track area. These days that surveying is done with a laser transit and laser levels. If you come on a work day (Wednesday or Saturday) you might hear this loud beeping sound coming from the target on an upright post set in the track. Further down the track would be a tripod also

set up on the track with the laser level mounted on it. As one of the guys moves the target up or down the rate of beeping changes allowing them to set the target at the same horizontal plane (that is level) as the laser device. Measure down from each and you know how far out of level the track is between the two points. Thanks to Bob and the many others who work on the track, we at Pennsylvania Live Steamers have one of the smoothest riding tracks in the miniature train community. 🚂



People at PLS

By Lynn Hammond

Robert (Bob) Freer

Editor's note: Author Lynn Hammond has offered a series for the Gazette titled "People at PLS." The series will cover various members at PLS including their role in the club and the equipment they operate. Lynn begins his series with Bob Freer.

Bob was born and lived briefly in the small town of Ithaca, New York, a place he would later stay for a five-year program in engineering at Cornell where he graduated in the class of '52. Bob's interest in trains stems from his father, who was a machinist, and loved trains—both the real railroads and the smaller versions. He received a black Lionel steam engine (262) with three green passenger cars at the ripe old age of two. The interest in miniature trains grew and he had a number of small Lionel operating layouts in the attic which culminated in an HO scale trains layout in high school. He even worked in a toy store.

After graduating from Cornell with a degree in Civil Engineering, Bob joined the Aero Service Corporation, an aerial mapping and photogrammetry firm (*photogrammetry* means measuring from photographs). Here he engaged in what I would consider rather exciting activity—he accompanied the three Aero Service Corporation B-17's on testing in Phoenix, Arizona for the Army Map Service. His contribution was to perform the lengthy calculations involved in determining the position of the aircraft when the individual photographs were taken. Bob was later involved in programming these calculations on IBM 602A and 604 computers. Think of this work as what people had to do before we had GPS. Sometimes this mapping activity happened in the U.S., but occasionally it occurred in exotic places like the Middle East. During his time with Aero Service Corporation, Bob went to night school and obtained

an MBA from Drexel University. He did this because he had decided he wanted to work more directly in the civil engineering field. He then switched to the consulting engineering field and used his background in the mapping field to spend the rest of his career working on the design of ground infrastructure such as roads and industrial parks.

Bob was never in the military, but was involved with the Military Affiliate Radio System (MARS) for over 40 years, handling messages from service members overseas. This led to another strong hobby interest—ham radio. His callsign is W3YLT. While in MARS it was AAR3XX.

Bob has been retired now for many years and in addition to volunteering at PLS, Bob has been a volunteer at the Franklin Institute in Philadelphia for 20 years. He also drives for the Red Cross.

Bob is married to his wife Joan and they have three grown children, Bruce, Carole, and Jennifer. Joan and Bob also have six grandchildren. They have lived for many years in Huntington Valley but recently moved to an active adult community.

Fifteen years ago, Bob purchased a kit for making a Delaware and Hudson one-inch scale RS-3 diesel switcher. His friend and fellow PLS member Bob Thomas (who, as you know,

an MBA from Drexel University. He did this because he had decided he wanted to work more directly in the civil engineering field. He then switched to the consulting engineering field and used his background in the mapping field to spend the rest of his career working on the design of ground infrastructure such as roads and industrial parks.



All Photos: Allen Underkofler

contributes to these pages) contributed his machining and modeling skills to help Bob complete this engine. On run days you will often see Bob running this blue and gray RS-3 switcher around the one-inch track.

In addition to his current PLS Board membership, Bob has contributed very substantially over the years to the development and well-being of the Pennsylvania Live Steamers. His background in civil engineering and surveying has been extremely beneficial to the club. It is probably the case that many of the people riding on our large miniature trains over the 4 3/4-inch and 7 1/4-inch gauge track have little knowledge of how much work goes into initially laying that track and then maintaining it. You don't mark a line on the ground with a sharp stick and throw ties down along the line.

As in the real railroads and in making highways a great deal of precision is required in order to have track

Membership Gauge

As of July 31, PLS has:

103 Regular Members
274 Associate Members
8 Honorary Members

For Sale

Gauge-1 Model Railway Association Newsletter/Journals. 129 issues from 1978 through 2011 — \$95

Bob Thomas —
SteamRR@Comcast.net

Club Membership News

PLS welcomes new Associate members Joseph Coyne, Thomas N. Daley, Jerry Carfagno, M. J. McCloskey III, Amy Conrad, Lee Melair, Joseph M. Nemeth, Ron Sherry, William M. Cox, J. Carl Altman, Christopher J. D'Ascenzo, Richard E. Chesney Jr, Mike Kirk, and Michael W. Pontrelli, plus Minor Associate members, Thomas Andrasek and Louis Lampe. Also, Chris Graham has applied for Regular membership.

Fall Meet Could Use Some Volunteers

Just a reminder that we need volunteers for gate duty, station duty and kitchen duty, among others, during our Fall Meet. Please sign up for a time slot when you arrive at the meet. Also needed are donations of baked goods. Thank you!

— Kathy Parris

Train Mountain Triennial

PLS members Bruce Saylor, Dave Johnson and John Bortz Jr. traveled together for their once-every-three-year visit to Train Mountain in Chiloquin, Oregon to attend this year's triennial and 25th anniversary celebration. The event was held during the last week of June.

Train Mountain is a huge club with 13 1/4 miles of 7 1/2" gauge track and 25 1/4 miles of total trackage.

As the photo to the right shows, PLS member Paul Rice was also there for the festivities and got a chance to run Bruce Saylor's propane-fired 10-wheeler with rider Dave Johnson. Note the smile! He ran happily for 45 minutes way out at the north end.

Below is a Northern Pacific 2-8-8-4 with train out on the road.

— Bruce Saylor



Edward J. Woodings

By Bob Thomas

1926 – 2012

Ed Woodings, well known within the live steam community, died July 7th of heart failure following a long illness. Ed graduated from Carnegie Institute of Technology in Pittsburgh and was subsequently employed as a Metallurgical Engineer in the aerospace industry, a field in which he worked for his entire professional career. In that position he acquired intimate knowledge of the properties and application of special metal alloys and exotic materials that he was able to apply in his masterful construction of live steam locomotives.

Ed started construction of his first live steam locomotive in the late 1950s but like others who encounter and finally surmounts life's diversions he was unable to complete it until 1974. That first live steamer was a 1" scale free-lance Atlantic utilizing Little Engines' castings supplemented by numerous built-up assemblies. In a testament to Ed's mechanical design and machining abilities, after running for decades on club tracks throughout the northeastern states, California and Montreal, the locomotive performs as flawlessly today for present owner Joe Fego as it did the day it emerged from Ed's shop.

If one criticism could be leveled at the Atlantic it is its failure to act like a "normal" live steam engine: there are no errant drops of water and no spurious whiffs of steam – *anywhere*. His Atlantic just simmers quietly as though it's not in steam at all! That is partly due to Ed's aversion to ordinary ball-type check valves. His standard design, for which he cheerfully provided drawings and machining advice to anyone interested, incorporates a grooved mushroom plug in a tapered seat with an O-ring seal. Yes, they are complicated little gadgets that take a long time to make, but for Ed there was no other way. They had to perform correctly and reliably. Ed made the



Ed Woodings with his PRR T1 at Rahns, August 30, 2003.

effort to remove the clacks annually, examine them carefully, and renew their O-rings whether they appeared worn or not. It was a time consuming task few would bother with, but he had to be sure everything was at peak performance at the beginning of each new running season. Similarly, he occasionally renewed rod and motion bearings so you never hear a "click" from the Atlantic. The most defining characteristic of the Atlantic, however, is its even, sharply-defined exhaust bark, with no wheezing or syncopation from leaky valves or incorrect timing.

Having completed his Atlantic Ed began to think of what to make for his next locomotive, about which there was little doubt in his mind. It had to be the magnificent PRR 4-4-4-4 duplex T1 he had admired as a young man at Pittsburgh Union Station. Its prototype was designed to exceed the performance of double-headed K4s with routine capability to haul a 1000 ton train at 100 miles per hour.

A duplex wheel arrangement was adopted to reduce high reciprocating masses associated with 4-8-4s at speed. However, the key element in achieving high performance from the T1 was its Franklin oscillating-cam valve gear actuating independent admission and exhaust poppet valves in each cylinder. It was driven from a crosshead link to mechanisms sealed in oil inside individual cases between the frames, one in the front of each pair of cylinders. Following a lengthy period for ironing-out initial problems with this complex machine, in the hands of competent enginemen, the T1 regularly met or exceeded its lofty expectations.

Ed had a close relationship with staff of the Pennsylvania Historical and Museum Commission in Harrisburg where there was a virtually complete file of T1 original drawings. From those he created his own CAD drawings for a 1" scale version of the locomotive. He retained the two separate oil-filled valve gear cases and

their locations between frames as in the prototype. Each valve gear case has two miniature modified Walschaerts gears for the two cylinders of its associated engine rather than prototypical cam drives which would have been impracticable to make in 1" scale – even for Ed. Still, his "simplified" valve gears for each of the two engines are comprised of nearly 100 tiny precision parts! Other parts of the T1 – butterfly firedoor, dual air compressors, prototypical brake gear, steel motionwork, drivers with steel rims shrink-fitted to C.I. spoke assemblies, formed shroud cleverly designed for convenient maintenance, exquisite glazed cab windows, and countless other examples of "miniature watchmaking" – are too numerous to describe here. An appreciation for the quality of Ed's T1 can be realized by an examination of photographs made by Buddy Borders and currently displayed on his webpage at: www.physics.upenn.edu/shop/edst1.html.

Sadly, after 18,000 hours of effort lavished on his T1, Ed suffered a stroke in 2004 when only a few minor unseen details remained to be completed. Despite a remarkable recovery, he found the giant locomotive too much to handle and reluctantly offered it for sale. Prior to that time he had been conducting extensive correspondence with Dr. Hiromi Harada, a neurosurgeon in Tokyo. Harada-san had been planning construction of a 1:32 scale T1 for Gauge 1 for which Ed had furnished some drawings and practical advice. Dr. Harada acquired Ed's T1 and it became a minor sensation in Japan with publication of a seven-page richly illustrated article by Kozo Hiraoka in Japanese *Model Railroading* magazine. Perhaps no greater complementary comments have been made about the T1 than in that article by Kozo who wrote, in part, "Honestly, I had never imagined such a high level of work before looking at it." The entire T1 transaction and its aftermath became source of relief and enduring satisfaction for Ed who considered his *tour de force* to be in good hands where his work of a lifetime would be preserved indefinitely.

Joe Fego at the throttle of his pristine Atlantic, built by Ed Woodings, completed in 1974.



With large scale live steam out of the question, Ed adopted a flexible philosophy that enabled him to continue to derive pleasure from the hobby. He bought a Chinese (Sieg) mini-lathe and minimill from MicroMark. Before using them they were disassembled, their gibs and ways were honed and then the machines were carefully re-aligned until they produced work to his standard. Then he embarked on an exact scale Gauge 1 PRR D-16sb based on Pennsy drawings, another bit of watchmaking.

However, about two years ago he began to have bouts with vertigo that prevented him from working in his shop. Work sessions dwindled as his health declined and last autumn he was forced to withdraw entirely from pursuing his passion.

There is no denying that Ed Woodings had a short fuse. He was a forthright, practical, and eminently accomplished man who did not suffer fools gladly. He did not feel compelled to accept an opinion when it was presented simply as a theory without practical foundation by someone without a record of success in the field. When confronted by a phony or self-important unaccomplished individual propagating irrational ideas he often became prickly and liable to react, shall we say, "negatively." On the other hand Ed Woodings never failed to acknowledge and vigorously debate views contrary to his own if they were sound or founded upon actual experience. He was always forthcoming with advice based on his own extensive experience. He was also generous with

his sage advice. For instance when we had technical meetings during the winter of 1999/2000, Ed demonstrated tricks devised while building his T1, such as an easy way to make broaches for small square holes; upgrading a commercial 3/4" pressure gauge into a scale backhead enhancement by addition of a turned brass flange; and an air brake stand using a Clippard Minimatic pressure regulator to enable prototypical Application, Maintain and Release air brake functions. That was in addition to the countless times he assisted club members with his encyclopedic knowledge of materials and machining techniques. In short, if you approached Ed with sincerity, you could always count on an illuminating conversation and sound advice.

Ed is gone now, his masterpiece enshrined, literally, in a foreign land. Still, his first locomotive steams among us and we can reflect on the accomplishments of that spare man and his phenomenal talent. Our hearts go out to Ruth, his devoted wife, as one more irreplaceable pioneer of our hobby becomes a cherished memory. 🚂