

# The LIGGIE

Published by the Ligonier Valley Railroad Association for the Friends of the LVRR

Volume 10 - Issue 1

## From Our Collection:

### **TIME AND THE RAILROADS** - by Bill Potthoff

Before mechanical clocks and watches were available, people measured time by the position of the sun. Even as late as the 1880s, most towns in the U.S. still had their own local time, also known as local solar time. Generally based on "high noon," or the time when the sun was at its highest point in the sky, this was easily determined by the use of a sundial. Local time was maintained by some well-known clock, such as the church steeple clock. In Latrobe and other smaller towns, it was a chronometer or clock in the window of a local jewelry store. The problem was that most cities would be on a slightly different time. The sun appears to move from east to west at a given rate. For example, when it is high noon in Ligonier, 10 miles west in Latrobe high noon is about 48 seconds later. Not a large difference. Between Latrobe and Pittsburgh the difference would be about three minutes and 24 seconds, which is more problematic. Between Pittsburgh and Chicago the difference would be 37 minutes, so if you were scheduling trains this difference would have to be reflected in the Timetable.

These local times became a scheduling nightmare when railroads began to shrink the travel time between cities from days to hours. Railroad timetables in major cities listed dozens of different arrival and departure times for the same train each linked to a different local time zone. The time of day was still a local matter until the railroad companies created the first time zones.

### **Railroad Time Service Rules**

In May 1834, the chief engineer of the South Carolina Canal and Rail Road Company reported difficulty in attaining regularity in the arrival and departure times of passenger trains running between Charleston and Hamburg 136 miles away. This was the longest railway in the world at that time. The chief engineer wrote that "... the want of a uniform standard of time at the different [station] points" could be resolved "... by placing clocks (at the six stations) ... which being well-regulated and readily accessible to the Engineer and Agent, will enable them to regulate their movements on the road with great accuracy."<sup>1</sup>

### **Railroads Establish Time Standards**

The General Time Convention of October 11, 1883, adopted Standard Time in four time zones (Eastern, Central, Mountain,

and Pacific) in the U.S. and Canada to standardize railroad schedules, based upon mean sun-time on the 75th, 90th, 105th, and 120th meridians west of Greenwich. These four meridians are approximately on the longitudes of Philadelphia, Memphis, Denver, and Fresno. All locations within a time zone would be on the same time. Crossing time zone boundaries resulted in the addition or subtraction of one hour. Most Americans and Canadians quickly embraced their new time zones since railroads were often their main link with the rest of the world.

On November 18, 1883, at 12:00 noon, Greenwich Mean Time (GMT) was transmitted via telegraph. The U.S. Naval Observatory began signaling the new time standard, and railroad stations

reset their clocks. Train crews were instructed as to what change to make in their watches. They were also instructed to check their watches with the telegraph operator upon arrival at the next scheduled stop. Newspapers referred to that day as "the Day of Two Noons." This indicates how influential the railroads were at that time. It was not until 1918 that Congress officially adopted the railroad time zones and put them under the supervision of the Interstate Commerce Commission.



Figure 1

### **Railroad Timekeeping**

From the mid-19th Century forward, railroad personnel in several countries required extremely accurate timepieces to ensure safe use of the rails. The standard Timetable and Train Order system was a highly detailed schedule that depended on precision timing, and it controlled the positioning of multiple trains at any given instant on North American rails. The primary goal was to prevent collisions by trains using the same sections of tracks. Companies required their key railroad personnel, including the engineer, conductor, fireman, brakeman, switch controllers,

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and railroad yard managers, to carry approved railroad standard pocket watches. They were referred to in the railroad industry as “standard watches” because they met the railroad’s standard, and were accepted for railroad time service.

The criteria for declaring a particular watch make or model railroad standard varied between firms. Each railroad had its own time inspector who determined which watches measured up to the railroad’s standards. Generally speaking, the standard for accuracy for railroad timepieces was plus or minus 30 seconds per week. Additionally, to be certified, railroad standard watches had to be adjusted to accuracy in six positions, including face up, face down, crown up, crown



**Figure 2**  
*Summary: Railroad time service requirements preceded the American watch industry. Rules were in place as early as 1849 and by the mid-1850s a number of railroads had some form of program. Almost from the beginning, the key requirement was to keep time within 30 seconds per week.*

pointing downward, crown to the left, and crown to the right. Since the user might carry the watch in a hand or pocket in any of these positions, it had to be accurate in all of them.

The Ligonier Valley Rail Road Museum has a good example of a railroad “standard” watch in its collection. (See Figures 1 and 2). The watch was manufactured by the Illinois Watch Company in 1917 and is a “Bunn Special,” serial number 3221535, 21 jewels, adjusted to six positions.

**References:**

“Railroad Watches and Time Service,” Larry Treiman, NAWCC Bulletin No. 160, October 1972, pp. 651-675.

“What is a Railroad Watch? A Case Study of Watches and Watch Inspection on the Burlington Route During 1889 and 1890,” Greg Fraenhoff, NAWCC Bulletin, No. 298, October 1995, pp. 590-594.

“Early Railroad Timekeeping,” Dana J. Blackwell, NAWCC Bulletin No. 245, December 1986, pp. 459-463.

“Rules for Passenger Engine Men, ‘Rules and Regulations for the Government of the Transportation Department of the Pennsylvania Rail Road,’” 1849, reprinted in “Railroad Timekeepers,” Ian R. Bartky, NAWCC Bulletin No. 262, October 1989, pg. 401.

“Running on Time,” Ian R. Bartky, Railroad History No. 159, Autumn 1988, pp. 23-24.

## Fred Potthoff Named to the LVRRA Board of Directors

During the first meeting in 2014, the LVRRA Board of Directors voted Fred Potthoff as the newest member to the Board.

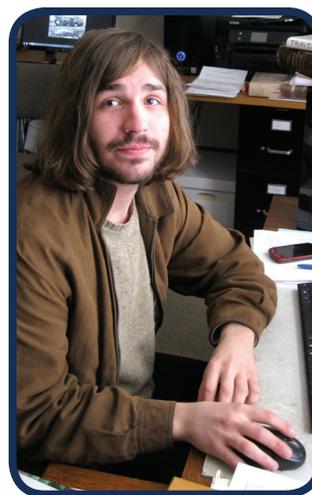
Fred is the co-founder and co-owner of Kroff, Inc. Since the founding in 1988 he and his partner have grown Kroff, Inc. to where it now includes 9 companies that have done business in Europe, Asia, North and South America, and Africa. The primary focus of the Kroff suite of companies is in providing water treatment chemicals and consulting to industrial and commercial facilities. However, companies under the Kroff, Inc. umbrella range from a company that recycles waste oil to a company that develops chemical additives used in oil and gas drilling.

Fred is an active member of the Association of Water Technologies, and he served on its board of directors for three years. He has been a two-time chairman of the International Water Conference and sat on the executive board for the conference for 10 years.

He is an active member of Vistage, Building Owners and Managers Association, Association for Iron and Steel Technology, the Engineers Society of Western Pennsylvania, and sits on the College of Business Advisory Board at Shippensburg. In 2012 he was a finalist for the Ernst and Young Entrepreneur of the Year Award and winner of the 2012 Pacesetter Award. Fred is also a recipient of the 2010 Jesse S. Heiges Distinguished Alumnus Award from Shippensburg University. The award is the university’s highest honor, recognizing distinguished and

outstanding achievements in the recipients’ field that benefit the community and society.

He earned his bachelor’s in business from Shippensburg University in 1970 before serving in the United States Marine Corps. Reserves.



## Donald Stauffer to Intern at the LVRRA.

A candidate for an AAS degree in Multi-Media, Donald Stauffer is already hard at work editing archival footage for a video, producing promotional material, and working on building LVRRA’s presence through social media. Stauffer attends Westmoreland County Community College and will earn his degree in May 2014.

## Recent Contributions

Thanks to all contributors for the following items that have been donated to the LVRRA since the last Liggie publication

**Ray Kinsey**  
**PRR water can**



## Local Author's Book is Published and Set for Release March 3, 2014

Robert (Bob) Stutzman, cofounder and past member of the board of directors of the LVRRA, has just published through Arcadia Publishing, his book, *The Ligonier Valley Rail Road*. Bob's book details the history of the Ligonier Valley Rail Road and its impact on the Ligonier Valley. Bob will be at the Ligonier Valley Rail Road Museum to discuss his book and sign copies. A time and date of the book signing will be announced once a date is confirmed.



## 6<sup>th</sup> Annual Model Railroad Home Tour

**MAY 3, 2014**

**9 AM until 4 PM**

Sponsored by: The Ligonier Valley Rail Road Association

*The tour will visit multiple layouts and displays  
in Westmoreland County.*

**Ticket prices are: \$15 adults -- \$5 under 16**

Tickets are advance sale only and only 300 will be sold.

No tickets will be sold after April 25.

Send your check along with your return information including your phone number and e-mail address to:

LVRRA • P.O. Box 21 • Ligonier, PA 15658

Make checks payable to: LVRRA

Tickets and maps will be mailed starting in late March.

For further details: [www.lvrro.org](http://www.lvrro.org) or Phone: 724-238-7819

### E-Version of The Liggie



If you prefer to access the newsletter in electronic format rather than to receive a hard copy, please notify the office at **724-238-7819** or send an e-mail to **[www.lvrro.org](http://www.lvrro.org)**

### Correction from the Last Liggie

Gary Lamolinara and Great Dane Powder Coating were omitted from the list of those credited with restoring the Bobber Caboose.

## Board of Directors

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Janet Hudson

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Bill Stablein

Jim Aldridge

Bob Stutzman

Pat Wallace

## Upcoming Events

- ★ **Saturday May 3, 2014:**  
Model Train House Tour  
(see details below)
- ★ **Sunday, May 4, 2014:**  
Community Day
- ★ **Tuesday, May 6, 2014:**  
Day of Giving  
If you do not have access to a computer, you may make your contribution to the office in advance. We will then make your donation in your name to take advantage of the match.
- ★ **Friday, June 13, 2014:**  
Annual Dinner –  
Invitations will be mailed in May

## CALL FOR VOLUNTEERS

If you would like to volunteer at the museum, stop in or give us a call at **(724) 238 – 7819** to discuss available opportunities.



Ligonier Valley Railroad Association  
P.O. Box 21  
Ligonier, PA 15658

# THE MISSION of the LVRRA

Ligonier Valley Rail Road Association

Organized in 2004:

**To Preserve** the legacy of the LVRRA

**To Conserve** vestiges of the LVRRA

**To Collect** memorabilia of the LVRRA

**To Educate** the public about the history of

railroading in Ligonier Valley

**Find us on the web**

[www.lvrra.org](http://www.lvrra.org)



## Hours of Operation

Wednesday through Saturday  
11 a.m. to 3 p.m.

724-238-7819 [info@lvrra.org](mailto:info@lvrra.org)

Please consult the website for changes

[www.lvrra.org](http://www.lvrra.org)

## Contact Information

Ligonier Valley Rail Road Museum

3032 Idlewild Hill

P.O. Box 21

Ligonier, PA 15658

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The Ligie is published

quarterly for

Friends of the LVRRA.