Carolina Conductor

Volume 7 Number 1 **Monthly Newsletter of the Carolina Railroad Heritage Association, Inc.** © January 2020

Preserving the Past Active in the Present Planning for the Future

Web Site: hubcityrrmuseum.org
Facebook: Carolina Railroad Heritage Association

Meeting Site:
Woodmen of the World Bldg.
721 East Poinsett Street
Greer, SC 29651-6404
Third Friday of the Month at 7:00 pm

Hub City Railroad Museum and SOU Rwy Caboose #X3115:
Spartanburg Amtrak Station
298 Magnolia Street
Spartanburg, SC 29301-2330
Wednesday 10-2 and Saturday 10-2

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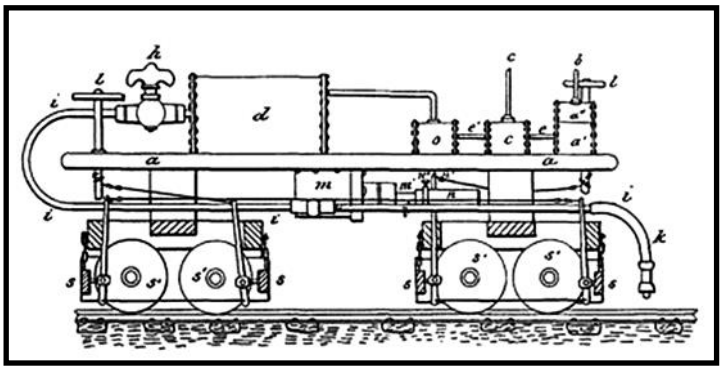
Articles can be submitted anytime.

Early Brakes

Early methods of stopping trains included reversing the locomotive engine and the use of wheel braking systems that were limited to the locomotive and its tender. During the 1860s, railway brakes were manually-operated by the brakeman, who applied or released them by turning a handwheel that was positioned at the end of the car.

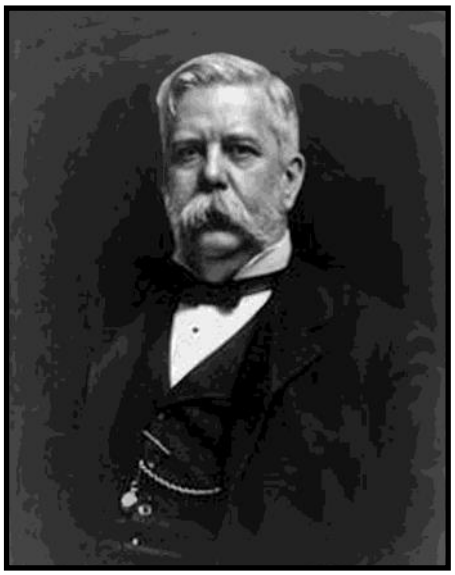


Westinghouse Brake Patent 1868.

By the late 1880s, passenger trains were running as fast as fifty and sixty miles per hour. Rail lines, once local and isolated, had become interconnected so that freight cars could carry their goods across the country by being hitched to a succession of different trains with compatible coupling and braking systems.

Various patents for brake improvements featured apparatuses for linking the brakes between the cars and employed different methods for reducing slack in the brake line. These innovations made it possible for trains to become longer and to carry more cargo, as heavier trains require more stopping power. The most successful of the early continuous brakes used a chain link running through the length of the train that connected to a single control.

As the use of railways increased,



George Westinghouse

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President's Message

Happy New Year, and welcome to the new decade. Your Carolina Railroad Heritage Association and National Railroad Historic Society has many activities going on to keep bringing the Carolina's railroad heritage alive.

First, the Hub City Railroad Museum, managed by Dave and Anne Winans. The exhibits are great and keep changing. The new exhibit displays all the railroad inventions of South Carolina inventors. Plan to stop by often. Museum hours are 10am to 2pm on Wednesdays and Saturdays.

Second, our caboose, located near the Museum and built in 1947 is undergoing extensive restoration. The Southern Railway Hayne Shops converted a box car into this bay window caboose, and understandably, is now suffering from extensive rust damage and wood rot. Unlike a classic car, you can't do a "frame off" restoration, but the team is stripping out the interior, welding rust holes and replacing all the windows and doors. We'd appreciate you stopping by on Wednesday and Saturday mornings to peek in and check out what's happening or wear old clothes and join in the work.

Third, there are many other activities in progress. Ask a board member, or better, come to our next board meeting on February 3rd, at the Taylors Library, 6:30PM. I'll update you next month on more activities.

Published author of books on the Walt Disney Railroads, David Leapheart, will explore the railroads of Walt Disney World in Florida. He will touch on the fascination of

Walt Disney with railroads and then look at the two railroads in Florida - the WDW Railroad around the Magic Kingdom and the former Fort Wilderness Railroad in the Fort Wilderness resort. Both have a rich history. There will be books and models on display.

I look forward to seeing you at the first meeting of the new decade, January 17th.

Happy Railroading, Steve Baker
President

Train Wreck

On Tuesday September 29, 1925 at about 7:00pm a Southern Railway Spartanburg Division train with locomotive #1852 was holding to 32 freight cars in track 2 of the west yard when the cars rolled away from the locomotive. The conductor and switchman were on the runaway, trying to slow or stop the errant cars by tying handbrakes down, but were unsuccessful. The cars rolled out of the west yard and into the South yard lead where they struck 2-8-0 locomotive #214.

Locomotive #214 was engineered that fateful day by William Bridges with his son Ledford as fireman. The impact killed Engineer Bridges, who for some reason was found at the front of the wrecked locomotive. Ledford was unhurt. The total number of runaway cars was not recorded, but 11 derailed, including three boxcars and eight coal hoppers.

The Asheville to Spartanburg line was blocked until midnight that day. Train #10 running from Asheville to Columbia was delayed 40 minutes and had to use a yard track. The Hayne and Greenville derricks removed the derailed cars. Two hundred yards of track was repaired.

Mr. Bridges was a twenty-year veteran of Southern Railway, the previous ten as a yard engineer.

The bell from #214 on display at the Hub City RR Museum , on loan from the Chapman Cultural Center, Spartanburg.

Wanted—Articles for the Carolina Conductor

Submit an article of 200 words or more with some photos and captions and see them in print. Every one of us has some unique railroad experience that would make interesting reading for our membership. Your editor always needs more contributions of local railway history and news.

Membership Application

To continue your membership and newsletter please remit your dues by Feb 15th!

NAME: _____

ADDRESS: _____

CITY: _____ **STATE:** _____ **ZIP:** _____

HOME PHONE: (_____) _____ **CELL PHONE:** (_____) _____

EMAIL ADDRESS: _____

APPLICATION FOR:

_____ **INDIVIDUAL / SENIOR MEMBERSHIP — Emailed newsletter** **$17.00**

A single member 18 years old or older.

_____ **INDIVIDUAL / SENIOR MEMBERSHIP — Printed and mailed newsletter** **$37.00**

A single member 18 years or older.

_____ **FAMILY MEMBERSHIP — Emailed newsletter** **$22.00**

Shall include all family members residing at a single address. List family member names below and note age if under 18.

_____ _____

_____ _____

_____ **YOUTH / STUDENT MEMBERSHIP — Emailed newsletter** **$ 7.00**

A member 8 years to 17 years of age. Youth / Student members must have permission of a parent or legal guardian.

Permission Signature: _____

TOTAL: $ _____

Signature: _____ **Date:** _____

Please make check payable to:
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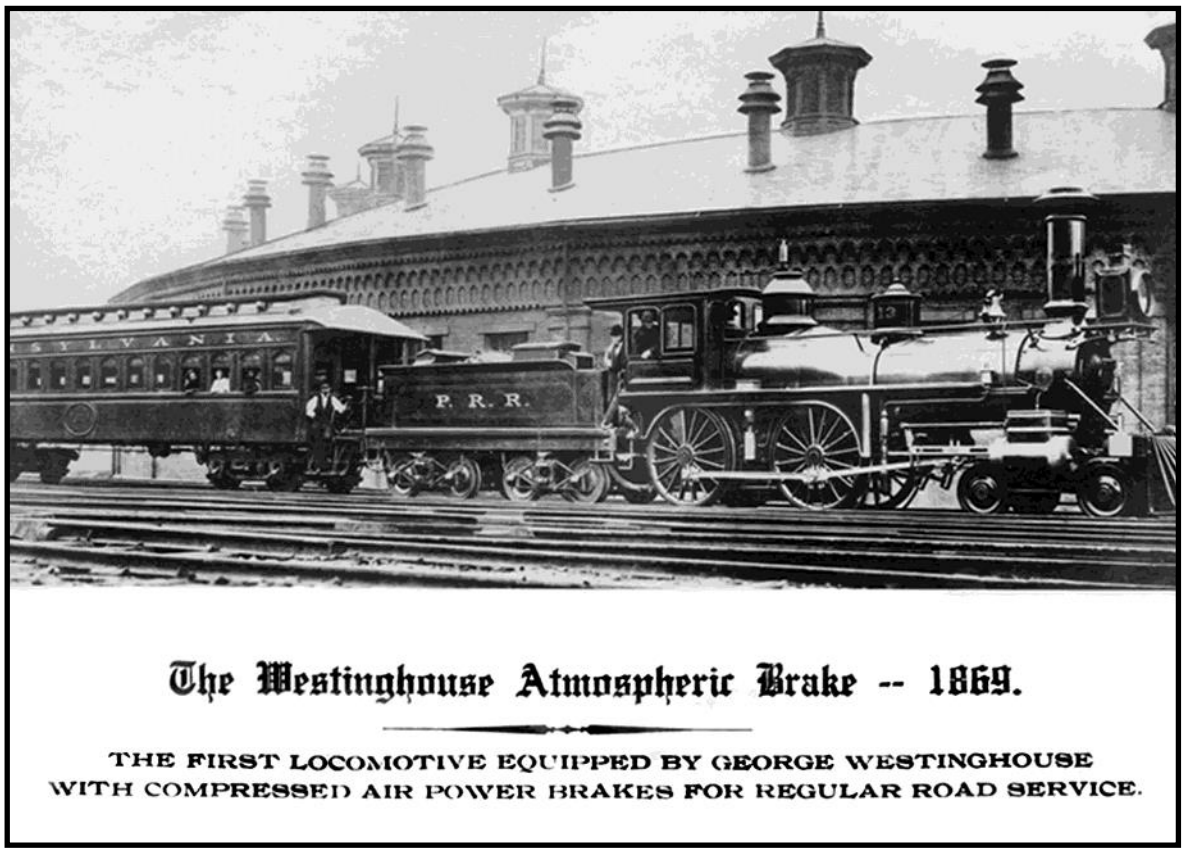


The Westinghouse Atmospheric Brake -- 1869.

THE FIRST LOCOMOTIVE EQUIPPED BY GEORGE WESTINGHOUSE WITH COMPRESSED AIR POWER BRAKES FOR REGULAR ROAD SERVICE.

the need for "automatic" brakes, which would engage in cases of accidental car uncoupling, grew more urgent. Railroad engineers grew quite inventive because of the proliferation of rail crashes involving cars that detached and ran downhill. Even a few chain brakes were designed to engage in cases like this, the tension in the chain functioning to keep a brake lever disengaged.

Steam brakes were among the early power brakes. Used on locomotives and their tenders, they had dual disadvantages: steam lost pressure as it cooled and the hoses carrying the steam would freeze up and clog with ice in cold climates. Steam pipes were not alone in their vulnerability to ice; it could handicap chain brakes as well.

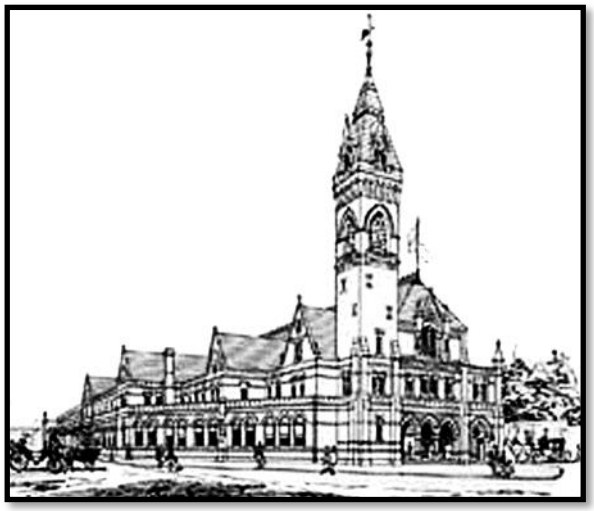
Contemporary freight trains employ air brakes that use compressed air to keep a car's brakes disengaged. When air pressure drops in a car's reservoir the brakes apply automatically. George Westinghouse patented his first air brake in 1869. He had difficulty persuading railroad officials that air could stop a train, but the efficiency of his system convinced detractors, and, by 1880, the Westinghouse automatic air brake had been installed on 2,211 locomotives and 7,224 cars in the United States. It was also used on rail locomotives and cars in Europe and Australia.

The efforts of the Master Car Builders Association to standardize brakes, couplers, and car design, and the Safety Appliance Act of 1893, brought U.S. railroads into modern times. The Act mandated that all rail lines conducting interstate commerce must use cars that coupled and uncoupled without manual assistance of a worker standing between cars. The Act also required that the trains employ power braking systems that could control the speed of the train without a brakeman to do so manually. A seven-year grace period allowed railway companies time to comply with the new law. The effect of the changes was marked by the dramatic reduction of injury and death to brakemen.

Before automatic air brakes the brakeman would go from car to car setting brakes manually.

Time Standardization

At high noon on Promontory Point, May 10, 1869, a crowd of railroad workers, government officials, and railroad supervisors gathered to watch the driving of the final, ceremonial golden spike. Officials from the Union Pacific and the Central Pacific stood ready. Reporters from over 20 newspapers were in attendance to report the story to a curious public, but the first transmission of the news was the responsibility of the telegraphers.



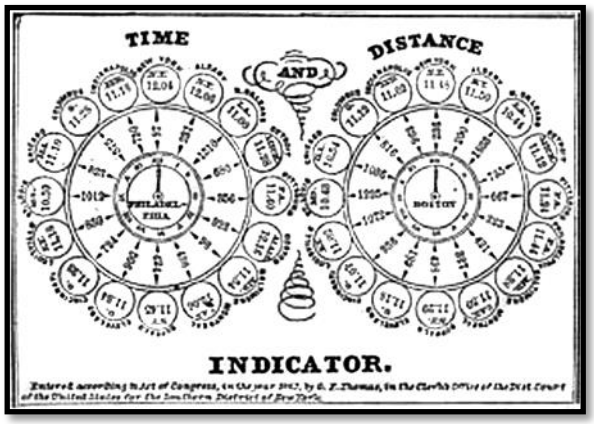
The rail station in Boston featured a prominent clock tower that helped travelers and stationary citizens maintain a schedule that was synchronized to local time.

Telegraph wires had been attached to both the spike and the maul, exemplifying the union of the country. When the maul struck the spike, the exact moment in time would be transmitted along telegraph lines to reporters waiting in cities and towns across the entire nation. The opening ceremony was a disorganized affair and the crowd waited an additional 45 minutes for Leland Stanford to raise the silver maul that would drive the golden spike. Stanford swung the maul and an eager telegrapher relayed the message, "Done!" The moment was recorded, but with no time standards in place, the time the golden spike was driven was reported in accordance with local time across the country: 12:45 p.m. at Promontory Point, 12:30 p.m. in Virginia City, both 11:44 and 11:46 a.m. in San Francisco, and 2:47 p.m. in Washington D.C.

When the Union Pacific and the Central Pacific Railroad formed the Pacific Railroad, later called the transcontinental railroad, more than 8,000 towns were using their own local time and over 53,000 miles of track had been laid across the United States. Railroad managers and supervisors well understood the problems caused by so many discrepancies in time keeping.

In the mid-19th century, three types of time measurements were used: natural time, local time, and de facto railroad time. Time based on the natural movement of the sun throughout the day was still in use by individuals and was especially suited to an agrarian society. Local time used synchronized astronomical time, based on time at the meridian of a specific location. It was displayed by town clocks and was useful for civil government and to anyone needing to synchronize a watch. Railroads ran on the time kept in the city where the line originated.

Travelers by train would be synchronized with local time at only one point in their journey. In the late 1840s, New England railroads began publishing monthly schedules, which they called timetables, to coordinate time between train lines. Eighty different timetables were in use in the U.S. by the 1860s, making connections between train lines very difficult. The British had already addressed the issue of railway time in 1847, using the meridian of the Royal Observatory at Greenwich, hence Greenwich Mean Time. The smaller size of England made the problem easier to resolve since it required only one time



By the 1860s, ascertaining the time for connections between trainlines was complicated.

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zone.

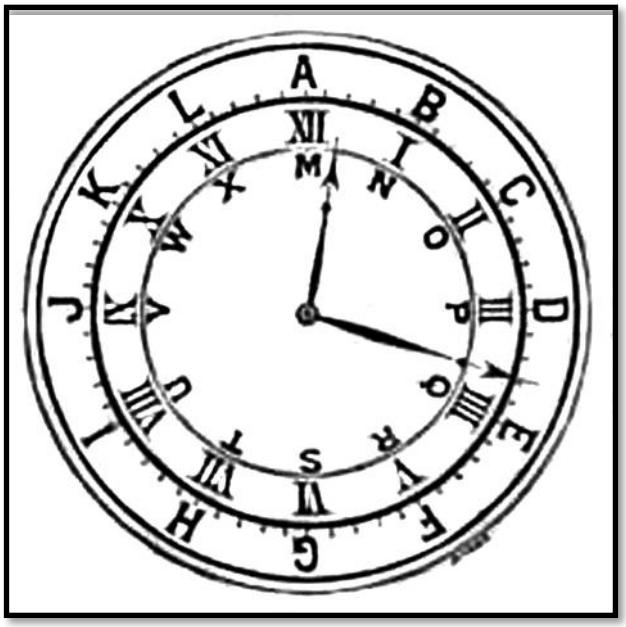
In the late 1860s, Charles Ferdinand Dowd developed the first comprehensive, practical plan for time standardization in the United States. Dowd ran Temple Grove Seminary, a school for girls in Saratoga Springs, New York. He was not a railroad man, but he developed his interest in timetables and time standards as a teacher posing a problem to his students. In 1869, he wrote his first standard for Railway Time. Dowd's original concept was to create one time zone, like Great Britain, using Washington, D.C. as the national meridian. Since the railroads were at the heart of commerce, their needs were often given primacy, but no one at that time would accept the radical idea of changing local time. Dowd recommended that cities and towns could use their local time and railroads would use Railway Time. With this plan, any locale would only have two-time standards to reconcile. In order to simplify the matter further, translation tables between the two times could be issued regularly and sold as a pamphlet or gazette. However, with the joining of the country by the transcontinental railroad and the lengthening of other rail lines, Dowd soon realized that the difference in local time for a single train line could be enormous.

After receiving tentative approval from some of the railroad companies, Dowd developed his plan to include time standards in hour sections, or time zones, positioned similarly to those in use today. In 1872, railroad superintendents Robert Harris, Joseph. F. Boyd and E. G. Barney tried to convince Dowd to move his meridian from Washington to New York. To avoid further argument on the position of the meridian, Dowd sought a more neutral location and recommended Greenwich Mean Time. In 1873, a group of railroad managers and supervisors came together at the General Time Convention and passed a vote commending Dowd's work. With this vote, a resolution looked promising, but the Convention members took no further action, and by the late 1870s, Dowd and his plan for time standardization plan were all but forgotten.

Scottish-born, Canadian engineer Sanford Fleming is credited with being the Father of Time Standards. Fleming spent his career working for the railroads, first as a surveyor, then over-seeing construction, and later supervising railroad maintenance. He was quite familiar with the issue of Railway Time. Fleming published his first pamphlet *Terrestrial Time* in 1878. Fleming's plan was like that of Charles Dowd, and he acknowledged Dowd's contribution to his work, but Fleming took his time standardization plan to the next level. He recommended international standards, citing the circumstances of a steam ship traveler from Great Britain who upon arrival in North America transfers to a train.

The interest in Fleming's time standards would probably have also waned, if not for William F. Allen railroad engineer and editor of the *Official Guide to the Railways,* and eventually Secretary of the General Time Convention. Allen knew that military and the scientific communities also had an interest in time, but as editor to a guide of timetables, he was immersed in the problem daily. With the railroads holding a core economic position in both the United States and Canada, the support of railroad management was key to any standardization plan. Allen called for "unity of action" and worked tirelessly to publicize the information needed to develop consensus for ratifying Railway Time.

Allen travelled throughout the country, gauging the level of willingness to adapt and presenting the



This clock demonstrated one of the recommendations for a system of 24-hour, standardized time that would be unique to U.S. railroads. Using this system, 1:30 a.m. would be B:30 and 1:30 p.m. would be N:30.

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plan as iterated by the General Time Convention. He met with railroad men and surveyed railroad supervisors and managers. All persons questioned favored a comprehensive system of standard time for North America. The plan that Allen disseminated combined Dowd's and Fleming's plans and proposed the concept of International Time as an eventual, although not immediate, outcome. The standard was based on a 24-hour clock and was not meant to compete with local time or, more importantly, with the purveyors of local time. The Naval Observatory provided a time signal by dropping a time ball at noon, and the Navy also transmitted a time signal by telegraph line to their ports. The Harvard College Observatory sold a standardized telegraphic transmission of their local time signal. Keepers of public clocks and fire bells, jewelers, and builders of apparatus for dropping time balls also had a financial stake in regulating time.

The General Time Convention specified five time standards, called zones today, one on the Atlantic and four for the continental United States. The standards were identified as Eastern Time on the 75th meridian; Valley Time at the 90th meridian, later called Central; Mountain Time on the 105th meridian; and Pacific Time on the 120th meridian. Eastern time was four minutes slower than New York Time and Valley Time was nine minutes slower than Chicago Time. The time standards were structured around five governing principles, meant to address the concerns of railroad management and workers. The principles stated that:

1. Railway time would never vary more than 30 minutes from local time and translation tables would be provided for anyone still wanting to use local time.
2. Time standards would be organized to cover as many rail lines as possible.
3. Standards will vary by one hour.
4. Standards will be made at well-known points of departure.
5. Changes will be made at the end of rail lines except for where unavoidable, as in the case of transcontinental lines.

24 hour pocket watch.

At the General Time Convention of October 1883, the new standards were unanimously approved. At noon on November 18, 1883 at the 75th meridian (Eastern Time) the railroads changed over to the new time standards to be known as "Railroad and Telegraph Time." When the transcontinental railroad tied the nation together physically, a regional problem became a national one. Agreement on the standardization of time took place 20 years after Dowd's 1869 proposal, but with the force of the railroads behind it, the measurement of time by these standards was eventually adopted by commerce, government, and individuals throughout the country.

24 Hour Clock

The 24-hour clock is the convention of time keeping in which the day runs from midnight to midnight and is divided into 24 hours, indicated by the hours passed since midnight, from 0 to 23. This system is the most commonly used time notation in the world today, and is used by international standard ISO 8601.

A limited number of countries, particularly English-speaking, use the 12-hour clock, or a mixture of the 24- and 12-hour time systems. In countries where the 12-hour clock is still dominant, some professions prefer to use the 24-hour clock. For example, in the practice of medicine, the 24-hour clock is generally used in documentation of care as it prevents any ambiguity as to when events occurred in a patient's medical history. In the United States and a handful of other countries, it is popularly referred to as military time.

Railroad Nicknames

Some of my favorite nicknames for various railroad jobs are:

“Baby Lifter” - Brakeman. Maybe he helped carry babies on the train for their mothers? Not sure how that nickname got started.

“Bakehead” - Nickname for the Fireman, because his head was so close to the fire box while he was shoveling coal.

“Big C” - The Conductor.

“Big E” - The Engineer.

"Boomer" - Itinerant railroad workers, always moving from one location to another.

"The Brains" - The Conductor.

"Brass Hat" - A railway executive (usually a division manager or higher).

"Bull" - Railroad detective.

"Carman" - A person trained in the craft of inspecting and repairing railroad cars.

"Conductor" - Traditionally, the railroad employee who walked up and down the aisles of the passenger cars taking tickets, etc. This term was sometimes teasingly used on Brakemen who had pencils sticking out of their pockets.

"Dead Head" - A railroad employee traveling on a pass.

"Dinger" - A Yard Master.

"Door Slammer" - What freight trainmen called passenger trainmen.

"Flagman" - The rear brakeman. To be a Flagman, the brakeman had to know how to read, so he could understand train orders, which from time to time would be changed enroute. Most Flagmen were proud of the fact that they were Flagmen, which set them above their fellow brakemen that could not read.

"Foamers" - name given by train crews for people who gathered along the railroad tracks to watch and wave at trains.

"Gandy Dancer" - Name given to a railroad track worker. The name came from the Gandy Manufacturing Company in the 1800's who made a lot of track tools.

"Guinea" - A new worker or a worker who is not familiar with job requirements.

"Hoghead or Hogger" - A railroad engineer (locomotives were nicknamed "Hogs").

"Iron Bender" - A switchman.

"Lighting Slinger" - A railroad telegraph operator.

"Number Dummies" - Clerks who worked as yard checkers.

"Old Head" - Someone who does his job well.

"Piglet" - A locomotive engineer trainee.

"Skipper" - The conductor.

"Spotter" - A company employee charged with spying on other employees, especially in the old days when a conductor would collect cash fairs from passengers and sometimes did not turn in all the receipts to the company at the end of the trip.

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