Carolina Conductor

Volume 6 Number 10 **Monthly Newsletter of the Carolina Railroad Heritage Association, Inc.** © October 2019

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 p.m.

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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Vice-President & Secretary:
Steve Baker - 864-297-0918
Treasurer:
Marv Havens - 864-292-3852

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Articles can be submitted anytime.

Bridges and Tunnels

Bridges and Tunnels on the Transcontinental Railroad

The successful design of bridges, trestles, and tunnels along the transcontinental route was critical for the railroad to function. Construction crews built these structures as they worked ahead of the track-layers. They crossed rivers, canyons, through mountains, and over dry gullies that would wash with water during rain and spring snowmelt. Engineers for both railroads faced dangers and endured environmental extremes on a scale that no railroad builder had yet faced.

Bridges and Trestles

Existing bridge design was incapable of supporting the stress of the heavy loads concentrated over the axles of a train. The structures also lacked the flexibility needed to traverse acute curves and abrupt changes in grade. New designs were needed to accommodate heavier and faster locomotives that would replace forms of transport like oxen and horses. Bridges designed for the transcontinental railway kept road grade at an inclination that allowed trains to ascend and descend hills at a safe rate of speed.

In the Sierra Nevada range, track raised on trestles hugged steep cliffs, making it possible to build a railroad through the mountainous Donner Pass. Trestles, one of which was eleven hundred feet long, hugged the precipitous sides of Cape Horn. In *Building the Pacific Railway,* author Edward Sabin describes:

Here a bed had been literally chiseled from the granite slope so sheer that laborers, yellow and white, were suspended by ropes while they hacked, drilled and blasted, 2500 feet above the rushing American River. Steadily making height, the iron trail bored on past the storied mining ca.m.ps of Gold Run, Red Dog, You Bet, Little York, startling the echoes with raucous blasts of the panting iron-train, signaling civilization's advance.

Before the advent of the railroad, trusses were used in foot and wagon bridges. The design was made up of supporting members joined together into triangular forms. For the railroad, the truss bridge was reinvented and constantly improved upon, from its overall design to the design of its separate members. The truss was ideal for the transcontinental railroad because it required less lumber. Its downward thrust required fewer substantial support members than the horizontal thrust of an arch bridge would have needed. Because it was built of small members joined together it could be manufactured off-site and constructed by a relatively unskilled work force.

Both the Union Pacific and the

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President's Message

September Meeting

The September meeting was held at 7:00p.m. at the Woodmen of the World Lodge in Greer on September 20, 2019. The program. for the evening was presented by Wayne Gallman and was about photographing trains. Wayne had previously presented this program. to the Spartanburg Photo Guild.

October Meeting

The October meeting will be held on October 18 at 7:00 p.m. at the Woodmen of the World Lodge in Greer. The program. for the evening will be presented by Mark Fredericks, of Anderson, and he will give a brief history of the Palmetto Live Steamers and how he got started in the live steam. ride-on hobby.

Also, he will discuss the locomotive that he and a friend built. He has a few photos and short videos that he will show to illustrate his program. Then he will answer any questions.

Mark Fredericks operating his live steam. locomotive.

Calendar of Events

Mark your calendars for the following events:

October 18, 2019 - Regular meeting, Woodmen of the World Lodge, Greer, 7:00 p.m.

October 26, 2019 – Train Show, Simpsonville Senior Activity Center

November 4, 2019 – Directors' Meeting, Taylors Library, 6:30 p.m.

November 5, 2019 – Train Lover's Lunch, A&P Restaurant Hwy 14, Greer, 11:30 a.m.

November 9, 2019 – NMRA Division Meeting, Northgate Baptist Church, 633 Summit Dr., Greenville, 9:00 a.m.

November 15, 2019 – Regular meeting, Woodmen of the World Lodge, Greer, 7:00 p.m.

November 22, 1:30 to 5:30 **& 23,** 9:30 to 4:30**, 2019** – P 'N' S T-Trak model railroad at Taylor's Library.

Caboose Renovation

Work continues on the Caboose renovation. Jim Hopkins has been welding on the metal caboose skin to seal as many potential sources of water leaks that we can locate. 90% of all the welding had been done.

All wood has been removed

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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.

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from the walls and ceiling. We have started applying a rust converter to the corroded metal to help minimize further corrosion. Next on the agenda is the removal of all deteriorated wood in the floor.

If you would like to help with the renovation, please contact Duane Heard at 810-623-7444.

Member Jim Hopkins is shown welding up one of the holes in the side of the caboose.

Election of Directors

We will be taking nominations for directors at the October meeting, with elections to be held in November. Please give some thought to members you think should be on the Board of Directors or if you would like to serve on the Board, please let a current director know, so that your name can be placed nomination.

Save The Date

Santa and Mrs. Claus will be at the Hub City Railroad Museum on December 21st, from 11 a.m. to 1 p.m.. Further details will be forthcoming.

Santa getting AJ's Christmas list with his parents, as Mrs. Claus watches.

Visit the Museum

Our latest Museum display is a display of glass and ceramic insulators used on telegraph and telephone pole lines. We also have an adjoining display consisting of historic communications equipment. The Hub City RR Museum is open from 10 a.m. to 2 p.m. on Wednesdays and Saturdays.

One of the many types of glass Insulators on display at the museum.

September Minutes

Minutes of the September Directors' meeting are attached to the email.

Thanks,
Dave Winans, President
864-963-4739
dwinans4739@charter.net

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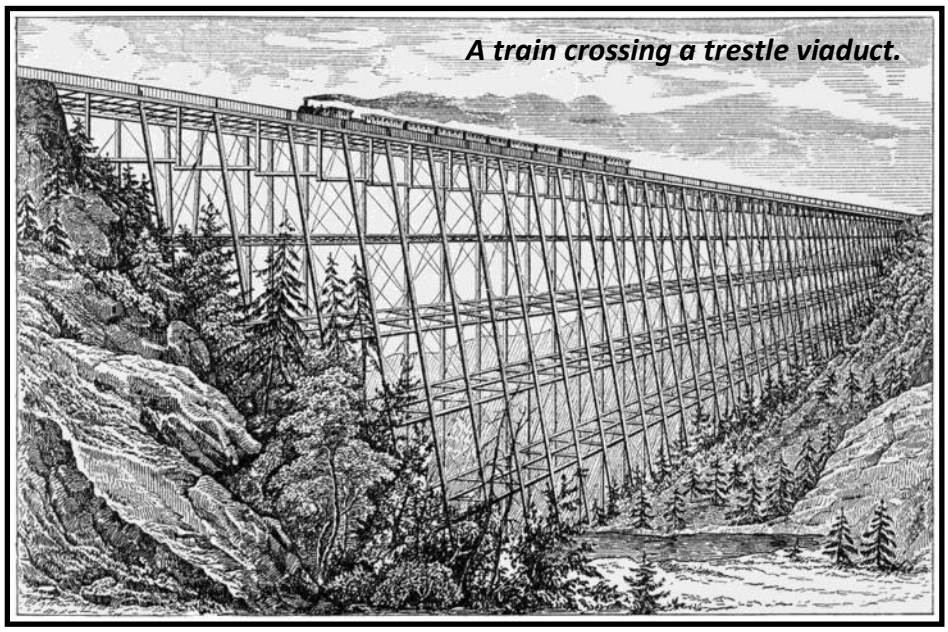
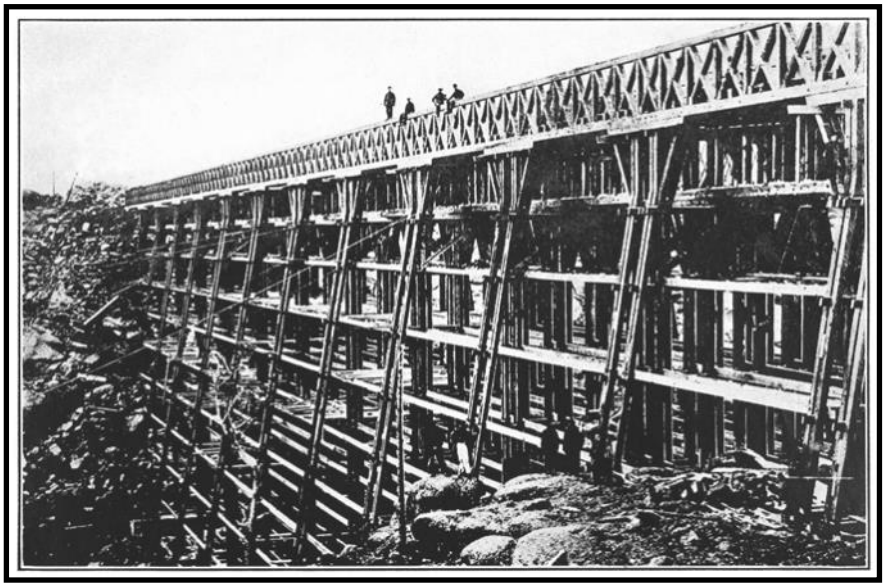


A train crossing a trestle viaduct.

Central Pacific railroads used William Howe's patented truss design. The Central Pacific's American River Bridge and the Union Pacific's bridge over the Missouri River, on either end of the transcontinental railroad, were examples of the use of Howe's truss. The Howe truss was the first design to incorporate metal with the wood construction.

Wood was plentiful along much of the right-of-way. Howe's design made it possible for the competing railroads to build bridges and trestles quickly and out of readily available materials to get the trains moving and bringing in revenue. By incorporating metal into his design, Howe's invention made it possible for the railroads to build with unseasoned wood. Iron bridge members could be adjusted to accommodate the shrinkage or warping of the wood as it aged.

The railroad companies first built temporary wooden trestles and bridges that they later replaced with more durable and permanent iron structures. Wood, though prone to decay and fire, was cheaper and more obtainable than the iron (and, much later, concrete) that would replace it.



The Dale Creek Bridge, 2 miles west of Sherman, Wyoming.

The wooden structure of the Union Pacific's Dale Creek Bridge was twice replaced, both times by iron bridges, before being made obsolete by the railroad's relocation. The bridge, built over the Dale Creek between Lara.m.ie and Cheyenne, Wyoming, was, at 600 feet, the longest bridge on the original Union Pacific route. With stone foundations and wooden supports, it raised the track 120 feet over the bottom of the ravine and required guy ropes to hold it steady in the wind.

About fifty miles northeast of Sacramento, the Central Pacific built the Dry Creek Bridge in four forty-five-and-one-half-foot wooden spans. It was the iconic rickety wooden bridge of the American Western movie, tall and narrow, with impossibly rangy and willowy-looking piers. Although trains had to reduce their speed considerably to cross a long wooden bridge or trestle, the important thing was to get the trains moving to collect revenue that would pay for new and improved bridges.

Tunnels

The Summit Tunnel, near Donner Pass.

By the time the railroads met at Promontory Point, the Union Pacific had dug four tunnels. This accomplishment seems insignificant

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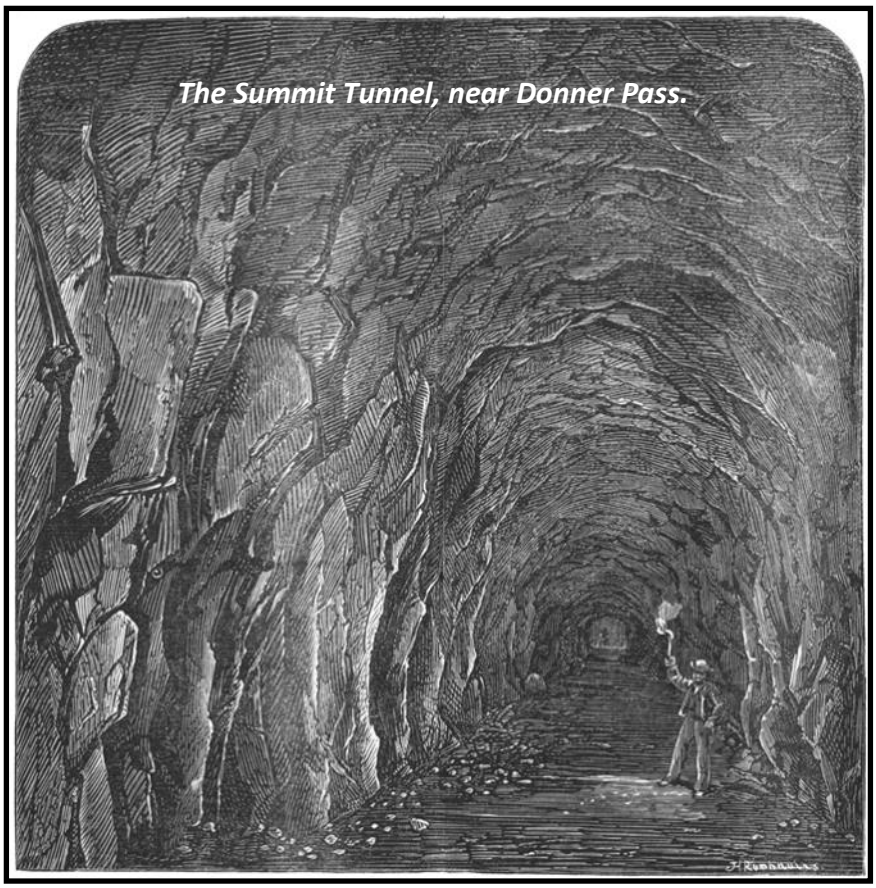
when compared to the fifteen tunnels dug by the Central Pacific through the seemingly insurmountable Sierra Nevada's. One tunnel alone, the infamous Summit Tunnel, then known as Tunnel No. 6, was at an elevation of 7,000 feet and was the longest tunnel built, cutting through approximately 1,750 feet of solid granite.

The 1860s were a transitional time for tunneling technology, bringing new equipment and methods to a laborious process. Despite the changes, news of the Massachusetts Hoosac Tunnel project may have influenced Superintendent Ja.m.es H. Strobridge, in charge of Central Pacific tunneling, to make use of manual labor rather than cutting-edge machinery.

The Hoosac Tunnel took nearly thirty years to complete, due both to its five-mile length and to many technological difficulties, including an excavating machine that broke and became wedged in place. When engineers suggested that new steam powered drills be tried in the Summit Tunnel, Strobridge would not allow the steam engine "Sacramento" to stop hauling debris from the tunnel long enough to make the hose connections for the drills.

Instead of using steam power to dig its tunnels, the Central Pacific Railroad relied on the muscle of men wielding hammers and chisels to make the holes into which blasting powder was packed. An on-site blacksmith's shop stayed busy, employed in restoring the tips of rapidly blunted tools. At one point during the winter of 1866-67, there were eight thousand men working in three round-the-clock shifts, attacking the granite from four faces, drilling inward from the ends and outward from the center. When the black powder they used first was replaced with a new explosive, nitroglycerin, the pace of excavation increased from 118 to 182 feet per day.



The Summit Tunnel, near Donner Pass.

The work force that chiseled through the Sierra Nevada granite was composed mainly of Chinese immigrant workers who had arrived in California during the 1850s seeking to profit from the gold rush. But few Chinese workers found their fortunes in the mines. The late 1850s and early 1860s saw the passing of numerous local and state laws that discouraged companies from hiring Chinese. Indeed, Central Pacific officials initially balked at hiring Chinese workers because of prejudiced attitudes and a feeling that their slight statures were not suited for the demanding work of building railroads. An unreliable white workforce, however, forced Strobridge's hand and he agreed to employ Chinese workers in early 1867. The replacement workers proved so capable that the stunning masonry support of a portion of the railroad was named the Chinese Wall, an artifact of the original construction that remains intact more than 150 years later.

Granite was not the only obstacle faced by the Central Pacific when building tunnels. During that winter of 1867, forty-four storms brought record snows, with a total accumulation of forty feet. The laborers lived and worked in the tight warrens of tunnels they dug in the

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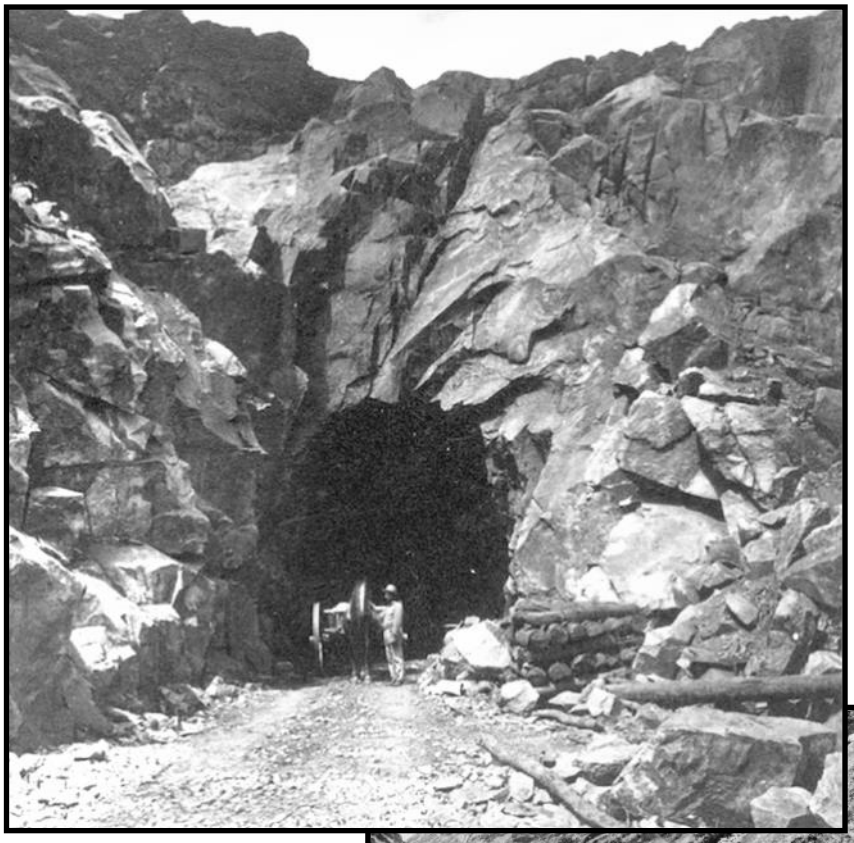

snow and the mountaintop. At another tunnel on the Central Pacific line, the Donner Peak Tunnel, or Tunnel Number Nine, work was stopped because snow drifts reached as high as twenty feet and dangerous snow slides began exacting a toll, taking many lives.

Edwin Sabin wrote of the conditions at this stage of tunnel construction, "In the spring the frozen corpses of laborers were revealed as the snow level lessened - still upright, their tools in their marble hands."

The tunnels along the Central Pacific line conquered the Sierra Nevada Mountain Range while the bridges and trestles built by the Union Pacific crossed chasms.

After Theodore Judah surveyed the high mountain chain for a route for the railroad, he traveled from the West Coast to the East by taking a stea.m.er to the Isthmus of Panama and then overland to take another stea.m.er to New York. In the early 1860s, this convoluted route was the most efficient means of travel between the coasts of what has become the contiguous United States. The tunnels of the Central Pacific, along with the Union Pacific's trestles and bridges, opened a faster, safer route for moving freight and people over land.

Workers at the head of Echo Canyon at Tunnel #2 Temporary bridge at Devil's Gate at mouth of Weber Canyon

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Mme. Begue and Her Recipies

Old Creole Cookery

By David Winans

I was loaned a copy of this book, which was published by Southern Pacific Railroad in 1900. As many of you know I have a passion for anything related to food and railroads. This book was so unique, that I felt I needed to share some of it with you.

Madame Begue

Begue's New Orleans

"Madame Begue served only one meal a day – a "second breakfast" at 11:00 a.m. This was to accommodate the hungry men who had been working in the Quarter on the docks since dawn. As the story goes, Begue's second husband convinced is new wife to add French recipes to the restaurant's menu. The new formula became very popular to more than just the dockhands who ate early lunches because of how early their day started. In 1884, the year of the big Cotton Centennial in New Orleans, Begue's was the place to eat and be seen. Travel writers and celebrities here for the World's Fair discovered the restaurant and New Orleans society took over the tables once reserved for blue collar workers alone.

A meal at Begue's began with a heavy soup; a second course featuring shrimp or crawfish; a third with snapper, trout or flounder; and a fourth with quail in wine sauce; followed by a fresh green salad, and dessert with as steaming cup of Café Brulot."

Front of Begue Restaurant circa 1900s.

I have pulled out some interesting recipes from the 1900 cook book. Interestingly the recipes are printed both in English and French. I think our tastes have changed just a tad, since 1900. Also, the recipes are not very specific on quantities and cooking temperatures.

Madame Begue's Jambalaya of Rice and Shrimp

Boil 2 dozen large shrimps; when cold, peel and set aside. Fry in hot lard a chopped onion and a cup of white rice washed in cold water. Let the onion and rice fry well, add

A meal in Begue's dining room.

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Recipe book cover.

shrimps, stirring constantly. When browned, add enough water to cover the whole. Season with salt and pepper, a bay leaf, thyme and chopped parsley. Let boil slowly, add water until the rice is well cooked. When done let it dry and serve hot.

Turtle Soup

Select a turtle of the desired size. Clean it well and cut in small pieces. If when bought, some of the inside is added to the meat, scrape well and cut small also. Fry a large onion in hot lard; when done put in the meat and let it fry a while. Add tomatoes, the quantity of bouillon needed, and a glass each of white and Madeira wine. Season to taste with pepper, a few cloves and bouquet consisting of a couple of bay leaves, thyme and parsley. Lastly add two spoonful's of Worcestershire sauce. Serve with toast bread.

Strawberries with Madeira Wine

Clean four boxes of strawberries, add three cups of granulated sugar and two cups of Madeira wine. Mix well and set two hours before serving.

Oyster Soup

Take a good piece of soup meat and boil it in a quart of water; season with salt only. Make a hash of green onions, parsley and chervil. Fry this in hot butter; add flour for thickening and pour broth on the whole. Add two dozen oysters and more water if needed, and season with a bunch of thyme, two bay leaves and a piece of strong pepper. Serve with toast bread.

Fried Eggplant

Cut in thick slices two eggplants and roll these in flour; season with salt and fry in plenty of hot lard. Brown well on both sides until crisp and serve hot.

Anchovy Salad

Divide the whites and yolks of six boiled eggs and chop fine with a bunch of parsley. Have your anchovies well cleaned and chop them also. Mix all together, and add vinegar, oil and mustard to your taste.

Mme. Begue in the kitchen.

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