

THE RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY



# NEWSLETTER

FALL 2006

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## Railroad Heritage and the California Dream *Thirty Years of the California State Railroad Museum*

*2007 Annual Meeting*


*Remembering Samuel Spencer*

*Photographing Chicago Union Station*

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Cover Photo: Transcontinental Railroad Exhibit at the California State Railroad Museum. Courtesy of CSRM.

Caboose silhouettes appearing at the end of each article are by Benn Coifman, [www.RailFonts.com](http://www.RailFonts.com). 



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## The Railway & Locomotive Historical Society Newsletter

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## Member Services

Membership applications, change of address and other membership status inquiries should be sent to :

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## Trading Post

Society members may use, without charge, the Trading Post section of the quarterly newsletter and the R&LHS web site to advertise items they wish to sell, trade or acquire or to seek information from other readers. This service is intended for personal, not general commercial, use. All items should be sent to David C. Lester at the address to the left.

## ARCHIVES SERVICES

The Railway & Locomotive Historical Society Archives Services provides four key services to members, which are listed below. All inquiries regarding these services should be addressed to R&LHS Archives Services, P.O. Box 600544, Jacksonville, Florida 32260-0544.

## Locomotive Rosters & Records of Building Construction Numbers

The Society has locomotive rosters for many roads and records of steam locomotive construction numbers for most builders. Copies are available to members at 25 cents per page, 40 cents per page for non-members (\$5.00 minimum).

## Back Issues of Railroad History

Many issues of Railroad History since No. 139 are available to members at \$7.50 per copy, \$12.50 for nonmembers. For more information on the availability of specific issues and volume discounts, write to the Archives Services address above.

## Articles from The Bulletin & Railroad History

Copies of back issues of these publications of the Society are available to members at 20 cents per page, 30 cents per page for non-members (\$5.00 minimum).

## Research Inquiries

Source materials printed, manuscript and graphic, are included in the Society's Archives. Inquiries concerning these materials should be addressed to the Archives Services address above. To help expedite our response, please indicate a daytime telephone number where you can normally be reached.

## About The Newsletter

The Railway & Locomotive Historical Society Newsletter seeks to serve as a vehicle for communication among the Society's Board of Directors, Chapters, and the over 50% of the membership which does not belong to a chapter. To accomplish this, the Newsletter reports Society news from three perspectives:

First, from that of the national organization, which is responsible for fulfilling the nine goals presented in the Society's Mission Statement.

Second, from that of the eight chapters of the Society, each of which are engaged in various activities to promote and preserve railroad history.

Third, from that of the individual member, who is engaged in research, interpretation, preservation and celebration of railroad history.

Each quarterly issue of the Newsletter includes the following sections: National Report, Chapter Reports and Trading Post. In addition, each issue will include at least one feature article that presents how railroad history is studied, researched, documented, preserved, communicated, displayed and celebrated. In addition, we have three regular columnists, listed at left.

Feedback on the Newsletter is always welcome, as are suggestions for feature articles. Please send any feedback, news items or suggestions to the Editor via U.S. Mail or e-mail.

## Publication Schedule for 2006


Issue	Deadline for Submissions	Mail Date
Winter 2006	January 6	February 1
Spring 2006	April 7	May 1
Summer 2006	July 7	August 1
Fall 2006	September 8	October 1

## FROM THE EDITOR

This issue of the *Newsletter* marks the first anniversary of my work as Editor. The opportunity to serve the Society in this role is one that I greatly appreciate. We strive to improve the *Newsletter*, and continue to solicit your suggestions. The overall goal of the *Newsletter* is to provide members with information on the Society's administrative, research, publication and meeting activities, along with feature articles that you're not likely to find anywhere else. I owe a tremendous debt of gratitude to our Editorial Advisory Board, our regular columnists, John Gruber, J. Parker Lamb, and Steamdome, along with our other contributors.

We are fortunate to have many fine railroad museums in the United States, but most will agree that one of the best in the country is the California State Railroad Museum in Sacramento, California. Situated in historic Old Sacramento, the museum offers a series of wonderful exhibits for all ages, and does a masterful job of interpreting railroad history. During the past couple of years, the museum has undergone significant renovation with a number of new and refurbished exhibits. Paul Hammond, Director of Public Programming at the CSRM, has worked with the museum staff to prepare a review of the museum's thirty-year history, with material on the latest exhibits. Paul's story begins on page 5.

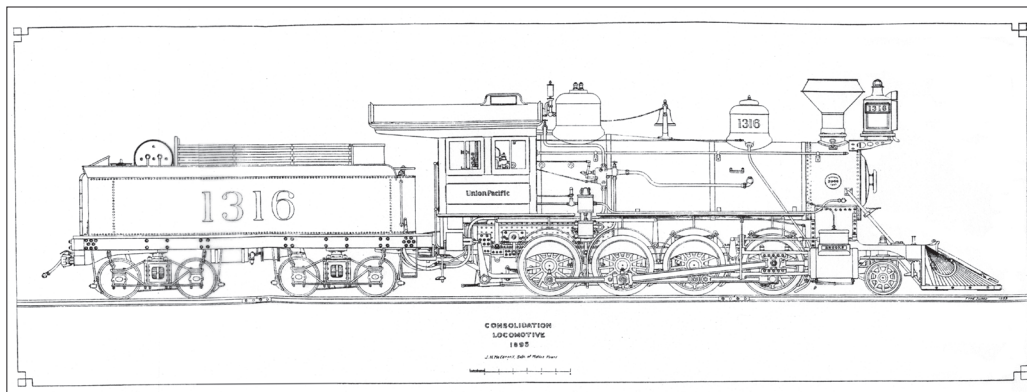
We are pleased to present a piece on Samuel Spencer, the first president of the Southern Railway, by Dick Hillman. Dick is a Curator at the Southern Museum of Civil War & Locomotive History in Kennesaw, Georgia, just outside of Atlanta, and the author of a piece on that museum in the Fall 2005 issue of the *Newsletter*. Samuel Spencer, who died on November 26, 1906 when another train collided into the train carrying his private car, had a distinguished career, and spent his last years at the helm of one of the south's most prosperous railroads, which operates today as part of Norfolk Southern. Dick's story begins on page 10.

Although it seems a bit early, since this is the last issue of the *Newsletter* to be published in 2006, it is appropriate to extend best wishes for the upcoming Holidays to everyone. See you next year! 

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## Corrections from the Summer 2006 issue, Vol. 26, No. 3

Due to production errors, the following corrections to the Summer 2006 are in order:




1. The line drawing of Consolidation 1316, appearing on page 11 of Steamdome's article, was not scanned properly, leaving the impression that the wheels were wider than they were tall. This drawing is reproduced above, with the correct proportions. Many thanks to Andrew Dow for pointing this out, who said that "The wheels seem to be a good ten percent wider than they are tall: if this really was the case, she must have ridden like a pig!"
2. On page 4 of the Rails in the Rockies II report, the last sentence was cut off - it should have read: *"The town of Antonito, the eastern terminus of the Cumbres & Toltec, sits at milepost 281, at an elevation of 7,888 feet above sea level."*



## 2007 Annual Meeting - Salisbury, North Carolina

The 2007 annual meeting of the Society will be held in Salisbury, North Carolina, which is near the North Carolina Transportation Museum, on the grounds of Southern Railway's Historic Spencer Shops. Dates and the itinerary have yet to be confirmed, but this meeting promises to be a good one. For information about the North Carolina Transportation Museum, check their website at [www.nctrans.org](http://www.nctrans.org), or write to them at NC Transportation Museum, 411 S. Salisbury Ave., Spencer, NC 28159. Their phone numbers are 704-636-2889, or 877-NCTM-FUN.

In order to learn about Southern's Spencer Shops, we recommend the book *Southern Railway's Spencer Shops - 1896 - 1996*, by Duane Galloway and Jim Wrinn (1996, TLC Publishing, Inc., 1387 Winding Creek Lane Lynchburg, VA 24503-3776, Phone: 434.385.4076). You may also visit their website at [www.tlcrailroadbooks.com](http://www.tlcrailroadbooks.com). Although the website indicates that this book is out of print, you should be able to locate a copy at a library, or railroadiana show where used books are sold.

The *Newsletter* will provide complete details and registration information as plans for the 2007 meeting progress. 

## FINANCIAL GIFTS TO THE SOCIETY

J. Parker Lamb

In my role as Executive Vice-President, I want to thank you for your continued support of our society as well as to make you aware of some current needs.


For some years, the R&LHS Board of Directors has maintained our basic \$25 annual membership fee as a means of encouraging new memberships. Today, after years of inflation, our fee is one of the lowest of any railroad historical society in the U. S. However, our annual fee still provides four newsletters and two issues of the acclaimed Railroad History journal. Clearly this is quite a bargain.

However, this policy has a downside, which has been manifested recently as an annual deficit of \$10,000 in the society's operating accounts. Thus I want to remind you of the two major programs we have available for those who wish to provide personal contributions to the continued vitality of our society.

To assist directly in erasing our operating deficits, you can make a gift of \$10 or \$20 beyond the basic fee when renewing your membership. Of course, we would be delighted if more members renew at the \$50 or \$75 level. Remember that any amount above \$25 is tax deductible, due to the Society's 501(c)3 non-profit designation.

Remember that the foregoing gifts are separate from those to Friends program, which was established to provide support for excellence programs and new thrusts. One half of Friends gifts are generally earmarked for the increased costs of Railroad History.

Another major issue for the Society is how to increase our membership. While we expect the demographics for those interested in historical events to produce an average age of about 60, this leads naturally to steady losses at the upper end. Thus my second request is that you attempt to bring in one new member during 2007. As selling points, you can use the society's publications as well as our strong chapter structure and annual meeting, along with our modest annual cost. Chapters should be active in inviting to their meetings those from other rail-oriented organizations, many of whom may be unfamiliar with R&LHS.

So let's make our motto for 2007, "Me plus one adds up!" I wish you all the best for 2007, and hope to see many of you (and your friends) at our 2007 meeting in Salisbury, NC, home of the Historic Spencer Shops (near Charlotte). 

# Railroad Heritage and the California Dream

## *Thirty Years of the California Railroad Museum*

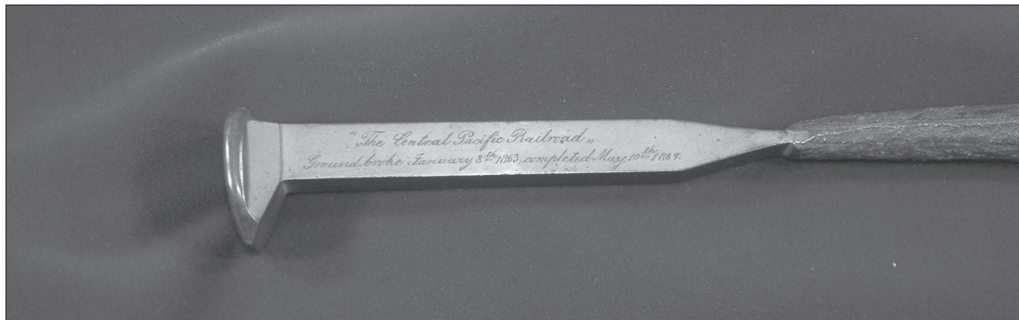
*Paul Hammond and the Staff of the California State Railroad Museum - all images courtesy of the CSRM*

The fabled "Lost Spike." Thomas Hill's epic oil-on-canvas painting, "The Last Spike." The first locomotive of the Central Pacific Railroad. The first steam and diesel locomotives owned by the mighty Southern Pacific. The only surviving Santa Fe F7A, Southern Pacific E8A, and Cab Forward locomotives. America's most comprehensive Toy Train exhibit. Weekend steam train rides six months each year. North America's largest railroad reference archive and library. Regular changing exhibits highlighting railroad photography and art. A planned major expansion into the Southern Pacific Sacramento Shops complex.

What do these things have in common? They're all part of today's California State Railroad Museum, a railroad heritage institution operated by California State Parks and headquartered at Old Sacramento State Historic Park. Most R&LHS members are probably aware of the Museum; with over 550,000 annual visitors, it's North America's most popular railroad museum. But CSRM has grown over the years to become a lot more as well. This brief article will highlight some of the many recent initiatives and enhancements the Museum has been working on.

### ***Lost—And Found***

The biggest news this year in Sacramento railroad circles was the public unveiling of the fabled "Lost Spike." A nearly-identical twin to the golden Last Spike of transcontinental railroad fame, this 9-1/2 inch "Lost Spike" is complete with an attached, visually intriguing "sprue" left over from the casting process. Cast as part of the same order, engraved after the Great Event, and quietly held by the family of San Francisco developer David Hewes (who presented the Last Spike to Leland Stanford for use at Promontory, and later became Stanford's brother-in-law), this fascinating artifact is now on permanent display in a specially designed, high-security case.



The Lost Spike, a nearly identical twin to the golden Last Spike of the transcontinental railroad, now displayed at the California State Railroad Museum

In spring 2005, the Museum's collections staff was alerted by colleagues at the Smithsonian Institution that the spike had been placed on consignment with a Southern California dealer. Research and negotiations began immediately, and by fall the spike had been authenticated and purchased with funds from the Museum's Opportunity Acquisition Fund, managed by the California State Railroad Museum Foundation (the Museum's non-profit partner).

While this acquisition was a major and high-profile one, the Museum has logged a number of important acquisitions over the last 10 years. In 1996, for instance, the Museum entered into a preservation partnership with Union Pacific Railroad involving artifacts (including a former Sunset Limited dining car and lounge car), historical records, and the former Sacramento Shops complex of the Southern Pacific. Plans call for the two largest structures in that complex to become the home of the proposed Railroad Technology Museum; more about that project later.

A truly immense acquisition came in late 2001, when the family of Thomas W. Sefton donated his extensive and internationally recognized collection of 20th Century toy trains, Buddy L riding toys and railroad-related artifacts to the Museum. Numbering over 7,000 individual items, many quite rare and some considered priceless, the artifact donation was accompanied by a considerable gift of funds. The collection was transported, stored, and organized, and proposals sought for a 3,300-square-foot exhibit. When it opened at the Museum in August 2004, the new exhibit "Small Wonders: The Magic of Toy Trains" became America's most comprehensive toy train exhibit.

Museum members, friends, supporters and volunteers are another “acquisition” that the Museum continually strives to bring aboard. Museum members now number nearly 10,000, and some 500 volunteers give regularly of their time and talents in support of a wide array of activities. School education programs have been improved and expanded, and public relations and promotional efforts maintain a high profile for the Museum. In November 2006, the Museum will host railway heritage professionals from throughout North America when the Association of Railway Museums and Tourist Railway Association, Inc. hold their second joint annual conference in Sacramento.

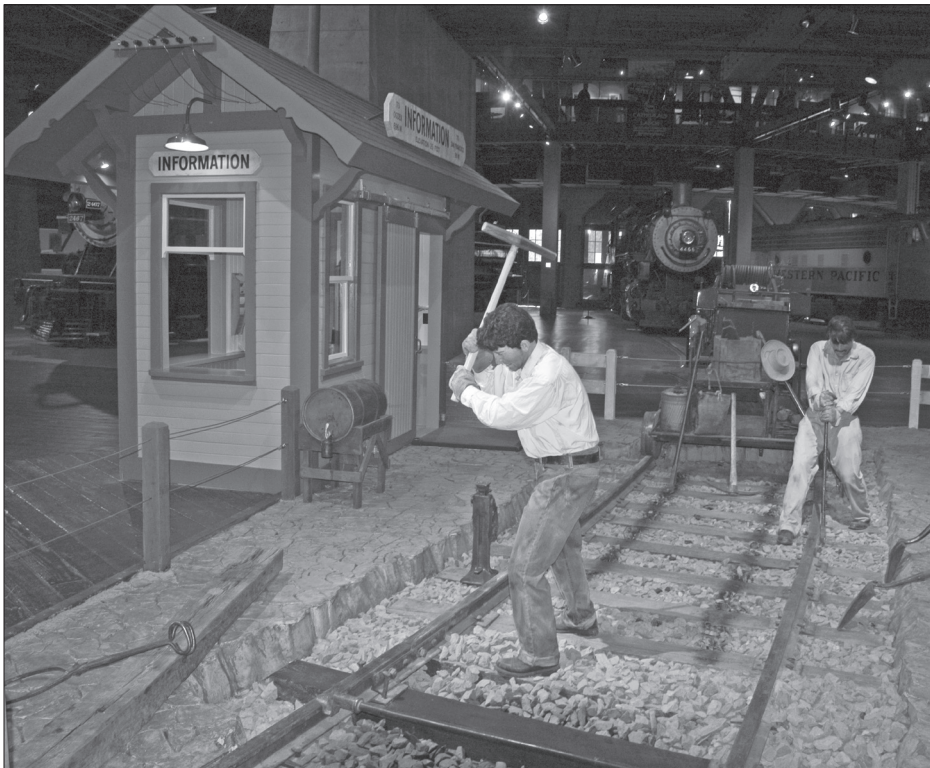
### *Reinventing the Dream*

When the Railroad History Museum opened its doors to the public in 1981, the railroad industry still resembled—albeit largely in withered form—its classic structure dating back to the late 19th and early 20th centuries. The caboose was a familiar fixture, and train crew sizes had not yet been drastically reduced. The era of railroad mergers was in its infancy, and railroad corporations and their public relations efforts were largely regional in nature. The Museum’s exhibits and displays accordingly assumed that guests had a basic level of knowledge about the railroad.

Fast-forward to the 21st century. With a handful of major railroads now serving the entire country, cabooses vanquished from trains, and the ranks of railroaders greatly reduced in employment terms, the public’s awareness of things railroad-related have changed. Even though freight traffic is at record levels on America’s railroads, and light rail and commuter rail systems are expanding to weave suburbs together with urban centers, the typical American no longer knows much about railroads—except that more trains seem to be causing the gates to stay down longer at grade crossings.

Accordingly, the California State Railroad Museum in the early part of the 21st century began planning for a major refocusing of its galleries and exhibits. As part of its efforts, four primary themes were developed to guide interpretive planning and exhibit upgrades. A common goal was to help the public in general—and increasingly diverse audiences in particular—find something interesting, and personally relevant, in America’s railroad heritage. The four themes that now help the Museum frame its public programming are Mobility, Nation Building, Modernization, and Enterprise.

A \$486,775 grant received in 2002 from the North American Railway Foundation made possible the reinstallation of a number of galleries and exhibit spaces to implement the new vision. In summer 2005, the reinstalled galleries and several new exhibits were unveiled. At the center of the new galleries are more than 18 new, life-sized figures of railroad workers. Positioned throughout the Museum in settings that replicate their original work environments, the figures include surveyors, construction managers and laborers, locomotive engineers, station agents, conductors, Pullman porters, dining car cooks and waiters, and track workers.



*Left:* An exhibit focused on track workers at the CSRM. This is one of more than 18 new, life-sized figures of railroad workers found throughout the museum, which depict life on the railroad.



These figures help guests understand the important contributions made by workers from many diverse backgrounds, including: African American, American Indian, Chinese, Scottish, Irish, Mexican American, and Italian American. A central exhibit explores how railroaders' personal and family lives were often intertwined with their work, and suggests that railroad employment really was a type of work unlike any other. An all-new photo gallery showcases more than two dozen images of the people of the railroad from the late 19th century through the mid-20th century. From weather-beaten faces of manual laborers to uniformed train crews and even managers, these images help to remind us that railroaders were as diverse as America itself.

In addition to the re-installed galleries and all-new exhibits, other significant enhancements include stunning, hand-painted murals of the Sierra Nevada mountains in the Museum's Transcontinental Railroad gallery; the creation of a working telegraph system linking a re-created 1938 train station with a newly installed public information kiosk; and the rearrangement of several exhibits in the Museum Roundhouse to provide for more appropriate interpretive groupings.

The reinstallation project remains ongoing. In summer 2006, the latest gallery was unveiled in the Museum Roundhouse, with Southern Pacific 4-6-2 No. 2467 (Baldwin 1921) as its backdrop. Replicating a roundhouse/backshop environment, the new exhibit spaces help guests understand how maintenance schedules and practices worked on the railroad, and how no job was too large for the dedicated men and women who labored in these shops. (Owned by the City of Oakland, No. 2467 in 2005 was loaned to the Museum for an initial 10-year period by the Pacific Locomotive Association.)



Southern Pacific 1911 travel poster promoting its Netherlands Route

Temporary exhibitions are another Museum focus. Recent ones have featured photographs of modern-day railroaders, while the not-too-distant past has seen topical exhibitions focusing on subjects such as the "Happiest Train on Earth: Walt Disney's Backyard Railroad," civil rights activist and Brotherhood of Sleeping Car Porters organizer A. Philip Randolph, women in railroading, railroad drumheads, promotional photography and posters. Coming to the Museum in fall 2006 will be "Railroads and the American Industrial Landscape: Ted Rose Paintings and Photographs," an exhibition conceived and produced by the Center for Railroad Photography & Art.

### *Back to the Future*

A Railroad Technology Museum was envisioned in the very first planning documents created to guide development of the California State Railroad Museum complex. Intended to complement the Railroad History Museum, the Museum since the late 1990s has been working to site this project in the two largest structures (Boiler Shop and Erecting Shop) remaining at the former Southern Pacific Railroad Sacramento Shops complex in downtown Sacramento.

The Railroad Technology Museum (RTM) will create an urban museum complex contiguous with the Old Sacramento Landmark District, and its location and appeal will help foster surrounding transit-oriented development. The spacious railroad shop buildings will house CSRM's collection of historic locomotives and railroad cars, with formal museum exhibit galleries interpreting railroad engineering and technology, fundamental physics and engineering principles. Guests will have the opportunity to view ongoing restoration work at the Railroad Technology Museum.

Begun in 1867—as construction of the Transcontinental Railroad was under way—the Southern Pacific Sacramento Shops were, for a time, the West's largest industrial complex. The facility eventually grew to encompass 240 acres, all of which were reclaimed from the marshy, swampy land just north of downtown Sacramento. For some 80 years, the Sacramento Shops (also known as the "Central Shops" because they were the railroad's main repair facility) were the Central Valley's largest employer.

Steam locomotives, passenger cars, freight cars, bridges, buildings, and all sorts of smaller items—even engines and machinery for the railroad's fleet of San Francisco Bay ferryboats—were engineered, manufactured and repaired at the Sacramento Shops. The City of Sacramento's neighborhoods, its housing stock, and even its public

spaces have been influenced by the Southern Pacific Railroad and its thousands of employees. The Shops' long legacy of industrial innovation came to an end in 1999.

A lease with Union Pacific allowed the Museum to move its restorations shops into the Boiler Shop, and place locomotives and rolling stock under cover in the Erecting Shop beginning in 2000. A massive transfer table serving the two structures was reconstructed in 2003 at a cost of \$500,000. Funding has been allocated for preliminary planning of the RTM and structural stabilization of the two shop structures. As of 2006, Union Pacific Railroad is in final negotiations to transfer the 240-acre Sacramento Downtown Railyard to a developer, which would enable work to begin. Stay tuned!

### *All Aboard for Old Sacramento*

The Museum's earliest beginnings date from 1937, when it was the "twinkle in the eye" of some forward-thinking people who made up the Railway & Locomotive Historical Society's Pacific Coast Chapter. Thanks to the foresight of these and other community leaders, CSRM's first facility opened in 1976 (the reconstructed Central Pacific Railroad Passenger Station) and just five years later, the 100,000 square foot Railroad History Museum opened to much fanfare in conjunction with "Railfair Sacramento 1981," a ten-day event that was the first large historical railroad gathering since the Chicago Railroad Fair of 1948-1949.

The California State Railroad Museum of 2006 is much larger and more successful than ever imagined by the visionaries who first proposed a railroad museum in Sacramento. In 1969, when the decision was made to develop a railroad museum as part of Old Sacramento State Historic Park, the entire concept of Old Sacramento was itself a pioneering one. Instead of tearing down the old to make way for the new, this "urban renewal" project proposed to preserve, upgrade, and reuse 53 historic structures at the heart of the commercial center of the California Gold Rush.

As the Museum begins its fourth decade of service to the public, the future looks bright. A dedicated paid and volunteer staff, a stable State budget situation with current funding to address deferred maintenance priorities, a focused and motivated non-profit fundraising and development effort, and a variety of exciting initiatives under way all bode well for the future of railway heritage preservation at the California State Railroad Museum. All Aboard for Old Sacramento! 🚂



*Left:* A father and daughter look at part of the toy train collection at the California State Railroad Museum. Perhaps this young lady will become a locomotive engineer or railroad executive as a result of this visit.

*You can learn more about the California State Railroad Museum through their website at [www.csrmmf.org](http://www.csrmmf.org), or by writing to California State Railroad Museum, 111 "I" Street, Sacramento, California 95814. The Museum front desk is open from 10:00am - 5:00pm (Pacific), M-F, and can be reached at (916) 323-9280. There is also a 24-hour information line, (916) 445-6645.*



## On The Horizon from Indiana University Press

### The *Encyclopedia of North American Railroads*

*This is the third in a series of four articles about the upcoming publication by Indiana University Press, the **Encyclopedia of North American Railroads**, edited by William D. Middleton, George M. Smerk and Roberta Diehl. Scheduled for a Spring 2007 release, work on the book has been under way for eight years. Since this will be a very significant publication event, the **Newsletter** is presenting these articles about the preparation and content of this major work. You can learn more about this work on the Indiana University Press website at [www.iupress.indiana.edu](http://www.iupress.indiana.edu) . DCL*


#### Article III: The Business and Public Policy Aspects of Railroading

The development of the railroad industry did more than stir new ideas and adaptations in technology. Starting from scratch, the business of creating and operating railroads and questions on the relationship of the public and government to the railroads had to be considered. The *Encyclopedia of North American Railroads* explores railroads as the first really large business enterprises in North America; as such they offered many challenges to conventional business thought. The encyclopedia covers the major challenge of how to structure the management of very large businesses spread out over a large territory. Very frankly, this is material that often causes readers' eyes to glaze over, but it is vital to understand the business side of railroading and the underlying economics.

Management was faced with the need to understand railway economics, including the huge proportion of fixed costs and the severe problems of finding costs and setting rates. The difficulty of allocating cost and assigning it to given events and units of traffic is covered in several entries.

Before railroads were operating entities there had to be a means of creating railroad companies. Discussions of the charters from the various states that created the railroads are part of the entries. The railroads were the first businesses to make widespread use of the corporate device of limited liability and pooled resources. The encyclopedia also includes material on railroad rates and the ratemaking process of the 19th and 20th centuries. This involves material on the rate bureaus and the rate agreements between the carriers, including rate types and the division of interline revenue. (By the way, rates have always been too high in the eyes of shippers.)

The encyclopedia covers the issue of public policy in a number of historical and in-depth treatments of the economic regulation of the railroads and how it evolved over time. Early on there was recognition of the difference between railroads and other forms of transportation. The need for an operating monopoly of the rail line to insure safety and efficiency rendered obsolete notions associated with turnpikes and canals, in which anyone paying the toll could operate their wagon, coach, or barge. The operating monopoly of a railroad often led to market monopoly and to unhappy customers demanding that government take some action to protect them from unreasonable rates; economic regulation was the result. The encyclopedia relates the whole story of regulation and its evolution, with entries on the Interstate Commerce Commission, U.S. Railway Administration, and Surface Transportation Board, as well as individual regulatory acts of Congress.

Government encouraged the development and expansion of railroads in a variety of ways. There are entries on the federal land grants and state and local financial support that stimulated railroad construction. The building of the first transcontinental railway is an important part of U.S. history and is just one of the entries on government encouragement of railways. The land grant issue is the subject of several entries and is important in the colonization of the West by the railroads. There are also entries on government-supported competing modes of transportation. The impact on railroads of government support of highways, waterways, and airways is discussed as a common feature of the 20th century and on into the 21st century. 

# Remembering Samuel Spencer

## *First President of the Southern Railway*

by Dick Hillman

November 26, 2006 will mark the 100th anniversary of the death of one of America's preeminent railroad pioneers, Samuel Spencer. The ultimate irony of his death is the fact that he died in a train wreck, but the point of this memorial is more than the facts of his tragic death. Far more important are the facts of his impressive life.

Samuel Spencer was born March 2, 1847 at Columbus, Georgia. He attended public schools in Columbus until he was 15 years old, at which time he entered the Georgia Military Institute at Marietta, Georgia. At the age of 16, he enlisted as a private in the Confederate Army and served in several areas of the south until the end of the war.

In 1865, he entered the University of Georgia and graduated in 1867. He immediately enrolled at the University of Virginia, graduating from that institution in 1869 with a degree in Civil Engineering. He began his railroad career with the Savannah & Memphis Railroad Company (a predecessor of the Central of Georgia) working his way through several positions to become principal engineer. Over the following eighteen years, Spencer held positions with 4 railroads until becoming the president of the Baltimore & Ohio Railroad in 1887.

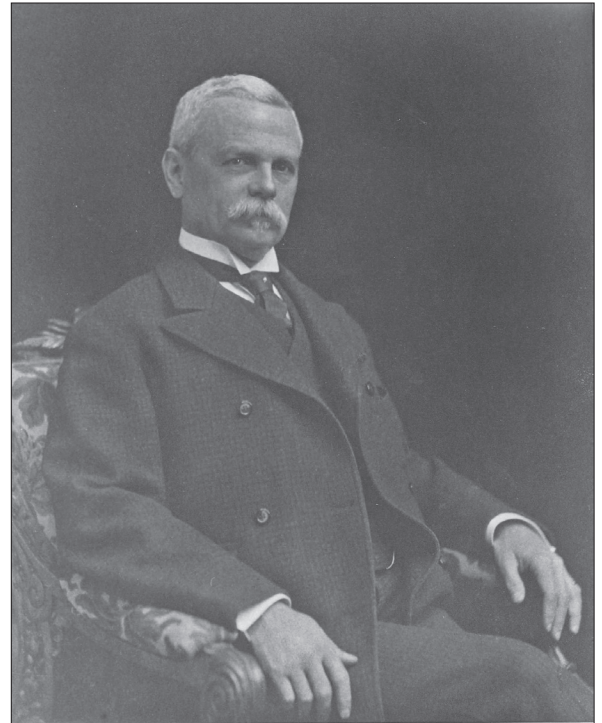
In 1889, he dramatically changed careers, leaving the railroad industry to become the in-house railroad expert with Drexel, Morgan & Company, working for the legendary J.P. Morgan. The decade of the 1890's was a period of tremendous railroad growth requiring massive amounts of capital. As a result, banks were making huge loans without the highly specialized knowledge required to make qualified assessments of the loans' recipients. Drexel Morgan was at the forefront of railroad loans, so it made good business sense to avail themselves of a qualified person such as Samuel Spencer. According to the New York Times, "there was no man in the country so thoroughly qualified on every detail of a railroad from the cost of a car brake to the estimate for a new terminal as Samuel Spencer."

In 1893, the Morgan firm assumed control over a cluster of struggling railroad companies operating under the name The Richmond & West Point Terminal and Warehouse Company. A Morgan operative by the name of Charles H. Coster drew up a reorganization plan for that company giving it the name The Southern Railway. All of the stock of this new enterprise was held in a trust headed by Morgan, and the trust appointed the Drexel, Morgan resident railroad expert, Samuel Spencer as the new president of the company.

With the solid financial backing from the Morgan bank, Spencer embarked on a rapid rebuilding plan of the weak rail system and over the following decade earnings of the revitalized system tripled. Under Spencer's administration the system doubled its operated trackage from 4,391 to 9,553 miles and provided employment to over 37,000 people. His enlightened leadership resulted in some interesting developments. He saw the lack of industrialization in the south as a threat to the growth and stability of the Southern Railway, so he began a campaign to encourage the textile manufacturers of the New England states to move their production closer to the source of their primary raw material, southern cotton. By 1900, forty-eight textile mills were alongside the tracks of the Southern Railway. Another large-scale relocation of an industry was furniture manufacturing.

One of Spencer's first appointments as president was M.V. Richards as Land & Immigration Agent, and the results in the growth and diversification of agricultural products was nothing less than phenomenal. Richards established 25 farm agents scattered about the area, initiated training and publicity publications and operated demonstration trains featuring modern agricultural practices.

Samuel Spencer's name and legacy became a part of the Southern Railway's history when, in 1896 an enormous repair shop, terminal and yard complex and village were opened. Early in his presidency, Spencer saw the need for a more conveniently located maintenance facility between Washington, D.C. and Atlanta, and had it



Executive portrait of Samuel Spencer

*From the Southern Railway Historical Association Archives at the Southern Museum of Civil War & Locomotive History, Kennesaw, Georgia.*

established north of Charlotte, NC. As Spencer was a self-effacing man, it is not known how the complex was assigned the name "Spencer," but in August, 1896 Spencer Shops were opened.

By 1900, Spencer had created an efficient rail system throughout the southeast by merging sixty-eight different rail companies into the Southern Railway. He also participated in the selection of equipment, and his ordering of light Pacific locomotives from the Baldwin Locomotive Works heralded the arrival of machines that would become legendary on the Southern Railway.

A good window into the mind of Samuel Spencer can be achieved by listening to his words as he fought against legislation that would have resulted in the Interstate Commerce Commission setting all American freight rates. This had been proposed in retaliation against a few unscrupulous railroads that had abused their power by extracting excessive rates from shippers. Spencer argued, "It's unfair that every manager, every president, every director shall be subject to indiscriminate public condemnation and that investors have their property jeopardized simply because the real offenders are not identified and punished." He went on to say that "the great majority of railroad men are, in fact, honest and efficient."

On Thanksgiving weekend, 1906, the then sixty year-old Spencer departed Washington, DC on a quail hunting expedition to North Carolina. Spencer, and a few of his friends were riding in Spencer's private railcar which was attached to the rear of Southern's passenger train, the *Jacksonville Limited*. It was November 26th. During the night, near Lawyer's Station, Virginia, approximately 10 miles south of Lynchburg, the train was rear-ended by a following passenger train, 1st 37, the *Washington-Southwestern Limited*, instantly killing Spencer and most of his companions.

Ironically, Spencer's 26 year-old son, Henry, a Southern Railway vice-president was onboard a northbound train which arrived at the scene soon after it happened. Henry remained at the scene until his father's body was recovered from the wreckage and he accompanied it back to Washington.

Soon after Spencer's death, the employees of the railway initiated a project to more formally memorialize him. A statue by Daniel Chester French was commissioned showing Spencer seated in a chair, with the cost of the project paid for entirely by 30,000 Southern Railway employees. Admirers of Spencer outside of the ranks of the railway asked to participate financially in the project, but their assistance was declined with thanks. The unveiling of the statue took place on the plaza of Atlanta Terminal Station on May 21, 1910. William W. Finley, who had been elected to succeed Spencer as president, presented the statue to the State of Georgia and the City of Atlanta with these words: "Mr. Spencer was essentially an organizer and a builder. His highest ambition was the development of the Southern Railway into an efficient transportation system thus making it a still more important factor in the upbuilding and prosperity of the south. Mr. Spencer constantly devoted the best energies of his creative mind to this goal and we, as his successors, will carry forward the great work he had planned, that this railroad be of inestimable value to the south. That this has been achieved will be the crowning work of his life."

Samuel Spencer was indeed a truly remarkable man. 🚂



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**Left:** Samuel Spencer Statue, in front of Atlanta Terminal Station in 1970. The statue is facing the station, and the U.S. Post Office complex is seen behind the statue in this photograph. The base on which the statue sits reads, on the front, *Samuel Spencer, 1847-1906*. On the rear of the base are inscribed the words *A Georgian, A Confederate Soldier, and The First President of the Southern Railway Company. Erected by the Employees of that Company. SRHA Archives at the Southern Museum*



## STEAM TECHNOLOGY'S FINAL THRUSTS -- *PART I*

The subject of great steam locomotives usually causes observers to recall the decade beginning in 1935 when super power engines named Berkshire, Hudson, Northern, and Texas were the new standard for many roads while monster articulateds such as Allegheny, Big Boy, Challenger, and Yellowstone became the heavy lifters. Most think that these designs represent the pinnacle of American steam development, and in terms of their service to America in World War II, they performed as none others before or since. But a closer look into the evolution of locomotive technology reveals that, even as the diesel was relentlessly advancing onto American railroads, steam advocates were successful in pushing this vintage machine to its highest point of development. But these final steam designs are often overlooked due to the rushing tide of change that engulfed and overshadowed their brief performance record.

By the late 1930s locomotive designers knew there were serious performance limits to the super power designs. Railroads were demanding engines that could maintain high horsepower at ever increasing speeds. War-time refinements brought limited success and a clearer focus on the two primary limits to performance at high speed – valve gear effectiveness and dynamic loads produced by drivers at high RPM. The first limited steam flow, and hence power, while the second led to significant roadbed degradation.

The most important controls on a steam locomotive are those that modulate the valve motion. During the last decade of steam production, designers tried out many ideas for getting steam into and out of the power cylinders in a precise way during high-speed operation, but none was completely successful. The major physical reason for such a speed limit on reciprocating steam engines is that the large moving parts (power pistons and piston valves) have tremendous inertia and resist rapid changes in direction. For example, after the power piston stops at the end of one stroke, it must accelerate to high speed (over 1000 feet per minute) in the opposite direction, then decelerate and stop again, before repeating this motion. During a very brief part of each stroke, a carefully measured amount of steam must be admitted in a way to act on the entire piston face. On the reverse side of the piston, the exhaust steam must be allowed to exit the cylinder in an equally brief period after it has expanded to a predetermined low pressure. At high speed the usual piston valves and associated valve gear cannot respond to these rapid movements in a precise way. The result is that the steam does not enter or exit the power cylinder with the proper timing, and thus the power produced in each stroke is diminished.

The most obvious solutions envisioned by designers were to reduce the mass (and inertia) of the valve itself, and replace the inertia-laden valve gear linkage with a smaller, but functionally equivalent, control system. Naturally they turned for guidance to the most common high-speed reciprocating machine of that period, the automobile engine. In such engines, each power cylinder receives air through an intake valve and exhausts through an outlet valve. The valves themselves are thin disks that are activated by an integrated push rod (tappet). This configuration is known as a poppet valve and, when enlarged to six inches in diameter with foot-long tappets, could be applied to a steam locomotive.

With traditional valve gears, a locomotive engineer could control the cutoff position of steam admission to the cylinder, but there was no control over the exhaust process. With the poppet valve system there were separate intake and exhaust valves (often four per cylinder) driven by separate cams. The system thus provided a more precise timing of all events associated with steam passage through the cylinder. Just as an automotive engine drives its valve motion using a cam shaft connected to the crankshaft by a timing chain, a locomotive must contain the same functional elements, with the timing chain being replaced by another type of mechanical signal from the driving gear.


One of the earliest poppet valve gears was created by the Italian engineer Arturo Caprotti in the 1920s. In this design there was a long connecting rod between the eccentric crank (main driver) and the cam chamber at the cylinder. His design was applied to two American locomotives in the late 1920s but was removed after a year of testing in each case. One of the main complaints was its lack of robustness, due to the larger forces within American engines as compared with their European counterparts.

The primary American attempt to develop reliable and accurate poppet valve controls was undertaken at Franklin Railway Supply, beginning in 1937. This effort was led by Will Woodard, Lima's Vice President of Engineering, who was the father of super power designs in the early 1920s. Leading designers such as Woodard had long been intrigued by the potential of poppet valves, and some had offered specific proposals as early as 1934.

With the stubborn Pennsy still harboring a desire to improve its fleet of sturdy K4s Pacifics, the road contracted with Franklin in 1938 to equip one of these engines (No. 5399) with the poppet system. First, the engine was fitted with a new cast steel cylinder saddle that contained separate steam chests for each valve chamber. Then a large control box was mounted on a lengthened pilot beam, located on the centerline so as to produce symmetrical connections to the cam boxes adjacent to the steam chests. During its first series of road tests in the fall of 1939, the engine performed brilliantly. Inside the attached dynamometer car, the output data displayed an increase of 24 percent in drawbar horsepower at 60 mph (as compared with a conventional engine) and a whopping 45 percent increase at 80 mph. Later tests at the Altoona lab dynamometer confirmed these results.

However, at this point PRR seems to have lost sight of its primary objective, namely to produce a better valve gear. Surprisingly it sent the locomotive to Lima for additional improvements in its steam generation capability, including a front-end throttle, new superheater and an improved boiler tube design. While turning No. 5399 into the most powerful American 4-6-2, Pennsy had made it difficult to interpret the cause of improvements by mixing two sets of experiments. Thus many skeptics argued that the improved performance came mainly as a result of modernizing a 1913 design, rather than installing poppet valves. While the Franklin system was clearly a major advance, the limited testing had not proved that their poppet controls would be reliable in the hostile environment of everyday mainline operation.

Naturally Franklin's conclusion was that its system offered the best way to effect significant improvements in high-speed operation. It promoted specific proposals to the Pennsy and to Southern Pacific but no new programs could be initiated due to the outbreak of World War II. Thus poppet valves remained only a future possibility, albeit with some strong data for support.

The next column will discuss the final success of poppet valves along with another advancement that produced the most efficient steam locomotives ever made. 

*Material in this article was adapted from an article appearing in Kalmbach Publishing Company's **Steam Glory**, entitled "Supernovas of Steam," by J. Parker Lamb. **Steam Glory** was number two in a series of **Classic Trains** Special Editions, and was published in 2004. Courtesy of Kalmbach Publishing Company. DCL*

## EXPLORING THE PAST WITH STEAMDOME


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From Railway Engineering, January 1895 . . .

Mr. R.M. Galbraith, general master mechanic of the St. Louis Southwestern Railway, has recently raised a locomotive which had been buried for over seven years in the quicksands of Red River at Garland City, Ark. The engine was found in excellent condition, very few parts of even the lighter rigging about it being injured. But the quicksands were loath to yield up their prey, and in raising the engine, hooks made of 4 in. hammered, round iron were broken off short. Mr. Galbraith, in a letter to the Railway Age, states that the engine was brought to the shops on its own wheels, and had he imagined that it was in such good condition it could have been brought in under steam. In ten days after the engine was raised it was ready for service.

From the Railroad Gazette, February 3, 1905. . .

Another memorable fire in the history of the Pennsylvania Railroad, was the burning of the round houses and shops at Pittsburgh during the memorable riots of July 22, 1877. In this fire, 104 locomotives were burned. The large proportion of these stood in two round houses, a few were in the repair shop, and a few others stood among the burning cars at various places in the yard. No. 210, one of those in the shops, had just completed an overhauling and stood in the paint shed. The burning away of the supports of the track allowed this engine to fall into a cellar in which a large quantity of paints and oils were stored. In the intense heat caused by these highly inflammable materials, No. 210 received such a roasting that it was deemed unwise to repair it -- especially as the boiler was that of a Smith & Perkins locomotive built for the company at Alexandria, Va., in 1853, but placed on new running gears of Mogul type at Altoona in 1866, and under a new number.

The 103 other engines were taken to the shops of the company, and some to Baldwin's, and again put in running order, remaining on the road for many years. Some, however, gave trouble from a tendency to leak, but no instance is recalled where any of these boilers exploded. 



The caption in *Trains* said simply,  
"It could be a cathedral."

Photo by John Gruber

## "It Could be a Cathedral"

In a 13-page section about Chicago Union Station in the August 1965 *Trains*, David P. Morgan wrote simply and eloquently about the concluding photograph. Union Station's importance in the rail photography world comes from many events, including the multimedia slide show. The Library of Congress' Prints & Photographs Online Catalog lists 279 images for Union Station, but only 104 for New York's Grand Central Terminal.

The structure, once one of six major Chicago intercity passenger stations, served four railroads when it opened on May 15, 1925. "In point of number of station tracks it ranks fifth in the United States. From the standpoint of design it embodies much that is both novel and forward looking. It is the only double stub station in America, having two separate grids of platform tracks. ... It is one of an extremely limited number of great passenger stations in which the platforms, concourse, and waiting room are on a common level," *Railway Age* reported. A formal dedication followed on July 23.

It immediately drew photographers' attention. Alfons Weber, writing about the pictorial possibilities of the station in *Photo Era* (October 1925), called the opening "a very pleasant surprise to the traveler, but more so to the camera-enthusiast who is more concerned about beauty, than just how many millions to dollars were spent and the dimensions of the building in feet." Weber, Chicago, exhibited 10 photographic salons between

1925 and 1928. In addition to *Trains*, the arches have been featured in Weber's story and in a *Chicago Tribune* photo in 1931 describing their "utilitarian beauty."


Initially, Kaufmann & Fabry, the large commercial photography company serving many of the railroads in the city, produced the publicity photos. As might be expected, Alfred W. Johnson recorded activity at the station along with passenger train views throughout the city. The Farm Security Administration/Office of War Information photographers visited the station in World War II (see *Railroad History* 194).

For a station of its influence in railroad photography, the selections are sparse. Perhaps that's a reason Morgan, then *Trains* editor, asked me to photograph the station in 1964. "Come with us now as John Gruber explores a structure grand enough to occupy an architect and a train-watcher," Morgan wrote in the introduction to the photo essay with the photos of the nun in the traditional habit walking through the station's arches.

Mel Patrick followed with a multimedia show with two projectors and music, previewed at Central Station and initially presented for the Railroad Club of Chicago in 1969. "'Chicago Union Station-A Photographic Narrative' runs 23-1/2 minutes, is introduced with a short narration, then uses 7 songs to drive a segmented look at people and trains that use the station. Photos were very carefully selected to accompany the music to produce a coherent match between sight and sound," Patrick said. "The concept of using narration and music to accompany slides did not originate with me by any means, but this was the first full scale attempt at a railroad theme program with fast paced dissolved images." He redid the show using computers for the Center for Railroad Photography & Art's photo conference.

Mike Schafer, who was in the Railroad Club audience, continued the trend. Schafer is best known for "Silver Memory," about the California Zephyr, 1970, and "Chicago Is ... My Kind of Railroad Town," 1971. He has revamped and automated both shows, produced initially with Jim Heuer and others in the North Western Illinois Chapter-NRHS, Rockford. Multimedia shows now are standard features at Winterail, Eastail, Summerail, and similar events.



Today, all intercity trains in the railroad center arrive or depart from the station, designated a Chicago landmark in 2002. The building is a historically significant element of Chicago's transportation heritage as well as the golden age of intercity rail travel. The station's ornate Beaux-Arts main waiting room, the "Great Hall," is one of the United States' great interior public spaces, the landmarks commission said. And it has meaning for the architectural as well as photographic community. 


## CHAPTER REPORTS

NEW YORK   CHICAGO   GOLDEN SPIKE   LACKAWANNA   PACIFIC COAST  
SOUTHERN CALIFORNIA   SOUTHWEST   SOUTHEAST

### Southern California Chapter - Preliminary Report on Los Angeles County Fair

Each year, the Southern California chapter participates in the Los Angeles County Fair, and the initial reports from the 2006 fair are good. Chapter Chairman Loren Martens and fair coordinator Jesse Tomory report that attendance at the chapter's exhibit has been strong, and that donations have been averaging around \$100.00 per day. Sales of railroad related items have also been steady. The chapter has also been selling bottled water, and as of September 24, they reported that sixteen cases had been sold. We will have a complete report on the fair in the Winter 2007 issue of the *Newsletter*.

For the September meeting, the program featured a digital slide presentation of more than 200 2 1/4" square slides in the chapter collection. Member Clyde Stoneman scanned and digitized the slides on the chapter's scanner and arranged them in calendar order. The slides were of various excursions that the chapter took between 1956 and 1959. There were also some general rail enthusiast slides taken by the unidentified photographer.

The October chapter meeting was scheduled to feature a presentation on early railroads, and chapter member and national director Jim Caballero (who also serves on the editorial advisory board of the *Newsletter*) was slated to present digital slides of early railways at the meeting. The program theme is "When Did Railways Begin?", and members will hear about drawings and written descriptions of early railways. Of special interest are the purposes to which these railways were put, and the unusual methods that were employed to keep the wheels on the rails. 

## TRADING POST

**Wanted** - Steam, Electric and Diesel locomotive builder's and number plates. I am still building my collection after 43 years. I will purchase outright or I have some plates available for trade. Please let me know what you. Ron Muldowney, 52 Dunkard Church Road, Stockton, N.J. 08559-1405 - 609-397-0293 or steamfan@patmedia.net.

**Call to Action!** Thousands of railcars including both new and historic fallen flags have been vandalized with graffiti over the past decade. Help stop this crime. Report any suspicious trespassing to the railroad or local police. NS 800-453-2530, CSX 800-232-0144, UP 888-877-7267, BNSF 800-832-5452, CN 800-465-9239, CP 800-716-9132, KCS 877-527-9464.

**For Sale:** Accepting the high bid for my lot of 496+ RR Stories/Magazine., Jan. 1933-Jan. 1979 (inclusive). Plus five 1932 bonus issues. Fair replacement value \$2,150.00. Some cover faults, but contents vf and complete. Prefer U-P/U. John Maye, 1320 W. Lincoln Way, Schererville, Indiana 46375-1559. 219-865-8967 (10-7 CDT).

**For Sale:** *Burlington Northern Adventures: Railroading in the Days of the Caboose* (2004, South Platte Press), a collection of true short stories about R&LHS member William Brotherton's

days as a brakeman, conductor and trainmaster. Starting with his days of hopping Southern Railway freights as a kid in Atlanta, the book takes you through his career as a boomer brakeman working freights throughout North Dakota, South Dakota, Wyoming, Minnesota and Nebraska, ending as a trainmaster for the Colorado & Southern in Denver. An attorney in Texas today, Brotherton writes in a humorous style and is a frequent contributor to *Trains* Magazine; his last story was in August 2005, entitled "Grand Forks: 25 Years Later". To order the book (autographed free for R&LHS members), send \$24.95 (includes S&H) to William Brotherton, 2340 FM 407, Suite 200, Highland Village, TX 75077 or order online at [www.bnrailstories.com](http://www.bnrailstories.com).

**Information Wanted:** I would like to obtain a photograph showing the aftermath of the Pennsylvania Railroad commuter train accident at Woodbridge, New Jersey on February 6, 1951. This photograph would illustrate an article that I am writing about that accident. If several views are available, please send photocopies so that I may choose an appropriate image. I will pay a reasonable amount for the photo (which must be suitable for printing) and any other expenses (photocopies and mailing) and will certainly provide full credit. Please reply to A.J. Bianculli, 3 Toth Lane, Rocky Hill, NJ 08553.

## The Railway & Locomotive Historical Society *Mission Statement*

The mission of the Railway & Locomotive Historical Society, Inc., is to collect, interpret, preserve, educate and disseminate information relating to railroad history. The Society's mission will be achieved by:

1. *Publishing Railroad History and maintaining its status as the premier publication in the field.*
2. *Recognizing and encouraging scholarship in railroad history and other endeavors, such as the Society awards program.*
3. *Preserving historic documents, photographs and other materials, and providing access through national and chapter activities.*
4. *Maintaining communication among members of the Society through printed and/or electronic means.*
5. *Providing fellowship, education, and effective governance of the Society through the annual convention and membership meeting*
6. *Furthering knowledge of railroad history by publication of significant historical studies and reference works.*
7. *Encouraging appreciation of railroad history, and providing social enrichment opportunities through chapters and special interest groups.*
8. *Encouraging members to actively participate in the process of researching, recording, and disseminating railroad history by providing research guidance.*
9. *Promoting the significance of railroad history in schools and related organizations such as historical societies.*



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