

THE RAILWAY & LOCOMOTIVE HISTORICAL SOCIETY



# NEWSLETTER

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## Railroad Standardization - The Special Problem of Electrification

*Remembering Gil Reid*

*Railroad History Awards for 2006*

*Altoona Shops in 1875*

*Chicago Chapter at the Chicago Historical Society*

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*On the Cover - Southbound New York to Washington Metroliner No. 105 at Landover, MD. GG1 No. 4935 repainted in original PRR colors. October 27, 1979. William D. Middleton photo*

*Caboose silhouettes appearing at the end of each article, along with silhouettes of locomotives and rolling stock, 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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## 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).

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## 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. Further, 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 2007

Issue	Deadline for Submissions	Mail Date
Winter 2007	December 6	January 19
Spring 2007	February 15	March 15
Summer 2007	June 1	July 1
Fall 2007	August 1	Sept. 1

## FROM THE EDITOR

We were very saddened to learn of the death of Gil Reid on January 2, 2007. Gil was a prominent and accomplished railroad artist who meant a great deal to our community. I'm very grateful to George Drury and John Gruber for preparing the tributes to Gil found below. Please keep Gil and his family in your thoughts and prayers during the coming months.

We are especially pleased to feature a piece on electrification standards by William D. Middleton. Bill's prolific contributions to the documentation of railroad history in books, articles and photographs are well-known to readers of the *Newsletter*, and I believe you will thoroughly enjoy his detailed and insightful article. One of Bill's specialties is railroad electrification, and an excellent volume for further reading on electrification is his *When the Steam Railroads Electrified*, originally published by Kalmbach Publishing Company in 1974, with a second, and revised edition published by Indiana University Press in 2001.

Happy New Year! 

David C. Lester

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## Remembering Gil Reid

Gil Reid died early this morning, less than two weeks short of his 89th birthday. He was best known for the prints of his railroad paintings; he painted Amtrak's calendar for more years than Grif Teller painted the Pennsylvania Railroad's calendar (this was a matter of some pride).

His work first appeared in TRAINS in December 1940. In 1945 TRAINS published his article on railroading in Italy. Gil had been wounded at Anzio and had plenty of time to wander around and sketch. The painting which made his reputation at Kalmbach was "Noonday Water Stop," a picture of a 4-6-2 stopped to take on water. He was in Kalmbach's art department from 1956 to 1978.

He retired to devote full time to his painting and his line of prints. He was still actively painting until a few months ago. A series of medical difficulties gradually restricted his life, but as long as he could, he went out for lunch with several other rail enthusiasts a couple of times a week.

He is survived by his wife Lorryne and his daughter, Sarah, of Olathe, Kansas. His first wife, Annie, and his son, Gil Jr., preceded him in death. He asked that his ashes be disposed of in the firebox of a working steam locomotive. - *George Drury, January 2, 2007*

Gil Reid *January 15, 1918 - January 2, 2007*

Gil Reid often referred to himself as the "last of the Mohicans." He considered himself the last major railroad artist painting steam locomotives who grew up in the steam era.

He lived longer than his contemporaries such as Howard Fogg and Ted Rose. He met Fogg in 1939 at the Chicago Academy of Fine Arts while they were looking out the 9th story window at the railroad yards below. They remained friends until Fogg's death in 1996. He worked with Rose in the Kalmbach art department in downtown Milwaukee in the early 1960s, and never forgot the day Ted showed up barefoot in the elevator. They also were friends until Rose died in 2002. He delivered an impressive tribute to Rose at the Center for Railroad Photography & Art's 2006 conference in Milwaukee.

Reid fondly recalled his boyhood experiences with steam locomotives. "I know a little about the feeling of steam because I grew up with steam," Reid said. His favorite paintings are based on remembrances of these impressionable years in the 1930s in Richmond, Indiana. Among his mementos, he displayed the senior achievement award he received May 4, 1991, from the Railway & Locomotive Historical Society.

"I paint because I want to express myself. My particular expression is on railroad trains, and some people think I am a steam nut, but that was the era that was up for me. I don't mind the diesels at all; I like them. They do a nice job," he continued.

He was partial to the Pennsylvania Railroad because it served Richmond, and also fascinated by the K-4 type locomotive, simply because it was a 4-6-2 Pacific type common to practically every passenger railroad in this country, and other countries too. His legacy is the uncounted number of paintings, mostly watercolor, of interurbans, diesels, and, of course, K-4s and other steam era scenes. - *John Gruber*

## Railroad History Awards for 2006


The Railway & Locomotive Historical Society announced the winners of the twenty-fifth annual Railroad History Awards in Cedar Rapids, Iowa on Friday, October 13, 2006. President Charles P. Zlatkovich and Railroad History Awards Chairman Mark E. Entrop presented the awards in a ceremony held at the Crowne Plaza at the bi-annual meeting of the R&LHS board of directors and the annual meeting of the Lexington Group in Transportation History.

The 2006 recipients were:

The George W. and Constance M. Hilton Award, for an outstanding book of lasting value to the interpretation of railroad history, was presented to **Richard J. Orsi** for his *Sunset Limited: The Southern Pacific Railroad and the Development of the American West, 1850 - 1930* (University of California Press, 2005);

The R&LHS Senior Achievement Award was presented twice - the first recipient was **George M. Hart**, and the second recipient was **Robert G. Lewis**;

The Fred A. and Jane R. Stindt Photography Award, which recognizes outstanding contributions to the interpretation of North America's railroad history, was presented to **William D. Middleton**.

The David P. Morgan Award, for an article of lasting significance in the interpretation of railroad history, was presented to **Tony Reevey** and **Dan Cupper** for their biographical essay "Mixed Legacy" on the life and work of the legendary Lucius Beebe (1902-1966), which appeared in the Fall-Winter, 2005 issue of *Railroad History*. 

## Fuel for the Engine

J. Parker Lamb, Executive Vice-President


Our society's logo proudly announces that the R&LHS has been in business since 1921. During these 95 years of successful operation, the society has benefited from the special efforts of hundreds of devoted members, working largely as volunteers. Fortunately, in some cases, we are able to provide a small level of remuneration for those who donate countless hours of high-level professional skill at a fraction of their market value. To express the effort of these dedicated members, we can use a common railroad metaphor. The cumulative time of our leaders is symbolic of the fuel that produces the tractive effort to move the Society ahead. But, just as a locomotive needs to be refueled periodically, the membership should be ready to respond when the society needs more fuel.

The year 2007 will be a period of transition for R&LHS, highlighted by a number of changes in the roster of officers listed in each issue of *Railroad History*. Some of our leaders will step down after years of effort, thus opening the way for a new group of talented members to join the ranks of R&LHS leadership. It is these new opportunities for assistance that I wish to bring to your attention.

One of the most important of these openings is the Membership Secretary, who must keep track of annual dues renewals and changes of address from our 2200 members. Bill Lugg of Sacramento has provided monumental performance in this position for 9 years, but wishes to retire by mid-year. Thus, I would like to hear from any members who have capability with Excel spreadsheets and similar record keeping software.

At the fall meeting of the Society Directors, *Railroad History* editor Mark Reutter announced his intention to retire at the end of 2007. Because we expect this search to be lengthy, our initial effort to identify candidates has already begun. Any nominations from the membership will be welcomed.

Recognizing the growing importance of electronic publishing, the Board of Directors is beginning a study of transferring portions of our two major publications to secure web sites. We are seeking expressions of interest from those with capability and experience in this field.

Finally, the annual nomination of new members of the Board will begin soon. We are always anxious to bring our most active and interested members into these positions of leadership and oversight. Please feel free to indicate your interest directly to me. 

To respond to any of these opportunities, you may contact me at:

J. P. Lamb, 2605 Pinewood Terrace, Austin TX 78757-2136 or [jpplamb@mail.utexas.edu](mailto:jpplamb@mail.utexas.edu)

# Railroad Standardization: The Special Problem of Electrification

*William D. Middleton*

One of the wonders of North American railroading was the way in which the system, originally built by many hundreds of individual railroad companies, could operate so well as a continental network, with traffic commonly operating through multiple interchanges between connecting systems. But the railroads didn't originally operate that way at all.

The very early railroads were typically built to serve their immediate territory, with little thought being given to future through operation between connecting lines. But as railroads began to develop into a network of adjacent lines, it soon became evident that through operation between connecting lines could provide a much enhanced service. Instead of the costly and time consuming transshipment of cargo between the cars of connecting lines, a faster and cheaper service could be provided by simply moving loaded freight cars over the lines of connecting railroads. The keys to this were the establishment of physical standards that permitted equipment to operate between connecting lines, and the development of business practices that could readily handle traffic operating over connecting lines.



P5a on the Pennsylvania Railroad at the Washington, Baltimore & Annapolis crossing, Odenton, Maryland 1935. At this location, the PRR's 11,000 volt A.C. catenary had to cross with the WB&A's 1200 volt D.C. wire. *James P. Shuman photo*

## *Standard Gauge*

The most fundamental standard that had to be adopted, of course, was that of the track gauge over which the railroads would operate. Many of the early U.S. railroads were built to the standard British gauge of 4 feet 8-1/2 inch, but the Erie and the Ohio & Mississippi were built to 6 foot gauge. Many railroads in the South were built to a 5 foot track gauge, but Southern states also used anywhere from 4 feet 10 inches to 5 feet 6 inches and 6 feet. As the railroad system grew it soon became evident that track standardization was necessary to provide the railroads with an integrated economy. The decision that the Pacific Railroad be built to 4 foot 8-1/2 inch standard

gauge helped the U.S. to move to a nation-wide standard, and in 1886 the broad gauge southern railroads planned to make the change to standard gauge. On May 31 and June 1, 1886, more than 13,000 miles of broad gauge track were converted to standard gauge and the U.S. had adapted to a virtually uniform track standard.

### ***Standard Time***

As the American railroad network began to develop there was no standard time system. Principal cities usually adopted a time based on solar time. Thus, for example, when it was 12 noon in Chicago, it was 12:31 p.m. in Pittsburgh, or 11:41 a.m., in St. Paul. Smaller cities usually adopted the same time as neighboring large cities, and typically a state might have 20 to 30 different local times in use. A railroad might operate its trains by the local time in its headquarters city. Thus a train would be operating, for example, in Buffalo but by the time of its headquarters in New York City rather than on the local time at Buffalo. A city served by several railroads might find each of them operating on a different time, and perhaps none of them on the city's local time. As American railroads developed into a national rail network, the confusion and inefficiency of the existing time system became increasingly evident for connecting freight and passenger services.

Several plans for adopting a uniform time system based upon time belts running north and south were developed during the 1870s, and a General Time Convention, a meeting of railroad companies and an early predecessor of the Association of American Railroads, was established in 1876. By 1883 the Time Convention had proposed a system of five time belts—Intercolonial, Eastern, Central, Mountain, and Pacific—which was adopted as Standard Time for the railroads on November 18, 1883.

### ***Mechanical Standardization***

Many other details of railroad equipment also had to be standardized to permit them to operate effectively and safely in trains with cars from many different sources. Automatic couplers, air braking systems, clearances, car dimensions, and details of safety equipment all had to be developed to operate in a compatible interline service. One of the earliest of the predecessor organizations to the AAR was the Master Car Builders Association formed for this purpose in 1867, which established the standard details and arrangement of equipment for interchange operation.

### ***Electrification, the Long Struggle for Standardization***

Developed in the 19th century, with periodic updates and modifications, these standardization efforts worked well for the North American rail network. But the need for a new set of standards for the technology of railroad electrification that developed early in the 20th century didn't work out so well.

By the late 1880s the electric operation of street railways had reached a fully practical system, and urban street railways were rapidly being converted from animal-power or cable systems to electric power. What was to become a virtual standard for street railway was the use of a low-voltage D.C. power supply, usually at around 600 to 650 volts and supplied from an overhead wire through a trolley pole connection.

Railroad electrification soon followed. With the rapid growth of street railways, interurbans, and urban rapid transit systems, the technology and equipment to design and build low-voltage D.C. systems were well developed, and in the early period it was the only system that had any real experience behind it. Several experimental branch line electrifications during 1893-1895 used low-voltage D.C. equipment comparable to street railways. Much more important was the Baltimore & Ohio's main line electrification through the new Howard Street tunnel at Baltimore opened in 1895. With low-voltage D.C. still the only proven power system then available, the B&O's 96-ton electrics operated with a heavy duty low-voltage power system similar to a street railway system. To accommodate the much heavier power demands of a main line railroad, power was collected from a third-rail power system.

The next few electric lines opened soon after the turn of the century also used low-voltage D.C. power, including such major suburban systems as the Long Island Rail Road first opened in 1905, and the New York Central's extensive New York network and the West Jersey & Seashore suburban lines, both opened in 1906. All of these early lines also utilized a third-rail power distribution system.

These early low-voltage D.C. electrifications worked satisfactorily, so long as they were limited to relatively short distances. Third-rail power systems, usually installed alongside one of the running rails, imposed clearance and safety problems, and the high power demands of a low-voltage system necessitated the installation of frequent power substations to avoid the excessive voltage drop whenever low-voltage D.C., was transmitted over long distances. Because of these limitations, low-voltage D.C. electrifications were never attempted for long distance railroad electrifications.

A newer form of electric operation was the use of a high-voltage, single-phase alternating current system, developed at the turn of the century, which promised a much more efficient arrangement for long distance electrification. George Westinghouse was an early visionary of A.C. power, and had brought two European engineers to the United States to help develop it. A.C. systems were built with several different voltages, but the most common one in the U.S. was an 11,000-volt, 25-Hertz, single-phase system. Because of the much lower power requirements of a high-voltage system, the A.C. system could use an overhead wire power supply, and could use much more widely spaced sub-stations.

In 1904 Baldwin-Westinghouse built an experimental single-phase, A.C. locomotive, and a year later Westinghouse supplied an Indiana interurban with a single-phase A.C. system. Despite this extremely limited experience with A.C. electrification, Westinghouse in 1905 won a contract to electrify the New Haven's main line out of New York with an 11,000-volt, single-phase A.C. system. This choice of an untested new system may have been surprising, but it reflected the New Haven's plans for future long distance electrification, and its unsatisfactory earlier experience with the hazards of third-rail electrification on some branch lines. The decision to use single-phase power also presented other problems, for the New Haven system would have to operate into New York over the third-rail, low-voltage D.C. system developed by the New York Central. This was accomplished by using series commutator motors, which could operate on either A.C. or D.C. power, although the locomotives had to be equipped for drawing both a high-voltage A.C. power from an overhead wire, and a low voltage D.C. power from a third rail. Thus, this early installation was the first major interline electric operation, although the combination of two different electric systems was hardly an ideal arrangement.



NYC 541 switching south of Detroit, Michigan's passenger station in September, 1952. A maze of slip-switches here caused extensive gaps in the third rail, requiring overhead contacts to ensure an uninterrupted power supply. *Thomas Dworman photo.*

Close behind the development of the single-phase, A.C. system, General Electric developed a whole new third family of electrifications using high-voltage D.C., which included systems of 1200-, 1500-, 2400-, and 3000-volts. The systems were similar to those of a low-voltage D.C. system, but had the important advantage of greatly reducing the power demand, permitting the use of overhead power wires and allowing much wider spacing between sub-stations.

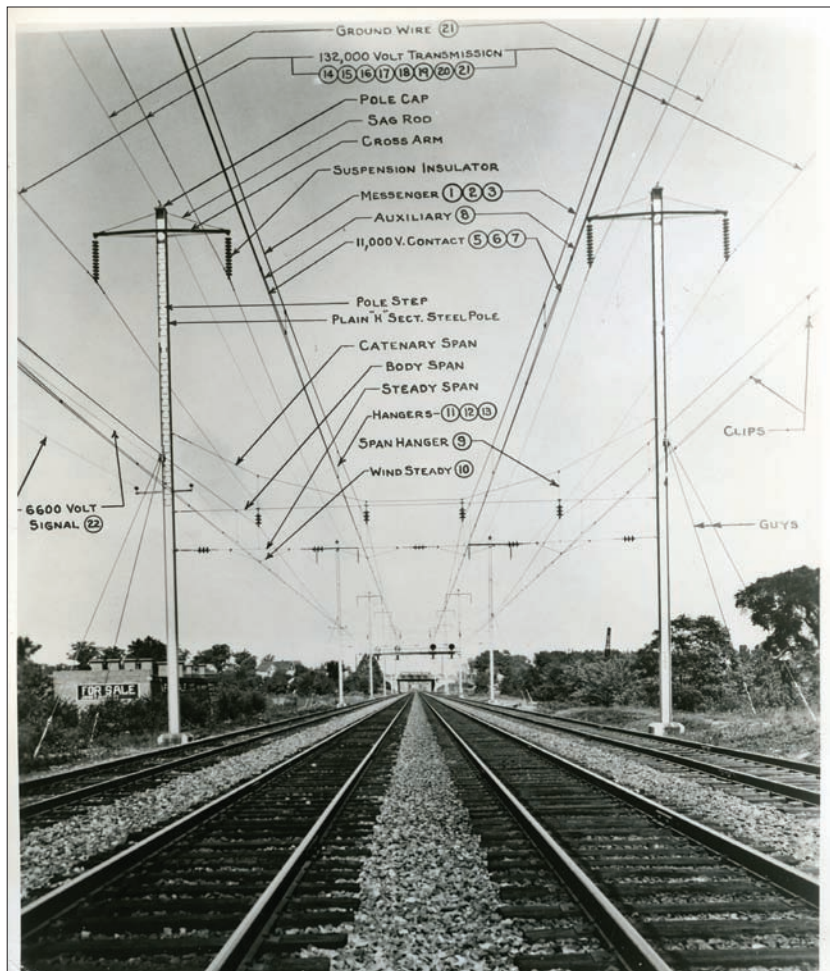
For several decades electrification proponents were engaged in a "battle of the currents," with Westinghouse favoring an A.C. system, while General Electric favored the high-voltage D.C. system. Low voltage D.C. systems were seldom used once the single-phase and high-voltage D.C. systems had been perfected, except for extensions to earlier low-voltage D.C. systems. Both single-phase A.C. and high-voltage D.C. systems were widely installed by U.S. systems. Electrifications in the New York metropolitan area included installations in all three systems. To make matters even worse, from the point of view of standardization, even systems that used the same electric system sometimes built the systems in ways that were incompatible. At New York, for example, the Long Island Railroad installed its third rail system with a third rail that was powered by shoes on the top, while the New York Central adopted a different "underrunning" design.



Michigan Central 7505 shows the typical mounting of a third rail shoe, as well as the miniature overhead pantograph that the New York Central used to assure uninterrupted power supply during movement through complicated track locations. *Library of Congress*

For electrification proponents who were convinced that electric operation would soon take over from steam power, this lack of standardization was the source of great concern. The longer new railroad electrification was built without the adoption of any standards, the more difficult it would be to ever achieve one, once the heavy investment costs for adoption of a particular system had been made. One of the most vocal proponents of standardization was George Westinghouse.

As construction of the Pennsylvania's New York tunnels and Pennsylvania Station were nearing completion in 1908, the PRR had begun a detailed study to decide between the use of a low-voltage D.C. third-rail system or the newly developed single-phase A.C. system adopted by the New Haven just the year before. A five-mile test track was even erected along the LIRR to test both types of electrification. Late in 1908 Westinghouse, as well as several New Haven officials, had written to PRR President James McCrea urging the adoption of single-phase A.C., which they believe would better serve the Pennsylvania's electrification, as well as be in conformance with an eventual link with the New Haven via the Hell Gate Bridge. In the end, however, the Pennsylvania decided that there were still too many uncertain conditions for building a single-phase A.C. system, and adopted the proven third-rail D.C. But recognizing that A.C. electrification would be needed for a later long distance operation, the Pennsylvania made plans that would allow its later installation. And indeed, that was what eventually happened as the PRR began its long distance electrification.



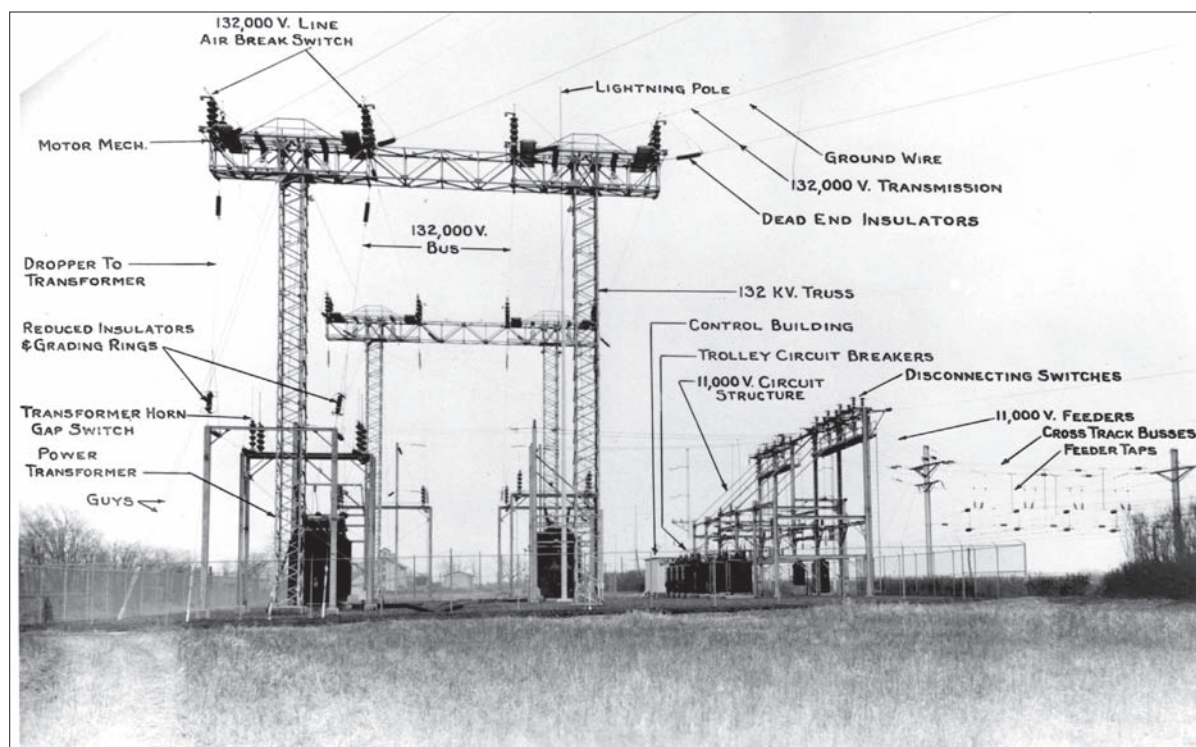
As electrification continued to expand, Westinghouse continued to urge standardization. Then president of the American Society of Mechanical Engineers, Westinghouse delivered a major paper to a joint meeting of the American society and its British counterparts at London in July 1910.

"Believing unreservedly that the increased capacity of a railway and its station," said Westinghouse, "the economies of operation, and other advantages will bring about gradually the systematic electrification of steam railways, my wish is that the progress of the art may not be hampered and such electrification of our main lines delayed or rendered unprofitable by mistakes which experience, judgment and foresight may enable us to avoid."

Accordingly, Westinghouse argued, we must direct attention to "the necessity for the very early selection of a comprehensive electrical system embracing fundamental standards of construction," which would permit the continuance of interchange between traffics.

*Continued on page 10*

These photos, above and below, are PRR images which describe the electrification wiring. Both, Penn Central Co.



The fundamental requirements for interchange of traffic for steam operation included:

- A standard gauge of track.
- A standard or interchangeable type of coupling for vehicles.
- A uniform interchangeable type of brake apparatus.
- Interchangeable heating apparatus.
- A uniform system of train signals.

To these basics, Westinghouse added these additional fundamental requirements for electrically operated railways:

- A supply of electricity of uniform quality as to voltage and periodicity.
- Conductors to convey this electricity so uniformly located with reference to the rails that, without change of any kind, an electrically fitted locomotive or car of any company can collect its supply of current when upon the lines of other companies.
- Uniform apparatus for control of electric supply whereby two or more electrically fitted locomotives or cars from different lines can be operated together from one locomotive or car.

But American railroads ignored Westinghouse's advice, and as the major period of North American electrification continued through the 1930s, electrifications included low-voltage 600-650 volt D.C., several different high-voltage D.C., and 11,000-volt, single-phase, 25-Hertz A.C. systems.


A major electrical advance over the 1940-1950 period was the development of the practical rectifier—first with mercury-arcs and later with silicon diodes—for railroad use. By converting A.C. power supply into D.C., the rectifiers combined the advantages the highly efficient power distribution of A.C. power with the superior performance characteristics of D.C. series traction motor. The use of D.C. power to the traction motors also simplified the cost and complexity of single-phase A.C. systems. Locomotives equipped with A.C. traction motors usually used a series-commutator motor, which required a low-frequency power supply (25-Hertz in North America), which required either power stations to change 60-Hertz commercial power to 25-Hertz power, or a separate 25-Hertz railroad power plant. With the use of D.C. motors powered through rectifiers, the single-phase A.C. power could be supplied directly to the railroad with 60-Hertz commercial power.

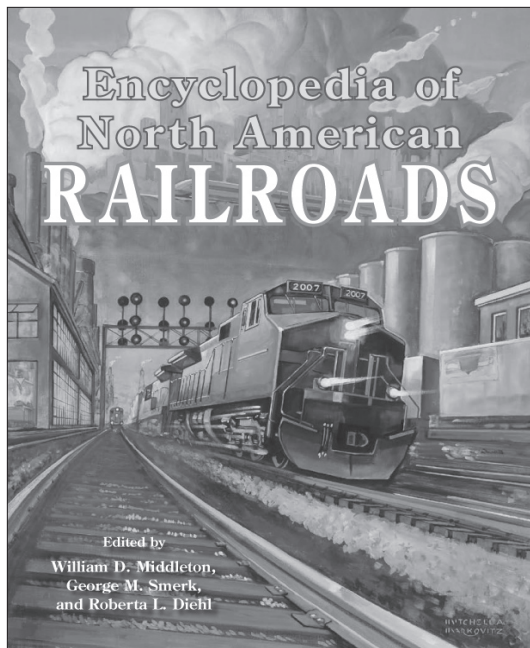
The new 60-Hertz (50-Hertz in most other locations), single-phase, commercial frequency system, electrified usually at 25,000 or 50,000 volts, became the basis for widespread expansion of railroad electrification all over the world. While there was little new North American electrification after World War II, with far more electrification dismantled, new or rebuilt electrical systems almost always used the new commercial frequency system. The only major new North American electrification, the 156-mile Northeast Corridor segment between New Haven and Boston, was electrified with the new 25,000 volt, single-phase, commercial frequency system. New coal-hauling electric lines built in Ohio, Texas, Utah, Arizona, and British Columbia during 1970-1980 were all built with either 25,000 or 50,000 volt, single-phase A.C. commercial frequency electrification. Existing New Jersey Transit high-voltage D.C. electrifications and at Montreal were both replaced by modern 25,000-volt, single-phase, commercial frequency electric lines. The former New Haven 11,000-volt, single phase, 25-Hertz electrification between New York and New Haven has been converted to 12,500-volt, single-phase, commercial frequency power. Amtrak originally planned a similar conversion of its 11,000 volt, single-phase, 25-Hertz line between New York and Washington to 60-Hertz, but funds were never available, and Amtrak is now instead simply replacing the old frequency conversion stations.

Thus, single-phase, commercial frequency electrification has become what represents the new standard for North American electrifications, and is likely to remain so for electrification, if and when any ever happens.

### ***Electrification Standard for Urban Transit***

In marked contrast to the wide range of electrifications that main line railroads could choose from, North American street railways and urban rapid transit have seldom strayed far from the low-voltage D.C. power supply originally put in place in the 1880s, using overhead wires for street railways and third rail for rapid transit, and new rail transit installations still typically employ the same basic electrical system.

It would seem that this electrical standard is now well established, and then along came plans for Seattle's new light rail system. The Central Puget Sound Regional Transit Authority has decided to electrify its power supply with a 1500-volt overhead power supply, rather than the traditional low voltage, thereby reducing the required number of power supply installations and the size of overhead contact wires. And so perhaps the old "battle of the currents" still continues. 



Courtesy of Indiana University Press

## On the Horizon from Indiana University Press -- *The Encyclopedia of North American Railroads*

*This is the fourth in a series of four articles about the upcoming publication by Indiana University Press of the Encyclopedia of North American Railroads, edited by William D. Middleton, George M. Smerk and Roberta Diehl. Scheduled to be released in the Spring of this year, 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, prepared by the book's editors, which address the preparation and content of this major work. You can learn more about the Encyclopedia on the Indiana University Press website at [www.iupress.indiana.edu](http://www.iupress.indiana.edu). DCL*

### Article IV: And All the Other Things

The Encyclopedia of North American Railroads includes many entries and illustrations that help complete and explain the railroad story beyond technology and public policy. There are features unique to railroads in the colorful rail-oriented argot and terms used by employees as well as reporters and historians. The railroads needed standards in order to become a national transport mode with universal interchange. The move to standardization is covered in entries on standard gauge of the railways and their adoption of standard time decades before Congress and government got around to it. There is an entry on narrow gauge railroads and another on the electric interurban railways and why they enjoyed a period of popularity.

There is a strong historical bent in the encyclopedia, with almost 300 brief biographies and of key individuals and short historical sketches of principal railway companies. There are entries about the suppliers to the railroad industry such as the Baldwin Locomotive Works, General Electric, Electro-Motive, and Westinghouse Air Brake Company, to name just a few.

Important ancillary services offer material for entries on the Railway Post Office, the Railway Express Agency (and predecessor firms), Pullman sleeping cars, and the Parmelee Transfer Company, which provided linkage between several Chicago downtown railway stations. Major railway stations are covered, as is the architecture of the various kinds of stations that developed over time.

North American railways played a pivotal role in the U.S. Civil War and in the First and Second World Wars, and a lesser role in the Cold War era, and entries provide information on the service provided. Their role in urban growth and development is the subject of entries on commuter railroads. Entries are included on the federal and state mass transit aid programs that have been essential in maintaining and improving urban rail transportation.

Entries in the encyclopedia tell the story of the vacation resorts and the national parks whose development was sparked and supported by the railroads.


As a major economic and social factor in North American life, the railroads stimulated a body of literature in the popular magazines as well as in early 20th century novels. In addition to mainstream material, there was also a genre of juvenile literature with rail themes. The theater, too, includes a body of work using rail themes; radio, movies, and television have followed the same pattern. There are also entries about the role that railroads played in moving and helping to initiate the national theater companies as well as nationally known and popular vaudevillians on the national Keith and Orpheum circuits. An entry explains the role of the railroads in the national tours of the Metropolitan Opera Company.

How railroads operate today is an important part of the encyclopedia. The process of getting a freight train from yard A to yard B is followed in detail. There are entries on the role of women in railroads, and religion and railroading. The co-editors of the Encyclopedia of North American Railroads sought to be all-inclusive. Virtually every

entry includes suggestions for further reading and exploration of the subject at hand.

Inclusion of many new and original maps help to explain the history of railroads in North America, with entries on Canadian, Mexican, Central American, Hawaiian, Cuban, and Puerto Rican railroads. There are comprehensive tables of railroad facts that cover the full range of rail history and performers.

Among the important historical elements is the role of the railroads in helping to populate the western part of Canada and the U.S during the 19th century. The politics of the location of the Pacific Railroad, as the first U.S. trans-continental railroad was called, was an important part of antebellum controversy in the country. The Pacific Railway survey attempted to find the best route and the railroad, when finally built, reflected the politics of 1862 and is the subject of an important entry.


The co-editors and the editorial board tried to make the encyclopedia truly encyclopedic in its coverage. At the same time we are sure that something has been omitted; what that something is will be revealed by alert readers who discover there is no entry on the Highland, Lowland, Sagebrush & Pacific Railway. Alas! Maybe in a second, revised edition? 

## *Passenger Train Journal* Resumes Publication

Many members will likely remember the magazine *Passenger Train Journal*, which was founded in 1968 by Kevin McKinney, and published by Mr. McKinney's company, PTJ Publishing, until 1987, when the magazine was sold to Interurban Press, and then acquired by Pentrex. The publication of *Passenger Train Journal* continued to 1996, and then publication ceased that year.

In July of 2006, White River Productions announced that it was resuming publication of *PTJ* as a quarterly, 48-page all-color magazine. White River Productions President and PTJ Publisher Kevin EuDaly appointed Mike Schafer to serve as the magazine's editor and art director. Mr. Schafer served as PTJ's editor from 1983 to 1990. In addition, founder Kevin McKinney has joined the magazine as a Contributing Editor.

White River Productions announced that PTJ will include "the best of the 'old' magazine with new columns and contemporary coverage, in a color format with plenty of illustrations, including helpful maps." The first issue was published in October 2006.

For information about and subscriptions to *Passenger Train Journal*, here is some contact information - postal address: White River Productions, Inc. 24632 Anchor Avenue, Bucklin, MO 64631; toll-free ordering line: 877-787-2467; on the web at [www.whiteriverproductions.com](http://www.whiteriverproductions.com). Annual subscriptions are \$29.95, and the single copy price is \$7.95. 

# THE MECHANICAL DEPARTMENT

BY J. PARKER LAMB



## Steam's Final Thrusts – Part II

The previous column discussed the performance advantages that were possible with poppet valve gear. A second major problem that arose near the end of the Super Power period was due to the large masses of the side and main rods, which produced much greater dynamic forces than those of smaller locomotives. The duplex engine configuration sought to diminish these rail pounding forces by splitting an eight- or ten-coupled drive gear into two smaller engines, each with its own power cylinders, side rodding, and valve gear.

As far back as 1932, Baldwin's chief engineer Ralph Johnson proposed such a configuration to the B&O. His idea centered on a rigid-frame 4-4-4-4 arrangement, in which the second set of cylinders was placed between the second and third drivers. Although initially rejecting Johnson's proposal, the road later decided to pursue this approach at its Mt. Claire Shops. The George H. Emerson, named for B&O's chief of motive power, was completed in May 1937. In an effort to minimize the long wheelbase, designers used opposed pistons, with one set of power cylinders near the cab. But, like many other experiments of this period, the Emerson appeared at the wrong time, just as the B&O began receiving its first EMD passenger diesels. President Daniel Willard quickly realized the potential of this new form of power and called a halt to further steam development.

But the duplex concept did not die with the B&O experience. It was soon revived by the Pennsy, which eventually settled on a passenger engine of epic proportions, a 6-4-4-6 wheel arrangement weighing over 300 tons and running on 84-inch drivers. With a cast steel main frame longer than that of a UP 4-12-2, this monster machine would be capable of generating 6000 hp and moving a 1200-ton train at 100 mph. Engine No. 6100 (Class S-1) left Altoona in 1939 wearing Raymond Loewy styled streamlining similar to that he had applied to a K-4 Pacific in 1936.

The S-1, after receiving much national publicity at the New York World's Fair, proved to be both fast and powerful, but extremely slippery (low adhesion). Moreover, it was such a behemoth that it was incompatible with everyday needs. Indeed it was known by Pennsy people merely as the "big engine." During the War years its fancy skirt was stripped away to facilitate maintenance and eventually the engine was scrapped in 1949, after a short ten-year operating career.

Not surprisingly, Baldwin's Johnson had not been a strong supporter of either the B&O or PRR designs, and in 1939 convinced his company to build another duplex engine as a national demonstrator. Before starting construction, however, the company's sales staff scurried around to court potential buyers with specs, drawings, and artist renderings of the radical styling by Otto Kuhler. Finally in July 1940 Pennsy signed up for two 4-4-4-4's to be called Class T-1.

These engines, equipped with Franklin poppet valves, were designed to pull eleven 80-ton cars at 100 mph, and contained lateral motion pedestals on the first and third drivers to allow passage through 17-degree curves. The 80-inch drivered T-1 weighed about the same as a mid-sized Northern, although its 16-wheeled streamlined tender (when loaded) weighed 80 percent as much as the engine itself. The first T-1 (No. 6110) was delivered in late April 1942 and the second one a month later. Soon they were racking up strong performance numbers in the Harrisburg-Chicago passenger pool.

After 120,000 miles of service No. 6110 was sent to the Altoona dynamometer lab in April 1944, and exhibited a maximum of 6100 drawbar horsepower using a 15 percent cutoff. Sensing that it had the steam equivalent of the GG-1 electric locomotive, the road ordered 50 more T-1's in 1944, splitting the order between Baldwin and Altoona. Unfortunately this turned out to be a colossal miscalculation. Only two years after the last T-1 was delivered in August 1946, PRR president Martin Clement announced that "By May of this year [1948] we expect all of our through passenger trains west of the electrified territory to be dieselized." This statement was included in a press release announcing a \$16 million order for diesel locomotives (both passenger and freight).


Railroad historians have often speculated about the T-1's history. Was it just another victim of the diesel revolution or were there some design issues involved? Surprisingly, the answers to both inquiries are "yes." In the ensuing decades, there have been numerous discussions of the T-1 design, both pro and con, that are far too lengthy for this space. Interested readers will find a contemporary citation at the end of this article.

By making a final judgement on duplex steam locomotives based on Pennsy's S-1 and T-1 experiences, one will fail to comprehend the entire evolutionary process of this design. In parallel with the T-1's development, Baldwin and

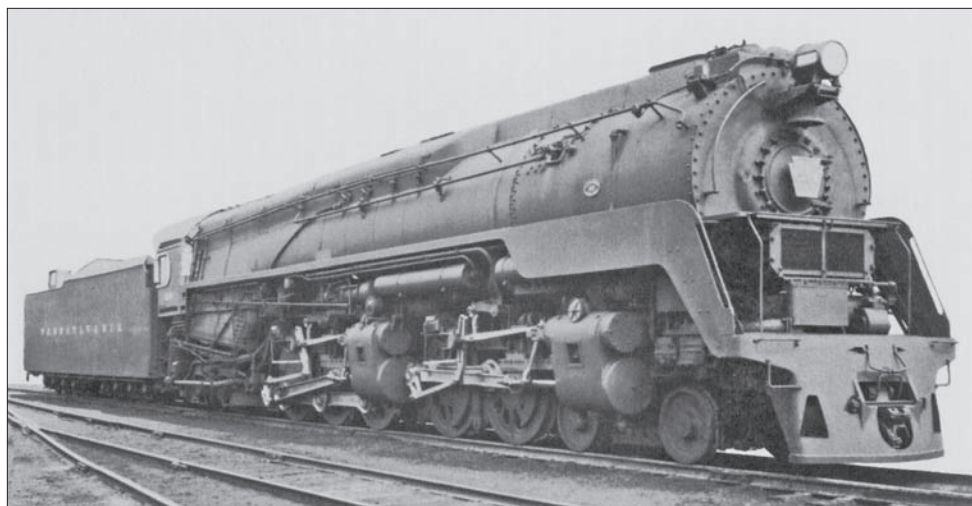
PRR were also crafting a design for freight service, an engine that would not represent such a daring leap in technology as did the T-1. To put five sets of drivers on the rail within the shortest wheelbase, the experimental Q-1 design, like B&O's Emerson, employed opposed power cylinders, which also helped diminish dynamic loads from the piston strokes but produced other problems with locating the rear cylinder saddle near the firebox. A single prototype, with a 4-6-4-4 configuration, was built in 1942 for testing. It was a hefty engine, weighing as much as a typical Challenger and had a tractive effort of 115,800 pounds (including 15,000 from a booster). With less streamlining than the T-1, it kept the same long-distance 16-wheel tender and was equipped with roller bearings throughout.

Not completely satisfied with the Q-1, the road ordered a Q-2 model in 1944. On this engine the power cylinders were conventionally located, and carried the six-wheeled engine in the rear, thus producing a 4-4-6-4 wheel arrangement. At the Altoona test lab, the Q-2 was outstanding, producing the largest horsepower ever recorded by a steam locomotive on a dynamometer. Its 8000 indicated horsepower at 57 mph, with a water evaporation rate of 137,500 pounds per hour, caused the road to proclaim that the Q-2 was "the most powerful steam locomotive in the higher speed range." Soon Altoona was at work on an order of 25 more Q-2's that were completed in 1945.

The accompanying table allows a comparison of the Q-2 with Pennsy's previous leading freight hauling, the J-1 (2-10-4), and with three famous Super Power articulateds. Although the duplex had the same number of drivers as the J-1, its improved running gear produced about 2000 more horsepower than the J-1 on the Altoona test plant. The large increases produced by the duplex running gear at speed are illustrated clearly by the relative piston thrust values. Each of the J-1's pistons produced a thrust of 178,300 pounds, whereas the two Q-2 pistons shoved with 92,000 (front) and 133,000 pounds.

Comparable data from the articulateds, whose maximum horsepower was in the 6000-7000 range, makes it clear that the Q-2 was just as powerful, although it had but 5 driving axles and the smallest cylinder displacement of the group (another advantage of the duplex arrangement). It clearly represented a significant improvement over anything before it and, in the estimation of many, was America's most technically advanced reciprocating steam locomotive. Certainly, it was one of railroading's best kept secrets. 

Reference on PRR T-1: David R. Stephenson, "T vs. J," *The Arrow*, Nov./Dec. 2005, N&W Historical Society [www.nwhs.org, author's email: drs5260fr@yahoo.com]



Pennsylvania Railroad's Q-2 duplex locomotive was one of the most technically advanced steam designs produced.

*J.P. Lamb collection*

#### Comparison of rigid frame and articulated locomotives

	Date	Number	Boiler	Engine	Driver	Tractive	Total Cyl
	Blt	Driver	Pressure	Weight	Dia	Effort	Volume
		Axles	(psi)	(lbs)	(inches)	(lbs)	(cubic feet)
Rigid frame							
PRR J-1	2-10-4 1943	5	270	575,880	69	110,100	26.0
PRR Q-2	4-4-6-4 1944	5	300	671,100	69	115,800	24.8
Articulated frame							
N&W A	2-6-6-4 1943	6	300	573,000	70	114,000	31.4
C&O H-8	2-6-6-6 1947	6	260	751,800	67	110,200	26.0
UP Big Boy	4-8-8-4 1941	8	300	772,000	68	135,400	32.8

Data from "The Steam Locomotive in America," A. E. Bruce, W.W. Norton, 1952

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

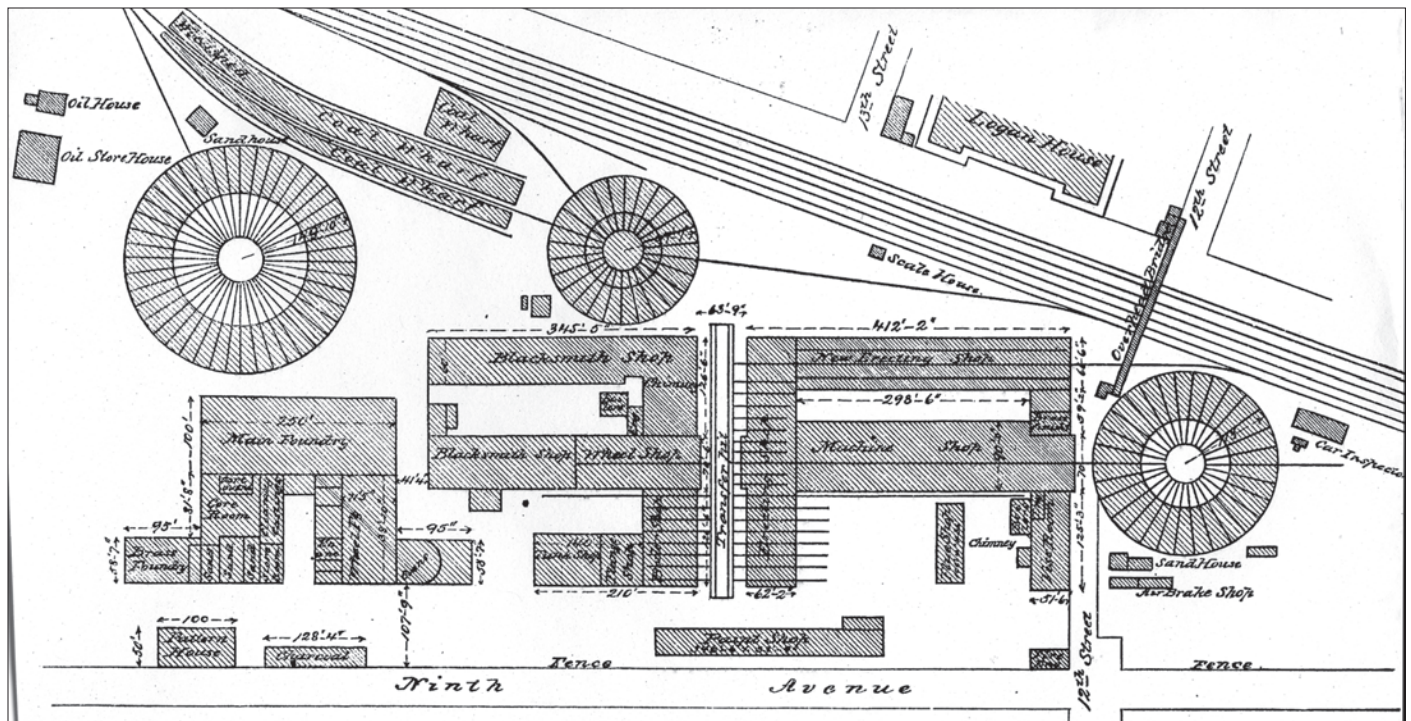
## EXPLORING THE PAST WITH STEAMDOME



*From the Railroad Gazette, November 27, 1875 and December 4, 1875*

### Shops of the Pennsylvania Railroad, Altoona, PA.

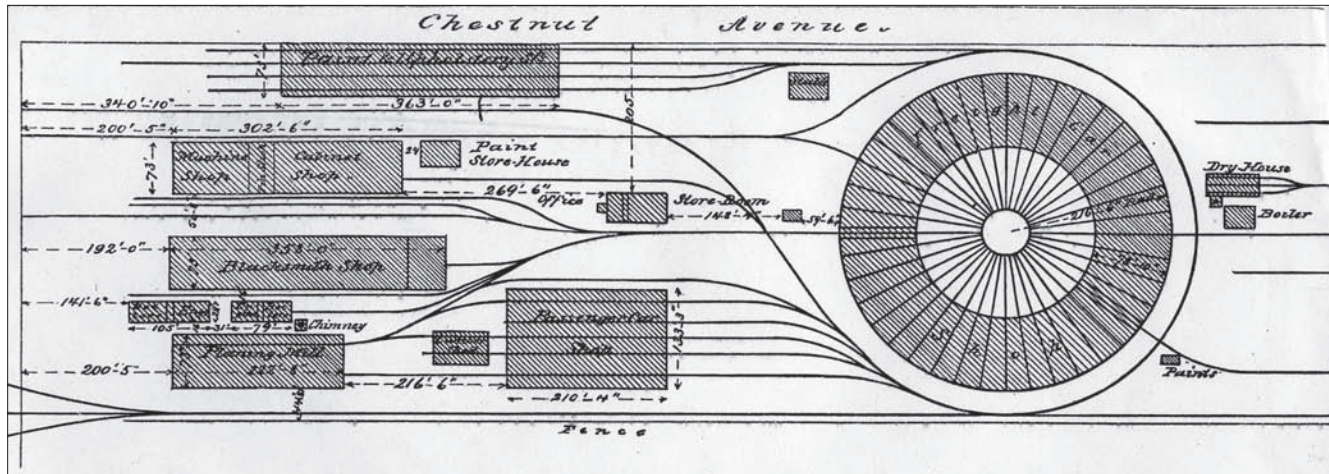
From Baltimore the writer went to Altoona, where, as is well known by most railroad men, the principal shops of the Pennsylvania Railroad are located. The first thing which attracts the attention of a stranger or a person who has not visited this place within a few years is the new erecting shop. This has been put up parallel to the old machine shop and between it and the tracks. It is 350 ft. 6 in. long and 66 ft. 6 in. wide, and has three tracks in it running lengthwise. The two side ones are used for repairing and erecting engines and have each room for seven engines. The side walls of the shop are constructed with brick arches over each window. These are made very strong and carry the tracks for two overhead traveling cranes. Each crane consists of two "fish-bellied" plate-iron girders, which span the shop from one of the walls to the other, with a transverse traveling carriage on each. Each girder weighs nine tons, and the distance between their end supports is 59 feet. The cranes have each a lifting capacity of 25 tons, so that by attaching one to each end of a locomotive it can be lifted up with the greatest ease and carried from one end of the shop to the other.



Locomotive Shops of the Pennsylvania Railroad, Altoona, PA

The cranes are driven by means of a cotton rope traveling at the rate of 5,074 ft. per minute, and the power is applied by pressing the running rope against appropriate grooved wheels in the shafts of which are screws which work into work wheels and the usual reducing gearing. The cranes travel along the walls at the rate of 55 ft. per minute and the transverse traveling carriage at 29 to 30 ft. per minute. The crane has two hoisting speeds, the quickest moving at the rate of 8 ft. and the slowest 15 in. per minute.

Below the floor on each side of the center track are deep paved pits extending the entire length of the shop, in which there is room to stow the machinery of the engines which are undergoing repair, the boilers of which must often go to the boiler shop. When they are removed, the floor of the shop is not obstructed at all by any of the parts of the engines, all of which can be deposited in the pits, which are large enough to receive a pair of 5 1/2 ft. wheels. The floor is made in sections 12 ft. 9 in. long by 12 ft. wide, with which the pits are covered. Each section has two iron



Car Shops of the Pennsylvania Railroad, Altoona, PA

gratings in it, to allow the warm air, heated by steam pipes below, to escape into the shop above. The gratings are also so constructed that a chain can be attached to them and the section then raised or lowered by the crane. Fresh cold air enters the pits through openings in their sides. It is thus heated by the steam and ascends through the gratings as described.

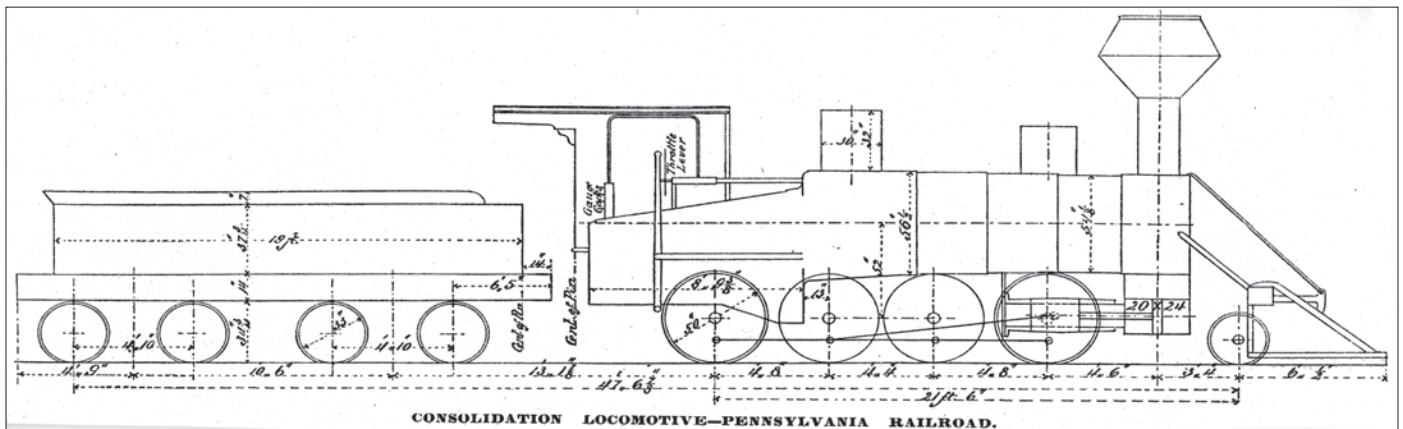
There is also a system of pipes in the pits which is connected to a force pump. These pipes are arranged so that they can be connected with any of the engines on the track above, and the boilers be subjected to a pressure of 200 lbs. hydrostatic pressure. Steam for testing boilers is supplied by two extra strong boilers, which carry sufficient pressure to produce 125 lbs. in the boiler of the locomotive being repaired.

The pump which supplies the water for the hydrostatic test is a triple Worthington pump, with steam cylinders 10 in. in diameter, water suction cylinders 6 in. in diameter, and pressure forcing cylinders 3 1/2 in. diameter, which are all in line and connected to each other and have a 10 in. stroke. In connection with the pressure cylinders is a pressure accumulator with a cylinder 18 1/2 in. diameter. The lifted cylinder and weights on it weigh 33,318 lbs.

The suction cylinders of the pump are used to pump out the drainage of the pits, which flows into a well provided for the purpose. This is necessary, because the bottom of the pits is lower than the system of the city sewerage.

At the back of each pit are hose connections which can be connected with the blow-off cock of the locomotive boilers, and by means of triple valves they can be filled with either water or steam.

The room is lighted at night by means of six reflectors made by the American Reflector Company, each of which is 60 in. in diameter and has 20 gas burners. There is also a burner at each vise, and alongside the pit. Convenient to the engines are two hose connections from which portable hose lights may be used in the fire-boxes of the boilers.



For the information contained in this description of the new shop, we are indebted to Mr. G.W. Strattan, Master Mechanic at Altoona.

The Pennsylvania Railroad Company has been engaged for some months past in preparations for the Centennial. During the past year, it has built twenty-five new passenger engines, fifteen of which are for burning anthracite coal and ten for bituminous. Each kind of engine has 17 X 24 in. cylinders, with 5-foot wheels. At present the force in the shop is engaged on seventeen large freight engines of the Consolidation pattern, a skeleton drawing of which is reproduced in the engraving herewith. The dimensions of these engines are as follows: cylinders, 20 X 24 in; driving wheels, 50 in. diameter; truck wheels, 28 in.; distance from center to center of cylinders, 84 in.; distance between frames, 43 in.; the steam ports are 17 1/4 X 1 1/4; exhaust ports, 2 1/2 in., and the bridges between steam and exhaust ports are 1 in. wide. The throw of eccentrics is 5 in.; outside lap of valves, 3/4 in.; diameter of piston-rod, 3 1/4 in.; diameter of driving axles, 6 1/2 in.; and, length of journal, 7 1/2 inches. The size of boiler, wheel-base and other dimensions are given on the engraving of the engine. The thickness of the boiler plates next to the firebox is 7-16 in. and the other plates are 3/8 in. thick. The fire-box is 8 ft. long X 34 3/8 in. wide inside. The number of tubes is 138, which are 12 ft. 11 in. long X 2 1/2 in. diameter outside. The engines have two outside pumps attached to the guide-yokes and worked from the cross-head. The feed-water is carried into the boiler and distributed there by a perforated cast-iron pipe over as large an area as possible. One small Sellers injector is used for feeding the boiler while standing still.

The weight of engines is as follows:

	Pounds
Weight on truck . . . . .	12,240
“ “ front driving wheels . . . . .	21,580
“ “ second “ “ . . . . .	19,200
“ “ main “ “ . . . . .	19,540
“ “ back “ “ . . . . .	<u>19,080</u>
Total weight of engine . . . . .	91,640
Weight of tender with coal and water . . . .	<u>53,410</u>
Total weight of engine and tender . . . . .	145,050

The capacity of the tank is 2,400 gallons.

The feature of the engines which is the most striking is the sloping fire-box, which is made almost exactly like that used on the old “Camel” engines built by Winans twenty years ago. The crown sheets are stayed to the outside shell by ordinary stay-bolts. The object aimed at in adopting this form of construction was the same as that which led to Mr. Winans to use it on his engines -- that is, to use a long fire-box without increasing the weight behind too much. It will be seen from the distribution of weight on the wheels that the back wheels carry even less weight than any of the others, but that the distribution on all of them is very nearly equal. The advantage which this form of construction possess over any other, in staying the crown-sheet, and its diminished weight, have often been pointed out, but thus far it has not gained in favor as much as its merits seem to deserve. If the different forms of locomotives were submitted to periodic competitive tests, the merits of such forms of construction would, it is believed, soon be made apparent, and come into use by sheer force of their inherent advantages. It is a subject well worth the consideration of railroad men whether it would not be wise to induce different master-mechanics to submit their engines to competition under the same conditions and on the same roads in order to determine which of them will do the best service.

The object in building these engines for the Pennsylvania road so large and powerful was to enable them to take the same trains over the more difficult portions of their road that their ordinary engines haul over the more level sections, thus making the trains continuous instead of dividing them as is now necessary.

## Testing Department


The Pennsylvania Railroad is, we believe, the first railroad company in this country which has established a testing department under the charge of experts, whose duty it is to determine the quality of the materials used, such as the strength of metals and character of oils, the performance of engines, the degree of purity of water, the results of various processes, such as the manufacture of wheels, journal-bearings, etc. The Baltimore & Ohio Railroad Company has for several years employed a person to test the oils and other lubricants used on that road, and the officers report that the company has reaped great profit therefrom. The testing department of the Pennsylvania Railroad is

located in a small room in the second story of the machine shop, and has the appearance more of a practical workshop than of a scientific laboratory. It is also necessary to say that it is somewhat poorly equipped with apparatus for making physical investigations, and has hardly any for chemical analysis. Nevertheless, it is the first distinct recognition of the value of scientific knowledge in the operation of a railroad, and although but a beginning, it is believed it will lead to very great reforms and improvements. The danger is that the scientific department may assume the character of an end and not a means to an end. To a person with a love for such investigations scientific research is so fascinating that it soon becomes the chief object of pursuit, and it is very easy for a scientific student to forget the interests of stockholders, while he is intently absorbed in making original investigations. In the management of a railroad, science should be entirely subordinate to certain definite and practical ends, for the attainment of which railroad companies are organized. These are the carrying of freight and passengers cheaply, safely and quickly. If, therefore, as has sometimes happened, when the aid of science has been sought, it should wander away among the stars, instead of following the track of the locomotive, it is quite sure to be speedily suppressed, and the direction of affairs revert to the hands of "practical men" who pride themselves on *not* knowing what other persons do. To quote from a letter received from the manager of a wheel foundry, to whom some recommendations were made to seek the aid of science in his business, "The practical men get the best results so far. Our foreman of foundry does not know what carbon is, nor what percentage of anything there is in any brand of iron that he uses, but he will pick out the right pigs by his eye in any iron yard, while his wheels outwear two of those of the deep scientific fellows."

Now, this remark, although it is true of a certain kind of scientific knowledge, is not true if science is properly applied. Several wheel makers have now regularly established laboratories for chemical and physical research, in which the materials of which wheels are made are analyzed and tested, and they report that the information gained in this way has already amply repaid the cost. To be profitable, the scientific men must beat the "practical fellows," not in the use of fine words but in the production of better wheels or other practical work. A chemist may discourse very learnedly about combustion, and yet a skillful fireman will often beat him in the economy of fuel with no other instrument than his shovel and little other education than that of practical experience. Some one has said that science is only a superior quality of common sense, which is perhaps as good a definition as could be given. The fact, however, that a leading railroad has made arrangements to avail itself of this kind of knowledge is very encouraging, and indicates an immense step forward. It is, of course, impossible to anticipate the advantages that will result from such a step, but it can hardly be that a road which uniformly tests the bar iron it buys, so all that it uses will bear a strain of 50,000 lbs. per square inch, has not an advantage over a road which buys inferior iron, which will bear only 40,000 lbs., and does not know it.

In the testing department at Altoona, as has already been indicated, there are daily tests made of the iron employed in the wheel and also in the general foundry. These, with a record of the kinds of iron melted, are carefully entered in a book, so that they can be referred to at any time. Tests are also made of the strength of pig and bar iron. The use of phosphor bronze for car-journal bearings has now become general on this road. Being a comparatively new material, its quality, strength, etc., are constantly tested. As has been stated in these pages heretofore, this alloy is not a chemical combination of metals, but simply a mechanical mixture. When examined under a microscope its fracture appears like a sponge of copper, the interstices or cells of which are filled with a softer metal having the appearance of lead. So great is the tendency of these metals to separate that it is necessary to pour it at as low a temperature as possible and at the same time keep it intimately mixed by stirring it actively. It is also found that the mixture is more perfect if the casting is cooled suddenly, and therefore it is proposed to cast the bearings in iron moulds or chills. The castings made from this metal are constantly examined under a microscope, are tested for transverse and tensile strength, and the results of various processes employed are carefully watched and recorded. By these means it is obvious that the results of the use of this metal can be determined with a much greater degree of certainty than would be possible with only the ordinary impressions and observations.

Oils are tested in a machine with a revolving shaft, on the bearing of which a definite quantity of oil is fed, the temperature determined by a thermometer and the number of revolutions indicated by a counter.

The testing department was under the charge of Mr. J.W. Cloud. We have learned that Dr. Dudley, formerly of Poughkeepsie, New York, an accomplished chemist and physicist, has been employed by the company to conduct investigations in the special department of his profession. 

## VISUAL INTERPRETATION

BY JOHN GRUBER



### R&LHS Photography Award Winners Offer Reflections & Advice

Reflecting on their years of activity, winners of an R&LHS photography award offered encouragement and ideas for newcomers at a time when railroad photography is on the verge of a renaissance.

The lifetime achievement award, named for Fred A. and Jane R. Stindt award has gone to 22 photographers since it was established in 1984. For 1982 and 1983 it was incorporated in the senior achievement award. For this column, five of the winners answered email queries.

"For anyone starting out I would certainly recommend that they put a very high priority on getting really good equipment. Some of my own very early photographs suffered greatly from the inadequacies of the equipment," according to William D. Middleton, the winner in 2006. "I would suggest, too, that a new railroad photographer carefully study how good photographers have composed their pictures, and what techniques they have used. I frequently mention the work of Jim Shaughnessy, whose splendid work on night photographs and panned trains were my inspiration for many similar works," said Middleton. He has been an active railroad photographer for more than 60 years, although he does not get out as frequently as he once did.

"With tens of thousands of negatives and color slides to choose from, it is difficult for me to pick what area would be the most memorable, but perhaps it would be the electric interurbans, which I was able to cover quite broadly in the period right after World War II. If I had to pick a specific one, however, it would be something which has a great deal of personal association as well, such as a 1961 photograph during which I enjoyed a picnic lunch with my wife alongside a mountain stream on the Anatolian Plateau as the westbound "Taurus Express" sped by (pp. 48-49, *Trains*, Sept. 1961). The most enjoyable railroad photography trip I've made in many years was a two-week trip I made last July, along with George Drury, that we called 'Bridges of Britain.'"



For William D. Middleton, his coverage of the electric interurbans after World War II is memorable. He made the photo here in June 1950 of the Cedar Rapids & Iowa City Railway's lightweight car racing across the Iowa prairie on its way from Cedar Rapids to Iowa City, at highway 381.

Jim Shaughnessy, the 1987 winner, had a short, simple suggestion: "Look and compose in your head before pressing the button." He retired in 1995 from his profession, civil engineering, but remains active in railroad photography, and will be at the fifth "Conversations about Photography" conference Saturday, March 24, at Lake Forest, Illinois.

Said J. Parker Lamb, "Once a person becomes familiar with the equipment, getting good railroad photos is mostly a statistical process. Thus the more variety you shoot, the more good images you will get. In my early days, I recall thinking that I had all the shots of a particular subject, and put the camera up. At first I was fixated on the newest equipment, and did not document the older rolling stock as much as I should have, not did I record enough passenger terminals." Lamb, who received the award in 1991, tries to take a weeklong, cross-country photo safari once or twice a year.

Between 1949 and 1963, I was fortunate to live in a half-dozen states (in the South and Midwest) where the transition from steam to diesel took place. I also benefited from having many close friends who enjoyed chasing around for photo ops as much as I did. Our discussions about setting up our shots caused all of us to stretch our creativity. I also experimented with panned shots early on, and after a number of them were published, my name was often associated with this technique," Lamb said.

David Plowden, the 1989 winner, has finished a new book, a retrospective covering 50 years, for this 75th birthday in October 2007. It starts with in 1955 with the Great Northern, concludes with a picture of a set of tracks going out into the distance.

For dozens and dozens of photographers, the best possible way to get started is to take an idea and illustrate it, he advises. "Try to go to work for somebody. Forget about going to graduate school; work as an assistant or a photographer. Go to work for a newspaper. Get the experience of photographing all kinds of things. Find a way to getting your feet wet," he said.

"The last thing you want to do," he continued, "is making a portfolio, because everyone is doing that. Convince an editor you have an idea to illustrate. That is the best advice I would give to a young person," concluded Plowden, who is known for the memorable photograph of the Phoebe Snow passenger train at Scranton in 1964.

Since receiving the R&LHS honors in 1998, Ted Benson has been exploring new territory in places like the wheat provinces of Canada and the anthracite country of northeastern Pennsylvania. "The more new ground I cover, the more I want to see. I truly pity those who feel contemporary railroading has nothing to offer. It's their loss--not mine," he said.

Greg McDonnell concluded on an optimistic note. "My enthusiasm for photography and railroading continues to grow. My interests and priorities are ever broadening as well, far beyond the ballast edge, to industrial and societal relationships, urban archeology, etc.," he said.

"The shift to digital has made photography more exciting and rewarding than ever, in no small part by the seemingly limitless creative potential afforded by the new technology. I consider digital as an entirely new body of work, so after more than 40 years of photography, everything is new again," said McDonnell, who was "caught off guard" when he learned he was the 2005 co-winner.

"I'm envious of those starting out with this technology and anxious to see where their talents take them. As an art form, I think railroad photography is on the verge of a renaissance. These are exciting times."

## Plans Set for 2007 *Conversations About Photography* Presented by Center for Railroad Photography & Art

Seven speakers are set for the Center for Railroad Photography & Art's fifth "Conversations about Photography" conference Saturday, March 24, at Lake Forest, Ill., 32 miles north of Chicago. The program for the informal yet informative gathering includes: Steve Barry, editor of *Railfan & Railroad* since 1998. Don Horn, about photography for the Pullman Company. Misko Kranjec, Ljubljana, Slovenia, co-winner in the Center's 2006 awards program. Simpson Kalisher, New York, author-photographer for the landmark book, *Railroad Men* (1961), which received an award from the American Institute of Graphic Artists. John Roskoski, Lompoc, Calif., on Surf, a station next to the ocean closed in 1985. Jim Shaughnessy, winner of the 1987 R&LHS photography award. Walter E. Zullig Jr., New York, attorney who retired as legal counsel for MTA Metro-North Railroad in December 2002. His column about the rights of railfan photographers appeared in *Trains* (October 2006).

The conference is co-sponsored by Lake Forest College library's Archives and Special Collections Department. More information and a registration form are available from the Center at P.O. Box 259330, Madison, Wis, 53725-9330 or at [www.railphoto-art.org/conference.asp](http://www.railphoto-art.org/conference.asp). The advance registration of \$65 (\$75 for nonmembers) includes lunch, breaks, parking, and reception.

Coffee and soda will be available at 8:30 a.m.; presentations begin at 9 a.m. The conference is at Meyer Auditorium in Hotchkiss Hall on the middle campus of Lake Forest College, one block south of Deerpath Road in Lake Forest, Illinois. 🚂

## CHAPTER REPORTS

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

### Chicago Chapter Participates in Railroad Days at the Chicago Historical Society



Chicago Chapter Chairman Charles Stats (l), and Chapter Director Mike Blaszak representing the R&LHS at the Chicago Historical Society's Railroad Days on October 28, 2006. Photo by Frank Carlson

The Chicago Chapter, along with several other local railroad historical societies, participated in the Chicago Historical Society's Railroad Days on October 28 & 29, 2006. The event celebrated the completion of a two-year remodeling and rebuilding program at CHS.

Chicago Chapter Chairman Charles Stats reports that on the second floor of the CHS exhibition building, now referred to as the Chicago Historical Museum, is a large hall which contains the Chicago & Northwestern's "Pioneer", the first locomotive of the earliest predecessor company, the Galena & Chicago Union Railroad, where

their first train operated on October 25, 1848. The engine was purchased second-hand, probably from the Tonawanda Rail Road of upstate New York, a predecessor of the New York Central. The engine has been at the Society's museum since 1972, and was relocated during the rebuilding. This is the oldest surviving Baldwin engine and the only one of the more than 200 4-2-0 types built by all American builders. It is largely original, having never been substantially rebuilt or altered.

The "Pioneer" is paired with Car No. 1 of the South Side Elevated railroad, Chicago's first "L" line. The car and the "L" (using Forney-type locomotives) were built in 1893 to reach the Columbian Exposition, located in Hyde Park, on Chicago's south-side lakefront. Car 1 was later converted to electrical propulsion and illumination, but was otherwise never rebuilt.

On Saturday, Charles Stats and Mike Blaszak displayed and offered for sale recent issues of Railroad History, membership forms, the Chapter's November meeting notice, some their local publications, and answered questions. On Sunday, these duties were assumed by Fred Ash, another director of the Chicago Chapter.

## New York Chapter Enjoys Fall Meetings

The New York Chapter had a busy and interesting meeting schedule during this past fall. In October, the program was presented by Chapter Director Jim Guthrie, and the focus was a tape that Jim made on a Long Island Railroad cab ride from the West Side Yard to Cold Spring Harbor. Jim edited the tape, replacing the original narration with his own historical annotations, which vastly improved the educational value of the tape.

At the November meeting, members enjoyed a tape of Chinese steam locomotives in revenue service in Inner Mongolia, one of the world's last steam strongholds, which only recently converted to diesel.

In December, members enjoyed four Pennsylvania Railroad public relations films of the late 1940's and early 1950's, totaling 70 minutes. The films were Progress On Rails, Wheels of Steel, Clear Tracks Ahead, and Opening A New Frontier. These films showcased the PRR's operations, and many of its locomotives: GG1 electrics, the diesels that the road had reluctantly adopted, the duplex drive T-1 and several of the standard steam classes. These films show genuine optimism for the future, optimism which would disappear in a few short years.

The New York Chapter meets monthly in the Williamson Library at Grand Central Terminal in New York City. Williamson is at the southeast corner of the building, first floor (above the concourse), and is reached by the elevator bank at the northeast corner. Due to increased security in the Terminal, members must assemble as a group at the Track 23 gate and be escorted to the Williamson Library.

## Southern California Chapter Enjoys Movies, Lectures, Fair & Trip

National Director Jim Caballero made a presentation on early railroads at the October meeting of the Southern California Chapter. Prior to the application of steam power, railroads were recorded in history starting in the 1500's as a method of moving material from mines. The program featured artwork from the times illustrating the various types of rails, and cars used to move material. Chapter Chairman Loren Martens opened the meeting with a report on the Chapter's participation at the Los Angeles County Fair, which was successful and generated numerous compliments from visitors.


On Saturday, October 14, forty Chapter members enjoyed a rail trip from Campo (elevation 2670, 50 miles east of San Diego) to Miller Creek. The train consisted of Pullman cars Robert Peary and the Santa Fe 1509, and was powered by a GE 80-ton engine.

The November meeting was centered around a 1940's railroad movie obtained by Chairman Loren Martens which featured steam action at Feather River Canyon, Mission Tower, Santa Ana Canyon and Cajon Summit.

The December meeting featured a movie by member Bruce Ward. It featured scenes of steam on the Southern Pacific, Santa Fe and throughout the United States.

## Southeast Chapter Hosts R&LHS Senior Achievement Award Ceremony

The Southeast Chapter's Annual Banquet was held on November 6 at the Hilltop Restaurant in Orange Park in order to facilitate the presentation of the R&LHS Senior Achievement Award to Robert G. Lewis, who was unable to attend the primary award ceremonies at the October national Board of Directors meeting in Cedar Rapids, Iowa. As reported on page 4, there were two Senior Achievement Awards presented in 2006, one to Mr. Lewis and the other to George M. Hart. The award was presented by Mark E. Entrop, Chairman of the Railroad History Awards. Others present for the presentation included R&LHS President Charles Zlatkovich and his wife, Sandy, and Southeast Chapter Chairman Bill Howes.

The December meeting focused on a program presented by John Leynes, and included a showing of CD's regarding the "Mandarin Train", an old Jacksonville Zoo train, an interview with SE Chapter member Ed Mueller regarding the history of the St. John's River and Jacksonville, an interview with country music singer T.K. Hilton and his parents, and an extract of "Trains & Boats & Planes" from the November Jacksonville Follies Show. 

## TRADING POST

**Wanted** - Steam, Electric & Diesel original locomotive builder's and number plates. I am still looking to fill voids after 43 years of collecting. Currently need a GTW 6400 series number plate as well as a CN 6100 or 6200 series number plate. Also looking for C&O brass ovals from either the 300 or 600 series locomotives. I have plates to trade or will purchase outright. Ron Muldowney, 52 Dunkard Church Rd., Stockton, NJ 08559-1405. 609-397-0293, email steamfan@patmedia.net.

**Wanted** - Elgin, Joliet & Eastern public timetable, any date, showing its long gone passenger service. Jim Prokes, 7505 W. Ute Lane, Palos Heights, IL 60463-2047. 708-448-3152.

**Wanted** - A pair of CB&Q marker lamps - need to be complete with all lenses, founts, burners, mount brackets and bails. Dick Rogers, P.O. Box 593, Mira Loma, CA 91752. 951-360-8565.


**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.

**Wanted** - Railroad History issues No. 55 and No. 58. Contact Kent Hannah, 1312 Woods Drive, Roanoke, Texas 76262, 817-431-8435, pkhannah@verizon.net, with price and condition.


**For Sale** - Bulletin #122, Railroad History #158, #170 through #185 plus # 189-191. These issues for sale and are in new condition. Please call me evenings, 410-480-4777. Clair L. Foster, 3020 N. Ridge Road, Ellicott City, MD 21043.

## LATE NEWS . . .

### R&LHS 2007 Annual Meeting Planning Continues

The 2007 Annual Meeting of the Railway & Locomotive Historical Society will be held from Thursday, June 7 through Sunday, June 10 in Salisbury, North Carolina. Planning is underway, and full details about the meeting will be available in the Spring issue of the *Newsletter*. Also, please periodically check the Society's website, [www.rlhs.org](http://www.rlhs.org), for updates. 

### Dick Hillman's Spencer Article Generates Rare Postcard

Dick Hillman's story about Samuel Spencer, the first president of the Southern Railway [pp. 10-11, Fall 2006 R&LHS *Newsletter*] generated positive feedback from several readers. One reader wrote to Dick about the article, and told him of a postcard that the reader had purchased at auction for \$67.00 in 1998. The postcard contains a photograph of Spencer's wrecked car, with a message saying that the writer of the postcard took the only pictures that were taken of the wreck. In addition, the reader offered to donate the postcard to the archives at the Southern Museum of Civil War & Locomotive History, where Dick is one of the curators. The donation was made toward the end of 2006, and the postcard is now available to researchers. We will have a further note about the postcard in the Spring 2007 issue of the *Newsletter*. 

## 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.*



The Railway & Locomotive Historical Society, Inc.  
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