

Editor / Producer: Clifford J. Vander Yacht 2363 Lourdes Drive West Jacksonville FL 32210-3410 <CliffVDY@JUNO.COM>

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Editorial Advisors

Jim Smith Bruce Heard John Gruber

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R&LHS Archives Services, PO Box 600544, Jacksonville, Florida 32260-0544

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Newsletter Notes

There is always a need for more authors and articles.

There are many aspects to railroading besides steam engines and Diesels. Many railroads had a fleet of boats and barges, and other business operations. Your cross country phone conversations run in fiber-optic cables buried in railroad right-of-ways. So there are many different subjects. But consider writing an article that details just how Diesel locomotives were changed to meet the demands of railroading, including the "who did what" within COVER: It's 1952 and Broad Street Station is living on borrowed time. The massive 10-story office building, part of the 1892 enlargement, is now mostly vacant. Pennsy's executive offices were moved to the Penn Center building erected over Suburban Station when it opened 22 years earlier. Collection of Hagley Museum and Library.

companies, for instance. In other words, write, then send it in!

Ann Smith is the "winner" of the "photo contest" making a shot most like the 1869 classic photo. Other photos tell the story. See the photo section starting on page nine. Rely



The Polar Express, a movie directed by Robert Zemeckis is based on the book of the

same name written and gorgeously illustrated by Chris Van Alsburg (Houghton Mifflin 1985). A story about a boy who travels with Santa to the North Pole on a steam powered train. Human actors including Tom Hanks are turned into computer generated creations. A gift is lost and recovered in this charming tale.

Chris grew up in Grand Rapids, Michigan, where he knew the Pere Marquette freights that sped through the night between Detroit and Chicago. Thus the basic specifications of the movie locomotive were drawn



from PM 1225, the Steam Railroading Institute's locomotive at Owosso. Plans are to have the engine in Grand Rapids for the preview on November 5, 2004.

Your editor visited the engine August 23rd while on vacation. Retts

Philadelphia's Broad Street Lady

by Tommy Meehan

WHERE THE PENNSYLVANIA Railroad's Broad Street Station in Philadelphia was fundamentally different from most other big-city stations was this: it was a stub-end terminal in a city that was an intermediate point on most Pennsy through routes. PRR main lines - to New York City, to Harris-went around not through what Philadelphians call center city. So to provide its headquarters city with a suitable downtown station, Pennsy built a mile long spur off the main line, at the end of which was located Broad Street Station. Thus Pennsy through trains had to 'change ends' there or make a mile long backup move to the main line.

Work began in 1880 on what Pennsy called its Filbert Street Extension, grade crossing-free and entirely elevated. From West Philadelphia, where the main passenger terminal was located, a three-track iron girder bridge crossed the Schuykill River to an elevated structure. In those days the masonry arch viaduct, dubbed the 'Chinese Wall', began at 20th Street where today's Suburban Station tunnel begins. (Later the Wall would be extended further west.) The original Broad Street Station, at Filbert and Broad Streets, included a four-story Gothic head house behind an eighttrack elevated train shed and a fourtrack freight house. The latter opened first, in April 1881, and passenger trains began moving in that December.

In the first summer of operation there were over 100,000 riders a week; by 1886 ridership had doubled. Also increasing were the number of train movements. By the mid-1880s extensive commuter services were being operated-to Trenton, Chestnut Hill, Norristown, Paoli and Lamokin/Wilmington — and the 160-train schedule of the station's first year had swelled to over 400. In 1889 PRR moved the freight station (and an Adams Express facility) a couple blocks west to extend the platform area and permit the addition of four more platform tracks (for a total of twelve). By then Broad Tower at the station's throat was handling 1,000 or more movements a day, (including vard engines and deadheads) and it was clear more space would soon be needed.

A major renovation of the 11-year old station was begun in 1892 and the result was the Broad Street Station as most people knew it. This included squeezing in four more platform tracks and building a massive arched train shed. This glass-covered shed was whopping 591 feet long by 306 feet wide. At its peak it rose 100 feet above the tracks. The final touch was extending the station to Market Street to permit the addition of a ten-story office building, with Pennsy's executive corps among the new occupants. PRR was pleased enough with its rebuilt station to begin calling it, "America's Grandest Railway Terminal."

As traffic to and through Philadelphia continued to grow PRR continued to make improvements. In 1903 a new two-level station was built at West Philadelphia and extensive track changes were carried out. Since many Jersey City-Washington trains were skipping Broad Street the new station provided lower level platforms to allow them to run through, avoiding interference with Broad Street-bound trains on the station's upper level. With most of PRR's east/west passenger fleet plus several hundred weekday suburban trains operating to and from Broad Street, this was an important improvement.

Ten years into the 20th century Broad Street Station was again nearing the saturation point and Pennsy considered a number of options. The most ambitious was a plan to convert Broad Street into a *through* station. Several years later PRR Chief Engineer A.C. Shand recalled this plan in a Philadelphia *Inquirer* interview.

"We have had a number of plans centering around Broad Street Station. [About 1913] we found...that the station was traffic-saturated and could accommodate no more steamdrawn trains. We planned tunnels beneath Broad Street leading from the North Philadelphia Station ... Just as we were preparing to go ahead with construction the electrification of the Main Line to Paoli commenced ... and we suddenly found our track congestion relieved." The changeover to owl-faced MP-54 MU equipment had eliminated much of the switching and staging of equipment at Broad Street, thus greatly reducing train movements.

Two prominent events in any recall of Broad Street Station are the pair of major fires that ripped through the trainshed. The first fire began shortly after midnight on Sunday morning June 10, 1923. It was never determined how it started—an electrical short circuit or a carelessly discarded cigarette were the leading theories—but a small wisp of yellowish smoke rising from a crack in the station floor first alerted employees to what became a six alarm fire. The fire destroyed both the magnificent train shed and the platform area.

Twenty years later it happened



Looking east at the massive train shed that Bert Pennypacker once likened to a ship's hull turned upside down. This photo was taken in 1914 just before the initial electrification on the Philadelphia Division to Paoli. Photo by Harry F. Brown, Collection of Herb Harwood.

again. Small umbrella-type platform canopies had replaced the massive train shed following the 1923 fire, but much wood construction remained. Early on a bright Sunday morning in September 1943 a small fire in a railroad power house near the terminal's west end quickly roared out of control and the Philadelphia Fire Department had another multi-alarm fire to fight. By the time it was extinguished a block-long section of terminal track and most of the platform area had been destroyed. What drew praise in both fires were the actions of Pennsylvania Railroad repair crews who went to work constructing temporary platforms just west of the fire area before the flames had even been subdued!



It's the Fall of 1929, just over six years since the fire that destroyed the massive shed. Modest umbrella canopies have replaced it. The terminal now hosts a mix of steam and MU trains. In January 1933 the first P5-powered intercity train will debut. Photo by Harry F. Brown, Collection of Herb Harwood.

The disruption caused by the second fire was much less than problems encountered in 1923. By 1943, for several reasons, Broad Street was handling many fewer trains. First, virtually all Philadelphia commuter service had been electrified and moved to Broad Street Suburban Station when it opened in 1930. Second, since the opening of the magnificent 30th Street Station in West Philly in 1934 many of the east/west long-haul trains no longer called at Broad Street. By 1943 only the famous Philadelphia-New York Clockers, second-tier long-haul trains and a handful of steam-powered locals used Broad Street.

By the 1950s, a cash-strapped Pennsylvania had begun calculating

the potential financial return to the railroad of knocking down Broad Street Station and redeveloping its 22 acres of prime, center city real estate. In early 1952 the railroad announced it was going to close Broad Street Station and tear it down. The last regular service was run on Saturday, April 26, 1952 and the following night a formal farewell was held. On that rainy Sunday evening, PRR and city officials appeared in the main concourse to address a crowd estimated at several thousand. An emotional PRR President Walter S. Franklin told the crowd their presence spoke more eloquently of the station's place in Philadelphia history than any words he could speak.

A ceremonial 'last train' was part of the evening's ceremonies. A Philadelphia Orchestra Special was scheduled to operate that night and the train was accorded the honor of making the official 'last departure' from Broad Street Station. At 9:57 PM the train edged out of the terminal into a driving rain behind GG1 4800, 'Old Rivets', the very first G ever built. The *Philadelphia Enquirer* reported that, after the special departed and the last of the crowd left, the station's lights were turned off and the doors locked. After seventy-one years Broad Street Station was officially closed.

Demolition began bright and early the very next morning. R&HS

The author mould like to thank Herb Harwood and the Hagley Museum & Library for their generous permission to use the photos accompanying this article.

Convention Photos

On the next eight pages are selected photos of the 2004 R&LHS Convention, "Wasatch & Junction City Express" which convened in Ogden, Utah, June 10-13, 2004. We had a special reenactment of the Golden Spike Ceremony in which many members of our group participated. We watched the preparation of Central Pacific #60, "Jupiter," and Union Pacific #119 recreations in the engine house. They were then moved out (photos 1 & 2, 4 & 5) and initially positioned (3). The honor guard raised the flag (6) and took positions behind the engines (7) which were then moved to (almost) touch their pilots. The dignitaries made their speeches (9 & 10), placed the spikes and drove them home while the event was tapped out in Morse Code (8). The dignitaries then congratulated each other (13 & 14) and everybody joined in (11 & 12). An interesting bus and foot trip was made down the grades from Promontory Summit cut through blue limestone (15). The Heber Valley train trip was a slow ride to beautiful scenery (16) followed by a speedy trip through Salt Lake City on TRAX (17, 18 & 19). Photo credits: 1, 2, 3, 12, 14 & 18 by Jim & Ann Smith; 4, 5, 6, 7, 8, 9, 10,& 16 by Bill & Irene Lugg; 11 & 13 by Lee Witten; and 15, 17 & 19 by Georgene McDermott. The bottle holder on the Jupiter is engineer Ron Wilson and holder of the bottles on the No. 119 is engineer Richard Carroll. My thanks to all involved. — Cliff





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4 ABOVE: CP #60 Jupiter. 5 BELOW: UP#119. Elegant 4-4-0s.













6: The honor guards: Ken Miller (behind Jim), Jim Smith, Cliff Vander Yacht and Terry Wells raise the flag. 7: Ken, Cliff, Jim and Terry guard the gold and silver spikes. 8 Adrian Ettlinger actually keys "DOEN" while reading his script. 9: Mike Burdett speaks and Bill Lugg listens. 10: Charley Stats, Bill and GSNHS volunteer David Harrison. It was fun!









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17 ABOVE LEFT: The group at TRAX (UTAH TRANSIT AUTHORITY) in Salt Lake City. 18 BELOW: Our iron steed (like this) on steel rails gave us a fast ride on private right of way and a slower one in street running to our destination at Olympic Stadium and the now extinguished flame (19 ABOVE RIGHT).



The Westinghouse "Triple Valve" And It's Operation by A. J. Bianculli

LOCOMOTIVES THAT COULD ATTAIN HIGH SPEEDS were being outshopped by the 1850s, yet trains were limited to relatively low speed operation: 15 miles per hour for freight trains, 25 mph for passenger trains. The limiting factor was the ability to stop the train in an emergency and the elusive solution was not developed until the 1870s when George Westinghouse invented an automatic air brake utilizing a "triple valve."

Westinghouse's first effort in the field produced a "straight air brake," one in which the brakes were set by air pressure. It worked well but had a serious flaw: it did not fail safe. In other words, if the system was ruptured or developed a leak, the brakes could not be applied. Returning to the drawing board, Westinghouse produced a system in which pressure was continually applied to keep the brakes from being set. Now, in the event of a leak, the pressure in the system fell and the brakes became operative. The heart of the invention was a so-called "triple valve" that, along with a brake cylinder and air reservoir, was installed under each car. (A pump at the locomotive produced the compressed air that filled the train line.)

The triple valve at each car was connected to the trainpipe air line at (T), see drawing 1. It was also connected to the brake cylinder at (C), the auxiliary reservoir at (R), and the atmosphere at (A). A slide valve, mounted within the triple valve, controlled the supply of air to the brake cylinder, which moved its piston rod. The brakes were attached, through linkages, to the piston rod of the brake cylinder.

Drawing 2 on the next page shows the relative positions of the components when the brakes were released and the auxiliary reservoir (R) was charged or charging. In the latter instance, if the air pressure in the auxiliary reservoir(s) has fallen below the supply pressure (generated by the air pump at the locomotive), the piston of the triple valve was forced to its extreme left by the pressure imbalance. In that position, the feed port that spanned the piston thickness was open to each side of the piston and supply air was furnished to the reservoir until the air line (T) and the auxiliary reservoir was in balance with the same pressure on either side.



Once fully charged and in normal operation with the brakes off, the air line was maintained at high pressure by the locomotive pump and no air was acting against the piston of the triple cylinder (from either direction) because the piston between the air line (T) and the auxiliary reservoir (R) was in balance. In this position (which was the same as the charging position), the slide valve also uncovered the exhaust port at (A), which established communication between the brake cylinder (C) and atmosphere and allowed the brake cylinder pressure to "unload." The release spring within the brake cylinder retracted the brake cylinder piston and the brake shoes that were connected to it through the various rods and levers.

To apply the brakes, the engineer released air from the trainpipe and the line pressure fell. The resulting imbalance between the air pressure in the line and that in the auxiliary reservoirs caused the piston in the various triple valves to move to the right beyond the feed port, closing communication between the air line and the reservoir (see the small schematic drawing, la). At the same time, the exhaust port was closed off and air was admitted from the auxiliary reservoir to the brake cylinders (from R to C), thereby activating the brakes. To release the brakes, the engineer moved his control to the "brakes off" position, an action that resealed the air line and allowed it (the air line) to again reach the pressure of the reservoirs. As the pressure came into balance, the triple valve piston moved to its original position where air pressure acting in the brake cylinder was released. Obviously, in the event of air line rupture this system would operate as if the engineer had set the brakes



and would apply the car brakes automatically. (Later advances provided for more rapid release of the air pressure throughout the system when an emergency stop was needed.) In addition to failing safe, the system offered another improvement. Westinghouse's original system relied on compressed air furnished from a supply tank at the locomotive. On a long train, brakes were applied unevenly because of pressure losses as the air traveled along the trainpipe. The new system, with a reservoir at each car, each at the same pressure, eliminated that problem.

One other feature was provided for early installations was a three-way cutout cock that insured compatibility with existing cars equipped with straight brakes. It permitted an automatic brake to be used in a consist with straight brakes, but not in the automatic mode. Rears

[This description of Westinghouse "triple valve" operation is based on information provided *in Trains and Technology*, Volume 2, a book written by A. J. Bianculli and published by the University of Delaware Press.]

Role (and size) **Reversal** Current news of the R&LHS

THE **Newsletter** is now considered to be a significant historical magazine ranked next to CLASSIC TRAINS according to Don Phillips, columnist for TRAINS, in the September issue. As reported on the RLHS-Group (internet bulletin board), this is a direct result of authors selecting this publication to best present their articles. Two such articles have been withdrawn from other publications to do this. Most new, and thus younger, R&LHS members come from our website where the **Newsletter** is presented in full. As a group, they show a keen interest in steam engine development as well as diesel articles.

At the board meeting in Kansas City, it was announced that our journal is already on sale in stores side by side with TRAINS magazine. RRH articles and features are now more in tune with railfan interests with emphasis on current events such as the Horseshoe Curve Celebration and the Kinzua Viaduct collapse. The editorial staff of RRH proposes to take the journal to the next level — a perfect bound, softcover book, 10 x 8.25 inches rather than the present 9 x 6. This will mean slightly larger type. The added 2.25-inch width is critical. for it will allow use of photos and maps more effectively and to mix 3column width with 2-columns.

The resized journal will be increased from 8,640 square inches to 10,560 square inches, or the equivalent of 196 pages at the current size. The entire 128-page issue is to be in color (currently at 80%), with a heavier 80-pound silk paper and a cardboard mailer (similar to "priority mail") for an estimated cost of \$6,000 more per issue (*RRH* #190 cost \$26,506.28 for our 2439 members).

To offset that additional cost, the

journal is conducting retail sales as mentioned before, generates ad revenues and has a contract sale.

The *RRH* report stated, "... the R&LHS will gain \$11,000 in added revenues in 2004 from *RRH* sales." Also, "The amount allotted for *RRH* from the current Friends campaign is \$11,000."

The board approved the size change, but reduced the page count from 128 to 96 in the new size for the next two issues in 2005. Retts

Financial Quiz

The revenues for issue 190 in 2004 was \$5,220.32, and the expected revenues for issue 191 in 2004 is \$5,700, which totals \$10,920.32. This required a printing run increase from the former 3000 copies to 4000 copies which is about \$4,000 per issue or \$8,000 total. How much does the journal expect the R&LHS to gain from this in 2004? Hint: 10,920.32 minus 8,000.00 is 2920.32.

A 11,000, which is the estimated total ignoring the additional printing cost. This was used to justify the cost of the change of size according to the journal's report at the recent meeting.

In 2003, the Friends of R&LHS had donations of \$12,305 with a net of \$4,200 of which the journal got half. In 2004, the donations were \$9,310. How much does the journal expect for use in 2005? Assume expense of inserts of \$3,500 for issues 189 and 190. Hint: 9310 minus 3500 is 5810. Half of that is 2905.

A 11,000, which is half of the donations for both years ignoring all of the expenses. This also was used to justify the cost of the size change at the recent meeting. See quotes above.

The **Newsletter** was included in all Friends of R&LHS advertising. How much has been allocated?

After three requests for a portion of these funds, no funds were allocated by the board to the **Newsletter**.

TRADING POST

Submissions should be made to the Newsletter editor via e-mail or mail for inclusion in the next issue. All items subject to available space and editorial decisions as to content. New Trading Post items are posted on our WebSite. <http://www.RLHS.ORG>

SELLING - Russian Rail Transport, 1836-1917, colorful history of Russian railways beginning in 1836 until the Bolsheviks took power during WW1. \$32.00 USA, \$36.00 foreign. Also available is the 118-page biography, Franz Anton von Gerstner, Pioneer Railmay Builder, by Mikhail and Margarita Voronin. \$28.00 USA, \$32.50 foreign. Checks payable to Languages of Montour. John C. Decker, 112 Ardmoor Avenue, Danville PA 17821. <JDecker@Uplink.net>

WANTED - Original Howard Fogg train paintings, both oil and watercolor. John Atherton, 16 Coachlight Drive, Poughkeepsie NY 12603-4241. (845) 471-8152. <JJAAMAPOU@aol.com>

FOR SALE: Walter R. Fogg was a founding director of the R&LHS and the undersigned purchased his collection of BULLETINs from his son, Freeman, a number of years ago. Two issues were not in the collection as these were two you had to order special and pay extra for. In order to complete my collection, I recently purchased the McFarlane/Becker/ Fisher collection and since it is in somewhat better condition, the Fogg collection is offered for sale. The price to R&LHS members for issues 1-50 is \$40 each, nonmembers \$50 each. Other out-of-print issues 51-180, priced individually and may be more, but usually less. Already sold are Nos. 1, 2, 4, 5, 7, 9, 11, 12, 14, 15, 17-20, 36, 39A, 41, 48, 89 & 93. I will be away on steam safari until 05 November. Correspondence will be then addressed in the order received. Alden H. Dreyer, 91 Reynolds Road, Shelburne MA 01370-9715. (413) 625-6384. <alden.javanet@rcn.com>

FOR SALE - **RR Stories**/mag. Jan. 1933 -Jan. 1979 (inclusive). 502 total issues - mostly VF/Better. All complete with covers. \$1400.00 + shipping. (219) 865-8967 (9:30-8CT) Ask for John. **John Maye**, 1320 W. Lincoln Highway G14, Schererville IN 46375-1559.

FOR SALE - Otto Kuhler etching, watercolored and signed in pencil by the artist, of "The General Western & Atlantic Railroad" on heavy paper 14.5" by 17" Can fax a reduced copy for viewing. No phone calls please. **Robert E. Warren** 928 Mission Terrace, Camarillo, CA 93010-1265. <mrwanrew@aol.com>

WANTED - Clear 2¹/₂ x 4¹/₄ black & white negatives of Chicago, St. Paul, Minneapolis & Omaha RR 4-6-2, E-3, #600-602 steam locomotives. Elwood G. Mateer, Jr., 7324 Three Chopt Rd, Richmond VA 2326-26-3753.

WANTED - Photo by Norris Young of Tuckerton/SNJ #5 which appeared in Model Railroader Cyclopedia Vol. 1, by Kalmbach. Gerald Blaney, 99 Ellerton Road, Dagenham Essex, RM9 4HR UK <gerald_blaney@fsmail.net>

FOR SALE - My latest book, *Prairie Railroad Town*, the history of the **Rock Island**'s large shops at Horton, Kansas, 1886-1946, with 140 never-before published photos, including many by talented local photographer Jules Bourquin. For a review, see July 2004 TRAINS. Special R&LHS price of \$29 postpaid for softcover, \$54 hardcover. I. E. Quastler, Box 14591, Portland OR 97293.

NEEDED - Replacements for UPS shipment stolen or incorrectly delivered. Four, newly bound issues of *Railmay Equipment Register* from the 1910s and 1920s. James E. Lane, 2317 Brooklyn Dr., Terre Haute IN 47802-2758.

FOR SALE: *The Mightiest of Them All -The Pennsylvania Railroad*, the personal story of Earle Kraft, a Pennsy locomotive fireman during WWII on the Philadelphia Terminal Division. Softcover, 92 pages, only 200 copies total. Most Pennsy collectors haven't even heard of it. \$22.00 + \$3.00 postage. Dan Allen, PO Box 917, Marlton, NJ 08053-0917. <njsouthrr@aol.com> టts

New RR Books

Press releases for new railroad oriented books appear here. They are not paid advertisements and carry no endorsement by the R&LHS. All items subject to available space and editorial decisions as to content. Photographs are limited to 7/8 inches maximum size.

Mason Steam Locomotives by Arthur W. Wallace brings the complete Mason locomotive story to light. "Melodies, cast and wrought in metal" was often attributed to Mason's superb locomotive workmanship. 13 chapters, 200 photos, 1879 catalog, biblio., index. Hardbound, 192 pages, 8½ x 11, \$52.95 (7.75% for IL res.), \$5 s/h. Heimburger House Publishing Company, 7236 West Madison Street, Forest Park IL 60130.



In New Haven Railroad -Dining on the Shore Line Route, Marc Frattasio tells the story of this famous passenger railroad's equally famous food and beverage service operation,

the only service of its kind in America that ever turned a profit in the modern era. 112 pages, 170 illustrations, 215 authentic New Haven Railroad recipes, 8½ x 11, soft cover. \$20.95 plus \$5.00 shipping (US). TLC Publishing Inc., 1387 Winding Creek Road, Lynchburg VA 24503-3776. (434) 385-4076.



Patrick McGinnis was best known for his stormy 22 month tenure as president of the New Haven between April 1954 and January 1956. In The New Haven Railroad in the

McGinnis Era, Marc Frattasio presents McGinnis' experimental high speed passenger trains, the corporate image by his wife Lucille, the station design program, the New York City commuter revolt, the hurricanes and floods, the financial problems, and much more. 256 pages, over 500 color and black & white illustrations, 8½ x 11, hard cover. \$39.95 plus \$6.95 shipping (US). International shipping \$12.95. White River Productions Inc., 24632 Anchor Avenue, Bucklin MO 64631. (877) 787-2467.



Burlington Zephyrs Photo Archive: America's Distinctive Trains by John Kelly. Facing fewer passengers, Burlington President

Ralph Budd lured passengers with the Zephyr with its sleek lines which began the styling revolution. Softbound, 128 pgs., 10¹/₄ x 8¹/₂, 122 B&W photos. \$29.95 +\$4.95 s/h. Iconografix Dept. PR, PO Box 446, Hudson WI 54106. (800) 289-3504.



The Railroad and the State: War, Politics, and Technology in Nineteenth-Century America by Robert C. Angevine gives us a coherent whole examination of the relationship between the

U.S. Army and the railroads during the nineteenth century. This is his 1999 Duke University thesis (coverage to 1871) and updated to 1899 as a postdoctorial fellow at Harvard University. Hardbound, 371 pages, 6 x 9, notes, biblio., index. \$65.00 Stanford University Press, 1450 Page Mill Road, Palo Alto CA 94304-1124.



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