

The Railyard Local

Volume 12, Issue 4

-The Newsletter of the Danbury Railway Museum-

August-September 2013

Danbury Railway Day & Members Picnic

First public tours of the *Tonawanda Valley* among highlights

On August 3rd, the Danbury Railway Museum hosted Danbury Railway Day 2013. Over 200 guests came to celebrate the event and were able to ride in vintage railway equipment and ride the only working turntable in Connecticut. Midway through their ride



Art Slothower, Terrie Roese and Joseph Alves stand on the back of the *Tonawanda Valley* awaiting visitors. This and back cover (left) photos courtesy of Carolyn Taylor.

on the turntable, guests disembarked and were escorted onto a red carpet platform to take a tour of the *Tonawanda Valley* observation car, which is currently undergoing restoration. Project manager Art Slothower greeted guests as they stepped up to the *Tonawanda Valley*. Once inside, guests were treated to a talk about the *20th Century Limited* observation car given by Terrie Roese who was dressed in 1920s fashion.

Due to a glitch with the passenger equipment, the caboose train operated all day for guests to ride

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Staying on the Track and the Development of the 2-6-0 Mogul (Boston & Maine 1455)

By Bob Boothe

In the March 2013 DRM Newsletter I briefly summarized the problems facing the developers of railroads in America (which started in earnest in the early 1830's). Track was often hastily laid on poorly graded roadbeds, numerous curves were used to avoid the expense of tunnels/bridges, and low budgets brought forth locomotives which were increasingly able to "cope" with these issues.

Thus was "born" by the 1840's the typical 8 wheeled "American type" 4-4-0 locomotives with the "three point stance" (also chronicled in the March 2013 article) The 4-4-0 became the mainstay design for almost the next 20 plus years. These often ornate 4-4-0's were typical of the locomotive power during the American Civil War (1861-65) and the building of the Transcontinental Railroad (1863-69) Less ornate versions of 4-4-0's continued to be built right up to the early 1900's.

However, the quest to design more powerful locomotives for more speed and heavier loads was always going on. Although roadbeds/track/bridge engineering improved, it was found that simply adding more driving wheels wouldn't work without keeping the "three point stance-equalized suspension" in the design. Recall that John Jervis had shown back in 1832 the dramatic benefits of having a leading unpowered set of wheels in the front of the locomotive to "guide" the rest of the engine through curves.

On my reading of some railroad publications from the late 1800's (thanks to the kind folks who have made digital versions available on the internet), it seems that there were specific "desired performance goals" for the front wheel guiding truck (2 or 4

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Upcoming Events at DRM

September 2nd - Labor Day

The Museum will be open from **12 to 4pm** with train rides. This is also when the Museum's summer hours end.

After Labor Day, the Museum will be open Wednesday to Saturday from 10am - 4pm and Sunday from 12noon to 4pm.

September 7th - First Responders Day

The Danbury Railway Museum will be honoring our first responders and their families with free admission and train rides (ID required).

September 21st - Owney, the Railway Post Office Dog Day

Come and hear the history and stories of Owney, the famous Railway Post Office dog. Children's activities and **free hot dogs** will be provided!

October 12th & 13th, 19th & 20th, and 26th & 27th - Pumpkin Patch Weekends

That time of year for pumpkins is coming fast! Come to the Danbury Railway Museum for a historic train ride to our pumpkin patch where children ages 2 - 12 get a **free** pumpkin! The **\$10** admission for visitors ages 2 and up (under 2 years free) includes train ride, exhibits and displays, operating layouts, children's activities including free coloring station and temporary tattoos, and free cider and cookies! Children are encouraged to wear their costumes.

Hours are **10am - 4pm on Saturdays** (October 12th, 19th, and 26th) and **12pm - 4pm on Sundays** (October 13th, 20th, and 27th).

Trains will be running hourly 10:30am - 3:30pm on Saturdays and 12:30pm - 3:30pm on Sundays. The station and gift shop will be open until 4:30pm every day.

If you are a Member and would like to help out with this event, which would be very much appreciated, please contact Sue Teer at 203-778-8337.

Trackwork Saturdays

Volunteers are needed for doing trackwork beginning at 9:30am on the first Saturday of each month through October.

Parking Deal on Weekends

Thanks to the generosity and cooperation of the staff at the Danbury Parking Authority, guests at the DRM will be able to get their admission ticket stamped at the Front Desk for a \$1 discount on parking at the Municipal garage across the street.

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Ten Years Ago

By Stan Madyda

The weekend of July 12th and July 13th 2003 was a very special time for the Danbury Railway Museum. It was on that weekend that we celebrated the 100th anniversary of the Danbury Union Station. Opened on July 13th, 1903, it replaced the former Danbury & Norwalk station located on Main Street (where the Post Office is today) and the New York & New England station which is still standing on Leahy's property. By this time, both railroads were part of the New York, New Haven and Hartford Railroad.

A special ceremony was held in the parking lot on July 12th. Tom McCullough served as Master of Ceremonies and many of the local politicians spoke as well as former DRM President Peter Cornwall, Architect for the project Roger Whitcomb and then current President, Ira Pollack. Out in the yard, visitors were treated to special demonstrations and rides, antique machinery and music. Hollandia Nursery displayed their antique delivery truck.

While things were going well with presenting a memorable weekend, finances at the Museum needed help. Cash flow was very tight and reserves were being used up. In his monthly column, Ira Pollack asked for any member with grant writing or fund raising experience to please volunteer their services. He had hoped that an annual fund drive to members and the Danbury business community would help. New ideas were needed and a tag sale on museum grounds was scheduled for August.

New appointments saw Debbie Kern become the Newsletter Editor and Ron Freitag as Director of Operations and Instruction.

Out in the yard, we had a professional construction company come in to do switch and tie replacement on the 20 switch. Work had begun on the New York Central wooden caboose with rotted exterior wood removed and inspections being made to learn the extent of the work needed to be done.

Questions for Membership

As the new editor, I'm asking whether you, the membership, would like to continue receiving the newsletter in it's printed (black-and-white) form, or access it only on the Museum's website (and in color). Please let me know by emailing the **new** editor's address at: **drmnewslettereditor@yahoo.com**.

Secondly, I'm looking at changing the title of our newsletter to distinguish it from our actual railroad local train ride. So let your voice be heard and let me know. Thanks in advance for your help! - Mike M.

Staying on the Track and the Development of the 2-6-0 Mogul, *Continued from Page 1*

wheeled). First; have them “guide” the front of the locomotive through curves. Second; have these guiding wheels “self-center” (i.e. line up the engine and frame with the wheels) once out of a curve and third; still have most of the engine’s weight left on the powered driving wheels.

A good working solution emerged between 1857 and 1863. Here’s my summary of the descriptive article in *Scientific American* (Herbert Walker, 1897):

“In 1857 Mr. Eli Bissell patented a four (4) wheeled leading truck, having its frame extended rearwardly and pivoted to the engine frame. The truck, therefore, swung from this pivot instead of on a central pin, and the weight of the front of the engine (i.e. the cylinders etc.) weight rested on a pair of “V” shaped inclined planes midway between the two axles. Mr. William Hudson, (superintendent of the Rogers Locomotive Works, Paterson, NJ) applied it to a locomotive in 1858.”

“That same year (1858) Bissell patented the two (2) wheel single axle (or pony) truck which was constructed on substantially the same principle as his four wheeled truck.”

What’s the principle? Think of a wheel barrow with two leading wheels or garden cart. The wheels extend out in front and the weight being carried (in our case the front of the locomotive) is just behind the wheels. The handle of the wheel barrow would come together and be attached to a pivot point on the frame behind the cylinders.

This principle of Bissell’s 2-wheeled “pilot safety” truck quickly became a mainstay of American locomotive technology. A few years later the final innovation was added-equalization. To paraphrase, Mr. Walker (again writing in 1897):

In 1863 (under the supervision of Mr. Hudson), the first Mogul engine (i.e. a 2-6-0) was built at the Rogers works for the New Jersey Railroad and Transportation Company. This engine had six coupled wheels and the two (2) wheeled Bissell pony truck with swing links patented by Mr. Alba F. Smith, and also an equalizing lever from the truck to the springs of the forward driving wheels. This equalizing arrangement was invented and patented by Mr. Hudson. A very large proportion of the weight of a Mogul engine rests on the driving wheels, which makes it the most useful and popular freight engine of today (which was back in 1897).

The diagrams and photos of these components on the 1455 will hopefully give you an idea of what to look for on the locomotive.

Fig 1 is from the erecting shop drawing for the B15 series (the B&M 1455) on which I darkened the levers and components used to equalize the pilot wheels with the first set of driving wheels.

Fig 2a is the actual equalization lever on the 1455. The pivot point where it attaches to and supports the cylinders etc. is on the right of the picture. On the left side of the picture is seen the rear arm of the equalizer bar attaching to the rod coming down from the transverse equalizer which in turn is attached to the right and left front driver leaf springs. Also, just above the equalizing bar are the back ends of Hudson radius bars



Fig. 2a

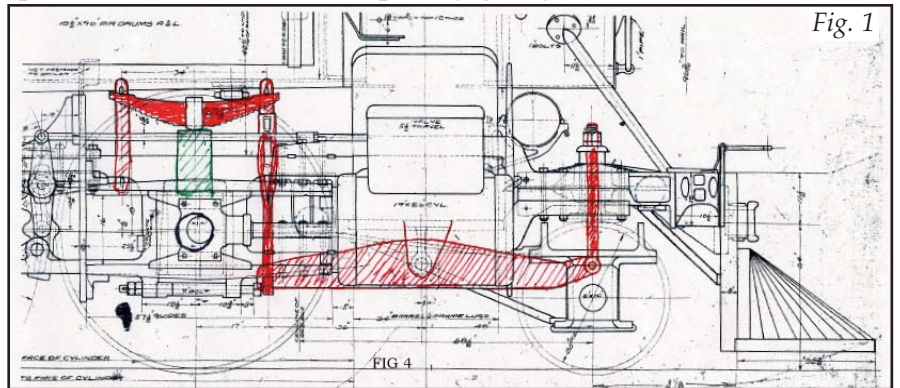


Fig. 1

and the swivel-bolt which attaches them to the engine frame (and thus “steers” the front pony wheels through the curves.)

Fig 3 is a drawing from the late 1800’s which shows the vertical “Bissell bolt” pulling up on the front arm of the equalization lever, fastening it to the large fitting which in turn swings by links from the front truck frame. This arrangement allows the front truck to swing out and follow the curve in the track while (because it’s literally hanging from the swinging links) the rest of the front of the engine goes forward. The “pony” wheels thus guide the engine through the curve (Hence the name).

Fig 4 is a representative photo from the 1455 showing the front axle, springs, fitting,

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Words from Our President

As our readers engrossed themselves in the previous issue of our newsletter, we were treated to some new coverage and informative articles. This issue, likewise, highlights info from Board member and 1455 steam locomotive project manager, Bob Boothe. We will also try to keep you up to date on Board of Director meeting discussions and decisions.

Other new ideas are being formulated, but we need your input and suggestions. What articles, information, interests, and photographs would you, our members and readers, like to have in future publications? Please snail mail, e-mail, telephone, stop in, or pony express your request to Mike, Steve, myself, or your best friend...here at the Museum of course.



August 3rd was Danbury Railway Day and our annual member picnic. The day featured a two-coach train behind the 1399 44-tonner, an all-caboose train, also behind the 1399, and an operational freight consist behind our operational RS-1. In addition, Bob Pitcher and Glenn Miller were conducting demonstrations at our Cedar Hill forge, Don Konen demonstrated coupling and uncoupling, and Lou Pisacano operated a number of hit-and-miss engines. The New York Central wooden caboose was open for public viewing with hosts Gerry Herrmann and Stan Madyda.

Normally, our train rides include a trip to and ride on our operational turntable. This day added a special feature to the norm. Danbury Railway Day's visitors' ride on the turntable was a 180 degree rotation, were upon they disembarked onto a simulated 20th Century Limited red carpet. Then they proceeded to, boarded and toured our *Tonawanda Valley* Pullman car currently under restoration by Art Slothower. Art, Jose' Alves, and Terrie Roese (in period costume) conducted our first public viewing of this currently-in-restoration project. Visitors returned to the table, completed the rotation and their train ride.

Later in the day, visitors and members were treated to a special demonstration by the "5Js" Re-rail Team (Justin Chapin, Jim Teer, Jeff VanWagenen, Joe LaPorta and Jose' Alves), members locomotive runs, and a great picnic.

Hope to see you soon!

On behalf of the Danbury Railway Museum, Wade W. Roese



and front swing links.

The rear end of the equalization lever (fig 2) is attached to a transverse lever (fig 5) which balances and equalizes the pull down on the front of the leaf springs for the first set of driving wheels (All of this is seen better on our 1455 "in person").

So what you ask. When the math and calculations are done (as it was back in the 1800's) the front 2 driving wheels and the 2 wheeled pony truck function as one unit - a single "third leg" of the famous STABLE 3 legged stool/3 legged stance we started talking about earlier.

Besides the great stability, there was a dramatic increase in "pulling power" (i.e. longer, heavier trains)

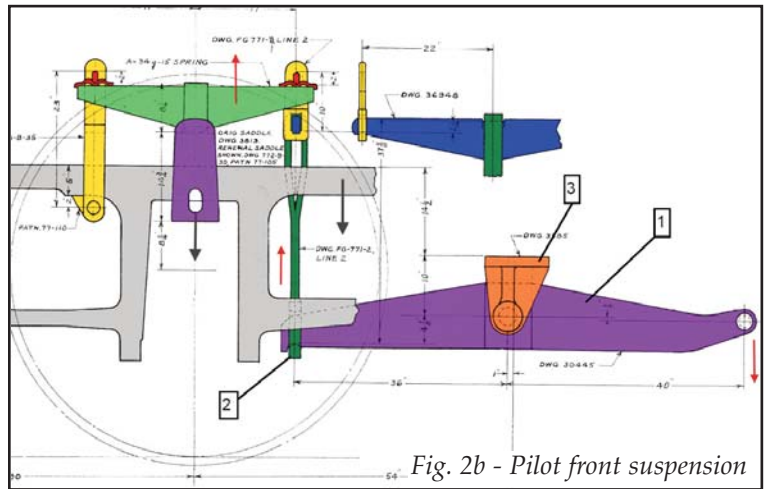


Fig. 2b - Pilot front suspension

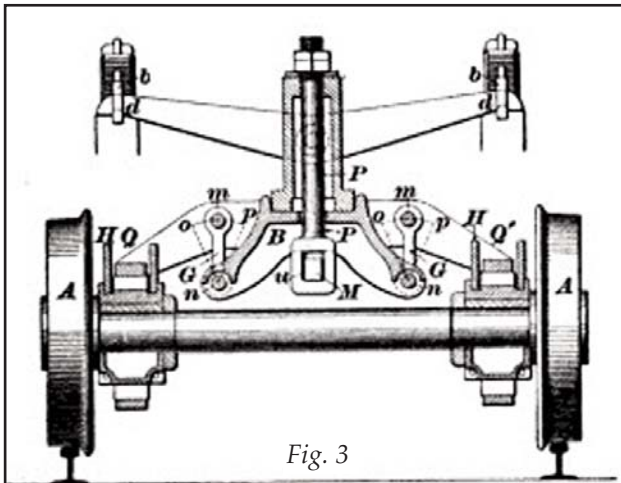


Fig. 3

because of the additional weight on the "new" set of driving wheels. For the B&M 1455, weighing about 70 tons, the pilot axle gets only 10 tons while each of the driver axles gets 20 tons each (totaling 60 out of 70 tons on the drivers.) Thus, for the same 8 wheels (seen on the 4-4-0) on a similar wheelbase and weight, the result of redistributing the weight to a third set of driving wheels (the 2-6-0) was about a 50% increase in "tractive power" of the 2-6-0 locomotive compared to a 4-4-0.

It didn't take much for the 2-6-0 arrangement to "catch on". Over 10,000 were built in the years that followed its introduction. However, another set of drivers were soon added creating the famous 2-8-0 "consolidation" type.

With subsequent generations of 2-wheeled and then 4-wheeled trailing trucks to carry larger fireboxes, it was common practice to include them in the equalization scheme in some way-(again, the 3 point stance could get complicated).

So as we may today look in awe at our current "techno-visionaries" (i.e. the "founding fathers" of computers, the internet, social media, etc.) it's good to keep in mind that we also had similar "visionaries" back in the early days of steam railroads. Many were self-trained, self-motivated and talented machinists and craftsmen, and what they did seems awesome even by today's standards. Their technology also transformed a nation.



Fig. 4 - Axelspring fitting



Fig. 5 - Transverse equalizer

Danbury Railway Day & Members Picnic, *Continued from Page 1*

and a freight train ran periodically during the day. Guided tours of the RDC-1 #32 Budd rail diesel car, #1455 steam engine, Railway Post Office car, and the NYC & HRR wooden caboose were available. Some of the other things that guests were able to enjoy was a performance of railroad tunes by the *Lys Guillorn trio*, an operating forge, operating hit-and-miss engines, open equipment and exhibits, operating model train layouts, and kids activities. The Library also had a 1/2-off used book sale.

After the festivities, around 50 Members enjoyed a picnic on the #18 track platform where they were able to enjoy hamburgers, hot dogs, Ed's ribs, salads, desserts and other delicious foods. A special thanks goes to Don Konen & Patty Osmer for cooking up the foods and to all those who brought a dish and helped with the picnic. Before and during the picnic, Members were treated to a live rerailing demonstration by the "5Js" Re-rail Team. Afterwards, Members were able to run the 1399 44-tonner with the assistance of Don Konen.

A big thanks goes to all the volunteers who helped make the day a successful event!



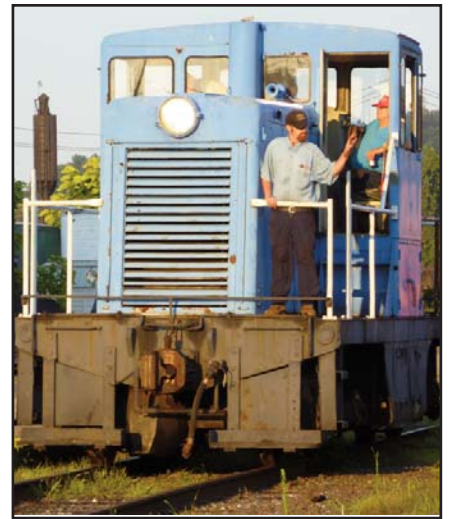
Photo courtesy of: Carolyn Taylor



Photo courtesy of: Carolyn Taylor

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Danbury Railway Day & Members Picnic, *Continued from Page 6*





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MUSEUM CALENDAR

- August 21(7:30pm) Conrail - Danbury, etc. - Pete McLaughlin
- August 28(7:30pm) To Be Announced
- September 2(Labor Day) Open 12-4pm with train rides
- September 4(7:30pm) Trolleys & Interurbans - Carl Liba
- September 11(7:30pm) To Be Announced
- September 18(7:30pm) To Be Announced
- September 19(7:00pm) Board Meeting - Open to Members
- September 25(7:30pm) To Be Announced

Museum hours: Mon-Sat 10-5; Sun 12-5

Beg. Sept. 2, Wed-Sat 10-4; Sun 12-4

See the newsletter in color at www.danburyrail.org!



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