March 2021

**Goings On at Seashore -**

Spring has arrived at Kennebunkport and, other than the annual mud, this is most welcome.

Seashore Trolley Museum will be opening for the 2021 Season on Saturday, May 1! As of May 1 trolleys will begin operating on Wednesdays and Friday-Sunday.

The Winter months have seen significant ongoing restoration work at the Donald G. Curry Town House Shop including Lexington & Boston 41. A recent shop report noted that a lot of work has been done on Car 41. Bent axles on the wheelsets slated for #41 required that they be sent out to have new axles fabricated. The freshly “axled” sets returned to the shop on 3/11. While the wheelsets were away being serviced a truck was assembled to facilitate the fabrication of missing or badly damaged parts. The truck was then dis-assembled in order to rebuild it adjacent to the 41 car body and that is now in process.

Extensive woodworking is in process on the car. The wainscoting that flanks the interior of the passenger area and forms a portion of the seat back is complete. The seating frames are fabricated and being installed. One of the complex posts the makeup a portion of the vestibule was reproduced. The ceiling panels have been installed and the ad card panels are in process. The motor hatches have been reconditioned and ready for installation.

The car’s wiring is about 90% complete. Main breakers have been reconditioned, tested and awaiting installation. Various switches for lighting, heating, etc. have been serviced and are ready to be installed. Motor wiring harnesses are complete and will be installed under the car now that warmer weather is here.

Work is also proceeding on the Narcissus, Toronto 2890, and the Denver Birney 1.

**Error Correction:** The cut and paste gremlin struck last month and the February 2021 edition of the *The Main Line* was mistakenly numbered Vol 12 No 11 - that was the number for January 2021 - so February was Vol 12 No 12. My thanks to Karen Dooks for catching the mistake.

This edition of *The Main Line* represents the start of the 13th volume, some 144 editions, counting extras and doubles.
Do You Recognize?

Last Month’s Do You Recognize -

Last month’s line-of-choice is yet more obscure than January’s. The Batavia Traction Company started out as part of the aspiration to build an interurban, the Buffalo and Williamsville Electric Railway (B&W), between Buffalo and Rochester, NY, a distance of approximately 75 miles. The B&W received a 99 year charter from the State of New York in August of 1891. Starting from Buffalo there were 4.5 miles of double track installed with service beginning in early April 1893. Another two miles of eastward track was added in 1903.

Slightly to the east of midway between Buffalo and Rochester was a primarily agricultural town and county seat of 9,180 (1900) of Batavia, NY. Batavia became a city in 1915. The area was mainly agricultural with the biggest employer being the Johnston Harvester Co., a farm implements manufacturer with some 1,300 employees by 1910. In 1910 a Canadian firm, Massey-Harris Co., purchased a controlling interest in the firm. The factory actually continued in operation until the mid-1950s when a combination of labor strife, poor management, and changing competitive conditions saw a final shutdown in 1958.

As the interurban was proposed to pass through this Batavia, the B&W wanted to preserve its franchises and routes over the main streets of the town. Therefore, in 1903 some two and a quarter miles with double track was constructed in the Batavia along with a power plant and car barn. Service began in September of 1903 with two cars although apparently additional equipment was available “if needed”. Over the next several years it became evident that the hoped-for 75 mile Buffalo - Rochester interurban was not likely to become reality. Actually some half dozen proposals for service over various routes between these same endpoints failed to develop. Around 1912 the double track was replaced with a single line and sidings. An isolated two-mile line in a small agricultural community could not develop significant traffic. Additional financial woes resulted from the fact that some town road restoration promised at the time the B&W started was still incomplete a decade later and involved a legal dispute. By 1913 demands that these repairs be completed combined with the low traffic and ongoing financial
woes of the little two mile line caused the B&W (by now a 6 mile suburban line with no further aspirations) to indicate its intent to close the little isolated franchise-holding line midway on the non-existent interurban.

A group of local businessmen in Batavia formed a new Batavia Traction Company and in early 1914 they received a certificate of convenience and necessity from the NY Public Service Commission and a 50 year franchise from the Batavia town council. In mid-April the president of the Buffalo and Williamsville Electric Railway announced that on May 19, 1914 the new Batavia Traction Company would assume ownership of the 2.25 mile operation including the powerhouse, dynamo, car barn, and four or five cars. Service began with two cars and some additional in reserve. The little line struggled on for a little over a decade. It is rumored that some businesses in the city, probably belonging to the line’s investors, paid excessive rates for advertising on the cars as an indirect subsidy to keep the wheels turning. Interestingly, even the 1914 document transferring the franchise rights still granted the Batavia Traction Company the right to make limited stops on cars involved the interurban operation - a dream long dead by the time of the change of companies.

The change in ownership of the street railway in 1914 somewhat coincided with the community transforming from a town to a city in 1915. This added some confusion to the road restoration debate previously mentioned. Legally neither party at the start of the argument existed at the end. In the year 1915 the Batavia assessors had assessed the Batavia Traction Company slightly over $28,000 (almost $730,000 in today’s money) related to past betterments resulting from paving the streets along the rail line. The primary bone of contention was regarding drainage. The Batavia Traction Company, reading the black letter law, insisted that it was only liable for assessment of work between its rails and either 18 inches or 24 inches on either side of the track (conflicting language in regulations). The city argued that drainage was obviously required and drains extending only two feet from the rails accomplished nothing as a drainage system was needed to remove the water and therefor the railway was responsible for their share of the entire drainage system. The railway appealed to the NY State Supreme Court (In NY the
Supreme Court is a trial-level court of general jurisdiction with its Appellate Division being the highest intermediate appellate court. That state’s highest court is the Court of Appeals sitting in Albany (In most states this would be called the state supreme court).

Apparently the courts finally agreed to a greater extent with the railway and a large component of the assessment was eliminated.

Reality finally caught up with the little line in June of 1927 when the electrics made their last two and a quarter mile foray. Although having no relationship for the past 13 years the little B&W suburban line, nee interurban, that started it all failed some three years later. Service was replaced by motor coach company that continued until 1971 when the service was absorbed by a regional transportation authority.

Photographic and roster data is extremely limited for both the original “interurban” and its successor in the remote midpoint. The original operator supposedly had twelve cars operating out of its westerly origin line of 6.5 miles at its peak and another two at our line’s remote location of 2.25 miles “with available spares”. After the sale of our line to the BataviaTraction Company it supposedly ran with two cars “with available spares”. In 1914 Kuhlman records the sale of two 21 ft. closed cars (No’s #100-101) to the Traction Company. The original “interurban” had purchased two 26’ 4” double-truck semi-convertible cars (No’s. # 100-101) from Brill in 1903 - it is not evident if these operated on the remote mid-point line. The Batavia Traction Company is also known to have operated a 21’ 8” Kuhlman semi-convertible closed car (No. #33) acquired second hand in 1924 from the Warren Street Railway in PA.

There is also an image of a Kuhlman car No. #154 identified as belonging to the Traction Company - however the order number indicated is attached to a group of cars delivered to a Canadian carrier in 1917 - no railway name is shown in the image, only car and order number. I could find no record of a transfer from the Canadian firm.
For readers seeking a bit more information there is a short monograph entitled Batavia’s Trolleys by Larry D. Barnes, Batavia City Historian, Toonerville’s of the Empire State by by Felix E. Reifschneider (1947), plus Wikipedia and CPTDB sources.

This Month’s Do You Recognize...

Both our electric rapid transit system of interest this month and the city in which it was located and from which it derived its name were the brainchild of the same entrepreneur / real estate developer. In 1898 at the age of twelve this “father” of the city and its electric Rapid Transit Corporation moved with his parents from Duxbury, MA to the area where he would later create the city and a traction system. After graduating college he had moved away in 1908 to study law at the New York Law School. With his father’s illness and subsequent death in 1911 our entrepreneur returned home to run his father’s large fruit and vegetable plantation with some 1,000 acres in production. Upon his return he worked in developing several areas of an adjacent city of some 70,000 population. By 1916 he had begun work on developing a totally planned community on 3,000 acres inherited from his father, a Congregational minister and agricultural entrepreneur, with actual construction of the development starting in 1921. In 1925 his new development had a population of about 6,000 when incorporated as a city, today it stands at around 50,000. The community eventually encompassed 10,000 acres. He envisioned this development as a major part of the adjacent city. In 1925 he was actually disappointed when the community voted to become a separate city although his disappointment didn’t stop him from immediately becoming a city commissioner.

As well as effectively planning every street, building, and tree (an estimated some 100,000 trees and shrubs) he saw a need for transportation from his planned community to the adjacent larger city (approximately 7 miles). Initially the railway development fell under the Utilities Corporation he had established to oversee the construction of the new community.
The railway operation was soon transferred to a new Rapid Transit Corporation that he had also organized. Initially actual operation of the line was contracted to the electric railway of the adjacent large city. Shortly thereafter the operation of the line was contracted with a power and light company that had purchased the electric generation/distribution and water systems of the new city.

Nature intervened towards the end of 1926 with a massive hurricane often referred to by the name of the adjacent city. Significant damage was done to both the two cities and the Rapid Transit infrastructure. In 1927 the state railroad commission approved a series of petitions regarding our line. Specifically, the sales of the street railway assets of the above-mentioned Utilities Corporation to the Rapid Transit Corporation and in turn the assets of the Rapid Transit Corporation to the Municipal Transit System of its home city. The Municipal Transit System provided both trolley (9 years) and later bus service until 1975.

There were two main lines connecting our new city with the large adjacent city. The first of these, the local line, was a somewhat slow route for end to end travel and a faster “interurban line” was constructed to improve service. Two additional east-west lines were constructed during the decade of our company’s operation but both failed to generate sufficient traffic to operate for very long. Both the local and interurban lines continued until nature struck the second major blow in a decade, this time fatal.
On Labor Day evening of 1935 an unnamed hurricane, the second major hurricane of the season, made landfall. By the time it had passed both cities served by our line had suffered tremendous damage and our railway had turned its last electric powered wheel. The railway infrastructure of the Municipal Transit System was heavily damaged including the destruction of almost all of its overhead wire. Trucks were eventually used to tow stranded cars off of the line.

The ten-year old city was nearly bankrupt from the ravages of the Great Depression and in no condition to fund the massive repairs that were required. The city commissioners threw in the proverbial towel and the railway was no more. Buses operated by the Municipal Transit System took over the service. Any remaining Brill cars were sold to the adjacent large city’s municipal line while the ten St. Louis Car Company products proved unsalable as trolleys due to severe rusting and they moved on to the ultimate fate of many streetcars - that of storage shed, chicken coop and a liquor store.

Rolling stock had come from J.G. Brill and the St. Louis Car Company. An initial five 28 ft. single-truck Birneys (101-105) were ordered by the Utilities Company from Brill in 1924 and delivered in 1925, three 28 ft. single truck Birneys (106-108) were ordered from Brill (Built by American) in 1925, and two 40 ft. double truck closed cars (109 - 110) ordered from Brill in 1925 and built by American Car Co. Ten 47 ft. double-truck cars (1 - 10) were ordered from the St. Louis Car Company in late 1925 with a 1926 delivery. These cars were described as “de luxe, double end, one-man, two-man city and suburban cars” in a St. Louis Car Co. ad.
The three Brill double truck Birneys were sold the the adjacent large city’s municipal line in 1928. The remaining single truck Brill Birneys (101-108) also went to the neighboring city’s municipal line (circa 1933 - 1936). The St. Louis Car Company closed cars were all on the property when the end came in 1935. Because of severe rusting problems none were sold as operating trolleys but ended up in the general area as storage sheds, chicken coops, one a liquor store, and the like.

![End of the line - the yard in 1936 with St. Louis cars stored to the right (#8 center and #5 right) with an unknown Brill Birney at the left.](image)

A Library Committee meeting was held through Zoom on March 13, 2021.

A general discussion was held of tasks looking towards when onsite work in the Library can be restarted with meetings and workshops. A major item is that donated material has continued to arrive and these items need to be inventoried and processed.

The 2021 committee election was held with Randy Leclair, Mike Frost, and Leo Sullivan being reelected to new terms. There are currently two open membership positions.

Election of officers - Karen Dooks was elected as Chair, Randy Leclair as Vice-Chair, and Mark Sylvester as Secretary/Clerk.
Library Committee Membership for 2021

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<tr>
<td>Karen Dooks</td>
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The next Library Committee meeting will be held through a virtual Zoom meeting on May 8, 2021 at 10 AM. Materials and login information will be distributed.

The Library Committee’s meetings on Saturdays (10AM) will tentatively be virtual meetings on a bimonthly basis on the odd months. Updated information will be forthcoming.

Saturday - Workshops only (10AM - 2 PM) are still cancelled

The Wednesday Evening Workshops are still cancelled - hopefully resumption in the future.

For further information/questions concerning the Library please contact Randy Leclair (207-641-9324 - text preferred) or Karen Dooks (781-799-5868).

By Karen Dooks, Chair

Links:

More than 1000 of the images are accessible online = https://digitalmaine.com/trolley_images/

Facebook page = https://www.facebook.com/groups/44932548777/

Seashore Library On-Line Resources -

A library resources page originally developed by Amber Tatnall dealing with useful and interesting resource material including among other things links to some three decades of the Street Railway Journal and the Electric Railway Journal on line is located at on line resources: https://virtual.yccc.edu/c.php?g=238406&p=3225494&preview=7b52901d1f51db2b76cb2a141ca8589c

or this handy tinyurl works as well: http://tinyurl.com/zwhndoe

The Library continues to upload material to the various sections of DigitalMaine - The DigitalMaine Repository is a partnership of the Maine State Library, Maine State Archives and community institutions around the state.
The uploads to the new documents area are quite fascinating as they allow you to literally leaf through the documents.

https://digitalmaine.com/trolley_museum/
https://digitalmaine.com/trolley_blueprints/
https://digitalmaine.com/trolley_images/
https://digitalmaine.com/trolley_documents/

Please remember when sending donations for the library to note that it is for Library Development – Fund 951.

The Year Before The Beginning -

We all know that first successful electric streetcar line was in Richmond, VA. or, more accurately, the first large-scale and successful use of electricity to run a city's entire system of streetcars was Frank Sprague's system introduced in 1888 Richmond.

However there is no Big Bang Theory for the creation of streetcars equivalent to that for the universe. The ideas and technology for successful electric streetcars came together over many years. Perhaps the starting point could be considered around two-and-a-half millennia ago, circa 600 BC, when an Ancient Greek philosopher Thales of Miletus discovered that rubbing an animal fur on amber (fossilized tree resin) caused what we know as static electricity - actually he thought he had found a way to create magnetism. Anyway, charging up a piece of amber didn't immediately result in streetcars. Technology a bit closer to the electrics occurred in 1831, when British scientist Michael Faraday discovered the basic principles of electricity generation. Building on the work of Benjamin Franklin and others, Faraday observed that he could create or “induce” electric current by moving magnets inside coils of copper wire. Once the interaction of magnetism with coils of wire was grasped the glimmer of the electric motor was on the horizon.

With that idea I thought it might be interesting to look back at the time before Richmond. Writing up everything between ancient Greece and Richmond seemed a bit ambitious so I decided to look at the year before and see where the railway industry was, specifically through its advertising. I decided to look through the 1887 Street Railway Journal for July and see what it revealed. The reading was fascinating in itself. Letters and articles debated the type of power - electric overhead, electric third rail, cable, electric batteries, steam, naphtha, and ammonia to name a few. Should “dangerous” electric motors be under the cars or inside where the motorman “could keep an eye on them”?

The following is limited to advertising and only of firms offering cars or whole systems. A whole myriad of manufacturers offered bits and pieces - wheels, rails, heaters, registers, switches, and on and on. Also a great number of ads for horseshoes, shoe nails, powered horse grooming devices, harness snaps, swivel snaps, open eye bit snaps, chain and trace
snaps, rope and web halters, halter leads, breast chains, halter chains, rein chains, break chains, and a special grade of trace chains, and heel chains. Dobbin hadn’t surrendered yet. Incidentally, the powered grooming device ad made a point of noting that a well groomed horse could be fed less! Maybe they weighed less? That’s for another day.

Here is the “year before” in advertising:
J. G. BRILL COMPANY,
PHILADELPHIA,
BUILDERS OF
Railway and Tramway Cars

Gold Medal at Chicago Exhibition of 1883.

Gold Medal at New Orleans Exhibition of 1885, for Best Open Cars.
THE
ST. LOUIS CAR CO.,
St. Louis, Mo.,
BUILDERS OF
Street Cars
OF EVERY DESCRIPTION.
Works among the most complete in this country.
Ready for business about August 1st.

Established,
1831.
BALDWIN LOCOMOTIVE WORKS. Annual Capacity, 600.
BURNHAM, PARRY, WILLIAMS & CO., Props,
PHILADELPHIA, PA.
LOCOMOTIVE ENGINES,
Adapted to every variety of service, and built accurately to standard
gages and templates. Like parts of different engines of same class per-
fected interchangeable.
Noiseless Motors and Steam Cars for City and Suburban Railways.
Catalogue sent upon application of customers.
J. M. JONES’ SONS,

AGENTS,

Street Railway Car Builders,

West Troy, New York.

Established 1856.  

Incorporated 1883.

The Feigel Car Co.,

BUILDERS OF

Cars for Street Railways.

FACTORY
New Utrecht, N.Y.

OFFICE
No. 108 Wall Street, N.Y.
KUHLMANN CAR CO.
CLEVELAND, O.
BUILDERS OF
Street Railway Cars,
AND MANUFACTURERS OF
ALL NECESSARY WOOD WORK for CONSTRUCTING SAME.
OFFICE—490 ST. CLAIR ST.
WORKS—488 & 590 ST. CLAIR STREET AND 221 & 223 OREGON STREET.

Established 1856. Incorporated 1883.

The Feigel Car Co.,
BUILDERS OF
Cars for Street Railways.

FACTORY
New Utrecht, N.Y.

OFFICE
No. 108 Wall Street, N.Y.
BROWNELL & WIGHT
CAR COMPANY,
ST. LOUIS, MO.
BUILDERS OF
Street Cars
OF EVERY STYLE AND SIZE,
For Horse, Cable or Other Motive Power.
EXCLUSIVE MANUFACTURERS OF
BROWNELL’S PATENT
COMBINATION CARS
FOR SUMMER AND WINTER SERVICE.
Pullman's Palace Car Co.,
Manufacturers of
RAILROAD CARS.
Pullman, Illinois.

Make a Specialty of
Street, Cable Grip & Electric Motor CARS.
Detroit, Michigan.

Address all correspondence
PULLMAN'S PALACE CAR CO., Chicago, Ill.
The Standard Fireless Engine Co.

P. O. Box 1914, New Orleans, La.

Use of Expansive Power of Condensed Ammonia as a Motive Power.

Machinery Simple in Construction, Effective, Economical in Action.

Thoroughly Tested and Practical Value Fully Demonstrated.

SAFETY ELECTRIC RAILWAY & POWER COMPANY.

Electric Railway Motors, Separate, or Attached Directly to Street or other Cars.

ELECTRIC LIGHT AND POWER MACHINES, ELECTRICAL CONDUCTORS.

DAFT SYSTEM.

We are prepared to equip railways with our electric system and supply Power and Light machines at the shortest notice.

The ONLY direct railway in practical and economical operation in Electricity in America is run by our system.

We guarantee the successful operation of our system. Steep grades no obstacle.

We are now building in the City of Springfield, a road which will cost $20,000. This road has a 25 per cent grade, and horizontal and underground conductors, and five motors.

The cost of electric power per car per day on the Baltimore road, operating our system, is $450. Fifty or more cars could be run at an average of 300 per day. The grade on this road is 30 feet per mile. Average speed, eight miles per hour. By horse power the speed was only four miles per hour, and the cost under the old system was $25 per car per day. SEND FOR ESTIMATES.

On request of full particulars of your road, or of power wanted, we will send you exact estimates for equipping and operating it by our system. SEND FOR CIRCULARS.

Office, 41 and 43 Wall Street, New York. Factory, Greenville, N. J.
THE GOULD DOUBLE CONDUIT.

A CONDUIT FOR THE CABLE AND AN EXTRA CONDUIT FOR TELEGRAPH, TELEPHONE AND ELECTRIC WIRES, ETC.

Constant Tearing up of the Street Avoided.

The Conduit for the Cable is placed at the side, doing away with the Central Conduit entirely. A Conduit on the other side is supplied for Electric and Telegraph Wires, Gas, Steam, Etc.

The Rails are Tied Together at the Surface.

The Slot which admits the Grip is placed outside the rails. The construction of the Grip is the simplest known.

THE INVENTOR WILL MAKE FAVORABLE TERMS WITH PARTIES WISHING TO PUT THIS SYSTEM IN OPERATION, OR TO FORM COMPANIES IN THE DIFFERENT STATES OR CITIES.

Address all communications to
POLE STREET CAR

Differential Lever Car
Starter, Runner & Brake.

Starts easily. Brakes as certainly and effectively as the air or steam brake.

Standard No. 3 Motor
Is operated by a Specially Designed Low Pressure Condensing Engine
of great power in small space and having no escapes on the street.

MOTOR SYSTEM.

The system can be operated by compressed air and is so recommended where good all-the-year-round water power can be secured to compress the air. Can be operated by storage battery, electricity or soda, ammonia, and other motive powers.

Warranted to climb hills, start on hills, and when the track is so slippery that the driving wheels will slip round under the motor, we still guarantee the motors starting by a system of ground levers.

WE ARE FULLY SECURED BY PATENTS.

We claim the only motor system capable of starting and going when the tracks are slippery, excepting only the cable motor. Ours is a cheaper outfit.

Correspondence solicited.

Pole Street Car Motor System,

310 Chestnut Street, Philadelphia, Pa.
NoFire! No Smoke! No Dust! No Ashes! No Fireman! No Engineer!
Complete within itself! Generates its own Power! Perfectly Independent! Can run on any Track!
No Cables, "grips" or expensive conduits.
No "Central Station" for generating power.
No loss of power in transmission.
No dangerous Electric currents.
No tearing up of streets for repairs.
No suspension of traffic for repairs.

It excels all other motors in ECONOMY and CONTROLLABILITY, and stands alone in its INDIVIDUALITY.
It carries a supply of fuel for a day’s run, and consumes but ONE GALLON OF NAPHTHA PER HOUR.
The daily expense of operating a road with these motors IS IN EXACT PROPORTION TO THE NUMBER OF MOTORS IN USE, which cannot be said of any Cable or Electric system.
The cost of equipping a road with them is but ONE-HALF the cost of any Electric system, and less than ONE-FOURTH the cost of any Cable system.
The cost of operating, including Fuel, Lubrication, Care, Repairs and Royalties, will not exceed $2.00 per day, being about half the cost by Cable or Electricity.
Any road can adopt these motors without making any change in their system, without interruption to their business, and without risking any investment in special plant, as a few motors can be put into use along with the Horse-cars, and the number gradually increased.
All companies desiring to abandon the use of horses should examine fully into the merits and peculiar advantages of our system, before making any contracts, as it is the only system that can be applied with equal economy on both large and small roads.
All parties interested in street or suburban roads are requested to correspond with us.

THE CONNELLY MOTOR CO., 177 BROADWAY, NEW YORK CITY.
THE CELEBRATED

Keg-Shaped Spring for St. Cars
FIT ANY BOX.

Are Elastic and Superior to any Springs yet made.

Trial sets furnished. Prices Low.

D. W. Pugh, J. S. Pugh, F. D. Russell

PUGH & RUSSELL,

STREET CARS, RAILS,

AND EVERY DESCRIPTION OF

STREET RAILWAY SUPPLIES.

General Representatives of

THE JOHN STEPHENSON COMPANY, Limited
NEW YORK

STREET CARS.

General Agents of

THE A. FRENCH SPRING COMPANY, Limited
PITTSBURG, PA.

STREET CAR SPRINGS.

Eastern Agents

THE JOHNSON STEEL STREET RAIL COMPANY
JOHNSTOWN, PA.

NEW YORK,

STEWART BUILDING,
Broadway, Rector and Chambers etc.
P. O. Box 924.

CHICAGO,

PHENIX BUILDING.

FIRST HANDS

FOR

ALL DESCRIPTIONS OF TRIMMINGS, CASTINGS AND GENERAL SUPPLIES.

STREET RAILWAY BUYERS

WILL SAVE TIME AND MONEY BY DEALING WITH US.
HAINES BROS.,
STEAM & STREET RAILWAYS,
55 Broadway, New York.

Promoters of Steam and Street Railways.

Builders of over a score of Railroads. Unlimited Capital furnished for Building and Extending Railways.

Purchase Street Railway Franchises.

Information upon Railway Materials and Matters pertaining to any branch of the Railway Business cheerfully given.

PUBLIC BENEFACTORS.—Burlington Free Press and Times.

ACCOMPLISHING WHAT FEW MEN WOULD UNDERTAKE TO DO.—Rutland Herald.


THEIR WORK IS A GREAT TRIUMPH OF CONSTRUCTIVE GENIUS AND FINANCIAL SKILL.—Syracuse Herald.

THEY NOT ONLY MAKE HAY WHILE THE SUN SHINES, BUT THEY SEEM TO BUILD RAILROADS AFTER THE ORB OF DAY GOES TO SLEEP IN THE WEST.—Newburg News.

THESE GENTLEMEN, AS THEIR WORK AND HISTORY SHOW, ARE THE MOST EMINENT IN THE UNITED STATES ENGAGED IN THEIR PURSUIT.—Newburg Journal.
THE DAFT SYSTEM OF ELECTRIC RAILWAY PROPULSION.

For Street Railways the DAFT SYSTEM possesses the following named advantages.

Unobtrusiveness of the Electrical Machinery.

It is entirely beneath the car-floor, and the regulating gear on each platform requires less space for its operation than the hand-brake; besides permitting the driver to be always in front, without recourse to a turntable at every reversal of direction.

No disturbance to balance of car or resilience of springs.

Carbuilders have reached the present excellence in these respects only by long and tedious experience, and the "Daft System" requires no change of existing methods, as the motive machinery is absolutely independent of the body of the car, and sustained entirely by the axles.

NO BELTS, SPROCKET-WHEELS AND CHAINS, OR OTHER OBJECTIONABLE MECHANICAL DEVICES USED.

The invariable position of the motor shaft with respect to the car-axle permits the use of the only trustworthy means—under the circumstances—of transmitting rotary motion, viz.:

Accurately Cut and Perfectly Fitting Steel Gearing, which is alone employed.

Freedom from Noise, Jar and Magnetization of Watches.

The remoteness of the motive machinery from the passengers; its being insulated electrically and acoustically by India-rubber washers and bushings at its connection with the car-axles; and its being covered by a magnetic shield, which affords perfect protection to the watches of passengers from magnetization—render the "Daft System" of Street Railway Propulsion peculiarly free from the above serious objections.

For Full Particulars and Estimates, Address

THE DAFT ELECTRIC LIGHT COMPANY,
Offices, 115 Broadway, New York. Factory, Jersey City, N.J.
Van Depoele Electric Manufg. Co.

SOLE OWNERS OF THE

VAN DEPOELE ELECTRIC RAILWAY SYSTEM.

CONTRACTORS AND BUILDERS OF

ELECTRICAL RAILWAYS.

MAKERS OF

Electric Railway and Stationary Motors, Electric Arc-Light Dynamos and Lamps, Etc.

ILLUSTRATED CATALOGUES FURNISHED ON APPLICATION.

We respectfully call the attention of those interested to our Electric Railway System now in practical operation at Scranton, Pa., Appleton, Wis., Montgomery, Ala., Detroit, Mich., Windsor, Ont., Port Huron, Mich., etc.; will shortly be running in Lima, O., Binghamton, N. Y., and Ansonia, Ct.

EVERY ROAD A GRAND SUCCESS.

We say nothing about what we are GOING to do. We call your attention to what we HAVE DONE. Investigate for yourselves. Write for estimates and further information.

Address

Van Depoele Electric Manufacturing Company,

15,17, 19 and 21 NORTH CLINTON STREET,

Branch Office: 45 BROADWAY, NEW YORK. CHICAGO, ILL., U. S. A.
Electric Street Cars on Secondary Battery Principle.

EDMOND JULIEN, Engineer, of Brussels, Belgium, is the inventor both of the Traction System and Secondary Battery System of this company. The present car is the result of six years of successful experiments, carried out at his works in Brussels and on the streets of that city, at great cost.

The leading principle of Mr. Julien's System has been the application of an Electric Motor and Batteries to the present existing rolling stock of street railways, and to construct a car so simple in its management that the drivers and conductors at present in charge of horse cars may take to the new service as easily as to the old. Mr. Julien, after running an Electric Car on the Rue de la Loi in Brussels, during the years 1884 and 1885, and ascending a grade of 5 per cent on that street, put his car in service at the Antwerp International Exhibition of Mechanical Traction in May, 1885, and ran it daily a distance of 57 miles, sometimes drawing an ordinary street car, both cars filled with passengers, and in competition with steam and compressed air motors; and the jury, consisting of eminent Engineers from England, Germany, France and Belgium, awarded Mr. Julien the First Prize and Diploma of Honor for the best System of Mechanical Traction for street cars.

At the end of this Exhibition, Mr. Julien placed two cars on the streets of Hamburg, and afterwards added a third. Those cars have now been running since February, 1886. They each make 60 miles a day and in one place over a 4 per cent grade, carrying passengers; and, although the municipal requirements of Hamburg were very exacting, yet the Electric car has so satisfactorily met them, that it has been adopted in that city. Readers are requested to write to Hamburg to satisfy themselves. The batteries used upon these cars were examined by the municipal officers two months ago, and were found in as perfect condition as when they were first put in the cars.

In April, 1886, Mr. Julien closed a contract with all the Brussels street railways, whereby they have agreed to adopt his System and to put 107 cars in use in Brussels. They are now ready to put three lines of Mr. Julien's System in service, if they have not already done so. The street railways at Rio Janeiro have also adopted Mr. Julien's system.

Last June, Mr. Julien placed two of his cars in service on the Champs Elysées under the supervision of ten members of the International Society of Electricians of France, M. Fontaine at the head. They did service between the Place de la Concorde and the Palais de l'Industrie during the entire summer, and, at the end of the Exhibition, were awarded a first prize and Diploma of Honor. Mr. Julien's Batteries were also put in competition there with those of Fauve and Plante under the supervision of Mr. Hospitalier, an eminent Electrician; and Mr. Julien was awarded the first prize and a Diploma of Honor. The Fauve and Plante batteries received a third prize and silver medal. Mr. Julien's car, which is now exhibited on Eighth Avenue, New York City, is working its way into favor and has been so adapted to the new conditions arising from sharp curves and an irregular track, as to travel easily at a rate of eight and one-half (8½) miles an hour and carrying a full load.

COST.

The cost of Installation of Mr. Julien's System is about the same as that of horse system. It is, in all probability, less; and, once installed, the expense of maintaining it is, of course, much less. In Brussels, this expense has been found, after an examination, covering a period of nearly a year, by a committee of Street Car men, to be a little over Three Dollars ($3.00) a day for each car. In this country, the expense will not exceed Four Dollars ($4.00) per day. From our observations on the Eighth Avenue line, it will be less than that on that line, owing to the favorable nature of the grades. The cost of horse traction is deemed to be at least Seven Dollars ($7.00) a day. We speak, of course, of two-horse cars.

The manipulation of the System is far easier than that of the horse system. Each car will require about three horse power in the way of steam engine, so that a road maintaining, say, 40 cars, would require three 60 horse power engines, one engine being in reserve. The dynamic power required is the same. Each car will require about three tons of battery; this will enable the car to be run about 80 miles a day with but one change of battery. It requires about eight hours to charge each battery. The three tons will be divided into two batteries, one being charged while the other is being used on the car. The batteries are ranged on either side of the car on benches; when the car comes in service and its batteries are exhausted, it is run up between empty benches, which are on a level with the panels of the car, the panels are let down and the batteries are easily drawn out on greased rods. Adjouning the empty benches are the benches with the charged batteries, which take the place of the discharged ones.

Mr. Julien's batteries being made on a new principle—that is, inadmissible support plates—are found to have an unlimited life and to be capable of being run up to a very high intensity without any injurious effect. In heavy grades, and going around curves, the current may be run up to 70 amperes without any fear of injury to the battery. As all Electricians know, Mr. Julien's is the only battery that can pretend to stand so high an intensity. Yet it may be seen every day on the Eighth Avenue road. The motor required for a large car will vary, according to the grades of the road, from 7 to 10 horse power. We do not consider it economical to overcome long grades of more than 3 per cent; though of course the car may be made to overcome much higher grades than this, especially for short distances. Curves should be at least 40 feet radius, although, on the Eighth Avenue road, we are compelled to run around curves of only 20 feet radius; yet there is an element of danger to the gearing of the car in so short a curve.

Next to Mr. Julien's motor, which is especially adapted, by its simplicity, for use on a Street Car, the Electrical Regulator is worthy of admiration. It is placed at either end of the car and controls so effectively and so methodically the application of power that an ordinary driver may learn the use of it with entire success in less than a few hours. Of course, railroads using this Company's cars will be enabled to light their stables with the Secondary battery employed in the service; the cars are, of course, lighted from the same batteries. One company now adopting Mr. Julien's System are undertaking to light the streets along which the cars will run from their stables, thereby reducing the cost of their installation by getting a profit from the City.
Lastly a view of the electric railway industry in 1887 through the eyes of the SRJ publisher.

**Electric Railways in America, May, 1887.**

<table>
<thead>
<tr>
<th>Place</th>
<th>Length</th>
<th>Motors and Motor cars</th>
<th>No. of passengers</th>
<th>Freight</th>
<th>Expense of operation</th>
<th>Car miles run</th>
<th>System of Conductors</th>
<th>Prime power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baltimore, Md.</td>
<td>2 miles (single track with turn outs)</td>
<td>6</td>
<td>200,000 yearly.</td>
<td>64¢ per car per day</td>
<td>Each motor runs 70 miles daily</td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Los Angeles, Cal.</td>
<td>3 miles, single and double.</td>
<td>8</td>
<td>300,000 yearly.</td>
<td>54¢ per day for power</td>
<td>Each motor runs 50 miles daily</td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Port Huron, Mich.</td>
<td>4 miles, single track.</td>
<td>2</td>
<td>600,000 yearly.</td>
<td>16¢ per day for power</td>
<td>Each mile 12¢ for fuel</td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Windsor, Can.</td>
<td>Nearly 5 miles, single track.</td>
<td>2</td>
<td>200,000 yearly.</td>
<td>6¢ cents per day for fuel</td>
<td>1 mile 24 hours daily, capacity 30 passengers; speed 25 miles an hour</td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Highland Park, Detroit, Mich.</td>
<td>1 mile, single track.</td>
<td>2</td>
<td>200,000 yearly.</td>
<td>16¢ per day for power</td>
<td>The trains run from 6 a.m. to 10 p.m.</td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Dix Road, Detroit, Mich.</td>
<td>1½ miles, single track.</td>
<td>1</td>
<td>200,000 yearly.</td>
<td>17 hours daily</td>
<td>Double overhead conductor</td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Appleton, Wis.</td>
<td>1 mile, single track &amp; single</td>
<td>8</td>
<td>400,000 yearly.</td>
<td>For power, wages of one man and they own their own water power</td>
<td></td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Scranton, Pa.</td>
<td>3 miles; single track, four sidings.</td>
<td>3</td>
<td>300,000 yearly.</td>
<td>10¢ per day for power, but are paying in their own water power.</td>
<td>Each car runs 15 miles per day</td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Denver, Colo.</td>
<td>3½ miles, single and double.</td>
<td>7</td>
<td>500,000 yearly.</td>
<td>15¢ per day for fuel</td>
<td></td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Montgomery, Ala.</td>
<td>1½ miles, single track &amp; single</td>
<td>18</td>
<td>1,000,000 yearly.</td>
<td>Thirty per cent less than horse and mule traction—General Manager's report</td>
<td></td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
<tr>
<td>Kansas City, Mo.</td>
<td>Short track within the works.</td>
<td>1</td>
<td>1 locomotive, 3 cars</td>
<td>The cars in constant use all day; the loads averaging 10 tons per trip, and each round trip averaging 5 miles</td>
<td></td>
<td></td>
<td>Steam engine</td>
<td></td>
</tr>
</tbody>
</table>

*Extending line or increasing rolling stock.†No specific details received; line not being yet in regular operation.

New roads—Electric railways are now in course of construction, or under contract, at Pittsburgh (3 roads); Los Angeles; Binghamton, N.Y.; 45 miles, 8 motor cars; Lima, O. 8 miles, 6 cars; San Diego, Cal., 2 miles, four 10-h.p. motor cars; Ansonia, Conn., 3½ miles water power; New York City (for Fulton street); St. Joseph, Mo., 15 miles, 50-h.p. motors; Niles, N.Y.; Harrisburg, Pa.; Woonsocket, R.I.; Richmond, Va., 40 cars, 11 miles of track.

- and these weren’t the only manufacturers out there but just the ones that happened to advertise in the July 1887 SRJ.

From the under one hundred miles of electric railway and some 150 cars and motors foreseen by the end of 1887 the national system would reach 48,000 miles with some 106,000 cars and locomotives some three decades later in 1921. In the decade following significant decline would set in through the impacts of the Great Depression and the private motor car. By the end of World War Two the electric interurbans where effectively gone and the majority of the streetcar systems with them. A truly amazing rise and fall over less than a human lifetime.

Really worth a look - If you have access to the Spring (2021-2) edition of Railroad Heritage, the quarterly publication of the Center for Railroad Photography & Art (Madison, Wisconsin), I would commend taking a look at this edition. There are twelve pages plus an inside and outside cover with a presentation of artwork entitled Steam & Shine by former Seashore librarian Kate Sullivan. These are Graphite on paper locomotive drawings that are more alive than any photograph.

The Main Line - Availability

If you are not on our direct distribution list and would like to be please drop a note to TheMainLine@ramsdell.com.

Regards,

Ed Ramsdell, Editor

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http://www.trolleymuseum.org