

## **Third Avenue Railway System: Historical Background**

**By Mary Habstritt**

New York City regulated street railways by granting them franchises to operate on specific streets. In exchange, the railways generally provided a percentage of gross receipts to city coffers and guaranteed maintenance of the street pavement between and immediately adjacent to their tracks. The first such franchise granted went to the New York and Harlem Railroad Company on April 25, 1831. It was not only the first street railway franchise for New York City, but the first in the United States.<sup>i</sup>

The Third Avenue Railroad Company received its original franchise on December 18, 1852 for a route from Park Row and Broadway to Chatham Street, along the Bowery to Third Avenue and up Third Avenue to the Harlem River.<sup>ii</sup> The first horse cars ran on this line on July 3, 1853.<sup>iii</sup> This line was extended to 86<sup>th</sup> St. on July 4, 1854. By 1859, a second track was added as far as 69<sup>th</sup> St. and a single track as far as 129<sup>th</sup> St. in Harlem. A short extension in 1867 allowed the company to connect its tracks on Third Avenue with its depot at 130<sup>th</sup> Street. According to rail historian Vincent F. Seyfried, this railroad was a financial success from its very beginning.<sup>iv</sup>

On November 26, 1870, the One Hundred and Twenty-Fifth Street Railroad Company was chartered. On July 20, 1870, it received a franchise for a route that began at the foot of 130<sup>th</sup> Street at the Hudson River, followed Manhattan Street to 125<sup>th</sup> Street, then went along 125<sup>th</sup> across town to the Harlem River bridge. It also had a route from the corner of 125<sup>th</sup> Street and Tenth that continued north along Tenth Avenue (later Amsterdam Avenue) as the road was opened, graded and paved. Almost as soon as the franchise was granted, the company leased its line to the Third Avenue company and eventually, on April 23, 1886, the Third Avenue company took over the smaller railroad's stock to make it a permanent part of the Third Avenue system.<sup>v</sup>

Originally equipped with horsedrawn cars, the streetcar company was a pioneer in the use of cable traction. In 1883, the directors resolved to test the use of a cable system and cabled upper Tenth Avenue (now Amsterdam Avenue) beginning in 1884.<sup>vi</sup> The first cable-car in New York City ran from 125<sup>th</sup> Street north up Tenth Avenue to 186<sup>th</sup> Street on August 25, 1885.<sup>vii</sup> This first cable route was 3-1/4 miles long with the longest cables used to that date for a street railroad (6-1/2 miles in length). One can always argue about "firsts." The Brooklyn Bridge opened its cable railway in May 1883.<sup>viii</sup> But that line did not actually enter Manhattan, at that time constituting the whole of New York City.

The introduction of a cable traction system to New York was said to be inspired by the success of the Chicago City Railroad Company which opened its line in January 1882. The Chicago system demonstrated the advantages of using cable traction on a flat grade and that a cable railway could be maintained in a colder and more changeable northern climate than the original United States system installed on the Clay Street hill in San Francisco in 1873.<sup>ix</sup> The Tenth Avenue line actually had several heavy grades, but the construction engineer came directly from the Chicago Cable Railway so certainly applied lessons learned there to the New York installation. The essential fault of cable systems was that if the cable broke, it shut down the entire system. The Third Avenue Railroad eliminated this possibility by providing twin cables. If one broke, the other could be put into operation in a manner of minutes.<sup>x</sup>

The success of this experiment was immediately clear and the company quickly moved to lay cable along its entire system, beginning with the 125<sup>th</sup> Street crosstown line which opened on December 1, 1886 with nine cars. This crosstown route was known as the Harlem-

Manhattanville line for the two villages it connected.<sup>xi</sup> (At this time, what is now 125<sup>th</sup> Street was Manhattan Street, along which a different streetcar line ran.) These original cable lines were powered by a motive power plant measuring 100 by 200 feet and located at 128<sup>th</sup> Street and Amsterdam Avenue.<sup>xii</sup>

The conversion to cable on the main line was strongly opposed by the thousands of car-drivers, hostlers and stablemen employed by the company. The elimination of horses, extra skill need to operate the cable grip vs. driving horses, and increased passenger capacity of the new cable cars, meant many of them would be out of jobs. City government, listening to the protests of the labor force, held up permits for some time, nearly allowing the Broadway line to get a jump on the Third Avenue Railroad.<sup>xiii</sup>

The Third Avenue Railroad eventually began construction to cable its Third Avenue line on March 30, 1891 and initiated operation on December 4, 1893 with ten cable cars. Within a month, 40 cars were in service on this line and eventually 180 cable cars served this route.<sup>xiv</sup> The Broadway and Seventh Avenue Railroad had initiated service on May 11, 1893.<sup>xv</sup>

Cable systems demanded enormous financial outlay at the outset, but were cheaper to operate than horse car systems. In addition to labor savings, the machinery to power the system had a longer life than horses. The average work life of a horse was less than five years, requiring constant replacement. Engineers estimated cost savings as high as 30 percent. For the public, cleaner streets, less battered by horses' hooves, and the elimination of stable odors and carting of vast quantities of manure through the streets were among the benefits.<sup>xvi</sup>

In spite of these improvements, the cable system was short-lived. Perhaps as J. Bucknall-Smith had predicted, in a series of articles on cable tramways in the British journal *Engineering*, it was too costly to operate a redundant system in the long-term. The Third Avenue Railroad had the novel feature of duplicate cables running side by side, each cable supplied with its own independent engine, to ensure continuous operation. One cable propelled the cars with the other at its side always in readiness. The cable grips therefore had double gripping jaws so that the car could grab either cable.<sup>xvii</sup> The Broadway line, which later became part of the Metropolitan streetcar empire, also had dual cables, but Third Avenue's construction engineer was credited with the innovation. The two systems also used the same rail, as specified by the city,<sup>xviii</sup> but were otherwise quite different in mechanical details, which caused some difficulty in merging them later.<sup>xix</sup> The cable-lifting device got special attention in the engineering literature which called it, "novel in nearly every respect."<sup>xx</sup>

The Third Avenue company again introduced change first on the Amsterdam (Tenth) Avenue line, by electrifying it between 186<sup>th</sup> St. and 194<sup>th</sup> St. in August, 1895. This experiment also proved promising and all routes were electrified and the cable system abandoned by 1899.<sup>xxi</sup> The first electric cars ran on the 125<sup>th</sup> Street crosstown line on September 28, 1899.<sup>xxii</sup> The Third Avenue route initiated electric service from 65<sup>th</sup> Street to 130<sup>th</sup> Street on October 22, 1899. The full line was electrified from its southern end at the General Post Office, Broadway and Park Row, all the way to Harlem by November 24, 1899.<sup>xxiii</sup>

The new system was powered by two rails in underground conduit. Two types of construction were employed for laying the electrical conduit, one for new construction and one where the old cable conduit would be retained. Because the Tenth Avenue route from 125<sup>th</sup> Street had the oldest cable in the system, it was removed entirely. The modified conduit was used only on Third Avenue. The new construction differed radically from anything that had been installed to

date.<sup>xxiv</sup> A paddle under the car, referred to as a “plow,” collected power from one rail and returned it via the second rail in the conduit. The only other streetcar systems known to use this method of current collection were in Washington, DC, Paris, and London.<sup>xxv</sup>

To supply power to this system, a new power plant was erected at a site bounded by 216<sup>th</sup> and 218<sup>th</sup> Street, the Harlem River and Ninth Avenue, adjacent to the company’s Kingsbridge Road Car House. When put into operation, it was the largest installation of electric generating machinery in the world.<sup>xxvi</sup> The plant was said to also be the first in New York City to utilize more than one stack.<sup>xxvii</sup>

Due to the size of the project, it was necessary to begin conversion from cable to electric operation before the power plant was completed. Several temporary generating plants were erected, utilizing as much as possible the steam power from the cable system power plants. To supplement these, a new power plant was constructed at 129<sup>th</sup> Street and Amsterdam Avenue.<sup>xxviii</sup>

Re-using the cableways was not the reason that the electrical power was placed underground. New York City had required that all overhead wires be buried after the fateful blizzard of 1888. Telegraph, electrical and telephone lines had been carried on a forest of utility poles, some with as many as 40 crossarms. During the storm, they fell to the ground, contributing to the difficulty of clearing the streets as well as disrupting utility service.<sup>xxix</sup>

The Third Avenue company also continued to expand geographically by buying up other streetcar lines. This was a response to a new group of Philadelphia investors who started buying small horsecar lines in 1886 and rapidly formed a large and competing network eventually named the Metropolitan Street Railway Company. The Metropolitan was increasingly isolating the Third Avenue lines and made several attempts to buy its rival. Instead, Third Avenue bought several small horsecar lines overlooked by the Metropolitan.<sup>xxx</sup> In the 1890s, it purchased the Dry Dock, East Broadway & Battery Railroad; The Forty-Second Street, Manhattanville and St. Nicholas Railway; and the Union Railway of the Bronx. Because the Union Railway already owned the Yonkers Railroad, the Westchester Electric Railroad, and the Tarrytown, White Plains & Mamaroneck Railroad, giving the company an immense street railway network of its own.<sup>xxxi</sup>

The Forty-Second Street, Manhattanville and St. Nicholas Railway, chartered August 29, 1878, began at the extreme western extremity of Manhattan Street and ran east along St. Nicholas Avenue to 110<sup>th</sup> Street and First Avenue to 109<sup>th</sup> Street to Avenue A and from Manhattan Street along Tenth Avenue to 42<sup>nd</sup> Street and the North River, from there it ran along Twelfth Avenue to 34<sup>th</sup> Street. A later franchise in 1910 gave it a loop extension at the Fort Lee ferry. The Third Avenue Railroad obtained stock control of this company in November, 1895.<sup>xxxii</sup> Insurance maps show the still-extant building, Block 1996, Lot 14, labeled in some cases at “3<sup>rd</sup> Ave. Rwy. Co. 42<sup>nd</sup> St. Div.” Reflecting the acquisition of this smaller line. Although the loop extension is from the electric period so there would be no cable remnants expected at this turnaround, it is assumed that the line running along the former Manhattan Street, now 125<sup>th</sup> Street and forming the southern project border, was cabled when the rest of the system was, although no specific record has been found. Street railway journals may provide better information. Either way, evidence of the nearly unique electric system may be found.

Although *Scribner’s* in 1894 called the Third Avenue Railroad, “the richest street railway corporation” in the country,<sup>xxxiii</sup> its expansion and electrification in 1898-99 seem to have overextended its finances, driving it into the hands of its competition. The Third Avenue

company went into receivership on February 28, 1900 and the entire system was leased to the Metropolitan Street Railway on April 13, 1900.<sup>xxxiv</sup> This gave the Metropolitan, arch rival of the Third Avenue Railroad, a monopoly on surface railway transportation in Manhattan and the Bronx.<sup>xxxv</sup>

But the Metropolitan Street Railway itself soon collapsed and on January 6, 1908, the Third Avenue Railroad Company and its subsidiaries were handed to an appointed receiver. It was sold at auction on March 1, 1910 and incorporated as the Third Avenue Railway Company.<sup>xxxvi</sup> The sale was approved and new company officially took over all assets and franchises of the Third Avenue Railroad on December 31, 1911. The company operated all surface lines in the Bronx and southern Westchester in addition to its routes in Manhattan.<sup>xxxvii</sup>

The new company evaluated routes, in light of both the underlying franchises and ridership, and after 1917 a number were abandoned or discontinued.<sup>xxxviii</sup> In 1924, the company began abandoning lesser used lines in Westchester and began to substitute buses on lines in New Rochelle, a move that gained momentum in the 1930s, although streetcars continued to be used on Manhattan routes. Between 1934 and 1939, the Third Avenue Railway's 65<sup>th</sup> Street shops constructed a sizable fleet of streetcars.<sup>xxxix</sup> In fact, in 1936, the shops were building two new streetcars per week. Around 1943, the name was changed to Third Avenue Transit System to recognize the increased use and new commitment to the use of motorbuses on its lines.<sup>xl</sup> The routes running through Manhattanville were the last to be operated with electric streetcars. The long main line which ran up Third Avenue to Amsterdam Avenue became a bus route on May 18, 1947.

Its 125<sup>th</sup> Street crosstown line was abandoned on July 1, 1947. The long B-Broadway line had already faced this fate on December 14, 1946. This route began at 42<sup>nd</sup> Street at First Avenue and ran west to Seventh Avenue through Times Square to Broadway and north on Broadway to 125<sup>th</sup> Street where it turned east to Amsterdam Avenue and then north for four blocks to terminate at the carhouse at 129<sup>th</sup> Street and Amsterdam.<sup>xli</sup>

The K-Kingsbridge line, once the source of a great battle between the Third Avenue Railroad and the Metropolitan, was operated until June 28, 1947 when it was abandoned. It ran from Third Avenue and 125<sup>th</sup> Street, west on 125<sup>th</sup> to Amsterdam Avenue, then north to 162<sup>nd</sup> and left on St. Nicholas to Broadway and 168<sup>th</sup> where it went north to 225<sup>th</sup> Street in the Bronx, where it turned around. The last seven blocks were one of the few short extensions where overhead wires were allowed to be used.<sup>xlii</sup>

The 10-Tenth Avenue line ran from the ferry slip at 42<sup>nd</sup> Street and Twelfth Avenue north on Tenth Avenue to 71<sup>st</sup> Street where it joined Broadway to run past Columbia University to 125<sup>th</sup> Street and Twelfth Avenue, ending at the Fort Lee Ferry terminal. The last day for this line was November 16, 1946.<sup>xliii</sup> The company's Bronx lines were abandoned in August, 1948. Last day of service was in 1952.<sup>xliv</sup>

### **Third Avenue Railway System Facilities**

Depots:

130<sup>th</sup> St. (Carman, p. 61)

Carhouses:

Kingsbridge Road Car House, 218<sup>th</sup> St. and Broadway (Volkmer, p. 5)

130<sup>th</sup> Street and Third Avenue (*Third Avenue*, p. 56)

129<sup>th</sup> Street and Amsterdam Avenue(Volkmer, p. 5; *Third Avenue*, p. 58)  
65<sup>th</sup> Street, built 1853 on Third Av. between 65<sup>th</sup> and 66<sup>th</sup>, it served as company  
offices, car barn as well as maintenance and construction shops (*Third  
Avenue*, p. 54 inc. photo by B. Abbott)  
54<sup>th</sup> Street and Tenth Avenue (*Third Avenue*, p. 59)

Shops:

65<sup>th</sup> Street (Seyfried, p. 6)

Power-houses:

Kingsbridge, 216<sup>th</sup> St. and Ninth Av., adjacent to carhouse (*Third Avenue*, p. 60-  
63)

65<sup>th</sup> St--in former horsecar stable—ran cable from 6<sup>th</sup> St. to 130<sup>th</sup> St. (Hubert)

Bayard St. in the Bowery—ran cable from 6<sup>th</sup> St. to City Hall (Hubert)

Sub-stations (*Third Avenue*, p. 62):

Foot of W. 129<sup>th</sup> Street

128<sup>th</sup> Street and Third Avenue

66<sup>th</sup> Street and Tenth Avenue, included auxiliary storage battery

65<sup>th</sup> Street and Third Avenue

Bayard Street and Third Avenue

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<sup>i</sup> Carman, p. 17.

<sup>ii</sup> Carman, p. 59-60.

<sup>iii</sup> *Third Avenue*, p. 6.

<sup>iv</sup> Seyfried, p. 5.

<sup>v</sup> Carman, p. 61, 135-137..

<sup>vi</sup> Seyfried, p. 5.

<sup>vii</sup> Hubert, p. 372.

<sup>viii</sup> Bucknall-Smith, June 11, 1886, p. 561.

<sup>ix</sup> Bucknall-Smith, September 18, 1885, p. 270-271.

<sup>x</sup> “New York Cable Road,” *Scientific American*, September 12, 1885, p. 160.

<sup>xi</sup> Seyfried, p. 9.

<sup>xii</sup> “New York Cable Road,” *Scientific American*, September 12, 1885, p. 160.

<sup>xiii</sup> Hubert, p. 372.

<sup>xiv</sup> *Third Avenue*, p. 6..

<sup>xv</sup> “The Broadway Cable Railway, New York,” *Scientific American*, May 20, 1893.

<sup>xvi</sup> Hubert, p. 372-3.

<sup>xvii</sup> Bucknall-Smith, June 11, 1886, p. 561.

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- <sup>xviii</sup> “Rail Section for Broadway Cable Tracks,” *Engineering News*, August 9, 1890, p. 118.
- <sup>xix</sup> “Broadway Cable Railway, New York,” *Scientific American*, April 22, 1893 and December 16, 1893.
- <sup>xx</sup> “Cable Pulleys and Lifts...,” *Engineering News*, December 20, 1890, p. 542-543.
- <sup>xxi</sup> Seyfried, p. 5.
- <sup>xxii</sup> *Third Avenue*, p. 6.
- <sup>xxiii</sup> *Third Avenue*, p. 6.
- <sup>xxiv</sup> *Third Avenue*, p. 16.
- <sup>xxv</sup> Volkmer, p. 4.
- <sup>xxvi</sup> “The Kingsbridge Power Station...” *Engineering News*, March 22, 1900, p. 189.
- <sup>xxvii</sup> *Third Avenue*, p. 60-61.
- <sup>xxviii</sup> *Third Avenue*, p. 60-61.
- <sup>xxix</sup> Meyers, p. 34.
- <sup>xxx</sup> *Third Avenue*, p. 4.
- <sup>xxxi</sup> Seyfried, p. 5.
- <sup>xxxii</sup> Carman, p. 148-153.
- <sup>xxxiii</sup> Hubert, p. 372.
- <sup>xxxiv</sup> Carman, p. 71.
- <sup>xxxv</sup> Kahn, introduction.
- <sup>xxxvi</sup> Carman, p. 71.
- <sup>xxxvii</sup> *Third Avenue*, p. 11.
- <sup>xxxviii</sup> *Third Avenue*, p. 12.
- <sup>xxxix</sup> *Third Avenue*, p. 14.
- <sup>xl</sup> Volkmer, p. 3-5.
- <sup>xli</sup> Volkmer, p. 5.
- <sup>xlii</sup> Volkmer, p. 5.
- <sup>xliii</sup> Volkmer, p. 5.
- <sup>xliv</sup> Volkmer, p. 4.

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