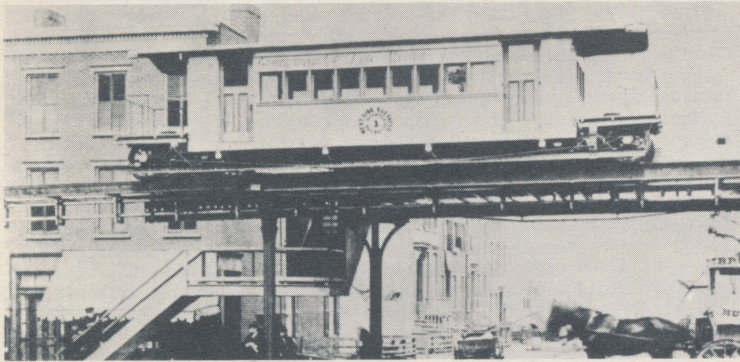


1867

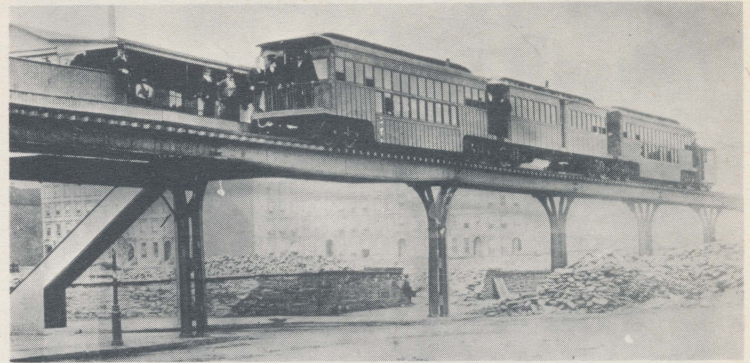
NEW YORK'S EL LINES

1955



THE FIRST "EL" TRAIN - 1868

Cable Car #1 of the West Side Patented Elevated Railway Company. The racks for the cable can be seen beneath the tracks. View believed to be at the 29th Street Station. (N.Y. Historical Society)



NEW YORK ELEVATED RAILROAD TRAIN - 1876

The first passenger cars purchased for use with the steam engines had floors depressed between the trucks to create a lower center-of-gravity. Note heavier construction and use of wooden cross-ties.

Wearing a safety helmet, goggles and a pair of asbestos gloves, Manhattan's Boro President Hulan Jack stood on top of a platform hoist truck at the northeast corner of 3rd Avenue and 42nd Street. Wielding an acetylene torch, he cut a steel girder from its two upright supports. A short time later, a crane lifted the crossbeam and the two uprooted columns onto a flatbed trailer truck as a crowd of 3,000 onlookers cheered and a battery of still and motion picture cameras recorded it for posterity. Thus, at 2:57 PM, on February 16, 1956, the end came for the last of New York's famous old elevated railroads. Straddling four of Manhattan's longitudinal avenues for 85 years, they had provided the first real rapid transit in America.

To be sure, the Third Ave. "el" was not the first to be built in Manhattan, nor was its history one of legal battles, bankruptcies or colorful episodes. But, as it ran in the shadows of new skyscraper construction, it was a link with the past and its consignment to oblivion carried with it many memories of those young and old who had used the lines both for business and pleasure.

They were memories of diminutive puffing locomotives whose soot blackened many clothes lines of fresh wash, the many awning fires caused by falling cinders, or perhaps a waiting room above the street with the sunlight streaming in through cheap stained-glass windows, a chattering telegraph instrument and the scene dominated by a cherry-red pot-belly stove casting its warmth about.

Perhaps others recalled the gabled roofs and cupolas of the stations, the sound of window sashweights rattling in its walls when a train stopped somewhere along the line and the structure swayed. Or perhaps the weak headlight and the colored marker lights heralding the approach of a train...the "ding-ding" of the gatemens bell as the starting signal was passed forward from car to car...or maybe the "click-click" of door engines on MU Door Controlled cars with the conductor leaning out from between the cars...the whine of the electric motor cars as they struggled to gain speed...the breezes that came through the front door that was open on a hot summers day...or the flashing of third rail "shoes" on a sleet-covered winters night.

Future New Yorkers won't know the vicarious thrill of threading their way through the man-made canyons of lower New York and the twisting rails of Coenties Slip Curve, seeing sleeping derelicts of society on a Bowery sidewalk, or the breathtaking view from "Suicide Curve" on the 9th Avenue Line at 110th Street

and Columbus Avenue where the rails were over 150 feet above the street. These and many more sights and sounds disappeared under the wreckers torch as the famous elevated lines were torn down one by one over the years.

While patronage declined during the last few years of the Third Avenue Line, due to long headways between trains and no night or weekend operations, the "els" carried more passengers during their last year of full operation in Manhattan (1938) than did the combined subway lines of the IRT, BMT and IND! Had they been retained and modernized, they might still be carrying millions. Although New York real estate made millions of dollars in new areas opened by the expansion of the lines in the '80's and '90's, it was real estate values that went up in older areas as the "el" lines came down.

While the visitor to Manhattan might express surprise at seeing trains running upon an elevated structure at the Northern end of the Island or crossing 125th St. at Broadway, the structures were built as appendages or extensions of the IRT subway system and have never been used by wooden elevated cars or under the management of the Manhattan Railway Company.

Manhattan's companion boroughs of Brooklyn, Queens and the Bronx have many miles of elevated structure yet in operation, but these for the most part are subway extensions, with the exception of Brooklyn's Myrtle Avenue Line (BMT) which still retains the old flavor, but that, too, is doomed for early extinction. The remaining portions of the old Suburban Line in the Bronx still sport wooden equipment but the plans are being carried out at present to gradually replace the old cars with subway equipment and will be operated by the IRT subway division.

It is the history and operations of the Manhattan Railway Company, its predecessors, and operations under the Interborough Rapid Transit Company and later the New York City Transit System with which this issue of Electric Railroads is concerned.

ELECTRIC RAILROADS

Edited by: George E. Horn

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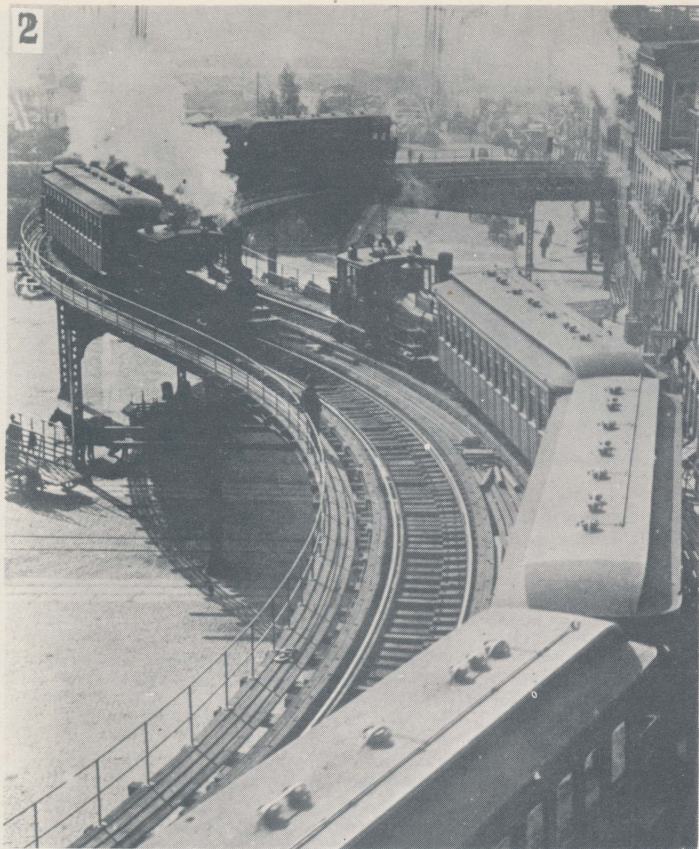
ELECTRIC RAILROADERS ASSN. Inc.
145 Greenwich St. New York 6, N. Y.

From the time Manhattan Island was first settled by the Dutch in the 17th Century, it has continually grown and prospered. This growth was not always anticipated and the rear facings of City Hall were done in a less expensive way since the city was not expected to grow beyond that point in the years to come. That was in 1803. The folly of this wisdom was not long in coming because as more immigrants arrived from Europe, many never moved onward but made the city their home. The City was getting so crowded that it was dangerous to cross Broadway on foot, due to the congestions of wagons, horse drawn omnibuses and cars.

While horse car lines did a thriving business and continuous processions rolled over their lines, they were inadequate to transport the populace very far uptown, due to their capacity, slow rate of speed and traffic conditions. It was a slow bumpy ride just to reach the Hudson River Railroad station at 30th Street and consumed more than 45 minutes. Plans had been offered to let the railroad trains run all the way down as sort of transit facility, but they would have hindered rather than helped the situation.

Tunnels under the streets were proposed, but the fear of the population to ride under the ground and the consequential diseases that would have resulted from "darkness", gases, agues and plagues was enough to discourage any promoter, but the legislative gentlemen were open to any worthwhile scheme that would solve the problems. While Alfred Ely Beach did manage to construct a pneumatic subway under Broadway in 1870, it was an experimental line, one block long and never was considered seriously more than just a curiosity.

In the meantime though, starting in 1825, various plans and schemes were offered to put transit in the air on elevated structures. Steam, cable, pneumatic, compressed air and sails were suggested as the means of propulsion for these systems. People were opposed to covering the city streets with structures and enabling permission was hard to secure. It took Charles T. Harvey and a group of interested backers to convince the special committee of the State Senate in 1866 that their system of cable power and type of construction would be the least objectionable and the most desirable. In 1867, the New York State Legislature passed a bill permitting Harvey to try out his patents and plan on an experimental half-mile stretch of Greenwich Street on the lower West Side, from Battery Place to Cortlandt Street.



Oct. 10, 1867 The first column of the 9th Avenue line was erected on Greenwich Street on Manhattan's lower West Side. The preliminary field work had started on July 1st for the construction of the first $\frac{1}{4}$ mile of the line to Morris St. On December 7, 1867, Mr. Charles T. Harvey demonstrated use of the line by riding a car truck, instead of a car. Following this test, the directors of the West Side & Yonkers Patent Railway Company who were financing the venture, authorized expenditures to complete the remainder of the line to Cortlandt Street which was permitted by the legislature.

July 3, 1868 A test trip on the structure was made in a passenger car by the Board of Railroad Commissioners from Battery Place to Cortlandt Street. The car was placed on the line the previous May and was pulled by a Roebling made $\frac{3}{4}$ " cable powered by a stationary steam engine in a vault under the street in front of 107 Greenwich Street. The system of cable grip was somewhat similar to those in use on the San Francisco Cable Cars. The track gauge was $4' 10\frac{1}{2}"$ and the rails were on the longitudinal girders and no crossties were used. The company maintained offices at 48 Cortlandt Street.

Feb. 14, 1870 Regular operation for passenger service began from Dey Street station to the new terminus of the line at 9th Avenue & 30th Street which was the southern end of the Hudson River Railroad. This single track structure followed the easterly curb line of Greenwich Street and the westerly curb line of 9th Avenue and was powered by four new cable operating plants. The first one was at Cortlandt and Greenwich Streets which powered the line from Battery Place to Franklin Street. A plant at Franklin Street operated another cable from there to Houston Street while another engine at Bank Street propelled the cable between Houston and Little West 12th Streets. From Little West 12th Street to the northern end at West 29th Street another cable ran to and from a plant at the northwest corner of West 22nd Street & 9th Ave. The original steam cable engine at 107 Greenwich Street built for the first experiments was closed down. At this time, three cars were on hand for service.

Nov. 15, 1870 Operation of the line had been discontinued by this time because of the frequent breakdowns of the cable method. Frequently the cable broke, necessitating the use of a team of horses to pull the stranded car and passengers to the end of the line. Following this, the whole line would have to be shut down for a considerable period while necessary repairs were made. The West Side Patented Elevated Railway Company was then in control of the first organization and they, too, had financial storms to weather. The line was auctioned off for \$960 to the bondholders who planned to discontinue cable propulsion in favor of steam dummies since the original charter permitted it, if cable was deemed impractical.

South Ferry is to the right out of view while East River Docks are in background. Locomotives carried marker lights and disks on cab roof while destination signs were mounted on boiler sides.

Apr. 20, 1871 Operation was resumed using a small steam locomotive pulling the three former cable cars. The engine was boxed in to prevent frightening horses in the streets below. The equipment belonging to the cable operation was discarded; the system was auctioned off again for \$5,000 to another group of bondholders who were organizing a new company. Operation continued sporadically until the new management was ready to assume control. The fare over the line was 10¢ and 237 passengers were carried on the first day.

May 6, 1872 Watts Street station opened. The line was now under management of the New York Elevated Railroad Company which was chartered on Oct. 27, 1871 with a capital stock of \$10,000,000 and had purchased the franchises of the old companies for \$801,000. Mr. Harvey and many of the original men of the first line were wiped out by this new organization.

June 17, 1872 Little West 12th Street station opened with a passing track so that trains going in both directions could meet at that point.

Aug. 15, 1872 Morris Street station was opened. This station was opened until March 19, 1873, when it was closed in favor of a station at the rear of 7 Broadway in which were located the company offices. It was reopened on April 5, 1877 for two years until the structure was rebuilt to join the 6th and 9th Avenue lines.

Jan. 21, 1873 Franklin Street station opened. By this time, running time over the line was 28 minutes.

July 30, 1873 As the operations prospered, the line was extended to West 34th Street & 9th Avenue on this date and an additional station was opened at West 21st Street on October 21, 1873. Houston Street station opened on November 3, 1873. The old original terminal station at 29th Street was closed and a new station opened at 30th Street on December 10, 1873, while the Dey Street station was closed and one opened at Cortlandt Street the following May 25th.

March, 1875 With more and heavier equipment on order to carry the increasing passenger loads, the structures were strengthened and the track gauge changed to $4' 8\frac{1}{2}"$. This was done in contemplation of handling freight cars for business over the line from steam railroads. The line was closed down a short time while 200 men changed the wheel widths on the rolling stock and relaid the rails on crossties. A new siding at Franklin Street was also installed.

Nov. 6, 1875 Service opened from 34th to 42nd Streets and sidings were installed at Bethune Street and 34th Street.

Jan. 18, 1876 Single track operation extended from 42nd Street to 61st Street and an incline to structure opened for equipment delivery until October 20, 1879. Stations opened were 50th and 59th Streets. By now, the line averaged 5,600 fares daily and was five miles in length.

Apr. 15, 1877 South Ferry station was opened from Battery Place (Morris Street) via a double-track line through Battery Park. This double-tracking was continued north up the westerly side of Greenwich Street and the easterly side of

CHATHAM SQUARE LOOKING NORTH - 1915

Third Avenue trains from City Hall went under bridge to station in distance. Bridge and station were later razed and replaced by tracks to South Ferry. Second Avenue platform (R.) for South Ferry trains was double-decked and connected to new work (far left) by underpass. Platform in foreground made way for Second Avenue tracks (coming from right background) going to City Hall on upper level.

(New York City Transit Authority Photo)



A Sixth Avenue train is just leaving 110th Street station in this view, looking west. Beneath, in the shadows, is the station entrance building where elevators whisked passengers 100' up. Structure was removed in 1940-41. (N.Y. City Transit Authority Photo)

9th Avenue to 53rd Street and was opened for traffic on June 2nd, 1878. The line now carried 8,500 passengers a day. The car and engine shops were located behind 7 Broadway. The passenger cars were lighted by sperm oil candles.

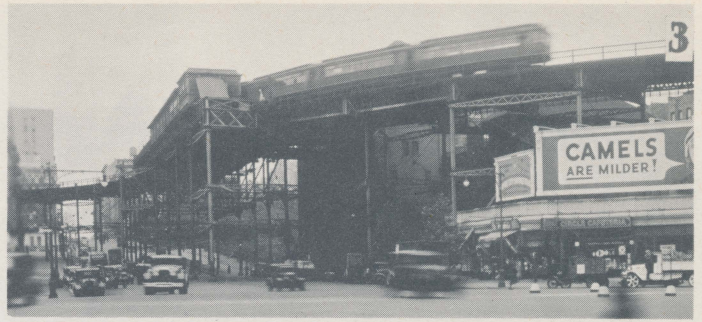
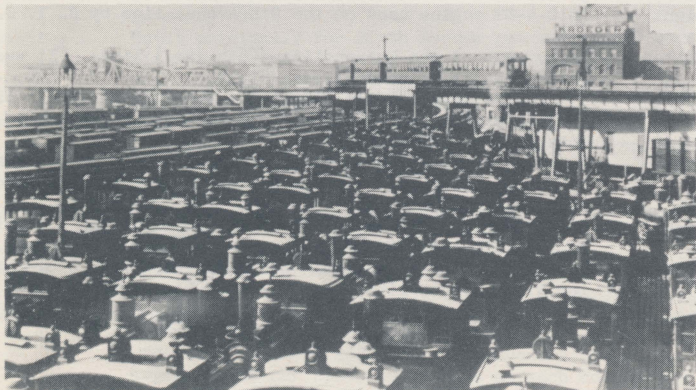
June 5, 1878 The Sixth Avenue "el" line opens. Construction of the line began at the northeast corner of 6th Ave. and 42nd Street by April 19, 1876, by the Gilbert Elevated Railway Company which was chartered on June 17, 1872. The company was headed by Dr. Rufus H. Gilbert, a former medical practitioner who became interested in transportation matters. He invented and patented a compressed air method of propulsion through elevated tubes which was forgotten under legislative pressure when the valuable franchises were ready to be handed out. The line was built to conventional standards of construction, although the girder work on Sixth Avenue was different from that used elsewhere. The stations opened on this date were Rector Street, Cortlandt Street, and Park Place, all on Church Street; Chambers Street, Franklin Street, Grand Street, Bleecker Street, all on West Broadway; 8th, 14th, 23rd, 28th, 33rd, 42nd, 50th and 58th Streets, all on Sixth Avenue. The rolling stock was raised to the structure by means of an inclined plane on Church Street, behind Trinity Church (near Rector Street). The locomotives had a 2-4-2 wheel arrangement, weighed 15 tons and were painted a pea green color. The passenger cars were painted a light green with pea green and gold trim and had wheels of highly compressed paper and steel rims. The interiors contained oak and mahogany woods, sported Axminster carpeting on the floors and introduced 3 chandeliers of kerosene lighting! The fare was 10¢. Since the Gilbert Company had run into financial storms, internal troubles and legal complications, the company received permission from the Supreme Court to change its name to the Metropolitan Elevated Railway Company on June 6th.

Aug. 26, 1878 The Third Avenue "el" line opens. This line was built by the New York Elevated Railroad Company under permission from the Rapid Transit Commissioners. Since the company now operated the 9th Avenue line to South Ferry, they were permitted to construct a line up the east side, which was begun at South Ferry and Chatham Square on November 1, 1877. The route was via State Street, Front Street, Coenties Slip, Pearl Street with stations at Hanover Square, Fulton Street and Franklin Square; New Bowery, the Bowery with stations at Chatham Square, Canal Street, Grand Street and Houston Street; while on Third Avenue the stops were at 9th, 14th, 18th, 23rd, 27th, 34th, and 42nd Streets. Here the line went west to the new Grand Central Depot of the Hudson River Railroad as a branch. The main line continued north with service opening up stations at 47th, 53rd, 59th, and 67th Streets on September 16, 1878, extended further on December 9, 1878 to stops at 76th, 84th, and 89th Streets. A new yard with offices and shops was opened at 99th Street, between Third and Fourth Avenues when stations were opened at 99th, 106th, 116th, 125th, and 129th Streets on December 30, 1878. By this time, the New York Elevated Railroad was carrying over 84,000 passengers daily on its two lines.

Feb. 25, 1879 The Sixth Avenue line began through service to 53rd Street and 8th Avenue on this date replacing a temporary shuttle that operated from 50th Street from the previous January 9th. This connection with the 9th Avenue line was begun on July 8, 1878.

SUBURBAN LINE IN LOWER BRONX - 1903

The 3rd Avenue electrified train has just crossed the Harlem River bridge on its way North to 138th Street station, passing over the New Haven RR and the 133rd Street yards where former "el" locomotives are stored pending sale. (Wm. Rugen Photo)



Mar. 17, 1879 The Third Avenue line extended operation south to a new station at City Hall from Chatham Square. This new spur line was built starting in June, 1878 and traversed the throughfare known as Park Row. It was closed down again on March 27th, ten days after it opened. The remainder of the line inaugurated all night service on April 15th.

June 9, 1879 Both Sixth and Ninth Avenue lines extended their operations to 81st Street and Columbus (Ninth) Avenue, opening stations at 59th, 66th, 72nd and 81st Streets. Since it was a double track structure, it was built jointly by the New York Elevated Railroad on the western side of the street and the Metropolitan Elevated Railroad on the opposite side. Service was further extended and stations were opened at 86th, 93rd, 99th and 104th Streets on June 21st.

Sept. 1, 1879 On this date, the Manhattan Railway Company assumed control of both the New York Elevated and the Metropolitan Elevated Railroads under an agreement signed the previous May 20th. The Manhattan Railway Company was organized on November 10, 1875 at the suggestion of the Board of Rapid Transit Commissioners appointed by Mayor Wickham. This company had a capital stock of \$2,000,000 and was headed by Edwin Jay Gould with offices at 10 Dey Street. It also undertook to complete all remaining structural contracts of the previous companies under their franchises and to unify operations under one management. When the previous firms had passed from existence, they had built 81.44 miles of structure, the Metropolitan having contributed 44.25 miles and The New York Elevated contributing 37.19 miles.

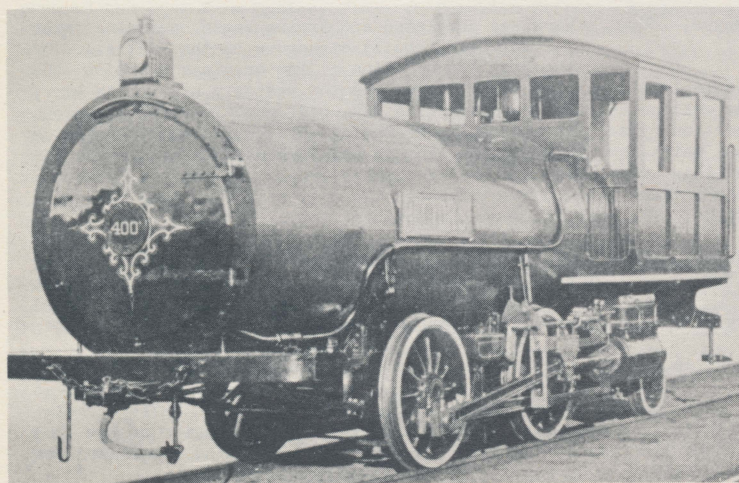
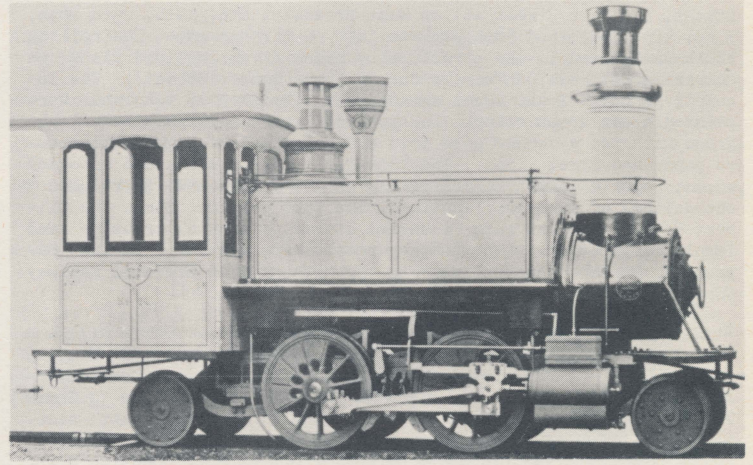
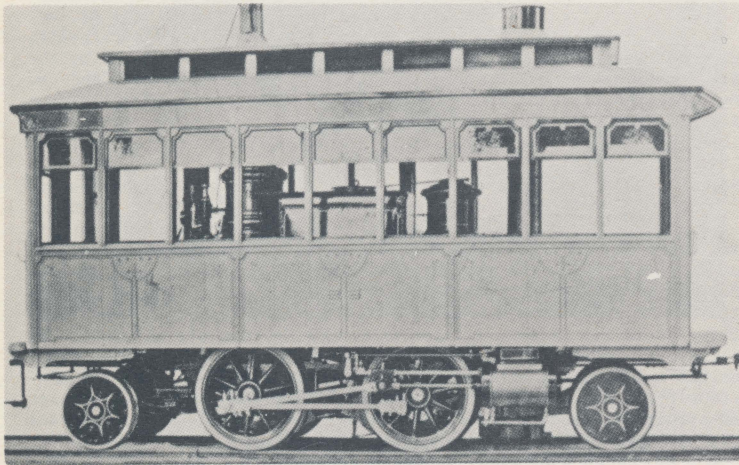
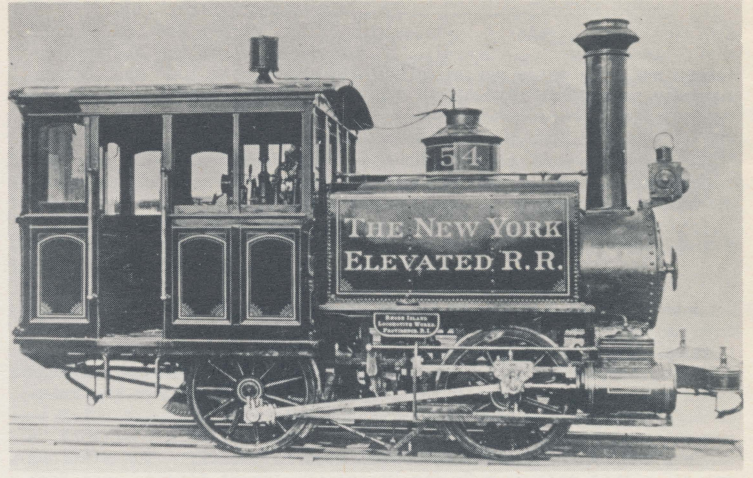
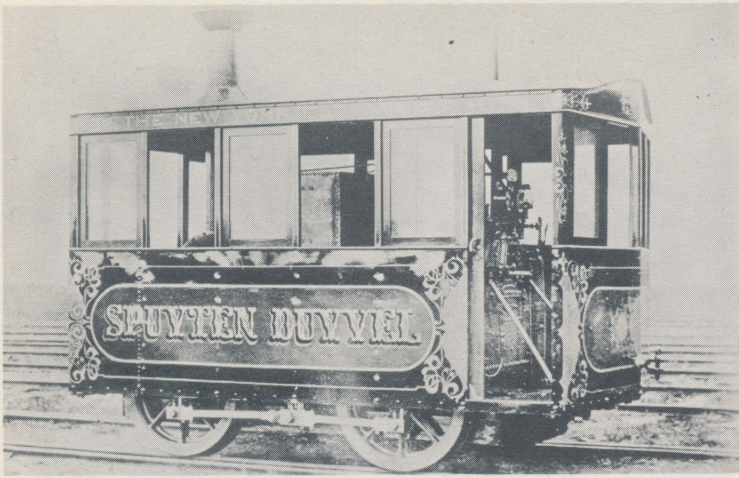
Sept. 17, 1879 The Sixth and Ninth Avenue lines further extended their lines North on Columbus Avenue to 110th St. and then East one block to Eighth Avenue and then North again to 125th Street, opening a station at 116th Street. This structure was the highest ever built and was called "Suicide Curve" from the large number of people who leaped to their death from this point. One Hundred and Thirtieth and 135th Street stations were opened on September 27th while 145th and 155th Street stations were opened on December 1st.

Mar. 1, 1880 The Second Avenue Elevated Line opens. This route was constructed to 65th Street by the Metropolitan Elevated Railway Company and north of that point to the Harlem River by the Manhattan Railway Company with work beginning at Allen and Division Streets on February 24, 1879. From Chatham Square, the route followed Division Street to Allen Street, thence north on Allen Street and First Avenue with stations at Canal St., Grand, Rivington, 1st, 8th, 14th and 19th Streets. At 23rd Street the line turned west one block to Second Avenue and then north for the remainder of its route. Stations opened were at 23rd, 34th, 42nd, 50th, 57th and 65th Streets. A storage yard for the lines equipment was opened at 66th and 67th Streets, between 2nd and 3rd Avenue. This yard was abandoned on March 17, 1905. Coincident with this opening, 3rd Avenue line trains resumed service to City Hall.

May 2, 1880 Work was completed and trains began operating over a completely rebuilt structure on the west side of the 9th Avenue line. The original track on the easterly side of Greenwich Street and the westerly side of 9th Ave., as well as sections reinforced in '74, '75 and '76 were torn down section by section and replaced. During this reconstruction, service was maintained by using the sidings and turnouts and afterwards the sidings were used as a centre express track, so that it became a three track line to 59th Street, the only such line then in existence. The work had begun in October, 1879.

July 1, 1880 The 34th Street branch opens. This spur, running from the 3rd Avenue line, connected with the East River Ferries of the Long Island Rail Road, serviced by a shuttle service, with an intermediate station at 2nd Avenue.

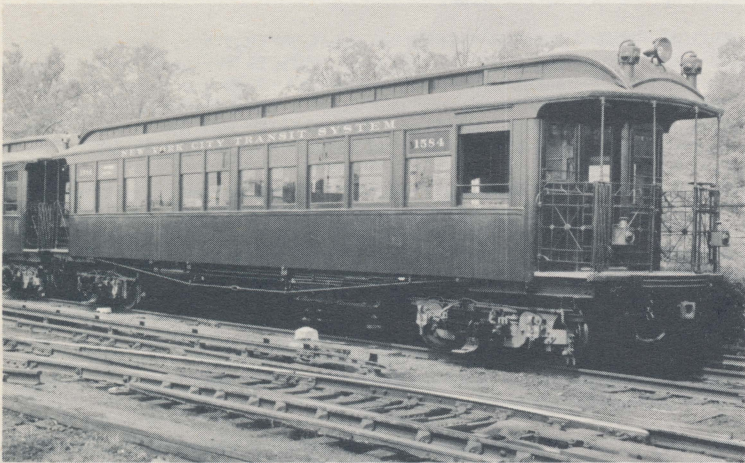
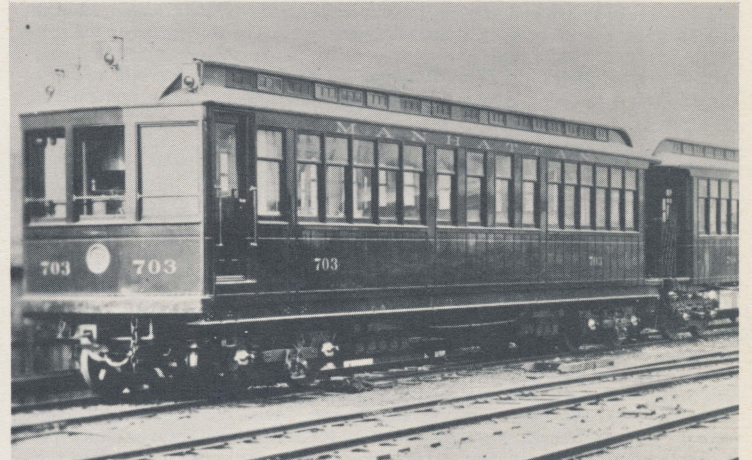
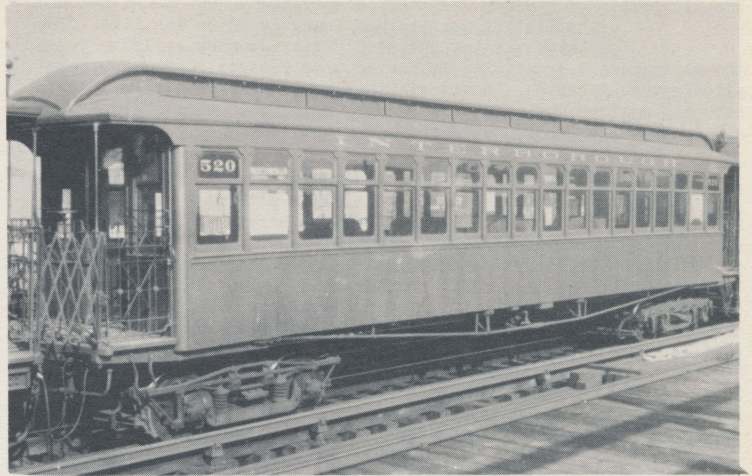
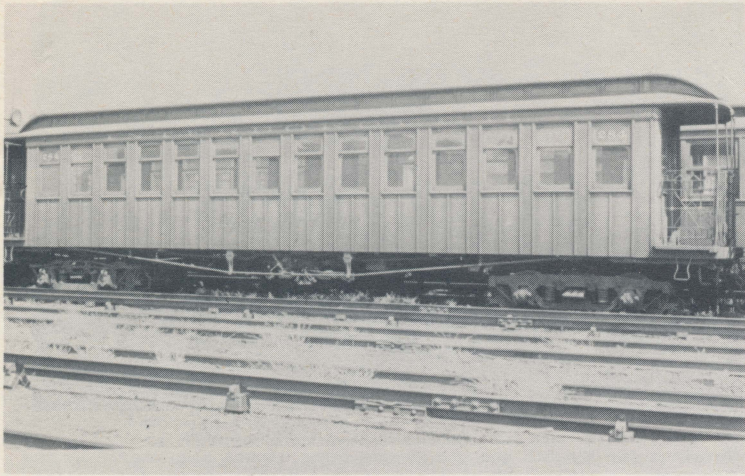
Aug. 16, 1880 Service was extended on the 2nd Avenue line from South Ferry to 127th Street, opening stations at 86th, 99th, 111th, 117th, 121st and 127th Streets. With the 2nd Avenue line going to South Ferry, service of the 3rd Avenue line was discontinued to there and all trains terminated at City Hall. (Continued on Page 6)



LOCOMOTIVES

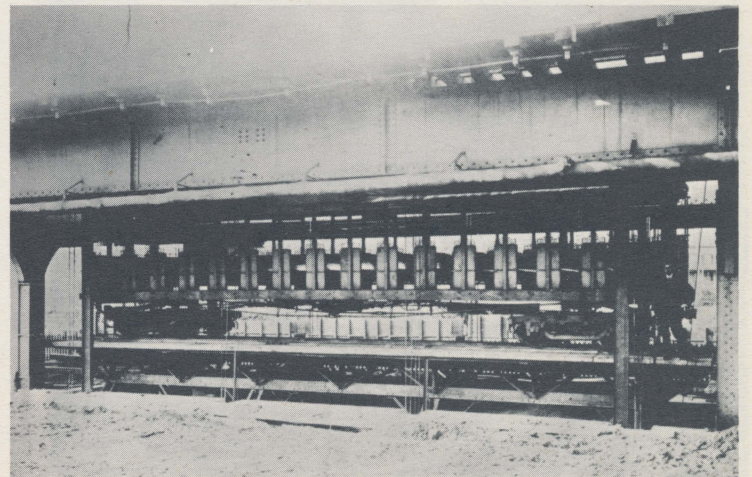
- Top Left - N. Y. E. Dummy "Spuyten Duyvel", first type of steam power.
- Right - An O-4-OT engine used on the 9th Avenue line by N. Y. E. #54.
- Center - Dummy #26 of the Metropolitan (6th Ave.) line. It was later rebuilt to conventional style.
- Right - #54 of the Metropolitan Elevated. The leading trucks of certain engines were removed to make 90° turns easier. Note the unusual smoke-stack.
- Lower L - #236 was an O-4-4 built by Pittsburgh in 1894 to designs by Matthias Forney. It was among the last built before electrification.
- Right - Rare photo of Compressed Air Engine #400. It ran a short time on Sixth Avenue. It had an O-4-2 wheel arrangement.
- Bottom - The first electric engine "Benjamin Franklin" shown on the Ninth Avenue line under tests by Leo Daft.

Photos courtesy of New York Historical Society, Smithsonian Institute, Mr. Walter Lucas and Mr. William Rugen.



PASSENGER CARS

- Top Left - #284 was typical of the old electrified NYE cars with 14 evenly-spaced windows. Roofs were remodeled at ends in early '80's.
- Right - Built originally for Sixth Avenue patrons, #520 ended its days in Second Avenue service to Queens.
- Center - Few passengers in 1937 remembered when #553 sported Axminster carpeting back in 1878. Note window design.
- Right - This experimental electric train on Second Avenue had motorman's controller in the center of an enclosed platform at one end of motor #703. Photographed at 65th Street yards.
- Lower L. - Cars 1584, 1586 and 1588 were equipped with subway-type third rail shoes for Dyre Avenue Line (IRT) service in 1941.
- Right - Interior of #1584 was typical of Manhattan "el" car seating arrangements. NYE cars had no cross seats.
- Bottom - During the seasons when not in use, the open cars were lowered by this hydraulic elevator to a small yard under the Bronx Park Branch. Conductors opened sliding gates on car sides by handles at each end of car.



Nov. 1, 1881 The Sixth Avenue line operated to South Ferry and all night service was inaugurated on the line. The night trains operated until January 1, 1883, when the management discontinued it for economy reasons. So many complaints were received, however, that passengers were permitted to ride the employee trains until January 31, 1883, when half-hourly night service was reinstated and made permanent.

June 18, 1882 The Second Avenue line terminated at Chatham Square while the Third Avenue line alternated service between City Hall and South Ferry. An interlocking switch machine was installed at Chatham Square for the routings. The Second Avenue line used a platform just south of the junction while the Third Avenue line used their original platform north of the junction. A shuttle was run in non-rush hours to City Hall from the Chatham Square (3rd Avenue) station and on September 25th, an overhead pedestrian bridge was opened connecting the two platforms. The resultant congestion at this point was so acute that on Jan. 11, 1885, the shuttle was extended to Canal Street station, for the South Ferry - City Hall interchange. Finally on April 12, 1885, track adjustments were made and both lines went to South Ferry.

Aug. 27, 1885 The first electrically powered train runs on the 9th Avenue Line. The locomotive "Benjamin Franklin" made a number of experimental trips on the centre tracks from 14th Street to 50th Street under the sponsorship of Leo Daft, pioneer electrical engineer. This locomotive weighed 9 tons, used a bronze wheel of 14" diameter to pick up the current from a centre third rail. It ran at a speed of 25 miles per hour and pulled four cars.

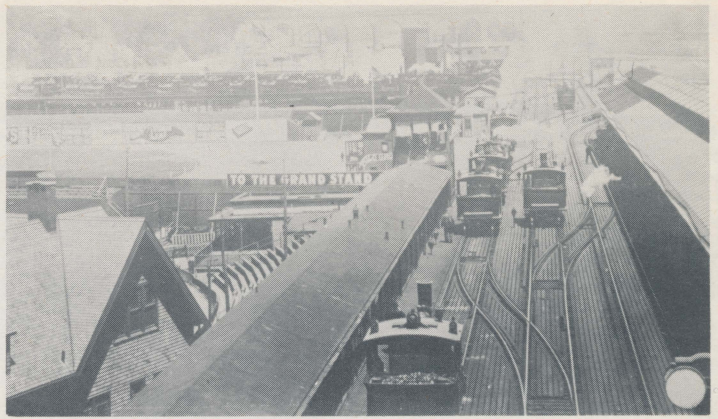
May 17, 1886 The Suburban Rapid Transit Company began operations. This new company was organized on March 6, 1880 for the purpose of constructing several elevated routes through the Annexed District as the lower sections of the Bronx was then known. Its original plans were to construct its routes over a private-right-of-way, but as the plans progressed, it was found to be a prohibitively expensive program. In March and April, 1886, it acquired through merger and lease the routes and franchises of the New York, Fordham and Bronx Railway Company which were almost parallel with the Suburban Company's routes. This second company had not built anything but possessed many property consents and easements. The Suburban Rapid Transit Company built a center-bearing drawbridge across the Harlem River, a curving S-route over the yard and terminals of the New York, New Haven & Hartford Railroad, as well as the Harlem River & Portchester Railroad. The bridgework was begun on October 24, 1883. Service began operating from a newly opened station on the Second Avenue Line at 129th Street to 133rd Street in the Bronx. The fare was 5¢. Service was extended to 143rd Street on May 23rd. The old 2nd Avenue station at 127th Street was closed.

June 1, 1886 The fare on the 2nd and 9th Avenue lines was reduced to 5¢ at all hours. It previously had been 5¢ only from 5:30-8:30 A.M. and from 4:30-7:30 P.M. and was 10¢ the remainder. The lower fare went into effect permanently on the 3rd and 6th Avenue lines the following October 1st. By this time, additional stations on the Second Avenue line were in use at 80th and 92nd Streets.

Oct. 26, 1886 Two elevated cars that were electrified by Frank J. Sprague, including heating, lighting, starting and stopping were tested on the 34th Street Branch. It was the first time a station platform was electrically lighted as well as the first application of dynamic braking. The car picked up 600 volt power from a center third rail. The power plant for this operation was located in a storage warehouse at East 24th Street and the East River. Mr. Sprague is ERA member Number 1.

DISASTER ON THE 3RD AVE. LINE - 1919

Three were killed at 175th Street station when Bronx Park local struck empty train. (Al Seibel Photo)



155TH STREET STATION - 1900

Terminus for the 6th and 9th Avenue lines, it was also shared by the New York & Northern RR that came across Harlem River from right. Rebuilt in 1918, it is now transfer point to IND subway. Early home of New York Giants baseball team, the Polo Grounds, is at left. Note train yards in rear. (Al. Seibel Photo)

Nov. 25, 1886 The Harlem River Branch of the Suburban line opened. A single-track structure that went down an incline to Willis Avenue and 132nd Street, where was located the Willis Avenue station of the New Haven Railroad. The cost of a transfer over this line was based on the New Haven fare schedules.

Jan. 1, 1887 One-Hundred-and-Thirty-Eighth Street station opened on the Suburban line. Service was extended to 149th Street and 3rd Avenue on June 16th; to 156th Street on July 1st; to 161st Street on August 7th; to 166th Street on December 25th; to 169th Street on September 2, 1888; to 170th Street on September 29th.

Sept. 1887 Another test of an electric motor was conducted on the 34th Street branch of 3rd Avenue by Stephen D. Field, pulling an electrified passenger car. This motor was built at Yonkers, brought over Hudson River Railroad to High Bridge, thence over the New York & Northern Railroad, to 155th Street. It then was hauled over the 6th Avenue to South Ferry and then up the 3rd Avenue line.

Nov. 26, 1888 Another test of an electric engine by Leo Daft on The Ninth Avenue Line. This is believed to be a rebuilt "Benjamin Franklin" from the tests of 1881. The test were begun in October and were completed on February 12th, 1889. Power was supplied from a dynamo in an old factory on 15th Street. As many as 8 cars were pulled at 15 miles per hour.

June 4, 1891 The Manhattan Railway Company assumed operating control of the Suburban properties, as a result of a lease dated April 1st. From the beginning of Suburban operations, their trains used a station built in 129th Street between 2nd and 3rd Avenues, as well as the joint station with the 2nd Avenue line at 127th Street. In 1889, a new, enlarged station to permit terminal operations was opened on 129th Street for 2nd, 3rd and the Suburban lines. The final changes at 129th Street were made in 1898 to permit through operation of the 2nd and 3rd Avenue lines. The passenger load of all lines under Manhattan operation had reached 547,000 passengers daily.

July 20, 1891 The Suburban line was extended north on 3rd Avenue in the Bronx to 177th Street, with a station also at 174th Street. Stations at 180th, 183rd Street and Pelham Avenue (Fordham Road) were opened on July 1, 1901. A new yard at 179th Street was put into use at this time also which supplemented one in use at 133rd Street near Willis Avenue. The Bronx Park spur and station were opened on May 21, 1902. An unusual operation of this spur was the hydraulic passenger car elevator which lowered cars for storage from the structure to a small yard beneath, beside the New York Central Railroad tracks.

Aug. 1, 1891 Service on the Harlem River Branch was operated by the New Haven Railroad. The branch was closed down on December 18, 1887 until July 19, 1891 when service was resumed by the Manhattan Railway Company. The New Haven service lasted until May 11, 1905. The following November 1st, the "el" shuttle service was re-instituted.

June 2, 1892 Third-tracking of the 9th Avenue Line was completed from 59th Street to 116th Street. The Sixth Avenue Line had new stations added also by this date at 18th and 28th Streets. Turnstiles were first installed on the 2nd Avenue line at 1st Street (downtown side) on August 10, 1896.



A Ninth Avenue uptown express rises above a downtown Sixth Avenue local at 66th Street. This appearance was the same at most express stations on the 2nd, 3rd and 9th Avenue lines. (N.Y.C.T.A. Photo)

Sept. 25, 1896 Through service (rush hours only) was instituted on the Third Avenue line from South Ferry to Bronx Park and from City Hall to Tremont Avenue (177th Street).

On August 15, 1898, platform changes were made at 129th Street and this through service was extended to all hours.

Oct. 5, 1896 Experimental operations with cars pulled by an electric motor instituted on the 34th Street branch. This was the first application of an outside 3rd rail and the use of batteries. This engine weighed 10 tons, was 18 feet long and 8 feet high in the center and was a steeple cab. It carried a storage battery of 256 cells for use in case of a power failure. The two passenger cars that it pulled were lighted by 15 lamps of 16 candle-power. These experimental trips were under the guidance of Mr. J. B. Entz of the Electric Storage Battery Company. The powerhouse for this testing was in a building at 1st Avenue and 34th Street.

Mar. 27, 1897 A new era in car lighting was introduced on the 6th Avenue line with the placing in service of 400 cars equipped with Pinstch gas fixtures. There were four lamps in each car, nine feet apart and each lamp had four jets at 40 candle-power. The gas was manufactured at the 155th Street yards, and placed in seven-foot long tanks under each car.

Apr. 11, 1897 Inauguration of the famous "Bicycle Trains" service. This service was operated each Sunday over the 9th Avenue line from 155th Street to Rector Street since platforms at South Ferry were too congested. Stations and trains involved in the service had "Bicycle Trains" (station) signs. Seats were removed on one side of cars and bicycle racks installed for 24" bikes. Fare was 15¢ for passenger and "bike" or 25¢ for two with a tandem. Thirty-five 2-car trains were run until autumn when it was permanently discontinued.

Aug. 19, 1897 Second test of an air-pressure locomotive for service began on the Sixth Avenue line. This was #400 that was built under the patents of Robert Hardie by the American Air Power Company. It was operated by compressed air from a plant at 100 Greenwich Street, that put it into the engine tanks at 2400 lbs. per square inch. On October 23, 1881, the 2nd Avenue line had one of its trains pulled by "Pneumatic Tramway Engine No. 1" under the same principle. Neither attempts were met with great enthusiasm.

Nov. 21, 1900 First public test of a Multiple-Unit electric on the Second Avenue line between 65th and 92nd Streets. This train, using the Sprague system of MU operation had one motor car at each end with four trailer cars. The results of this test train convinced the management to spend \$5,000,000 to electrify the whole system and on May 1, 1901, contracts were let to General Electric to electrify the rolling stock and structures, while Westinghouse built the powerhouse and generating facilities at 74th Street and the East River. This was the largest electrification project of its time and its final cost was about \$18,000,000. It was the end of the steam era.

Dec. 30, 1901 The first regularly scheduled electric train went into service on the Second Avenue line. Full service was inaugurated on March 11, 1902, with the exception of rush-hour "extras". On September 2, 1902, the last steam engine ran on this line.

Mar. 24, 1902 Electric service commenced on the Third Avenue line and was completed on August 15th when the last steam engine was operated. On May 31, 1902, two new open cars were placed in service on Third Avenue.

Oct. 1, 1902 Electric operation began on the Sixth Avenue line from Rector Street to 58th Street. It was extended to 155th Street on November 2nd, and the last locomotive ran via Sixth Avenue on April 4, 1903.

Feb. 18, 1903 Electrified operation began on the 9th Avenue line from South Ferry to 155th Street. The last locomotive to run in passenger service on the "el" lines was a 66th Street Local-Express pulled by engine #135. They were used in work train service for a number of years afterwards, however. A new station was also opened on this line at 110th Street on June 3rd. Situated at "Suicide Curve", it boasted four elevators to whisk passengers up from the street level.

Apr. 1, 1903 The Manhattan Railway Company was leased to the Interborough Rapid Transit Company for 999 years in order that the new subway system being built could be coordinated with the "el" lines. The first instance of this new arrangement came on November 26, 1904, when the Westchester Avenue elevated extension of the Lenox Avenue IRT subway was opened to West Farms Square. Due to the Harlem River tunnel still being unfinished, the subway was unable to make use of the new extension. Temporary service was provided by the Second and Third Avenue "el" lines to West Farms Square via a new connection opened at 149th Street and 3rd Avenue. This service was discontinued on July 10, 1905, and the connection remained unused. Beginning on July 13, 1905 paper transfers were issued at 149th Street between the "el" and subway stations. On or about October 1, 1907, the Second Avenue line was extended to Freeman Street during the morning and evening rush hour. The last new station of the Second Avenue line was opened at 105th Street on April 1, 1911, while the last new station of the Sixth Avenue line opened at 38th Street on January 31, 1914.

Sept. 15, 1904 The U.S. Express Company begins freight service over 3rd and 9th Avenue lines. The distribution point for this unique enterprise was on Morris Street, just behind #7 Broadway where the first shops were located for engine repairs. Livestock and less-than-carload freight were carried in the "el" baggage cars which made five round trips daily to uptown points. Mail was also carried on regular passenger trains on the front platform of the first car accompanied by a U.S. Post Office messenger with a limit of 7 bags per man. Both services were discontinued shortly before World War I. No railroad freight cars or special mail trains were ever operated. The mail service began in 1872.

Mar. 19, 1913 With the combined subway and "el" lines carrying over 1,500,000 passengers daily, it was deemed to be of the utmost urgency to expand the "el" lines so that the expected additional traffic could be handled. On this date the Public Service Commission granted approval for the Manhattan Elevated Improvement work to begin. When it was completed in 1916, 15 miles of new single track, 9 miles of old track and 40 stations had been built or rebuilt. This tremendous engineering feat required 50,000 tons of steel girder, 6,500 tons of new rail, 12,000,000 feet of track ties and 70,000 gallons of paint at a cost of \$44,000,000. It provided 17 double-deck express stations and the whole job was accomplished without delaying one train!

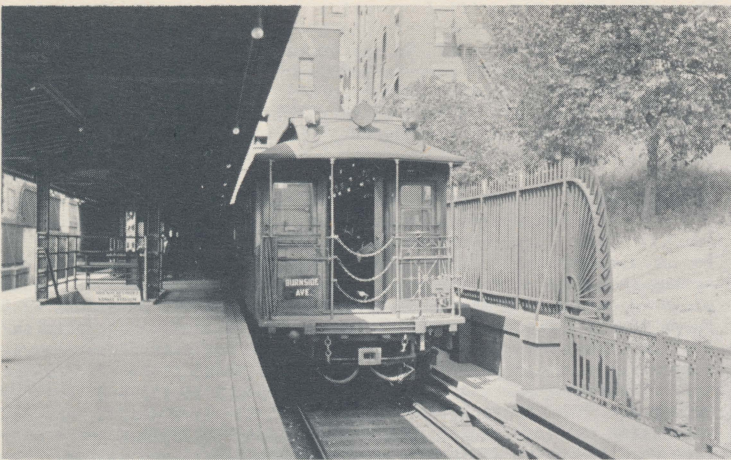
Jan. 17, 1916 Center tracks opened for operation on the 2nd, 3rd and 9th Avenue lines. The 2nd Avenue express trains went to Bronx Park or Freeman Street via 149th St.; the 3rd Avenue line discontinued through service to 133rd Street and instituted a shuttle service from 129th Street, while the 9th Avenue line inaugurated express service north to 125th Street which previously had terminated at 116th Street. The Sixth Avenue line began faster service also using the 9th Avenue center track.

July 1, 1917 The Bergen Avenue-West Farms Connection opens to eliminate delays at 149th Street and 3rd Avenue. Following the original franchised route of the Suburban line, it provided a direct connection from 143rd Street on the

Stained glass numbers on the bay window informed riders of passing Third Avenue trains that they were at 23rd Street.

(Wm. Higginbotham Photo)





WHERE THE "EL" WENT SUBWAY

A rise in the Bronx terrain between Sedgewick and Anderson Avenue stations forced the 9th Avenue-Jerome Connection to be tunneled for about 5 blocks. Wooden cars were replaced by IRT subway cars in 1940 here at Anderson Avenue, now a shuttle line from 155th to 167th Street. (Wm. Rugen Photo)

3rd Avenue line with the Westchester Avenue subway line structure. Second Avenue trains used it in rush hours only. The "els" were at their peak of use by carrying 1,014,883 passengers daily. On July 9, the Third Avenue line inaugurated through-express service from City Hall to 177th Street.

July 23, 1917 Elevated service to Ditmars Avenue, Astoria is begun via the 2nd Avenue line over the Queensboro Bridge, replacing the IRT subway service which had opened the line from Queensboro Plaza the previous February 1st. This arrangement lasted until Jan. 17, 1918, when the "el" service was alternately operated to Astoria and Alburdis (104th St.) Avenue on the Flushing line, with IRT subway service. A new station on the 9th Avenue line opened at 151st Street on November 15th.

July 1, 1918 The 6th and 9th Avenue lines extended their operations to 167th Street and Jerome Avenue on the IRT Woodlawn Line opening a station at Jerome-Anderson Avenue. The Sedgewick Avenue station had been opened on Jan. 6th, when the New York and Northern Railroad had terminated their operations over their bridge to 155th Street station of the "el". The bridge, last of the steam-powered swing type Harlem River drawbridges, was leased for 999 years to the IRT who instituted a shuttle service on a single track until March 1st, when both tracks were placed in use. Express track operations were also extended on the 9th Avenue line from 125th to 155th Street on July 1st. Jerome Ave. "el" service was further extended on July 17th to Kingsbridge Road and the 9th Avenue rush hour express ran to Woodlawn on January 2, 1919.

Oct. 4, 1920 The last of "el" expansions took place on this day when the Webster Avenue extension opened with stations at 200th, 204th and 210th (Williamsbridge) Streets and a lower level platform at the Gun Hill Road station of the IRT White Plains Road line. Third Avenue rush hour express service was provided to 238th Street while a shuttle train ran at other times between Fordham Road and 219th Street, until Dec. 13th, when rush hour service was run through to 241st Street.

Apr. 25, 1923 Faced with rising costs and refused applications for a fare rise above 5¢, the Manhattan Railway Company sought means of effecting economies and attracting riders. On this date, it introduced the "Goldenrod" paint scheme for its cars and stations. The first train operated on Sixth Avenue with 38th Street station being the first to be painted bright orange with a black roof and the words "Open Air Line" on the sides. Ticket collectors were replaced by the first turnstiles, the preceding January at the 106th Street station of the Third Avenue line, while the first Multiple-Unit Door Controlled train went into service on Second Avenue on November 8th, whereby one man operated all the doors on a train from a central position. December 6th saw the closing of the 42nd Street spur of the Third Avenue Line.

June 16, 1924 The last train operated on the 58th Street branch of the Sixth Avenue Line. This spur had through service to downtown in rush hours and a one-car shuttle the remainder of the time. Demolition began on August 11th. The Willis Avenue branch also discontinued shuttle service that year on April 15th although the spur remained in occasional use until 1954.

June 1, 1927 A passageway was opened between the "el" and the IRT subway station at 149th Street and Third Avenue, discontinuing paper transfer issuance and eliminating the heavy crowds crossing that busy intersection. On January

21st of the following year, the 2nd Avenue line extended its service in Queens to the Willets Point Boulevard station. It also began using the new Corona Yard of the IRT.

July 14, 1930 The 34th Street branch closed. Traffic began to decline on this spur when the Long Island Rail Road terminated its operations at Pennsylvania Station and discontinued the 34th Street Ferry. Razing began on July 15, 1931 and was completed on September 5th.

Dec. 4, 1938 The Sixth Avenue Line discontinues operations from Morris Street to 53rd Street and 9th Avenue. Being replaced by the new IND subway built beneath, real estate and political groups fought for its removal. Its steel was sold to Japan.

June 11, 1940 Second Avenue Line discontinues operations between 60th and 129th Streets. The service to Freeman St. was assumed by the Third Avenue Line. On this same date, the 9th Ave. Line discontinued operations between South Ferry and 155th Street. The remainder of the line was serviced by the IRT subway division using "composite" cars in a shuttle to Burnside Ave. On June 12th, the remaining properties of the Manhattan Railway Co. came under the ownership and management of the New York City Transit System operated by the Board of Transportation. A paper transfer issuance was established between the "el" and subway stations of the INDEPENDENT-Concourse Line at 155th Street. Board of Transportation offices were located at 250 Hudson Street.

June 13, 1942 The Second Avenue Line discontinues operations from South Ferry to Queens Plaza. For patrons formerly served by the trains to Queens, a paper transfer issuance was established between the Third Avenue Line and the IRT Queensboro Line at 42nd Street.

Nov. 5, 1946 With the war over with, agitation was renewed to rid Manhattan of its last remaining elevated route. On this date, service to Freeman Street via the Bergen Avenue cut-off was discontinued. On July 1, 1947, the fares of the New York City Transit System were raised to 10¢ and a 2¢ transfer between surface line trolleys and buses and the "el" was established in the Bronx. This arrangement was discontinued on June 30, 1952.

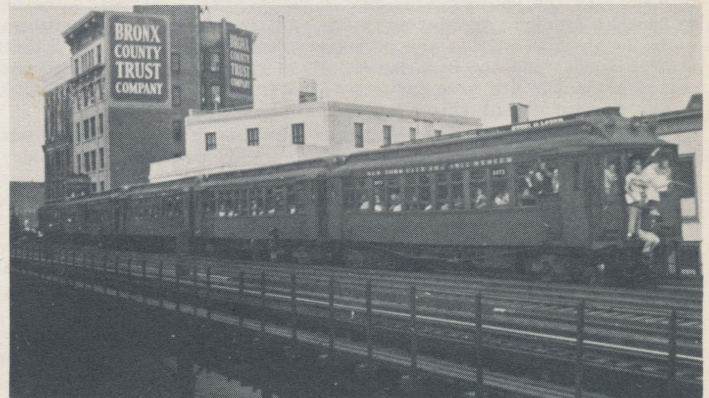
Dec. 23, 1950 Third Avenue "el" service discontinued from Chatham Square to South Ferry and from Gun Hill Road to 241st Street. A paper transfer issuance was begun between the City-owned bus line and the "el" at Chatham Square and between the "el" and the IRT-BMT subway stations beneath City Hall station. The Bronx Park (Botanical Gardens) station and spur were closed to service on November 14, 1951, while weekend and night service after 7 P.M. were discontinued on the Third Avenue Line below 149th Street on March 14, 1952.

June 15, 1953 The operations of the New York City Transit System were leased for 10 years by the newly created New York City Transit Authority and taken over on this date. Fares were raised to 15¢, using tokens, effective July 25th, and the City Hall branch of the "el" was closed on December 31st. The express track through 149th Street station was closed on September 24, 1954, forcing express trains to use ramp between upper and lower levels at 143rd Street.

May 12, 1955 Third Avenue "el" discontinues service south of 149th Street. Last train leaves Chatham Square at 6:04 P.M. ending elevated service on Manhattan Island. Demolition began August 3rd at 115th Street and was completed on February 16, 1956 at 42nd Street.

THE LAST "EL" TRAIN - 1955

The final train in Third Avenue service from Chatham Square is seen here as it reaches 149th Street station on May 12, 1955. Passengers jammed rear platform to be last riders to pass over the line. The last car is #1671, one of the first to be converted to Multiple-Unit Door Control, back in 1923. (Wm. Higginbotham Photo)



ELECTRIC RAILROADERS' ASSOCIATION, INC.
145 GREENWICH STREET
NEW YORK 6, NEW YORK

Dear Reader;

This issue of ELECTRIC RAILROADS is the second in a series of five devoted to the complex rapid transit history and operations of the New York City Transit System. It is the result of co-ordinated effort among the members of the ERA's New York Division Historical Publications Committee composed of the following:

GEORGE E. HORN
ELI BAIL
GEORGE J. ABERE

JAMES L. LANGAN
ARTHUR PHILIPS
HENRY RAUDERBUSH
BRADFORD STILES

ELAINE RINKE
JAMES ROBISON
MARTIN SCHACHNE

Grateful appreciation is also extended to Frank Goldsmith, Theresa Horn, Si Kashion, Ronald Kupin, Herman Rinke, William Rugen, Alfred Seibel, and Edward B. Watson for rendering information or assistance in the preparation of this issue.

Historical Reference for this issue included "New York Times" 1867-1940, "The Interborough Bulletin" 1912-1935, Annual Reports of the New York State Railroad Commissioners and the Public Service Commission, "Railway Age Gazette", "Early Elevated Railroads in Manhattan and the Bronx" by Wm. Reeves, records of the New York General Post Office and the New York City Transit System.

For additional information, the readers attention is directed to the following publications for sale by the Association:

- ELECTRIC RAILROADS # 23 - "New York's Subways" published in observance of the 50th Anniversary of the opening of its first line. Price 50¢ Member Price 35¢
- M-17 - Interborough Rapid Transit route map with reverse side listings of all stations, mileage and running time for each line. 11"X17" PRICE 30¢
- M-35 - Manhattan Railway Company track map for the period 1868-1903, showing stations, yards and water bridges. 17"X22". Price 50¢
- Q-7 - Manhattan Railway Company Equipment Roster of all steam dummies, locomotives and 2,052 passenger cars giving builders dates, class types, renumberings, disposition, purchasers and date when sold or scrapped. A collectors item of 82 pages covering 1868-1956. Price \$ 1.00

The transfers from the last day of Third Avenue "el" operations are included with this history through the courtesy of Mr. George F. Cassidy of the New York City Transit Authority.

The next issue in this series will be devoted to the history and operations of the Interborough Rapid Transit (IRT) Division.

The Editor,
ELECTRIC RAILROADS

Marker lights are designation signal disks and lanterns indicating the route, class and destination of a train. They were first used on the Third Avenue line in June, 1882. Prior to electrification, they were mounted on the locomotive cab roofs and illuminated at night by kerosene. Afterwards, all motor cars were equipped at each end beside the headlight. The four sides of the marker are painted in white, red, green and yellow (formerly blue). The marker is turned to its proper position by means of a spindle extending through the car roof. The order of colors given is that seen on an approaching train. Grateful appreciation is expressed to Mr. Bernard Linder of the New York City Transit System and Mr. James Robison for their generous help.

2nd AVENUE LINE

<u>BETWEEN</u>	<u>AND</u>	<u>CLASS</u>	<u>NORTHBOUND</u>		<u>SOUTHBOUND</u>		
			<u>MARKER</u>	<u>MARKER</u>	<u>MARKER</u>	<u>MARKER</u>	
South Ferry	127 or 129 Street	LCL	W	W	W	W	
" "	Astoria	LCL	R	W	R	W	
" "	111 St. Corona or Willetts Pt. Blvd.	LCL	W	G	W	G	
" "	" " " "	EXP	G	W	G	W	
City Hall	129 St. or NY NH & H Railroad Sta.	LCL	G	Y	G	Y	
" "	149 St. or 180 St.-Bronx Park	LCL	G	R	G	R	
" "	Freeman Street (via Bergen Ave.)	EXP	R	G	R	G	
" "	177 St & Third Avenue	LCL&EXP	G	R	G	R	
" "	Fordham Road or Bronx Park	LCL-EXP	G	R	G	R	
" "	Astoria	LCL	R	R	R	R	
" "	111 St. Corona or Willetts Pt. Blvd.	LCL	G	G	G	G	
" "	" " " "	EXP	Y	W	Y	W	
Canal Street	127 or 129 Street	EXT	G	G	G	G	1
" "	177 Street & Third Avenue	EXT	R	R	R	R	1
57 St. & 2nd Ave.	Astoria	LCL	W	R	W	R	
" "	Willetts Pt. Boulevard	LCL	G	W	G	W	

3rd AVENUE LINE

South Ferry	129 Street	LCL	G	G	G	G	
" "	Canal Street	SHU	R	R	R	R	
" "	149 Street	LCL	R	Y	G	G	
" "	177 Street	LCL	G	R	G	R	1
" "	177 Street	LCL	R	W	W	G	
" "	177 Street	LCL	Y	G	-	-	5
" "	177 Street	LCL-EXP	G	R	G	R	5
" "	Fordham Road	LCL-EXP	Y	R	Y	R	
" "	" "	LCL-EXP	G	W	-	-	5
" "	Bronx Park	LCL	W	G	W	G	
" "	" "	LCL	R	W	G	G	5
" "	" "	LCL-EXP	G	R	G	R	
" "	241 Street	LCL	Y	W	G	G	
" "	Gun Hill Rd. or 241 St.	LCL	W	G	G	G	5
City Hall	Canal Street	SHU	R	R	R	R	
" "	129 Street	LCL	W	W	W	W	1
" "	125 or 129 Street	LCL	W	W	R	G	6
" "	129 Street	EXP	-	-	B	B	1
" "	149 Street	LCL	R	Y	-	-	5
" "	152 Street (lay-up)	LCL	W	Y	R	G	6
" "	161 Street	LCL	Y	W	-	-	5
" "	164 Street (lay-up)	LCL	W	G	-	-	6
" "	177 Street	LCL	W	G	W	G	1
" "	177 Street	LCL	Y	G	W	G	5

(continued)

3rd AVENUE LINE

BETWEEN		AND	NORTHBOUND		SOUTHBOUND		NOTE
			CLASS	MARKER	MARKER		
City Hall	"	177 Street	EXP	W B	W B		7
"	"	177 Street	LCL-EXP	G R	G W		5
"	"	180 Street (lay-up)	LCL	W R	R G		6
"	"	Fordham Road	LCL	G Y	W G		5
"	"	" "	LCL	G Y	R G		6
"	"	" "	LCL-EXP	Y R	Y W		
"	"	" "	LCL-EXP	G W	W G		5
"	"	" "	LCL-EXP	G W	R W		6
"	"	Bronx Park	LCL	G W	G W		
"	"	" "	LCL	R W	W G		5
"	"	" "	LCL	G G	R G		6
"	"	" "	LCL-EXP	W R	W R		
"	"	" "	LCL-EXP	R G	G W		5
"	"	" "	LCL-EXP	G R	R W		6
"	"	" "	THRUEXP	R R	R R		
"	"	Gun Hill Road	LCL	W G	W G		5
"	"	" " "	LCL	R G	R G		6
"	"	" " "	LCL-EXP	Y R	G W		5
"	"	" " "	LCL-EXP	R W	R W		6
"	"	" " "	THRUEXP	Y G	Y G		
"	"	" " "	THRUEXP	W Y	W W		5
"	"	" " "	THRUEXP	R R	R R		6
"	"	238 Street	LCL-EXP	- -	W Y		
"	"	238 Street	THRUEXP	W W	W W		2
"	"	241 Street	LCL	W W	G Y		3
"	"	241 Street	LCL	Y W	Y W		4
"	"	241 Street	LCL	W G	W G		5
"	"	241 Street	LCL-EXP	G Y	Y R		3
"	"	241 Street	LCL-EXP	W Y	W Y		4
"	"	241 Street	LCL-EXP	W R	G W		5
"	"	241 Street	THRUEXP	W W	W W		
Chatham Square	"	84, 98, 106 or 116 Street	LCL	R R	R R		1
"	"	125 or 129 Street	LCL	W W	G G		6 & 7
"	"	149 Street (lay-up)	LCL	W Y	G G		6 & 7
"	"	164 Street (lay-up)	LCL	W G	R G		7
"	"	177 Street	LCL	G G	G G		7
"	"	Fordham Road	LCL	G Y	R G		6 & 7
"	"	" "	LCL-EXP	G W	R W		
"	"	Bronx Park	LCL	G G	G G		6
"	"	Gun Hill Road	LCL	R G	R G		
"	"	" " "	LCL-EXP	R W	R W		
"	"	" " "	THRUEXP	R R	R R		
Canal Street	"	129 Street	LCL	W W	G G		7
"	"	152 Street (lay-up)	LCL	W Y	G G		7
"	"	177 Street	LCL	G G	W R		7
"	"	Fordham Road	LCL	G Y	G G		7
"	"	Gun Hill Road	LCL	R G	G G		7
9th Street	"	98, 106 or 129 Street	EXT	- -	- -		1
149 Street	"	Gun Hill Road	LCL	R R	R R		7
Points North	"	177 Street (lay-up)	LCL	- -	R G		5
"	"	177 Street (lay-up)	LCL	- -	W R		7
"	"	Fordham Road (lay-up)	LCL	- -	W G		7
179 Street	"	219 Street (lay-up)	LCL	- -	G G		5
Fordham Road	"	241 Street	LC	R R	R R		5
241 Street	"	Gun Hill Road (lay-up)		- -	Y G		5

(continued)

3.
6th AVENUE LINE

BETWEEN	AND	CLASS	NORTHBOUND		SOUTHBOUND		NOTE
			MARKER	MARKER	MARKER	MARKER	
South Ferry	58 Street	LCL	-	-	-	-	1A
"	"	LCL	G	G	-	-	1
"	155 Street	LCL	B	B	-	-	1
"	155 Street (N.Y.C. & Northern RR train connection)	EXT	R	R	-	-	1
"	155 Street	LCL	G	G	G	G	
"	167 Street	LCL	R	Y	G	G	
"	Fordham Road	LCL	G	Y	G	G	
Rector Street	58 Street	EXT	W	W	W	W	1
"	155 Street	LCL	W	G	W	G	
"	155 Street	EXP	R	R	W	W	1B
"	167 Street	LCL	R	Y	-	-	
"	Jerome-Burnside Avenue	LCLorEXP	R	G	R	G	
"	Fordham Road	LCL	Y	G	Y	G	
"	Woodlawn	EXP	Y	Y	R	G	
Franklin Street	58 or 145 Street	EXT	-	-	R	W	1
"	155 Street	EXT	R	W	R	W	1
"	155 Street	LCL	R	G	R	G	
50 Street	58 Street	SHU	R	R	R	R	

* * * * *

9th AVENUE LINE

So							
South Ferry	59 Street	LCL	-	-	G	G	1
"	"	LCL	W	W	G	G	1
"	155 Street	LCL	G	W	G	G	1
"	155 Street	LCL	W	W	W	W	
Rector Street	59 Street	EXT	W	W	R	R	1
"	145 Street	EXT	-	-	R	R	1
"	145 or 155 Street	EXP	B	B	B	B	1
"	155 Street	EXP	R	W	R	R	
"	Burnside Avenue or 167 Street	LCL	W	R	W	R	
"	" " " "	EXP	R	W	R	R	
"	Fordham Road	LCL	Y	R	R	Y	
"	" " " "	EXP	Y	R	R	R	
Cortlandt Street	66 Street & North to 135 Street	EXP	R	B	B	B	1
"	Burnside Avenue	LCL	W	R	W	R	
"	Fordham Road	EXP	R	Y	-	-	

* * * * *

NOTES

- #1 - Were in use by Nov. 3rd, 1884 until about 1903
- #1A- Changed to G G by May 1st, 1899
- #1B- Changed to W.W by May 1st, 1899
- #2 - Changed to Y.Y Northbound at 204 Street Station
- #3 - Used on non-rush hour shuttle between Fordham Road and 241 St. prior to 24-hour through service.
- #4 - Used after 24-hour through service went into effect.
- #5 - Effective in October, 1948.
- #6 - Effective on December 23, 1950.
- #7 - Effective on January 1, 1954.

CLASS -- LCL-local EXP-express LCL-EXP-local-express THROUGH-through express
 SHU-shuttle EXP-rush hour extra. Branch line shuttles carried RR at all times. Local-expresses operated express south of 149th Street while through expresses operated express south of 177th Street, while North of those respective points they operated as local trains, making all stops.
 Colors: B-red W-white G-green B-blue which was replaced by Y-yellow about 1903.

MANHATTAN RAILWAY CO.
PASSENGER CAR SPECIFICATIONS

NUMBERS	TYPE	BUILDER	DATE	NO.	WINDOWS		TYPE SEATS	NOTES AND EXCEPTIONS
					ARRANGE*	SEAT		
1-39	CGT	PULLMAN	1885	16	6-4-6	48	Man.	
2nd 11	CGT	ST. LOUIS	1907	12	4-4-4	48	Man.	
40-41	CGM	WASON	1902	12	4-4-4	48	"	
42-91	CGM	ACF	1901-02	12	4-4-4	48	"	
92-241	CGM#	WASON	1902-03	12	4-4-4	48	"	30 Cars made MUDC*
242	CGT	ST. LOUIS	1907	12	4-4-4	48	"	
243-292	CGT	GILBERT & BUSH	1879	14	EVENLY	44	Long.	No Cross Seats
293-364	CGT	BOWERS, DURE & CO.	1882	16	6-4-6	48	Man.	
365-369	CGT	PULLMAN	1889	16	6-4-6	48	"	
370-500	CGM	GILBERT & BUSH	1886-89	16	6-4-6	48	"	
501-520	CGT	BARNEY & SMITH	1878	18	EVENLY SPACED	44	"	501 & 502 made into pay cars-Motor&Trlr.
521-540	CGT	PULLMAN	1878	18	EVENLY SPACED	44	"	
541-580	CGT	PULLMAN	1878-80	17	7 LARGE 10 SMALL	44	"	Seats changed from 48 to 44
581-699	CGT	"	1878-80	16	6-4-6	48	"	
700-728	CGM	"	1880-81	16	6-4-6	48	"	
729-790	CGT	"	1880-81	16	6-4-6	48	"	
791-825	CGM	"	1880-81	16	6-4-6	48	"	824 made into Instr- uction Car-1902
826-919	CGM	GILBERT & BUSH	1887	16	6-4-6	48	"	
920-1094	CGM	WASON	1890-93	16	6-4-6	48	"	
1095-1098	CGM	PULLMAN	1886	16	6-4-6	48	"	
1099-1120	CGM	GILBERT & BUSH	1887	16	6-4-6	48	"	
1121-1218	CGM#	WASON	1903	12	4-4-4	48	"	6 Cars not rebuilt to MUDC**
1219	O T	ACF	1902	None	- - -	80	Cross	16 Bench open car
1220-1244	O T	JEWETT	1902	None	- - -	80	"	" " "
1245-1254	O T	ACF	1902	None	- - -	80	"	" " "
1255-1314	CGM#	WASON	1903	12	4-4-4	48	Man.	4 Cars not rebuilt to MUDC**
1315-1364	CGT	"	1904	12	4-4-4	48	"	
1365-1414	CGT	ST. LOUIS	1904	12	4-4-4	48	"	
1415-1528	CGT#	" "	1907-08	12	4-4-4	48	"	4 Cars not rebuilt to MUDC**
1529-1612	CGM	WASON	1907	12	4-4-4	48	"	
1613-1652	CGM#	BARNEY & SMITH	1910	12	4-4-4	48	"	19 Cars made MUDC*
1653-1672	CGM#	JEWETT	1910	12	4-4-4	48	"	2 Cars never MUDC**
1673-1692	CGT#	WASON	1909	12	4-4-4	48	"	1 Car never MUDC**
1693-1712	CGT#	ST. LOUIS	1911	12	4-4-4	48	"	
1713-1752	CGT#	WASON	1911	12	4-4-4	48	"	1 Car never MUDC**
1753-1792	CGM#	JEWETT	1911	12	4-4-4	48	"	
1793-1812	CGM#	CINCINNATTI	1911	12	4-4-4	48	"	

LEGEND

CGT - Closed Gate Trailer Car

CGM - Closed Gate Motor Car

* - Cars 161, 162, 172, 179, 189, 191, 194, 211, 212, 216, 218, 220, 222-225, 227, 229-241, 1634-1652

** - Cars 1130, 1144, 1185, 1191, 1193, 1201, 1258, 1292, 1307, 1314, 1415, 1447, 1459, 1515, 1653, 1672, 1686, 1713.

- All or part of this group converted to MUDC. MUDC is Multiple Unit Door Control where one man operates all doors on train from central point between cars. Gates were removed and platforms were closed in by sliding doors. 465 cars were rebuilt between 12-18-23 and 8-30-24.

Cars from 1613 to 1812 had steel posts in stead of wood in their construction.
Total capacity of cars averaged 125 pasengers seated and standing.

MANHATTAN RAILWAY CO. - LOCOMOTIVE SPECIFICATIONS

YEAR	1873	1878	1878	1878	1878	1879	1879	1880	1881	1884
CLASS	-	-	A	B	C	D	I	J	E	F
DRIVER SIZE	2' 9"	2' 10"	3' 2"	3' 2"	3' 2"	3' 6"	3' 8"	3' 3"	3' 6"	3' 6"
DRIVER WHEELBASE LENGTH	5'	6' 0"	6' 0"	5' 3"	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"	5' 6"
TOTAL WHEELBASE LENGTH	5'	6' 0"	6' 0"	15' 0"	15' 0"	16' 1"	16' 4"	16' 7"	16' 1"	16' 1"
WEIGHT, ON DRIVERS (LBS.)	12,000	15,700	26,000	19,250	21,250	24,250	35,310	35,050	28,000	30,100
WEIGHT, TOTAL (LBS.)	12,000	15,700	26,000	33,000	36,000	37,900	46,300	42,450	40,300	43,200
CYLINDER SIZE (IN.)	6 x 12	9 x 10	10x14	10x14	10x14	10 x 16	10 x 20	11 x 16	11 x 16	11 x 16
BOILER STYLE	Straight	Straight	Straight	Straight	Straight	Straight	Wagon Top	Wagon Top	Straight	Straight
BOILER DIAM.			2' 10"	2' 10"	3' 4"	3' 4"	3' 4"	3' 4"	3' 4"	3' 6"
GRATE LENGTH			3' 6"	3' 6"	3' 6"	3' 6"	4' 0"	3' 9"	3' 6"	4' 7"
FIREBOX LENGTH			2' 11"	2' 11"	2' 11"	2' 11"	3' 0"	2' 11"	2' 11"	3' 7"
NO. OF TUBES			100	112	112	112	172	172	112	124
GRATE AREA (Sq. Ft.)			10	10	10	10	12	11	10	16.5
Tank Capacity (Gals.)		169	309	475	475	475	600	636	512	512
BUNKER CAPACITY (LBS.)			1500	1500	1500	1500	-	2500	2500	2500
WHEEL ARRANGEMENT	0-4-0	0-4-0	0-4-0	0-4-4	0-4-4	0-4-4	2-4-2	2-4-2	0-4-4	0-4-4

YEAR	1886	1892	1894	1878
CLASS	F3	K	K2	G
DRIVER SIZE	3' 6"	3' 6"	3' 6"	3' 3"
DRIVER WHEELBASE LENGTH	5' 0"	5' 0"	5' 0"	3' 3"
TOTAL WHEELBASE LENGTH	16' 1"	16' 1"	16' 1"	15' 6"
WEIGHT, ON DRIVERS (LBS.)	32,500	31,200	33,000	27,500
WEIGHT, TOTAL (LBS.)	45,400	49,630	47,000	32,500
CYLINDER SIZE	12 x 16	12 x 16	12 x 16	10 x 16
BOILER STYLE	Belpaire	Extended Wagon Top	Belpaire Extended Wagon Top	Extended
BOILER DIAMETER	3' 6"	4' 1"	4' 1"	4' 1"
FIREBOX, LENGTH	4' 7"	3' 8"	3' 11"	3' 7"
FIREBOX, WIDTH	3' 7"	2' 11"	3' 7"	3' 7"
NO. OF TUBES	154	16	185	125
GRATE AREA (SQ. FT.)	16.5	1	14	
TANK CAPACITY (Gals.)	512	51	512	
BUNKER CAPACITY (LBS.)	2500	250	2500	
WHEEL ARRANGEMENT	0-4-4	0-4-4	0-4-4	2-4-2

No Detailed data available on class H engines.

New York Elevated RR engines were painted light green on cab, tank and dome casing. The running gear was in dark red. The tank was lettered "N.Y.E.R.R."

Metropolitan Elevated RR engines were painted pea green.

Manhattan Railway painted all engines Tuscan red. No lettering was used on Metropolitan or Manhattan engines.

Locomotives consumed an average of 40 lbs. of coal per mile or 500 lbs. per hour. Anthracite was burned.

Second & Third Avenue line locomotives faced downtown while those on the Sixth and Ninth Avenue line faced up-town.

The Manhattan Railway renumbered all equipment in 1894. The Class "G" engines that were modified had the front leading wheels removed so that the locomotives could negotiate the 90° curves on the Sixth Avenue Line.

Data from ENGINEERING NEWS of February 15, 1894 and Mr. Walter A. Lucas, Editor of LOCOMOTIVE CYCLOPAEDIA.