

# The Bulletin



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## **The Bulletin**

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## **THE MILEPOSTS OF THE NEW YORK SUBWAY SYSTEM by ERIC R. OSZUSTOWICZ**

Many of us are familiar with the chaining system for the tracks of the New York subway system. Each track on the system has a marker every 50 feet based on a "zero point" for that particular track. For example, the zero point for the BMT Broadway Subway is just north of 57<sup>th</sup> Street-Seventh Avenue. The southbound local track is Track A1. 500 feet south of the zero point, the marker is A1/5+00. One hundred fifty feet further south, the marker is A1/6+50. If you follow the line all the way to 14<sup>th</sup> Street-Union Square, one will find a marker reading A1/120+00 within the station. At this point, one is 12,000 feet from the zero point located at 57<sup>th</sup> Street. Each BMT and IND track uses the same basic system, although the IND uses a zero point for its tracks at the New York/New Jersey state line south of Staten Island. The IRT uses a similar system where the last digit denotes the track number and the remaining numbers multiplied by 100 represent the distance from that track's particular zero point. The IRT system is further complicated by the fact that the number 4 as last digit denotes Track 1, the number 2 denotes Track 2, the number 1 denotes Track 3 and the number 3 denotes Track 4. This is system known to many of us. We will discuss some of the more interesting examples. There is another distance measurement system known to very few.

At some point after the opening of the line to Far Rockaway in 1958, another system of measurement was added to the New York subway system. Mileposts were placed on the IND, BMT, and IRT at half-mile intervals. These were not based on the above-mentioned chaining system. Each of the

three former divisions (plus the Flushing and Canarsie Lines) had one zero point. Most of these signs have been removed due to various construction projects over the years and were never replaced. Their original purpose is unknown, but shortly after their installation, they quickly fell into disuse.

Over the years, I have been recording and photographing the locations of the remaining mileposts before they all disappear completely. These locations were placed on a spreadsheet. Using track schematics showing exact distances, I was able to deduce the locations of the zero points. The Flushing Line presented a particular problem, since I was only able to locate one remaining milepost. Without this one milepost, it would have been impossible to find the zero point for this line.

The zero point for the IND is the bumping block at the Far Rockaway station on the **A** line (see photograph below). Every milepost placed on the IND is based on this one zero point. This is the only known actual zero point sign that still survives. This is the furthest "railroad south" any train can travel on the IND. The zero point for the IRT is the leaving home signal going north at New Lots Avenue on the **3** line. This station is the furthest "railroad south" any train can travel on the IRT. The tracks continue beyond New Lots Avenue into Livonia Yard, but mile post zero is at the north end of the New Lots Avenue station.

The BMT is more complicated due to the "loop" characteristic of Stillwell Terminal. The zero point is the center of the Coney Island

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## FROM RECOGNITION TO DOMINANCE: THE NEW YORK CONNECTING RAILROAD (BRIDGING THE BAY AND CONNECTING THE PIECES)

by George Chiasson

(Continued from December, 2016 issue)

### THE PENNSYLVANIA'S GREENVILLE YARD

Even before reconstruction engulfed the Harlem River Branch, and while the Pennsylvania was left to hang on its initial franchise application by the City of New York, construction was proceeding at full speed on the massive yard at Greenville, New Jersey in judicious anticipation that the New York Connecting Railroad would soon ascend from the planning stage to reality. This was especially so once the massive excavation work by Henry Steers Company had commenced at the site of Pennsylvania Station in Manhattan after the summer of 1904, as many tons of its "spoil" (tailings) were transported to the Greenville site by barge where the dredging out of an artificial bulkhead was quickly being completed. Once there, it was used along with other copious quantities of general rip-rap (including a generous helping of New York City garbage) to create a man-made island that measured two miles long by one mile wide, quite literally at the edge of New York Bay. At the same time, other artificial fills were created to support the eastward extension of PRR's New York Bay Railroad from Oak Island Junction into the new facility. By the end of the 1906 construction season things had taken shape nicely at Greenville Yard, but even so, the company's stubborn process in obtaining its city franchise was still being played out. By all indications these troubles were overcome at last in March, 1907 (at which point that long-sought and well-planned concession was finally obtained) and initial operations at Greenville Yard commenced. It was concurrently at this time that the Long Island Rail Road and the smaller but steadfast Sea Beach Railroad worked a swap of terminal facilities which granted that inbound railcars from Greenville could be berthed at an improved facility on the Brooklyn side. Since the 1895 reconfiguration of Bay Ridge LIRR's car floating operations continued to be performed through the enlarged-but-geographically-constricted "65<sup>th</sup> Street Ferry" terminal, which had tight curves and limited additional space. To counteract this operational limitation LIRR bought out the adjacent pierage of the New York & Sea Beach in March, 1907, in exchange providing it with the property to establish a wholly new bayside terminal at the end of 63<sup>rd</sup> Street. In the end this even greater expansion at 65<sup>th</sup> Street provided the joint Pennsylvania/LIRR operation with a superior basis for marine transfer operations, and better yet a straight shot from the new Bay Ridge car floats onto the Manhattan Beach Division that was easily sufficient to support the long strings of freight cars that were expected to form the through freights to be created in the years to come (and moved northward by the New

Haven Railroad). Ironically, for all the investment expended by the Pennsylvania Railroad on both of the maritime terminals to be supported by the New York Connecting Railroad, cutting-edge cable-suspension bridges were installed *only* at Greenville, being placed in service with its car floating operation that began moving cars to Bay Ridge by barge on December 22, 1909. On the Brooklyn side of the Bay meanwhile, more "conventional" pontoon floats were used on the equally new transfer facility at the former 65<sup>th</sup> Street Ferry.

At this point it is worth reflecting on the evolution of New York Harbor to date (1907), inasmuch as the railroad car floating trade had developed across its first 40 years. On the New Jersey side of the Hudson there were six principal terminals, five of which were by then equipped with car floating capabilities of one sort or another. The oldest was the Jersey City (Port Liberty) terminus originally established by CNJ in 1866, which by then was shared with the powerhouse Baltimore & Ohio along with the Philadelphia & Reading, all of which had formed a cooperative triumvirate in 1886 to divide a competing route to the Pennsylvania's Northeast Corridor. The Erie and Delaware, Lackawanna & Western (through predecessor companies) had been sharing the so-called "Long Dock" terminus at Jersey City (near Pavonia) since its beginning in 1861, but this location even in 1907 still required trans-shipment between railcars and liter vessels, with a modest float terminal having been newly established near the Lackawanna's new Hoboken terminal earlier that year. All other surviving New Jersey car floating venues to that time had been the province of the mighty Pennsylvania: Harsimus Cove and its (mostly passenger train) companion at Paulus Hook, which was now supplemented by the new Greenville facility. On the New York side, there were a number of West Side (Manhattan) piers available as destination points for the car floats, but this was not an option for furtherance toward Long Island or New England. There were also two "dead-end" float terminals in Brooklyn, the most noteworthy being that at N. 1<sup>st</sup> Street in Williamsburg, which was operated on behalf of both B&O and New Haven; and the recently opened Lackawanna float at "Greenwood," which had been established at the foot of 25<sup>th</sup> Street in 1906. Otherwise the Long Island Rail Road remained "king of the hill" in this regard, able to provide terminal connections or facilitate the furtherance of intact carload freight through its extensive facilities at Long Island City, originated in 1861 and float-equipped in 1904, along with its newly

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## From Recognition to Dominance

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expanded Bay Ridge yard at the former 65<sup>th</sup> Street Ferry. This latest facility would not in fact be operationally complete for a few more years, but when finished it would far outshine the parallel, relatively modern 63<sup>rd</sup> site, which from 1907 to 1916 consisted only of two long piers that were controlled by the Brooklyn Rapid Transit Company.

### NEW YORK CONNECTING RAILROAD PHASE 1-B, CAPITAL UPGRADES ACROSS BROOKLYN, INCLUDING RECONSTRUCTION OF THE BRT BRIGHTON LINE

After bids were received and a contract awarded in March, long-running reconstruction along the entirety of LIRR's Manhattan Beach Division, work that was collectively entitled the "Bay Ridge Improvements," formally commenced on May 19, 1905 near the previous site of the Parkville station. It would be more than a full decade before this overall effort concluded, but by November of that first year dirt was already flying across the borough of Brooklyn on both of the line segments involved, which varied from three to five track miles in length and had unique topographic relationships with their surrounding landscapes. Unlike the project of similar nature in the Bronx, a much better record of progress for this undertaking survives in the form of a report from the Brooklyn Grade Crossing Commission, dated April 30, 1918. Within, the two portions were described as such:

- "Section 1" consisted of expanding and improving the original open cut from Bay Ridge into what had been the plains of New Utrecht, as well as widening and/or depressing approximately 5¼ miles of existing grade level right-of-way from the 65<sup>th</sup> Street Ferry to Troy Avenue (a recent survey) through portions of the latter-day Bay Ridge, Bensonhurst, Borough Park, Mapleton, and Flatbush neighborhoods of Brooklyn. Project scope in this section included the addition of 29 new street bridges (railway underpasses) and 2 pedestrian bridges and the rebuilding of 4 existing street bridges
- "Section 2" consisted of widening and elevating approximately 3 miles of the original grade level right-of-way from Troy Avenue to New Lots Road through portions of the latter-day Flatbush, East Flatbush, Flatlands, and Canarsie neighborhoods of Brooklyn. Project scope in this section included the addition of 10 new street underpasses (railway bridges)

The most immediate action of any public consequence during 1905 was the closure of two existing grade crossings in Section 1 that were located at streets being deleted in favor of Brooklyn's developing thoroughfare grid. One was Kouwenhoven Lane between Tenth and Eleventh Avenues in Borough Park; the other was Amersfort Place (formerly Flatbush Road), situated between Nostrand and Flatbush Avenues. Otherwise the expanded cut progressed along Section 1 all through 1906, with its spoils being used to build the elevation on

Section 2, much like the methodology followed on the Harlem River Branch in the Bronx. In the year 1907, new street bridges were opened for use (along with the open cut beneath) at 18<sup>th</sup> Avenue and 53<sup>rd</sup> Street, 52<sup>nd</sup> Street, E. 3<sup>rd</sup> Street (near the former Parkville depot site), and Flatbush Avenue on Section 1, the last including a newly-depressed passenger station at Vandevere Park. On Section 2 new railway overpasses (and street underpasses) were placed in service, along with the attendant right-of-way elevations, at E. 83<sup>rd</sup> Street (formerly Wyckoff Avenue) in East Flatbush; at New Lots Road on the boundary between Brownsville and Canarsie (joined to the rapid transit elevated structure recently built for the Canarsie Railroad); and at Rockaway Avenue. Opening of the latter concurrently resulted in the closure of existing grade crossings on either side of it at Rockaway Parkway and "The Mill Road," a former Dutch colonial trail that was also being erased by Brooklyn's street grid reconfiguration. Other milestones that were achieved during this time along Section 1 involved the elimination of three at-grade railway crossings and one major interlocking. The latter, at LIRR's meeting point with BRT's Culver Line on Gravesend Avenue, was the first to be replaced on September 19, 1906 with a new bridge, followed by the Manhattan Beach Division's intersection with the West End Line at New Utrecht Avenue (once the site of "Bath Junction") on July 16, 1907. In both cases new overpasses carried the street and their associated rapid transit lines over LIRR, but for the Culver Line, physical track connections were also provided with the newly-depressed LIRR at Parkville Junction that ultimately survived for several decades. Lastly, where the Manhattan Beach Division had crossed *above* the former Brooklyn, Flatbush & Coney Island Railway near Avenue H & E. 16<sup>th</sup> Street since 1878 (with no physical connection), overall depression of the LIRR alignment repositioned it *beneath* its counterpart as of January 17, 1908 due to a coordinated effort between the Grade Crossing Commission, BRT, and LIRR that simultaneously resulted in elevation of the Brighton Line in that area.

Meanwhile, a parallel project initiated by the Brooklyn Grade Crossing Commission involved equally extensive re-engineering of BRT's "Brighton Line," including the total elimination of its many grade crossings in a 7-mile stretch from St. Marks Avenue in Crown Heights to Sheepshead Bay. Like that on the Manhattan Beach Division, this effort was divided into three sections, each with its own distinct topographical characteristics, but unlike the other job, the third, southernmost section was to be expanded substantially and used as a basis for the complete relocation of the Long Island Rail Road's Manhattan Beach Branch. In time this would permit the complete disposition of its original grade-level survey, as laid by Austin Corbin's New York & Manhattan Beach Railroad in 1876-7. When the Brighton Beach Railway was extended to make a physical connection with the Kings County Elevated in 1896, this was accomplished rather quickly by erecting a stiffly-graded steel ramp and

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**The Mileposts of the New York Subway System**

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The IND zero point marker is seen here in the lower right at the Far Rockaway bumping block. The track number is F3A and the mile marker is 0.0. All IND mile posts are based on this location.

Eric R. Oszustowicz photograph



The **G** Crosstown Line offered a complication since the line has no direct track connection to the IND line from Far Rockaway. The junction with the **E** line occurs at Queens Plaza where the chaining is D4/1250 and is at mile 26.8 from Far Rockaway via the **E** and **A** lines. E2/26.5 is at E2/1234, or 1,600 feet from D4/1250 (track E2 merges into track D2). The distance is approximately 0.3 miles from that point. The mileposts go down from Queens Plaza, so the milepost is 26.5 at this point.

Eric R. Oszustowicz photograph



A few surviving mile posts are in public view. Above, we are looking at mile post B3/23.5 located in the middle of the 47<sup>th</sup>-50<sup>th</sup> Street-Rockefeller Center station. This mileage is not based on the mileage from Far Rockaway. The mileage for the **A** line at 59<sup>th</sup> Street-Columbus Circle at the south end of the station is 24.32 miles (from Far Rockaway). The mileage for the Sixth Avenue Line is based from this point and goes down. Therefore, a **B** or **D** train that left 59<sup>th</sup> Street traveled 0.82 miles to reach this point. The Eighth Avenue Line between Jay Street-Metrotech and 59<sup>th</sup> Street-Columbus Circle is about 400 feet longer than the Sixth Avenue route, so the Sixth Avenue mileage is not based at Jay Street.

Eric R. Oszustowicz photograph



The last milepost on the **5** line is just north of the Dyre Avenue station. It reads Y2/26.0 which signifies that a trip from New Lots Avenue via the Seventh Avenue Line to this point is 26 miles.

Eric R. Oszustowicz photograph

station. The base mileposts for the BMT are based on traveling from this point over the Sea Beach Line because it travels the longest distance to DeKalb Avenue. The mile posts for the West End and Brighton Lines do not begin at Coney Island, but rather they count down from where they switch off from the Sea Beach (**N**) Line. The mileposts along the **J** line are based on the mileage along the Sea Beach Line, via the Montague Street tunnel and then via the Nassau Street Line. For the Canarsie Line, see the line by line explanations.

The Flushing Line was considered an entity unto itself

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**The Mileposts of the New York Subway System**

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Above is a photograph taken during the mid-1960s just north of the Eighth Avenue station on the Sea Beach Line. It reads E3/5.0. The chaining from here (E3/555) to the center of the Coney Island station is exactly 5 miles. The Sea Beach Line is the basis for the mileage of every BMT line with the exception of the Canarsie Line. This sign has long since been removed. Bernard Linder collection



A train of Standards is rounding the curve into Seneca Avenue and is also about to pass milepost M1/18.5. This milepost is based on a trip from Coney Island via the Sea Beach Line, the Montague Street tunnel, and the Nassau Street Loop. Bernard Linder photograph



Few mileposts remain on elevated structures, but this is the only example known of a milepost actually on an elevated platform. We are looking north at 111<sup>th</sup> Street on the JZ lines. Eric R. Oszustowicz photograph

for milepost purposes. The zero point was located at the bumping blocks just west of Times Square prior to the line's extension to 34<sup>th</sup> Street-Hudson Yards.

Below is a partial list of mileposts that are still visible today.

LINE	LOCATION	MILE POST	NOTES
Fourth Avenue	Approximately 600 feet south of 86 <sup>th</sup> Street on Track F1	4	
Seventh Avenue IRT	Approximately V4-109 south of Christopher Street	10	
	**V4 15 feet north of 560+00 at 23 <sup>rd</sup> Street	11	
	**V1 & V2 at 34 <sup>th</sup> Street	11.5	
Ⓐ	**Far Rockaway block F3A-940	0	
	&& South end of B. 60 <sup>th</sup> Street at F3A-834	2	
	South of Broadway-East New York Track A1	13	
	Lafayette Avenue A4/A3-732	17	
	South of Hoyt-Schermerhorn on Track A4	17.5	Jay Street A4-786=Milepost 18.04 See Ⓕ for its Jay Street notes and text
	A3-890 300 feet south of High Street	18.5	
	South of Chambers Street Track A4	20	
	** South end of W. 4 <sup>th</sup> Street Track A1	21.5	
	A3-995 south of 14 <sup>th</sup> Street	22	59 <sup>th</sup> Street A3-1118=Milepost 24.32
	135/145 A4-1339	28.5	
	A4 1392	29.5	
	Track A3 homeball north of 200 <sup>th</sup> Street	32	
Proof of Ⓐ Mileage — F3A-940 to F4-432 (Far Rockaway-Rockaway Boulevard) is 9.62 miles; K2-543 to K2-467 (Rockaway Boulevard to north of Euclid Avenue) is 1.44 miles; A1-418 TO A3-1541 (north of Euclid Avenue to 207 <sup>th</sup> Street bumping block) is 21.27 miles. Total mileage is 32.34 miles.			
Brighton	&& South of Sheepshead Bay Track A4	2.5	
	&& A2-448 north of Parkside Avenue	7	
	&& Track A3 north of Prospect Park	7.5	
Canarsie	&& Diamond cross-over north of Rockaway Parkway	16	
	North of E. 105 <sup>th</sup> Street	16.5	
	North of Bushwick-Aberdeen Q2-394	18.5	
	West of Wilson Avenue	19	

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**The Mileposts of the New York Subway System**

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LINE	LOCATION	MILE POST	NOTES
Canarsie (Continued)	** Halsey Street near 8-car marker Track Q2	19.5	
	North of Myrtle Avenue Track Q1	20	
	East of Lorimer Street	22.5	
	Track Q1 leaving Bedford Avenue	23	
Concourse	North of Kings-bridge Road	33.5	
	400 feet north of Fordham Road	33	
	South of 174 <sup>th</sup> -175 <sup>th</sup> Streets	31.5	
Flushing	C3/4-1469 south of 170 <sup>th</sup> Street	31	
	C1 2.0/101+30 50 feet south of Vernon-Jackson	2	
Crosstown	** Court Square station E2-1234	26.5	
Dyre Avenue	40 feet north of Dyre Avenue	26	
<p>Proof of New Lots Avenue to Dyre Avenue mileage: E460-E120+50 (New Lots Avenue to Borough Hall) is 6.428 miles; K297-K172 (Borough Hall to Park Place) is 2.367 miles; V172-V0 (Park Place to north of Times Square) is 3.257 miles; B197+57-B343 (north of Times Square to north of 96<sup>th</sup> Street) is 2.754 miles; F0-W365 - F becomes W north of E. Tremont Avenue (north of 96<sup>th</sup> Street to the ②/⑤ split north of E. 180<sup>th</sup> Street) is 7.404 miles; Y143-Y343 (②/⑤ split north of E. 180<sup>th</sup> Street to north of Dyre Avenue) is 3.787 miles. Total mileage=26.0 miles.</p> <p>For E460, E is the track designation and 460 is the survey marker. Add two zeros for actual footage. E460 is 46,000 feet from the north end of the curve leaving Fulton Street on the Lexington Avenue Line. K297 is 29,700 feet from the north end of Times Square, where the original 1904 line turned north onto Broadway. B197+57 is 19,757 feet from the south end of Brooklyn Bridge on the Lexington Avenue Line. See ⑤ notes regarding Dyre Avenue chaining zero point.</p>			
F B1/B2 and B3/B4 on 6 <sup>th</sup> Avenue	North of 7 <sup>th</sup> Avenue-9 <sup>th</sup> Street on B3	16	Jay Street B4-786=MP 18.11; see A Jay Street note and text
	Rutgers Tube	19	
	Track B3 opposite B4 end of trailing point switch north of Broadway-Lafayette Street	21	
	** 47 <sup>th</sup> -50 <sup>th</sup> Street station Track B3—center of station	23.5	
	Track B4 100 feet south of switch approaching 59 <sup>th</sup> Street-Columbus Circle	24	

LINE	LOCATION	MILE POST	NOTES	
J	J1-31+00 north of Canal Street	13		
	J1-58 south of Essex Street	13.5		
	J2-490 south of 85 <sup>th</sup> Street	21.5		
M	** Middle of 111 <sup>th</sup> Street station Track J1	23		
	Lexington Avenue Line ** Bleecker Street Track 1 56+50	10		
M	North end Seneca Avenue M321	18.5		
	Proof of M mileage to milepost 18.5: E819-E532 (Coney Island to south end of interlocking at 59 <sup>th</sup> Street-4 <sup>th</sup> Avenue) is 5.435 miles; F532-F314 (59 <sup>th</sup> Street to south end of interlocking at DeKalb Avenue) is 4.129 miles; B370-B275 (south end of DeKalb Avenue Interlocking to Nassau Street Connection in Montague Street Tunnel) is 1.8 miles; R275-R218+90 (Nassau Street Connection in Montague Street Tunnel to south end of Chambers Street) is 1.0625 miles; J1+84-J236 (*R chaining and J chaining overlap by 184 feet) (south end of Chambers Street to Broadway-Myrtle Junction) is 4.435 miles; M236-M321 (Broadway-Myrtle Junction to north of Seneca Avenue) is 1.61 miles. Total Mileage=18.4715 miles + overlap of 184 feet (.0348 miles)=18.5 miles. The overlap was added to their calculation for an unknown reason—this also affects the J calculation.			
	Queens Boulevard	D4-1208 53 <sup>rd</sup> Street Tunnel	26	
		**D1 Steinway Street middle of station	28	
		**D1 46 <sup>th</sup> Street 3 cars in	28.5	
		**D4 1620+50 north end of Union Turnpike station	33.5	
	Sea Beach/Broadway	&& Approximately 12 <sup>th</sup> -13 <sup>th</sup> Avenue north of New Utrecht Avenue	4	
		E3-555 south of 8 <sup>th</sup> Avenue	5	
		F4 600 feet north of south-facing homeball north of 36 <sup>th</sup> Street	7	
		F3-329 south of DeKalb Avenue after first curve leaving DeKalb Avenue	9.5	
	A3/A4 75 feet north of 154 homeball signal (6 <sup>th</sup> Avenue tracks leaving Manhattan Bridge) and A4-289 (6 <sup>th</sup> Avenue approach to Manhattan Bridge)	10		
	** 28 <sup>th</sup> Street 8-car marker Track A1	15		
	30 feet south of 49 <sup>th</sup> Street Track A1	16		
	Track A1 entering 57 <sup>th</sup> Street	16.5	Based on mileage via tunnel	

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**The Mileposts of the New York Subway System**

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LINE	LOCATION	MILE POST	NOTES
Proof of Sea Beach Line mileage from center of Coney Island to north end of 57 <sup>th</sup> Street-7 <sup>th</sup> Avenue via Montague Street Tunnel: E819-E532 (Coney Island to south end of interlocking at 59 <sup>th</sup> Street-4 <sup>th</sup> Avenue) is 5.435 miles; F532-F314 (59 <sup>th</sup> Street-4 <sup>th</sup> Avenue to south end of interlocking at DeKalb Avenue) is 4.129 miles; B370-B173 (south end of DeKalb Avenue Interlocking to south end of Prince Street Interlocking) is 3.731 miles; A173-A4 (south end of Prince Street Interlocking to north end of 57 <sup>th</sup> Street-7 <sup>th</sup> Avenue) is 3.20 miles. Total mileage=16.5 miles.			
West End	<i>South of Bay 50<sup>th</sup> Street parallel to Stillwell Yard</i>	1	
	<i>79<sup>th</sup> Street station at D3/4 634</i>	3.5	
White Plains Road	&& North of 225 <sup>th</sup> Street	25.5	

Key:

\*\* The milepost is within station limits and is visible to the public && The milepost is between stations, but visible from a passing train during daylight hours since the line is outdoors. All others are between stations and are only visible from the front window of a moving train

Note:

If a listing is italicized, this is a milepost that no longer exists, but was visible in vintage photographs

Following is a line by line explanation of the milepost system with unusual chaining information included:

①: The mileage for this line rises from Chambers Street based on the mileage from New Lots Avenue. South of Chambers Street, the mileage descends, but does not reach zero.

②: The mileage for this line rises from Nostrand (Rogers) Junction based on the zero point at New Lots Avenue via Seventh Avenue. The mileage descends towards Flatbush Avenue but does not reach zero.

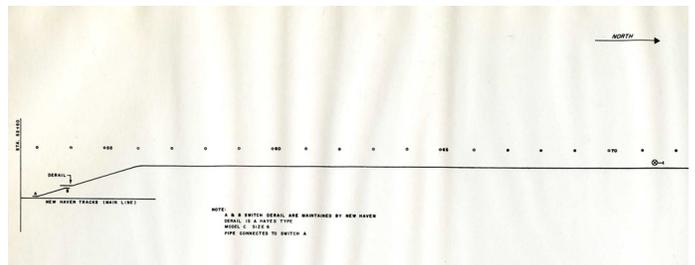
③: Since this line starts at New Lots Avenue, all mileage is based on that point via the Seventh Avenue Line.

④: From Utica Avenue (New Lots Avenue during the overnights), the mileage ascends towards Woodlawn based on the New Lots Avenue zero point via Lexington Avenue.

⑤: The mileage for this line rises from Nostrand (Rogers) Junction based on the zero point at New Lots Avenue. The mileage descends towards Flatbush Avenue but does not reach zero. Once reaching 149<sup>th</sup> Street-Grand Concourse, the mileage is based on the distance along Seventh Avenue. Mile post 26.0 is just north of Dyre Avenue. The Dyre Avenue Line has a unique chaining formula (not concerning mile posts), so we will discuss this below.

The standard chaining of the Dyre Avenue Line is anything but straightforward and is somewhat bizarre. There is a point north of E. 180<sup>th</sup> Street where the line enters straight track and the right-of-way has no curves for the remainder of the route to Morris Park. This is at survey maker 161+05. According to the schematics produced in 1966, this is the Signal Department's survey marker. South of here, there were alternate "ghost" sur-

vey markers used by the Track Department. Their survey marker at this point is 122+00. The passenger line begins at Y143+00 (Signal Department stationing) where ② and ⑤ split and gets higher from there. The line to Dyre Avenue was once part of the New York Westchester & Boston Railway (NYW&B). The station for the NYW&B is east of the E. 180<sup>th</sup> Street ②⑤ station and still has trackage. The tracks currently end one block north of Tremont Avenue at approximately Y129+05 (Signal Department stationing) and Y90+00 (Track Department stationing, no longer used). When the city took over the line in 1941, the tracks went much further south to a connection with today's Amtrak line. The connection was just south of E. 174<sup>th</sup> Street. South of the former NYW&B station at E. 180<sup>th</sup> Street, only the Track Department stationing appears on the schematic. The railroad connection was located at Y53+00 with a derail at Y54+00. The schematic ends at Y52+00, which was 5,200 feet from some point. This point was the portal for the Pelham Line north of Hunts Point Avenue. The Track Department's chaining was a provision for connecting today's ⑥ line to the Dyre Avenue Line, but what was the Signal Department's plan? Their stationing was 3,950 feet higher than that of the Signal Department. 3,950 feet south of the Pelham Line portal is the street bridge at Leggett Avenue, which is exactly 14,300 feet south of Y143, where the ⑤ line splits from the ② line. This is the location of the northern end of the Oak Point Freight Yard. Perhaps they had a Second Avenue subway connection in mind. Perhaps that is as far the NYW&B tracks went at the time in 1941. It is all irrelevant now. The NYW&B was torn down south of the E. 180<sup>th</sup> Street station and there is nothing to connect to anymore. The "ghost" survey markers no longer exist as far as I know. In any case, that is why Y143 is Y143\*\*. Below are two schematics to back up the above explanation. (\*\*After the rebuilding of the E. 180<sup>th</sup> Street switching complex north of the station, the northbound switch to the Dyre Avenue Line was moved south approximately 200 feet to stationing Y141. Since the mile post system was based on the original alignment, we are using Y143 as the division between the ② and ⑤ lines for the northbound track.)



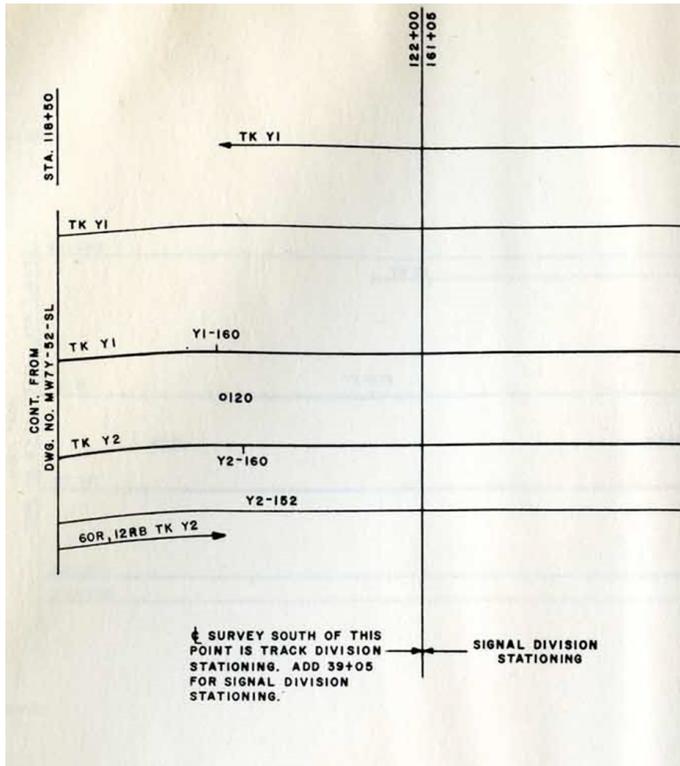
Above was the schematic for the southern end of the Dyre Avenue Line where it connected to today's Amtrak line from Boston. The "ghost" chaining referred to above was used south of E. 180<sup>th</sup> Street.

Eric R. Oszustowicz collection

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**The Mileposts of the New York Subway System**

(Continued from page 7)



Above is a 1966 schematic showing the tracks south of Morris Park where the two chainings overlapped south of Y161+05. The signals use the chaining based on the Y161+05. The schematics used both to the south end of the NYW&B station at E. 180<sup>th</sup> Street. South of E. 180<sup>th</sup> Street, only the Track Department's chaining (stationing) appeared.  
Eric R. Oszustowicz collection

6: The mileage is based on the distance from New Lots Avenue, but via Lexington Avenue.

7: This line has its own zero point, which is located just west of the Times Square station and goes north (east). The 34<sup>th</sup> Street-Hudson Yards station opened after the milepost system fell into disuse.

Grand Central-Times Square Shuttle: There are not any known mile posts, but they most likely would have been based on a trip north along Park Avenue South from New Lots Avenue.

A: Since the A line is home to the zero point of the IND at Far Rockaway, it is relatively simple as the last milepost (32.0) is located just south of the 207<sup>th</sup> Street station. The mileposts on the branch to Rockaway Park go down from Hammels Wye but do not reach zero. The mileposts on the line to Lefferts Boulevard go down from Rockaway Boulevard but do not reach zero. The F chaining from the Rockaways ends at Rockaway Boulevard (Liberty Junction) at F432. The chaining continues up the former LIRR Ozone Park Branch. Just south of the Jackie Robinson Parkway many years ago, there was a sweeping connecting track that turned west off

the Ozone Park Branch and joined the Montauk Branch of the LIRR just west of Woodhaven Boulevard. Today, a road leading to three baseball fields east of Woodhaven Boulevard was built over the former right-of-way for this connection. The chaining went over this connection reaching zero in Long Island City, 8.18 miles or 43,200 feet from Liberty Junction. At Liberty Junction, the K chaining takes over at K543. This was the chaining for the former Fulton Street elevated (abandoned in 1956), which continued down Liberty Avenue, Euclid Avenue, Pitkin Avenue, Snediker Avenue, Fulton Street (abandoned south of Rockaway Avenue in 1940), and over the Brooklyn Bridge to Park Row. From Rockaway Boulevard, this trip was 54,300 feet to Park Row.

B: This line uses the BMT mileposts from Brighton Beach and the IND mileposts from Broadway-Lafayette to Bedford Park Boulevard (see the D, F, and G explanations).

C: This line shares the A mileposts.

D: South of 36<sup>th</sup> Street, the mileposts go down based on the Sea Beach Line milepost at 36<sup>th</sup> Street. The West End Line mileposts do not reach zero. Mile 1.0 was located at the bottom of the hill south of Bay 50<sup>th</sup> Street. Between 36<sup>th</sup> Street and Coney Island, the West End Line is 2,600 feet shorter than the Sea Beach Line. From 36<sup>th</sup> Street to the Manhattan Bridge, it shares the Sea Beach mileposts. The mileposts were installed prior to the Chrystie Street Connection, so there are no mileposts upon leaving the Manhattan Bridge and until Broadway-Lafayette is reached. From there, the F IND mileposts are used from Broadway-Lafayette to 59<sup>th</sup> Street (see the F explanation). Upon entering 59<sup>th</sup> Street, the mileposts are based on the distance from Far Rockaway.

E: From World Trade Center, the mileposts are based out of Far Rockaway. In Queens, mileage is based on the longer local route between 36<sup>th</sup> and 65<sup>th</sup> Streets. No mileposts have been observed on the Archer Avenue Line, since the milepost system was already defunct when the line opened in 1988.

F: When the Church Avenue Connection opened to Ditmas Avenue, the IND chaining prevailed (B1-B4 tracks replaced C1-C4 tracks) and it is also assumed that the mileposts south of Church Avenue would have been based on the IND system going down from 59<sup>th</sup> Street. No mileposts are visible south of Church Avenue. Once reaching Church Avenue, the mile posts rise as one goes north and up Sixth Avenue. The Sixth Avenue mileage is based at 59<sup>th</sup> Street-Columbus Circle and goes down from there. At Jay Street, the milepost for the F line in the middle of the station at B4-786 is approximately 18.11, but the A milepost across the platform at A4-786 is approximately 18.04, the reason being that the distance via Eighth Avenue to 59<sup>th</sup> Street-Columbus Circle is approximately 400 feet longer than the Sixth Avenue route. South of W. 4<sup>th</sup> Street, the A and B tracks meet via a connecting ramp at A962+54/

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## The Mileposts of the New York Subway System

*(Continued from page 8)*

B951+40, a difference of 1,114 feet from Jay Street. The distance from W. 4<sup>th</sup> Street to 59<sup>th</sup> Street via Eighth Avenue is shorter due to the diagonal running under Greenwich Avenue. Just south of 59<sup>th</sup> Street, the survey markers merge at A1110+50 and B1106+32, a difference of 418 feet. The Eighth Avenue survey markers prevail after this point, but this track is for the **B** and **D** lines, not the **F** line. The **F** line continues up Sixth Avenue and then across 63<sup>rd</sup> Street in Manhattan and 41<sup>st</sup> Avenue in Queens where there are no mileposts since this section opened in three segments (to 57<sup>th</sup> Street, then 21<sup>st</sup> Street-Queensbridge, and finally to 36<sup>th</sup> Street) after the milepost system was defunct.

The **F** line has two chaining oddities. The express tracks take a shorter route between Seventh Avenue and Church Avenue in Brooklyn, but the survey markers match for the express and local tracks at both stations. Going south, the express track structure separates from the local track structure just south of Seventh Avenue at survey marker 647+25.7. This one point has an additional survey marker of 640+55.9. On Tracks B3 and B4 one will not find any survey markers between these two numbers as they jump 669.8 feet so that the survey markers match again as the tracks enter Church Avenue. As a note, the line is double-decked from north of Church Avenue to 1,100 feet north of Fort Hamilton Parkway. The express tracks take the shorter route from this point.

The second oddity is in Queens (for both the **E** and **F** lines) between 36<sup>th</sup> Street and 65<sup>th</sup> Street, where once again, the express tracks (D3 and D4) take the shorter route, this time under Northern Boulevard. The structure is double-decked from survey marker 1361, which is in the Northern Boulevard station, 300 feet from the south end. At approximately the point where the lower level structure meets the upper level structure, the survey markers on D3 and D4 tracks jump from 1340+56.546 to 1356+84.501 at the same point. The local route is exactly 1,627.955 feet longer than the express route. This is why the survey markers match at 36<sup>th</sup> Street & 65<sup>th</sup> Street, the two stations where the local and express lines run with each other.

**G**: This line uses the **F** mileposts from Church Avenue. North of Bergen Street, the mileposts are based at Queens Plaza and go down from there.

**J**: This line uses mileposts based on the Sea Beach Line, then the distance via the Montague Street Tunnel and then via the Nassau Street Line to north of 121<sup>st</sup> Street, where the connection to Archer Avenue was placed in service in 1988. No mileposts have been observed on the Archer Avenue Line, since the milepost

system was already defunct when the line opened. Beyond East New York, the mileposts are too low by about 900 feet and there is no explanation for this other than an error in placement. This is the only location on the system where a variance occurred. The **J** line once terminated on an elevated structure at Jamaica Avenue and 168<sup>th</sup> Street. The bumping block at 168<sup>th</sup> Street was at survey marker J696, or 69,600 feet (13.18 miles) from the south end of Chambers Street.

**L**: This line uses mileposts that ascend from the Rockaway Parkway end. The first visible milepost is 16.0 at the diamond crossover leaving Rockaway Parkway. The mileage at the south end of Broadway Junction is approximately 18.0. The **J** line, which passes below at this point has a mileage of about 18.91. It was assumed that the **L** mileposts used Broadway Junction as the point to join the BMT milepost system, and rise or descend from this point, but it is off by about 0.91 miles. Perhaps by coincidence or not, the radius of 16.0 miles from the north end of Rockaway Parkway roughly touches the same IND chaining zero point south of Staten Island.

**M**: Along the Queens Boulevard Line, this line uses the **E** mileposts, the **F** mileposts along Sixth Avenue, and the **J** mileposts to Broadway-Myrtle. They then ascend to Metropolitan Avenue.

**N**: This line uses the BMT zero point from the center of the Coney Island station to Canal Street via the Manhattan Bridge. The mileposts in Manhattan north of Canal Street are based on the distance via the Montague Street Tunnel. The route over the Manhattan Bridge is 5,600 feet shorter than the route via the tunnel.

**O**: The mileposts south of DeKalb Avenue descend based on the Sea Beach Line milepost at DeKalb Avenue. The mileposts do not reach zero. The distance from DeKalb Avenue to Coney Island is approximately 1,400 feet shorter than that of the Sea Beach line. The line shares the mileposts of the Sea Beach Line north of DeKalb Avenue. The mileposts in Manhattan north of Canal Street are based on the distance via the Montague Street Tunnel.

**R**: In Queens, the **E** mileposts are used. Once beyond Queens Plaza going southbound, the BMT mileposts gradually descend based on the Sea Beach mileposts via the Montague Street Tunnel, but never reach zero due to the fact the **R** line branches off from the **N** line at 59<sup>th</sup> Street. The lowest visible milepost is 4.0 just south of the 86<sup>th</sup> Street station. From 59<sup>th</sup> Street, the **N** line reaches its 4.0 marker north of New Utrecht Avenue and 0.0 at the center of Coney Island station.

Franklin Avenue Shuttle: The mileposts for this line ascend from Prospect Park based on the mileage for the **O** line.

# Commuter and Transit Notes

No. 338

by Ronald Yee, James Giovan, and Alexander Ivanoff

## METROPOLITAN TRANSPORTATION AUTHORITY

MTA has unveiled options for needed increases to fares and tolls over the next two years of less than 4 percent — or an average of 2 percent annually, consistent with the financial forecast made in July. MTA's continued discipline in keeping costs down has resulted in the lowest increase since 2009, when MTA committed to a biennial schedule to keep adjustments as small and predictable as possible.

According to MTA Chairman and Chief Executive Officer Thomas F. Prendergast., fare and toll revenue cover just 51 percent of MTA's \$15.6 billion annual operating budget. MTA has achieved nearly \$1.8 billion in 2016 annual savings, with more cost-cutting planned every year to hold increases to a minimum.

The proposals were the subject of eight public hearings across the MTA region in December, 2016. The MTA Board will review public input before a final proposal is selected and voted on by the full Board in January. The new fares and tolls will take effect on March 19, 2017. (MTA press release, November 21, 2016)

## MTA LONG ISLAND RAIL ROAD

LIRR released its Environmental Impact Statement for public comment regarding the third track and grade crossing elimination project on 9.8 miles of the main line between Floral Park and Hicksville. Costing an estimated \$2 billion, the expansion would enable LIRR to offer constant bi-directional train traffic and enable express trains to bypass locals. Seven grade crossings would be eliminated, vastly improving safety for both trains and motorists and finally banishing to the history books the train horns and constant traffic jams generated by crossing gates being down for long periods of time during rush hours with trains passing through on close headways. Amazingly, this plan would not require any residential property acquisitions as the railroad worked closely with local communities and outreach programs to residents alongside the right-of-way. The reconstructed tracks would also feature sound-walls to reduce train traffic noise in surrounding communities, upgraded stations, and additional parking. Comments will be accepted through January 31, 2017 (MTA website, *Progressive Railroading*, November 28-29, 2016)

## MTA METRO-NORTH RAILROAD

Metro-North completed the upgrading of its Fordham station, doubling the width of its northbound platform and adding a stairway from Fordham Road. On the north end of the southbound platform, a new street level entrance was built leading directly to Webster Avenue at E. 193<sup>rd</sup> Street. Artwork was added to beautify the station, which is the busiest reverse commute station on the system. (Al Holtz, November 29, 2016)

## NJ TRANSIT

Member Randy Glucksman, Chair of the Metro-North Railroad Commuter Council, observed a shortcoming of

the new information display at New York's Penn Station. He had noticed the absence of indicator symbols for whether departing trains would make stops at Secaucus Junction and/or Newark Liberty International Airport. He contacted an official at NJT regarding the matter who is in a position to remedy the issue and by December 1, 2016, an "S" symbol for a scheduled stop at Secaucus Junction and an airplane symbol for Newark Airport were added to the display board. (New Jersey Association of Railroad Passengers, December 2, 2016)

An old rail line is being rehabilitated for freight use in Ocean and Burlington Counties. "The Blue Comet" line, which runs between Jersey City and Atlantic City, has existed for more than 150 years and was abandoned in the 1970s, but will soon be revitalized thanks to a plan conceived by Clayton Sand Company, New Jersey Seashore Lines, and Conrail. In 2013, Governor Chris Christie's administration awarded \$2.1 million in grants to assist with restoring a portion of the line and other grants were received to fund the project. The restored freight line will be used for transporting sand and gravel for a local business. (app.com, December 9, 2016)

## AMTRAK

On December 16, 2016, federal railroad regulators endorsed an ambitious and costly plan to rebuild the congested Northeast Corridor over the next 30 years by shoring up crumbling infrastructure, running more trains, and building new tracks that would allow speeds of up to 220 mph on a stretch of the Washington-Boston route.

The Federal Railroad Administration's plan aims to cut down on delay-causing bottlenecks and increase capacity and reliability by upgrading outdated bridges and tunnels — including ones into New York City that are more than a century old — and realigning tracks to eliminate speed-restricting curves.

FRA estimates the \$120 billion plan would cut travel times between Washington and New York by 35 minutes, to about 2 hours 10 minutes, on the fastest trains and save 45 minutes to an hour on trips between Boston and New York, which now take close to 4 hours.

FRA's plan is the first comprehensive look at the future of the 500-mile corridor, which handles about 2,200 trains and 750,000 passengers each day on commuter and intercity trains. The agency said it is the product of a four-year process that sought input from state and local officials and residents, as well as Amtrak and commuter railroads.

Now it is up to the states, railroads, and President-elect Donald Trump to give their approvals and figure out which aspects of the plan to prioritize, but not everyone is on board.

U.S. Senator Richard Blumenthal (D-Connecticut) declared a part of the plan calling for new tracks from Old

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## Commuter and Transit Notes

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Saybrook to Rhode Island "dead on arrival," even after FRA opted to recommend a tunnel instead of elevated tracks through the historic town of Old Lyme. He contends the plan will still devastate neighborhoods, marshlands, commercial districts, and tourist attractions along the state's southeastern shoreline. A tunnel would add \$20 billion to the project, and even a tunnel, according to local leaders, would have environmental impacts.

Matthew Lehner, FRA's Public Affairs Director, said that the recommendation is just one step in the process and that construction could not begin on any aspect of the plan without the support and agreement of state leaders.

Elsewhere, work has begun on some projects incorporated into FRA's plan. They include a \$20 billion project to build new, expanded tunnels under the Hudson River between New York and New Jersey and a \$4 billion project to replace a 143-year-old tunnel in Baltimore.

Among other provisions in the plan: a new Amtrak stop at Philadelphia's airport, eliminating the need for some travelers to reach the city and switch to a commuter train; increased service to parts of southern New England; and a new level of service that makes stops at a variety of commuter rail stations and major city hubs. Straighter tracks would enable trains to reach 220 mph between Baltimore and Wilmington, Delaware. The fastest trains on the system currently top out at 150 mph, with a project underway to boost that to 160 mph near Trenton, New Jersey.

U.S. Senator Cory Booker (D-New Jersey), said implementing FRA's plan is vital to the growth of the region, which is expected to add 7 million people by 2040. Currently, the Northeast is responsible for about 30 percent of the nation's jobs and 20 percent of its gross domestic product, according to federal data. (ABC News, December 16, 2016)

The first of 25 new Viewliner II dining cars went into service on the **Silver Meteor**, Train #98, departing Miami on December 5, 2016 bound for Penn Station New York. These dining cars are part of a 130-car order placed by Amtrak with CAF-USA based in Elmira, New York back on July 23, 2010. (AI Holtz, December 6, 2016)

Pets are now welcome on the entire route of the Amtrak *Vermonter*. Amtrak has recently announced that small dogs and cats can now join their owners on the *Vermonter* route from Washington, D.C. to St. Albans, Vermont as long as their trip time does not exceed seven hours. "VTrans is pleased that Amtrak riders will now be allowed to bring carry-on pets along the entire *Vermonter* route," said VTrans Rail Director Dan Delabruere. "Our customers were asking for this and VTrans agrees that this will make it a much more enjoyable trip for the entire family." Pet reservations officially launched for the line on trips taken beginning on December 12. According to Amtrak, over 15,000 pets have travelled on Amtrak with their owners since the program

launched on a smaller scale in October, 2015. Pet service is currently also available on many other Amtrak routes. (news10.com, December 5, 2016)

At an industry conference on November 17, 2016, Wick Moorman stated that he does not have a long-term future at Amtrak. Moorman took the top spot at the railroad in September. Moorman's goals at Amtrak include making the company highly efficient, developing a stronger safety culture, and finding the right executive to lead the company over the long term.

Moorman retired as Chief Executive Officer of Norfolk Southern in mid-2015 and stepped down from the freight railroad's Board of Directors on December 31, 2015. He and his wife moved to Charlottesville, Virginia to be closer to their children and grandchildren in retirement. Then Amtrak called, asking for help finding a new CEO after Joseph Boardman announced he would be stepping down. One thing led to another and Moorman was offered the job. He said, "no," but relented after the Amtrak Board persisted in asking for his help. Moorman said that the future of Amtrak is important to the United States, but also noted that close family were against the move.

Moorman has brought in a few fellow NS retirees, including former Chief Operating Officer Mark Manion, to help him make the company more efficient. It is easier to get lawmakers and others behind Amtrak when it is efficient and well-managed, and by becoming more efficient, Amtrak can reduce operating losses while providing better service, he says. Amtrak's safety culture, according to Moorman, is also improving. Amtrak has a lot of great people who work hard and believe in the company's mission, he says. He will listen to their suggestions while developing training programs that aim to make on-board service more consistent.

The railroad needs to focus on its product, which is tired and frayed in places due, in part, to its aging equipment and belt-tightening that led to coaches being cleaned less frequently, Moorman says. Replacing the railroad's worn fleet of P-42 locomotives can be done relatively quickly. But there is no quick solution to replacing Amfleet I and II equipment, which needs a funding source and a new design. The replacement for *Acela Express* train sets, announced in August, 2016, will be a game-changer for high-speed rail in the Northeast Corridor when delivery begins in 2021.

Long-distance trains are the system's "political glue" and are essential for underserved areas of the country, Moorman says. The railroad understands the growth opportunity of its regional trains as well as state-supported services in shorter corridors, Moorman says. They are particularly attractive compared to the hassle of flying and dealing with airport security. "Amtrak's bag fees are very low," Moorman quipped. "And, you'll hear this in our marketing, there's no middle seat."

Adding new regional service will require cooperation from Class I host railroads. Moorman aims to improve the partnership and dialogue between Amtrak and each of the Class I systems. Moorman wants, for example,

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**Commuter and Transit Notes***(Continued from page 11)*

NS Chief Dispatchers to know Amtrak operating officials so that they can solve problems together.

Moorman spoke at the RailTrends 2016 conference, sponsored by analyst Anthony Hatch of ABH Consulting and the trade publication **Progressive Railroading**. *(Editor's Note from Alexander Ivanoff: A friend told me recently that NS has been putting its own trains in holds to get Amtrak trains moving quicker after whatever cause. Moorman at Amtrak's helm is starting to pay yields, and I do say that I hope Moorman's successor will also be from a Class I and not a political hack.)* (**Trains Magazine** via Al Holtz, November 21, 2016)

**OTHER TRANSIT SYSTEMS****UNITED STATES**

The Federal Transit Administration recently announced a \$2.75 million opportunity for non-profit groups to apply for funding that will help in the research and development of zero-emission public transit vehicles and infrastructure technology. The funding is intended to focus on initiatives towards pursuing battery-electric, hybrid electric, hydrogen fuel cells, in addition to charging and refueling infrastructure. Organizations that are eligible to apply for the funding will have until close to the end of February, 2017 to do so. (**trains.com**, December 1, 2016)

**BOSTON, MASSACHUSETTS**

A seven-stop extension for Green Line trains in Boston has been set back until at least 2021, according to the Massachusetts Bay Transit Authority. The line, which is planned to bring new service into Somerville and Medford, was originally hoped to open partly in 2017. Rising cost estimates have led the state to stop work on the project and complete a scaled-back redesign. John Dalton, the new project manager for the \$2.3 billion extension, expressed confidence that the project could be completed, but there are still major hurdles to be overcome for the project to proceed.

The project still needs to receive a major grant from the federal government, as well as fill a \$75 million fund gap and hire a new team dedicated to working on the project. When finished, the new Green Line extension would provide service from a relocated Lechmere station in East Cambridge to Union Square in Somerville, and College Avenue in Medford. In total, there is expected to be 4.7 miles of track and seven new stations. A new set of contractors is intended to be selected by the end of 2017 at which point work on the project may resume. (**Boston Globe**, December 7, 2016)

**WASHINGTON, D.C. AREA**

The Washington Metropolitan Area Transit Authority (WMATA) announced its latest two programs to return the ailing rapid transit system to a state of good repair and reliability to its customers. Dubbed "Back2Good," the first program will phase out, by the end of 2017, the original fleet of 1000-series Metro cars as well as the 4000-series cars, which have been mechanically unreliable since their delivery in 1991. As the 7000-series car

deliveries ramp up, all eight-car trains will be made up exclusively of these new cars. The "Railcar Get Well Program" will put the 2000-, 3000-, 5000-, and 6000-series cars through a repair and replacement program covering the heating and air conditioning systems and propulsion and braking systems to improve their reliability. Currently, 60% of train delays are due to mechanical issues on the railcar fleet; the goal is to reduce this type of delay by 25% by the end of 2017. The on-going SafeTrack plan is continuing to make improvements to track and rail infrastructure to improve safety and will be expanded to replace signal displays with brighter LED bulbs in an effort to prevent red signal violations, a problem that has plagued the system for quite some time, resulting in several accidents and near-misses. (Al Holtz, December 5, 2016)

**CHARLOTTE, NORTH CAROLINA**

City leaders have selected a construction firm to build the next phase of the city's CityLYNX streetcar Gold Line. The Johnson Brothers Corporation of Texas have been awarded an \$80.6 million contract to build a 2.5-mile expansion of the current 1.5-mile system.

The Charlotte City Council also selected Siemens to build six new S-70 streetcars for the Gold Line. The units will be designed with advanced hybrid technology that features a battery storage system, which allows for operation in portions of the city's Uptown area without an overhead wire. Siemens' battery-storage technology was first demonstrated in San Diego, where it achieved a world record for longest distance traveled by a battery-powered tram from one charge in 24 hours, according to the company's press release.

The new streetcars will run on the second phase of the Gold Line and replace the legacy green and yellow trolleys currently in operation. The new phase will add 2.5 miles to the line.

The units have features aimed at enhancing the riding experience and operational performance, Siemens officials said. Those features include traffic light preemption, a pedestrian-friendly front mask, an automatic passenger counter with 3-D infrared sensor technology, larger windows, and an unobstructed floor with room for bicycle storage and wheelchairs. The order is valued at \$40.4 million, **The Charlotte Observer** reported.

Work is expected to begin in 2017, with the project wrapping up by summer of 2020. (**Trains Magazine** via Al Holtz, November 30, 2016)

**MIAMI, FLORIDA**

The first of five trainsets which Siemens is building for the privately-financed Brightline inter-city project has arrived in Florida following a 3,000-plus-mile journey by rail from the manufacturer's Sacramento plant.

The train sets will each comprise four stainless-steel coaches, top-and-tailed by diesel-electric locomotives. The initial train set carries a blue livery, and will be followed by the pink, red, orange, and green sets, which are scheduled to be delivered by the end of March.

"Having our first Brightline trainset completed is a major accomplishment and brings us one step closer to the

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**Commuter and Transit Notes***(Continued from page 12)*

introduction of our innovative new train service,” said Brightline President Michael Reininger on December 14, 2016. “Our operations team will begin the required testing as we ready to launch Brightline between Miami, Fort Lauderdale, and West Palm Beach next summer.”

Michael Cahill, President of Siemens Rolling Stock, said construction of the train set involved “the latest in modern manufacturing techniques (and) a vast supply chain and leveraged the best in Siemens engineering and manufacturing know-how,” with components coming from over 40 suppliers across more than 20 states.

Siemens will also be responsible for maintenance of the fleet, which is expected to provide full-time employment for approximately 70 Siemens and 40 Brightline employees. (*Railway Gazette*, December 14, 2016)

**CINCINNATI, OHIO**

Ridership on the Cincinnati Bell Connector street car line has declined sharply, according to data recorded over the past month. The streetcar had only about half of the projected passengers expected to ride on it in November. Overall ridership on the line, which opened to the public in September, is actually 53% above expected, yet looking closer reveals that day-to-day numbers are declining.

Day-to-day ridership has shown that over 130,000 passengers took the street car in September compared to less than 50,000 in November. Some reasons for the decline in ridership have been attributed to difficult-to-use ticket vending machines, non-functioning street car countdown clocks, and a lack of predictable service. It is hoped that work can be done in the future to correct these issues, but no formal plan has been made as of yet. (fox19.com, December 8, 2016)

**CHICAGO, ILLINOIS**

The Lake Bluff station on Metra’s Union Pacific Line lost its Ticket Agent beginning December 8, 2016 due to declining ticket sales and the fact that around 25% of all ticket sales to and from that station are now done on Ventra, a mobile phone app. While vending machines will continue to sell tickets, customers will be allowed to purchase one-way paper tickets from the train crews. (Al Holtz, November 28, 2016)

**OKLAHOMA CITY, OKLAHOMA**

City Council members have chosen Herzog and Stacy and Witbeck to install rail for the new Oklahoma City Streetcar system in a contract valued at around \$50 million.

Construction will begin in January, 2017 and when completed, the OKC Streetcar will connect downtown to Bricktown with service through several city neighborhoods. City leaders estimate that it will take about two years for all of the rail and other infrastructure to be installed. Brookville Equipment Corporation is slated to build the street cars.

The street car project is being funded through a capital improvement program known as MAPS 3. The \$777 million program is funded through a one-cent sales tax

that began in April, 2010 and ends in December, 2017. (*Trains Magazine* via Al Holtz, November 29, 2016)

**LAS VEGAS, NEVADA**

The University of Nevada’s Las Vegas campus will be the site of the country’s latest transportation center. The U.S. Department of Transportation recently awarded a \$1.4 million grant to the university to assist with funding for a University Transportation Center that will focus on methods to create more high-speed rail and improve rail infrastructure in Nevada and all around the country. The center will be the second of its kind in Nevada. In 2013, U.S. Senator Harry Reid (D-Nevada) assisted in having funding allocated to a transportation center at the university’s Reno campus. The primary goal of University Transportation Centers, which are located throughout the nation, is to conduct research that aligns with the priorities of the U.S. Department of Transportation as well as other agencies. (trains.com, December 6, 2016)

**SAN FRANCISCO, CALIFORNIA**

A computer hacker found access to the fare collection system when a MUNI employee clicked open a link in an email that contained a computer virus that quickly disabled 900 employee computers. The problem was discovered on November 25 and was continued through November 27, 2016. As a precaution to prevent customer inconvenience, all ticket vending machines were turned off and all fare gates left in the open position, the latter a matter of safety if they had malfunctioned and ended up trapping people inside the MUNI Metro stations. MUNI assured the public that no customer or employee information was compromised, although the MUNI payroll system was briefly interrupted. At no time was operational safety compromised (e.g., signals and switches). MUNI Information Technology Department personnel quickly restored all systems and determined the source of the computer virus, verifying that it had not penetrated the firewall protecting the integrity of its computer systems. This is not the first major cyberattack on a transit system’s computer network. In 2008, a 14-year-old hacker accessed the computerized control systems of the transit system of Lodz, Poland, causing several derailments that injured 12 passengers. The boy was charged and imprisoned for his misdeeds. The hack on MUNI was different in that it was ransomware where the hacker demanded a payment of around \$73,000 in bitcoin to end the cyberattack. Since 2007, the American Public Transport Association as well as the Department of Homeland Security have called for increased vigilance and steps to secure the ever-increasing dependency on computerized systems to operate mass transit systems. (*Editor’s Note by Ron Yee: This issue raises major safety concerns with the advent of driverless transit lines (JFK AirTrain), Positive Train Control (all passenger rail lines governed by FRA), and Communication-Based Train Control (CBTC, already installed on NYC-T’s ① and being installed on ⑦). If the control systems are severely hacked, trains can literally be switched from one track to another or run into each other in an act of terrorism.*) (*San Francisco Examiner*, November 28, 2016)

*(Continued on page 14)*

**Commuter and Transit Notes***(Continued from page 13)*

Bay Area Rapid Transit (BART) is planning to ease overcrowding aboard its trains by modifying its existing fleet to accommodate more passengers. Seven rows of double seats on one side of up to 380 selected cars would be replaced by seven single seats, allowing more room for standees in the newly widened aisle. BART has been collecting customer opinions on three potential configurations where seating was reduced to accommodate more riders per car. One configuration took away seats adjacent to the side doors; another removed all seats in the middle of the car. These two alternatives were less favored than the apparent winner, in which one side on the middle of the car was modified to single seating. BART now transports over 440,000 per day, up 100,000 in just the past five years. As there are some voices of opposition to the reduced seating plan, which is expected to cost \$1.6 billion, at press time BART was awaiting a December 15, 2016 Board meeting where the plan could be approved, upon which the modifications would immediately commence at a rate of around 10 cars per week. This would be a stopgap measure until the new fleet of Bombardier-built cars built to carry more passengers and ordered in greater numbers than the current fleet to accommodate future ridership increases, takes over. (*Mass Transit Magazine*, December 5, 2016)

**SAN JOSE, CALIFORNIA**

The Mineta National Transportation Research Consortium at San Jose State University will receive a \$7 million grant from the U.S. Department of Transportation for continued studies in transit technology, workforce development, and education for public transportation networks around the country. The money was made possible through the agency's University Transportation Center program, providing five annual installments of \$1.4 million. The Mineta center is one of numerous transit research centers around the country that seeks to find solutions to transit and infrastructure challenges affecting the nation. There are other comparable programs that exist at Howard University, Navajo Technical University, and the University of North Carolina at Charlotte. (*trains.com*, December 9, 2016)

**MONTREAL, QUEBEC, CANADA**

As the Societe de Transport du Montreal retires its 1966-vintage rubber-tired Metro rapid transit cars, it has issued a call for proposals from the public to see if there is any interest in purchasing cars for private use. Stipulations are that the cars are to be sold to buyers with adequate financial resources to maintain them, used in an environmentally friendly manner, and utilized in a manner respectful of their heritage. The purchase price is a reasonable C\$750-\$1,000, but the cost of transport from the Metro facility to their final destination can be up to \$4,000. One challenging issue is likely to be that these cars do not have any thermal insulation, owing to the fact that they spent practically all of their service lives underground and would be hard-pressed to be

habitable for any kind of occupancy in the cold winter months. (*The Canadian Press*, April 2, 2016)

Bombardier announced November 22, 2016 that it has been awarded an eight-year contract by Montreal's Agence Metropolitaine de Transport (AMT) for the operations and maintenance of the AMT commuter rail fleet on all of its six lines in the greater Montreal area.

The contract is valued at approximately C\$331 million (U.S.\$246 million) and includes a two-year option. The new contract took effect on November 18, 2016.

Bombardier has been providing maintenance services for AMT since 2010. With this new contract, Bombardier's scope of work will not only cover the maintenance of AMT's entire fleet of 264 coaches and 41 locomotives, but will also extend to the operations of AMT's commuter rail service.

Over the past 12 months, Bombardier reports its average on-time performance for maintenance of the AMT fleet has been 99.87%, which it says offers "market-leading results even in harsh winter conditions." (*Railway Age*, November 22, 2016)

**OTTAWA, ONTARIO, CANADA**

Transit leaders on Ottawa's new O-Train Confederation Line have started testing Alstom's Citadis Spirit light rail vehicles (LRVs). While the 7.7-mile light rail system will not begin full revenue service until 2018, testing will continue through much of 2017.

LRVs will undergo static and dynamic testing, including dynamic braking tests at speeds exceeding 50 mph. The tests will evaluate traction and braking performance, as well as passenger comfort and overall train handling. Other static tests will take place at nearby Belfast Yard in Ottawa, according to an Alstom news release. The first phase of testing will last until the end of March, 2017 on single vehicles. In the middle of 2017, transit officials will conduct similar tests using multiple LRVs.

When opened, the \$2.1-billion light rail project will serve 13 stations in and near Ottawa's downtown. To date, it is the city's largest infrastructure project. (*Trains Magazine* via Al Holtz, December 7, 2016)

**TORONTO, ONTARIO, CANADA**

GO Transit extended its Richmond Hill Line on December 5, 2016 when it opened its newest station, Gormley, north of the former terminus of Richmond Hill. Located on Stouffville Road between Highway 404 and Leslie Street, the new station features 850 parking spaces, a platform fully accessible to the handicapped, and connecting bus service with GO Transit bus route 61. (*GO Transit website*, December 5, 2016)

Metrolinx is preparing to increase service for GO transit commuters on its 63-mile Barrie, Ontario line by 2017. The agency is introducing a new year-round weekend passenger service that will add three new trains to the schedule traveling between Allandale, Ontario and Toronto's Union Station. The trains will run south to Toronto in the morning and will make the return trip to Barrie in the evening. The added trains will provide more options and reduced crowding for passengers

*(Continued on page 16)*

## STATUS OF NORTH AMERICAN TRANSIT PROJECT OPENINGS SCHEDULED FOR 2017 by Randy Glucksman

Using the latest available information at time of publication, the projects listed in the table below are scheduled for completion by the end of 2017. On the list in the December, 2016 *Bulletin* there were five projects that

had been scheduled for completion in 2016. Two are still due to be completed; the others have been annotated as "Holdover." The new Metrolinx Gormley station came as a surprise and was not previously reported.

DATE	AGENCY	CITY	TYPE	LINE	DETAILS
<b>Completed or to be completed in 2016</b>					
December 5	Metrolinx	Toronto, Ontario, Canada	CR	Richmond Hill	Extended one station to Gormley
December	MTA Staten Island Railway	Staten Island, New York	HR	Arthur Kill station	Replaces Nassau and Atlantic stations
December 31	MTA New York City Transit	New York, New York	HR	Second Avenue Subway Phase I	96 <sup>th</sup> Street to 63 <sup>rd</sup> Street/ Lexington Avenue 6.3 miles, 3 stations
<b>2017</b>					
Holdover	Denver RTD	Denver, Colorado	CR	G (Gold) Line	Union Station to Wheat Ridge-Ward 11.2 miles, 8 stations
Winter (Holdover)	Denver RTD	Denver, Colorado	LR	R (Aurora/I-225) Line	Nine Mile to Peoria 10.5 miles, 16 stations
January (Holdover)	Bay Area Rapid Transit	San Francisco, California	HR	Warm Springs Extension	Fremont to Warm Springs 5.4 miles, 1 station
Early	Chicago Transit Authority	Chicago, Illinois	HR	Brown, Green, Orange, Pink and Purple	Washington/Wabash station opens, replacing Randolph/Wabash and Madison/Wabash stations
March (Holdover)	Empire State Development Corporation	New York, New York	LD	Northeast Corridor	Moynihan Station Phase I opens
Spring	Loop Trolley Transportation Development District	St. Louis, Missouri	SC	Delmar Loop Trolley	Forest Park to University City 2.2 mile loop, 10 stations
May	Massachusetts Bay Transportation Authority	Brighton, Massachusetts	CR	Framingham/Worcester Line	Boston Landing station (fill-in station) opens between Yawkey and Newtonville
Late Spring	Sonoma Marin Area Rail Transit	Petaluma, California	DMU	Initial Operating Segment	Sonoma County Airport to San Rafael 43 miles, 10 stations
?	Southern California Regional Rail Authority	Los Angeles, California	CR	San Bernardino Line	Extension to San Bernardino 1 mile, 1 station
Mid	Florida East Coast Industries (All Aboard Florida)	Miami, Florida	LD	Brightline Phase I	Miami to West Palm Beach 70 miles, 3 stations
Mid	M-1 Rail	Detroit, Michigan	LR	Q Line	Woodward Avenue to 8 Mile Road 3.3 miles 12 stations
August	Charlotte Area Transit System	Charlotte, North Carolina	LR	Blue Line Extension	7th Street to UNC Charlotte Main 9.3 miles, 11 stations
September	Long Island Rail Road	Suffolk County	CR	Main Line Second Track Phase I	Double-track: Central Islip to Ronkonkoma 4 miles
No earlier than December	Toronto Transit Commission	Toronto, Ontario	HR	Yonge-University Line	Downsview Extension 5.3 miles, 6 stations
Late	Toronto Transit Commission	Toronto, Ontario	HR	York-Spadina Extension	Sheppard West (Downsview) to Vaughn Metro Centre 5.3 miles, 6 stations
?	Virginia Railway Express	Potomac Shores, Virginia	CR	Fredericksburg Line	Potomac Shores station opens (Woodbridge and Rippon Landing)

(Continued on page 16)

**Status of North American Transit Project Openings***(Continued from page 15)*

DATE	AGENCY	CITY	TYPE	LINE	DETAILS
?	Bay Area Rapid Transit	San Jose, California	HR	Berryessa Extension Phase I	Warm Springs to Berryessa 10 miles, 2 stations
Holdover	Amtrak	Miami, Florida	LD	Tri-Rail	Trains begin serving Miami International Airport station
Late or 2018	Bi-State Transit	St. Louis, Illinois	LR	Red Line/Blue Line	Cortex station (fill-in station) between Central West End and Grand stations

Legend:

CR: Commuter Rail

LD: Long Distance

DMU: Diesel Multiple Unit

LR: Light Rail

HR: Heavy Rail

SC: Streetcar

**Commuter and Transit Notes***(Continued from page 14)*

on the line. (trains.com, December 8, 2016)

**CUBA**

The Director of Cuba's foreign trade agency Tradex, José Antonio Arias, signed a contract with Andrei Solovoy, Chief Executive Officer of Transmashholding subsidiary Tver Carriage Works (TVZ), on November 10, 2016 for 68 passenger coaches for Cuban Union Railways (UFC). The agreement was signed during the visit of Cuban transport minister Eduardo Rodríguez Dávila to Russia. The order comes under the umbrella of a broader agreement between Russia and Cuba to modernize the railway network on the Caribbean island.

The coaches will replace aging vehicles from Germany and Mexico on long-distance trains. The poor condition of these coaches means that many long-distance trains have been cut back to operate only every three days. (*Railway Age*, November 15, 2016)

**SANTIAGO, CHILE**

Santiago Metro has awarded a joint venture of Arrigoni Engineering & Construction, Chile, and Strukton International a U.S.\$49 million contract to construct stations on the new Metro Line 3.

Package group 1 and 2 covers the construction of underground stations and ventilation shafts at Los Libertadores, Cardenal Caro, Vivaceta, Conchali, and Plaza Chachabuco on the northern part of the line. The scope of the contract includes civil, structural, architectural, mechanical, and utilities works.

Line 3 will link the northern district of Huechuraba with Fernando Castillo Velasco in the east via the city center. The 18-station line is due to open in June, 2018. (*Railway Age*, November 28, 2016)

**PARIS, FRANCE**

Bombardier Transportation is to build 52 additional trainsets for the French National Railway Co. in a contract that is valued at \$370 million. The new high-speed trains will provide service from the Saint Lazare Station in Paris. Currently, there are 200 passenger trainsets running on the SNCF state owned railway system. The new trains will be built at a Bombardier facility in

Crespin, France and are expected to be finished in early 2018. (trains.com, December 9, 2016)

**NEWTON AYCLIFFE, ENGLAND**

A new high-speed Intercity train that was developed at a factory in County Durham, United Kingdom, has rolled off the production line. Hitachi Rail Europe's Newton Aycliffe plant was completed in 2015 after the company recently won a £5.7 billion contract to supply express trains for the East Coast and Great Western main lines. The plant will complete work on 110 high-speed trains which are manufactured in Japan. The new trains will initially run at speeds up to 125 miles per hour with the potential for an increase to 145 miles per hour if track are upgraded on Rail Europe routes. The new factory will support the region by providing thousands of jobs and developing a strong engineering skills base. (bbc.com, December 9, 2016)

**DUBLIN, IRELAND**

Direct rail service between Dublin's southwest suburbs and its central business district began running on November 21, 2016, after completion of a €13.7 million project to adapt the orbital link through the 690-meter Phoenix Park tunnel for regular passenger service. The 4.4-kilometer 1877-vintage link between Islandbridge on the Dublin Heuston-Cork main line and Glasnevin Junction on the Dublin Connolly-Maynooth route had been mainly used for freight service and rolling stock transfers, but occasionally carried diverted inter-city service. According to the National Transport Authority, regular commuter service could not be run until capacity constraints at Connolly were addressed by resignalling. The project, funded by the Department of Transport through NTA, also included cutting stabilization, drainage improvements, and vegetation clearance, as well as repairs to the tunnel. Some track was relaid, and the stations at Drumcondra and Tara Street upgraded.

Iarnród Éireann is initially operating seven trains from Newbridge and Hazelhatch to Grand Canal Dock via Drumcondra, Connolly, Tara Street, and Pearse in the morning peaks, and eight evening peak trains from Grand Canal Dock, along with some limited-stop services in the opposite direction. Connections are provided

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## From Recognition to Dominance

*(Continued from page 3)*

“L” structure from the existing grade level right-of-way at Prospect Place (just north of the Sterling Place station). It passed overhead of several streets and the LIRR Atlantic Division, and included a perfunctory (likely wooden) high-platform replacement station at Dean Street, then ended at Franklin Avenue where the structure and another set of high platforms were appended to the existing Fulton Street “L.” The balance of the Brighton Line at that time consisted of the 14 original ground-level railway stations from Sterling Place to the Brighton Beach Hotel, with an extension to Culver Depot added for some trips using the former Seaview Railroad in April of 1900. It was initially electrified on May 6, 1899 using third rail from Franklin Avenue, where steam power was cut away or added, to Church Avenue, then overhead contact wire from that point to Brighton Beach. Electrification was then extended to the Brooklyn Bridge via the Fulton Street “L” on July 18 (for trains so equipped) and the use of locomotives consequently reduced. The former excursion road was then also shared with street cars south of Prospect Park, where a ramp was added for trolleys passing to and from Flatbush Avenue. Of course, this arrangement among several necessitated the use of both trolley poles and third rail shoes on BRT’s elevated rolling stock for years afterward.

Crossing elimination work sponsored by the Commission through a municipal bond sale actually started on August 1, 1904 when mild elevation of the tracks was begun along the First Section, from Park Place to St. Marks Avenue, where it met the existing steel ramp to Franklin Avenue and served to ease the transitional grade. During 1905, Park Place itself was undercut to pass beneath the line at what had been its at-grade crossing, thus to allow the rapid transit line to continue its slope into an open cut south of that point, where the Second Section began. Across the construction seasons of 1905 and 1906 the 1896-built steel connecting structure to the Fulton Street elevated was gradually replaced by a hefty solid fill, with all seven cross streets traversed by steel girder bridges on concrete abutments (including an extended version which forded the newly-depressed Long Island Rail Road at Atlantic Avenue). In 1905 BRT’s streetcar service that operated via the Brighton Line was discontinued in anticipation of the line’s reconstruction, being diverted into a “feeder” loop at the Prospect Park station that enabled easy connection with elevated trains to and from Brighton Beach.

By the middle of 1906 a raw excavation had been completed along the westerly flank of the Brighton Line from Park Place to Church Avenue that would enable the line to be depressed. In the meantime, a two-track connection was also quickly constructed between the Brighton Line and the Manhattan Beach Branch between Avenue H and Avenue J (south of its passage beneath the Bay Ridge Branch). Effective March 5, 1906 all BRT rapid transit trains were diverted through

this so-called “BRT Junction” (as controlled by Tower 75 after May 22), using LIRR’s tracks as far as Emmons Avenue, just south of the Sheepshead Bay station. Naturally, this action also required that the Manhattan Beach Branch be electrified with overhead wire between the same points, which effectively extended such capability for BRT trains all the way to Manhattan Beach itself when combined with the small portion that had been wired in 1899. BRT placed crude low-platform station stops on the Manhattan Beach Branch where none had previously existed at Avenue J (coined “Manhattan Terrace” to replace its own, now-closed venue at Fiske Terrace) and “Avenue O.” Its trains also began sharing the pre-existing LIRR low platform stations at South Greenfield (Elm Avenue), Kings Highway, Neck Road, and Sheepshead Bay. Access at either end was through hand-thrown switches at first, but by June the Tower 79½ junction at the Sheepshead Bay end had been completely reversed in orientation to feed Brighton Beach trains solely onto the Manhattan Beach Branch. A new Tower 75 had also been activated right at “BRT Junction” on May 25, while the far northern end of the Manhattan Beach Branch was temporarily realigned slightly eastward as far as the South Greenfield station by July 13, 1906 to open the future site of its elevation on to the adjacent Brighton Line embankment. From this time for almost the next two years, contractors had the entirety of the Brighton Line’s Third Section to themselves between Avenue H and Sheepshead Bay to perform its extensive job of demolition and reconstruction.

The completed First and Second Sections of the Brighton Line were opened for revenue service as of May, 1907, though some of the overhead bridge work would not be finished for up to two more years. The First Section included the solid fill connector to the Fulton Street elevated and incorporated a totally new station with high platforms at Dean Street, while the original Brooklyn, Flatbush & Coney Island depot building at Sterling Place was retained but attached to a new high-level island platform that was named Park Place and positioned *across* that street’s newly-depressed alignment. Both the Dean Street and Park Place stations would then remain in operation with little change for nearly 90 more years. The initial part of the Second Section that was opened by May of 1907 consisted of a two-track cut from Park Place as far as Church Avenue, over which eleven new street bridges of steel and concrete were constructed, including four “compound” spans that supported intersecting arteries above. New and replacement stations were built into this part of the open cut at Consumer’s Park (Montgomery Street), Prospect Park (next to Flatbush Avenue), Woodruff Avenue (half a block south of Parkside Avenue), and Church Avenue, with all new trackage still being powered by third rail. On the balance of the Second Section south of Church Avenue service was maintained at the existing grade level while excavation was performed along the railroad survey’s westerly flank as far as Avenue G

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## SWITZERLAND IN THE LATE SUMMER

by Jack May  
(Photographs by the author)  
(Continued from December, 2016 issue)

We arrived at 10:53 (45) and departed five minutes later, the usual dwell time. We kept climbing, and at the Muttbach siding right before the original 1.15-mile long Furka Tunnel, we stopped to allow diesel locomotive 506 to push us through. We emerged from the tunnel portal at the Furka station, the summit of the route, at 11:27 (25). This is where we were scheduled to pass our opposite number, and be able to relieve ourselves and get lunch. Tables were set up for free (included in the ticket price) food and drink, but the occupants of the other train got there before we did, and the victuals had pretty much disappeared, having been picked clean. But the usual kinds of snacks and beverages were also on sale at a kiosk during this scheduled 35-minute stop, as were souvenirs.

While the weather on the Gletsch side of the mountains was clear, here the skies were overcast. The blue train (ours was red) was being pulled by locomotive 9, another 2-6-0, one that had been restored after being repatriated from Vietnam. I got some photos of that train after our industrial diesel was removed, but also was hoping for a great action shot upon its departure, so I positioned myself very close to the tunnel portal. The train began to chug (literally) at 11:40 (25) under an incredible amount of thick steam that enveloped the locomotive. I began to kick myself (figuratively) for not positioning myself closer to the station (which is a bit cluttered) so I could snap just as it was getting underway, but then fortunately a gust of wind blew much of the steam away and the photo became somewhat acceptable.

We departed on the advertised at 12:00 and as we



2-6-0 locomotive 9 picks up speed as it powers the three-car "blue train" toward the eastern portal of DFB's tunnel at Furka.

descended the sun reappeared. But I cannot say the downhill ride was uneventful, as we almost hit a cow on the tracks and the crew had to shoo it away after we went into emergency. Our arrival at the end of the line in Realp was at 12:30 (40). So despite the encounter with livestock we arrived early. Just prior to entering the station we passed the shop lead, and then a track connection with the MGB near its base tunnel's eastern portal. There is a lovely, full-service station at this point, which is well-stocked with postcards and souvenirs. After unloading the passengers the train headed for the shop and another turntable. Leaving Clare at the terminal I walked down to the complex and was totally ignored as I photographed the cleaning of the smoke box, the removal of ashes (with a sliding crane), and the refueling and watering of the locomotive for its afternoon trip.

The MGB station is located in the center of Realp, a few blocks away from the DFB terminal. The town looked very attractive, but we did not have time to stop, as our day's work was nowhere near completed. Soon, running 6 minutes late, the 13:20 MGB train to Andermatt arrived and we duly boarded. There were not too many others on the platform, as most DFB patrons must have bought round-trip tickets, as their cars were probably parked at Oberwald.

It was a great ride; the scenery, sounds and smells couldn't have been better. I was also impressed with the authenticity of the operation; there was no indication that the line had ever been electrified.



Industrial locomotive 506 was fabricated in 1953, but has been totally rebuilt for its duties at the summit of the line in Furka, which includes aiding in the ascent of DFB's full schedule of steam-hauled trains.

(Continued on page 19)

**Switzerland in the Late Summer**

*(Continued from page 18)*



A three-quarter view of 2-6-0 No. 4 with the four-car "red train" at the Furka station, the highest on the line at 7,096 feet above sea level.



Our open-platform coach. Its windows were constantly closed and opened as the train traversed a series of tunnels on its route between Oberwald and Realp.



A workman hauls away some ashes spilled from the locomotive's smoke box under the watchful eye of two budding railroaders at DFB's shop and maintenance facility in Realp.



The picture postcard perfect town of Realp, an agricultural community 5,072 feet high and with a permanent population of 143. It is located at the eastern end of the Furka Base Tunnel and has two narrow-gauge railway stations as well; the right photo shows the arrival of an MGB Zermatt-Andermatt train.



*(Continued next issue)*

## Around New York's Transit System

### "Holiday Train" Suspended

NYCT was forced to suspend the operation of its "Holiday Train" consisting of eight R-1 to R-9 class subway cars dating back to the 1930s on December 4 when car 1300 developed a serious mechanical issue upon arriving at Second Avenue on **F** where it would be positioned to begin the day's service. It was the sixth car of an eight-car consist, the third south motor. In an effort to maintain "Holiday Train" service, 1300 and the two cars behind it were uncoupled and left at Second Avenue while the north five cars took on the task of filling in the day's planned activities. Scheduled for five round trips between Second Avenue and Queens Plaza following the **M** route, the first northbound trip was uneventful. However, even at 10:45 AM, the five-car train quickly became overcrowded on its first southbound trip back to Second Avenue. Out of concern for the safety of the public trying to jam aboard the truncated consist, upon arrival at Second Avenue, officials decided to suspend operation of this train for the day.

The train operated on Sundays, December 11 and 18,

but with seven cars instead of the usual eight.

### Arthur Kill Station Opening Delayed

The opening date of the Arthur Kill station has been delayed and pushed back from November to December, 2016 (as of press time of this edition). Postponed three times from its original April, 2016 opening date, this \$27.9 million station is to replace the Nassau and Atlantic stations, both of which will close upon the opening of Arthur Kill station, which will have a 150-car park-and-ride lot and entrances from Arthur Kill Road and Ellis Street, and feature an enclosed pedestrian overpass and two concrete side platforms with canopies, wind-screens, benches, and wheelchair-accessible ramps. The station will have security cameras and customer assistance intercoms. No reason was given by MTA as to the cause of this series of delays. (siadvance.com, December 3, 2016)

### R-188 Cars With Green Circles and Red Diamonds

A solid train of R-188 cars, 7501-9/7928/7510, is operating with exterior signs with green circles (for locals) or red diamonds (for expresses) around the route **(7)**.

### Commuter and Transit Notes

*(Continued from page 16)*

ed with outer suburban trains to Kildare and Portlaoise. IÉ and NTA are hoping to introduce off-peak and weekend service at a later stage.

Minister for Transport, Tourism, and Sport Shane Ross said, "the Phoenix Part tunnel line is a vital part of our

rail infrastructure and I know that it will prove to be of immense benefit to the travelling public, as will other transport projects such as the Luas Cross City Line, which will open in 2017." NTA Chief Executive Anne Graham added that "together with city center resignalling, the new services ensure we will exploit the full potential of existing rail infrastructure at minimal cost." (*Railway Gazette*, November 22)

### From Recognition to Dominance

*(Continued from page 1)*

(Glenwood Road), where the Third Section started. Some months later (probably about August) Brighton Line trains were shifted onto the first two depressed tracks between Church Ave and South Midwood (Newkirk Avenue), while excavation and finishing efforts were transferred to the existing grade along the line's eastern flank.

The entire four-track open cut between these points was placed in revenue service by November, 1907, though again some of the six overhead street bridges included in the project would not be complete for another year or so. The three replacement stations contained within this portion of the cut were configured to be in harmony with the line's expanded operational capabilities. Those at Beverly and Cortelyou Roads (which succeeded the original depot sites at Avenues B and C) had high platforms along the outside, or local, tracks while the station at Newkirk Avenue, which replaced the original depot site at South Midwood, was designed with a pair of high island platforms to serve both the local and express tracks. All this new trackage was also powered by electric third rail, with trains changing to over-

head wire for propulsion before they entered the Manhattan Beach Branch. By the end of April, 1908, progress on the Third Section of the Brighton Line reconstruction, which consisted of a four-track elevation from Avenue G to Sheepshead Bay, had reached a point where BRT added a temporary station location on the Manhattan Beach Branch at Avenue U, which more or less corresponded with that on its soon-to-open relocation, while the interim station at Avenue O was eliminated. Finally, the new BRT elevation itself was placed in revenue service on May 30, 1908, bringing with it the familiar Brighton Line litany of latter-day station locations: Avenue H, Avenue J, Avenue M (all local), Kings Highway (express), Avenue U and Neck Road (local) and Sheepshead Bay (express). Once again this resulted in the extension of third rail all the way to Sheepshead Bay, where the change to overhead wire was made for the rest of the trip to Culver Depot. The new elevation also included a grade-separated connection to the Brighton Line's side terminal at the Sheepshead Bay Race Track. With BRT trains gone, the Manhattan Beach Branch reverted solely to seasonal steam-powered Long Island Rail Road service, which in 1908 was offered at levels about half of those a decade earlier.

*(Continued next issue)*