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This Month's Cover Photo:
Bytom (northwest of Katowice), Poland, May 28, 2006. Type N 954 (Konstal, 1949) trundling down Piekarska Street at the intersection of Powstańców Śląskich. This is just south of the north terminal station of Bytom Stacja Ruchu. Photo taken on by Jeff Erlitz during the ERA's trip to Poland.

AVENUE A ENTRANCE OPENS/ CANARSIE LINE UPDATE

by Subutay Musluoglu

(Photographs by the author)

We have been periodically visiting the Canarsie Line this year, as MTA New York City Transit (NYCT) continues to reconstruct the 14th Street Tubes to remedy the damage inflicted by Superstorm Sandy in 2012. Previous installments in this series appeared in the February and September ***Bulletin***s. While work continues on the under-river tubes, it has been accompanied by a series of capacity improvements at several subway stations on the Canarsie Line as well as adjacent lines in Brooklyn and Queens. Fare control areas are being rearranged, long-closed mezzanines and street access stairways are reopening, and internal stairways have been widened, with new stairs added in key locations.

In the short term, these improvements have mitigated the effects of service changes while the tubes are rebuilt, and in the long term they will serve to cope with the population growth which has created congestion and overcrowded conditions at the affected stations.

A significant milestone in this effort was achieved on the morning of November 4 at the 1 Av station when the first of the new entrances at the station's east end at Avenue A were placed into use. Sited along the south side of E. 14th Street, just west of the corner of Avenue A, two stairways to the Brooklyn-bound platform are now open, with an elevator to follow. A fare control area with five turnstiles has been built at platform level. Directly across the street, work continues on two more stairways and an elevator to the 8 Av-bound platform and based on personal observation the work appears advanced enough that they could possibly be opened before the end of the year.

Some background is in order. The 1 Av station suffers from two related issues — constrained capacity and location. As of 2018, this station was used by 21,000 average weekday riders, the 65th busiest station in the entire subway system. As such, the building of these new entrances should be examined in the larger historical context of the development of the Lower East Side and beyond, as it realizes a transit need that long predates the current Canarsie Line rehabilitation project.

Built during the later years of the Dual Contracts era, the 1 Av station opened in 1924 as a single-ended station with side platforms, with separate entrances to each platform at the station's western end at its namesake avenue. Located across from each other on E. 14th Street, the entrance on the northeast corner features a fare control area one level up from the platform level, and a pair of street stairs facing east and north. The southeast corner entrance features a smaller fare control area, and a pair of street stairs facing north and south, both on First Avenue.

At the time of the station's opening this arrangement was considered adequate. However, the lack of a through mezzanine linking the two fare control areas, and the undersized southeast corner fare control area and entrance in particular, would present future challenges, as discussed later.

In 1924 the surrounding area was mostly composed of low-rise tenement apartment houses. To the north and east, several large

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gas holders belonging to the Consolidated Gas Company (one of the predecessor companies to today's Con Edison utility) dominated the landscape by the East River, which earned the neighborhood its name as the Gas House District.

This setting, as well as the steep grades rising from the under-river tubes, precluded the building of an additional station between First Avenue and the East River.

In the years following the end of World War II, the neighborhood underwent dramatic change which would increase usage at the 1 Av station. One by one, the gas holders were demolished, reducing Con Ed's footprint to the facility it occupies today between Avenue C and the East River.

The tenements north of 14th Street gave way to two of the largest housing developments in the city's history — Stuyvesant Town and Peter Cooper Village. Built by the Metropolitan Life Insurance Company in a manner similar to its previous Parkchester development in the Bronx, the complex opened in 1947 on an 80-acre site stretching from First Avenue to Avenue C, from 14th Street to 23rd Street, composed of 110 buildings, mostly 12 and 13 stories in height, containing 11,250 apartments. Tenancy priority was initially given to returning war veterans and over time the complex came to be known as a bastion of stable middle-class living in the heart of Manhattan, with a present-day population of around 25,000.

At around the same time, Robert Moses was busy clearing slums throughout the Lower East Side. Southeast of the 1 Av station, the Jacob Riis and Lillian Wald public housing complexes were built between Avenue D and the FDR Drive. Through the 1950s and early 1960s, tenements across the neighborhood were demolished in favor of larger apartment houses.

The unique geography of this part of the city presents a challenge to transit planners. From just north of E. 23rd Street to south of the Williamsburg Bridge, Manhattan Island "bulges" eastward. As such, during the Dual Contracts era, as well as later during the planning of the IND, it was difficult to effectively design a rapid transit solution for the area.

This led to the situation which continues to this day, where the area bounded by E. 14th Street on the north, FDR Drive/East River on the east, E. Houston Street on the south, and Fourth Avenue/Lafayette Street on the west represents the largest "transit desert" in Manhattan. Walk times from the areas east of First Avenue are long (15-20 minutes from Avenue D and E. 7th Street for example), with added difficulty in inclement weather. Travel by bus with a subway transfer is not considered much faster due to local street congestion.

In the late 1960s hope was offered to alleviate this situation when the MTA's "Grand Design" program of new subway routes proposed to build Route 103B, also known as the Avenue C "cuphandle" — a two-track subway linking the IND Houston-Essex Streets Line with the BMT Canarsie Line.

Route 103B would have extended east along Houston Street from the center express tracks east of the 2 Av station (originally intended for the IND Second System East River tunnel to S. 4th Street in Brooklyn), then turned north on Avenue C, with at least one new station on the avenue before turning west on to 14th Street and merging with the Canarsie Line.

Unfortunately, the city's economic struggles that began in the early 1970s effectively killed Route 103B and severely curtailed most of the New Routes program. In the ensuing decade the city experienced a population loss of one million residents. The Lower East Side struggled with poverty, crime, arson, and general social unrest and disinvestment for years.

In the early 1990s the area began to rebound, as the city's economy improved, and young professionals began to flood the area. Gentrification soon followed, and as housing costs increased, the population boom moved across the river to Brooklyn, with Williamsburg being the first stop for those getting priced out of the Lower East Side.

By the late 1990s the Canarsie Line was feeling pressure on both sides of the river, as both the 1 Av station and the Bedford Av station in Williamsburg began to strain under the increased ridership. At around this time, the need to replace the line's life-expired signal system presented an opportunity to increase train frequencies by installing a Communications-Based Train Control system (CBTC). The completion of this pioneering project provided some relief, but the situation at both stations would ultimately need to be addressed.

While CBTC was being designed, NYCT was also looking at longer-term solutions to the travel issues across the lower East River and along Manhattan's east side. In 1994, two studies were initiated — the East River Crossings Study (ERX) and the Manhattan East Side Alternatives Study (MESA).

The motivation for ERX came about partly in response to the long-term risks in continued subway operation over the Manhattan and Williamsburg Bridges. In the 1980s serious structural deficiencies had been discovered on both bridges. On the Williamsburg Bridge, the defects were serious enough that all vehicular traffic and Ⓙ Ⓜ subway service across the bridge was suspended for a two-month period in the Summer of 1988.

Intensive inspections yielded a series of emergency fixes, allowing traffic to gradually return to the bridge. Soon after, a design competition was held to identify a permanent solution to either rehabilitate or replace the bridge. It was determined that a comprehensive rehabilitation was the best option, which also included reconstruction of the subway structure on the bridge. After 20 years of work, the Williamsburg Bridge is presently considered to be structurally sound and viable for the next several decades.

A similar reconstruction program occurred on the Manhattan Bridge, but owing to its unique design, and the arrangement of the subway tracks on the outer sides of

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the bridge, NYCT customers endured 15 years of varying service changes and reroutes, including an extended period from the mid-1990s until the early 2000s when there was no service at all between the BMT Broadway Line express tracks in Manhattan and DeKalb Av in Brooklyn.

These disruptions and future uncertainties led NYCT to identify ways to reduce or even cease using the bridges. A variety of alternatives were studied, ranging from the relatively less expensive and easier to implement, such as changes to regular service routing, building new transfer connections, and adding station capacity, to more expensive and long-term capital projects including adding new under-river tunnels and line connections. One of the study's final recommendations was to add new Avenue A entrances to the 1 Av station. *(Author's Note: As a consultant in the late 1990s, I worked on the ERX study for a period of time.)*

The MESA study was tasked with examining ways to improve north-south travel in the First/Second Avenue corridors, studying a range of alternatives including busways, light rail, and subways. As the subway option evolved, a branch sub-option similar to the 1960s "cuphandle" scheme briefly appeared, to address the lack of rapid transit options in the Lower East Side "bulge" of Manhattan. This branch was deemed infeasible, and at the study's conclusion the Second Avenue Subway ultimately emerged as the best alternative.

In recent years the 1 Av station's single-ended design and the inadequacy of the entrances has created operational issues. On the 8 Av-bound platform during the AM peak hour, a bunching condition occurs daily as customers do not spread evenly along the platform, instead rushing to favor the first few cars of arriving L trains, trying to jam into cars that have already been overloaded at Bedford Av in Williamsburg. This has led to increased dwell times and adversely impacted line capacity.

A similar condition in reverse is occurring on the Brooklyn-bound side during the PM peak period, with customers wishing to exit at 1 Av cramming into the rear cars of L trains, creating uneven loadings of the trains themselves. These crowds then overwhelm the two stairs as they try to exit the station. Dwell times are an issue here as well.

The new Avenue A entrances should go a long way towards easing these conditions. However, customers will have to wait just a little longer to fully appreciate their benefits, because with the opening of the new entrance to the Brooklyn-bound platform, the existing entrance at the southeast corner at First Avenue was scheduled to be closed on November 11 for reconstruction lasting until April, 2020. Once the new entrance to the 8 Av-bound platform opens with its two new stairs, the current entrance at the southeast corner at First Avenue will also be closed for similar reconstruction.

As a side note, it should be pointed out that the next Canarsie Line station to the west, 3 Av, was built in an almost identical manner. Though there are no plans to change that at this time, if and when the future Phase 3 of the Second Avenue Subway reaches the area, its 14th Street Station is envisioned to be linked to the 3 Av station, which should not be too difficult as the station's eastern end is just shy of Second Avenue.

Elsewhere on the Canarsie Line, progress continues on other station capacity projects. Work is well along at 14 St-Union Sq L on the installation of a new escalator between the Canarsie Line platform and the IRT Lexington Avenue Line's south mezzanine. Once complete, this escalator will presumably be operated exclusively in the up direction, and by doing so will relieve congestion on the existing P2/P3/ML5/ML6 stairway group, which is currently the most direct route for transfers between the L and the 4 5 6.

It should be especially useful during the AM peak period, as surges of arriving L customers struggle up the stairs to make transfers to the 4 5 6 all the while conflicting with passengers on their way down.

Fortunately, the installation of this escalator has involved minimal structural reworking, by taking advantage of a pre-existing ventilation void above the Canarsie Line platform. The top of this void is level with the Lexington Avenue Line mezzanine, where the upper landing of the escalator will penetrate through a grille near the ML5/ML6 stair landing.

This work complements the previously completed work to reconstruct the P5/P6 and P7/P8 stairways between the Canarsie Line platform and the BMT Broadway Line platforms. The P6 stair was widened, while the P7 stair was both widened and reoriented to the west to eliminate conflicting movements on the platform.

Work continues at Bedford Av L to address longstanding capacity constraints. At the station's western end, the existing Bedford Avenue mezzanine is being expanded, two new street stairs were opened in late 2018, while the two original stairs are currently closed for reconstruction. Two new stairs between the mezzanine and platform opened earlier this year, while the original single stair is being reconstructed to make way for a new elevator between the mezzanine and platform. The elevator between the mezzanine and street is also progressing and a recent visit shows that the shaft and frame are in place.

At the station's eastern end, the Driggs Avenue mezzanine is also being expanded. The first of two new street stairs opened earlier this year, and one of the two original stairs has been rebuilt and reopened. A new mezzanine-to-platform stair has been added, and the original stair has been reconstructed. We will provide a more detailed examination of the work at the Bedford Av station in a future installment.

And finally, one project which we have only briefly mentioned to date is at Broadway Junction where earlier this year NYCT completed stairway work to increase capacity between the J Z platform and the mezzanine

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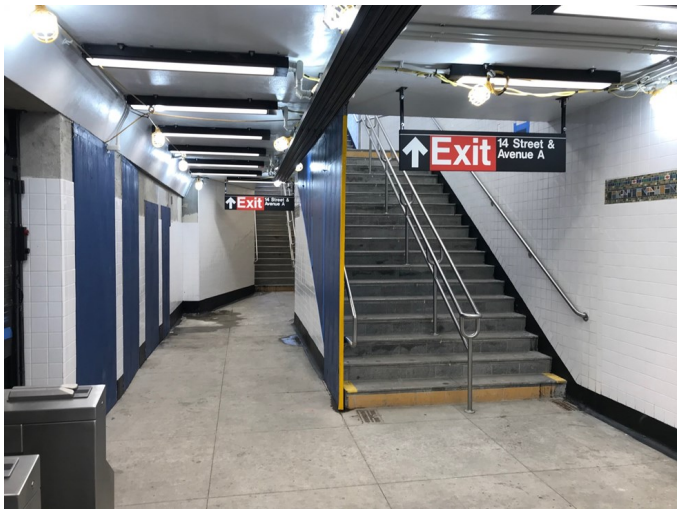
above which provides access to the L platforms and the escalator/stairs down to the A C station.

In the early 2000s the entire complex was rehabilitated, and a check of the station plans from 2001 shows that there had previously been six stairways between the platforms and mezzanine — three to each platform. During the station rehabilitation, the two westernmost stairs were removed, and that portion of the mezzanine space was closed off and converted to miscellaneous NYCT support space.

The ridership gains in the years since then has prompted a rethinking, and so a portion of the support space has been reduced and the mezzanine has been opened back up to circulation. The two removed stairs have been reinstated, and modifications were made to two other stairs.

Selected views of some of the completed improvements are in the photo essay that follows:



The fare control area for the new Avenue A entrance at the 1 Av station — Brooklyn-bound side. Note the mosaic band on the upper part of the wall on the right - a faithful reproduction of the work of Squire Vickers from the Dual Contracts era. Finishing work will be completed later. (November 5, 2019)

Another view of the two new stairways at street level, looking west along the south side of E. 14th Street from Avenue A. Visible in the background is the frame for the future elevator. (November 5, 2019)

Looking west along the north side of E. 14th Street, the soon to be completed entrance to the 8 Av-bound side. In this view, one new stairway is in the foreground, with the frame for the future elevator in the left background. The second new stair is out of view behind the elevator.

On the Canarsie Line platform at the 14 St-Union Square station, this is the location where the new escalator is landing. (September 13, 2019)

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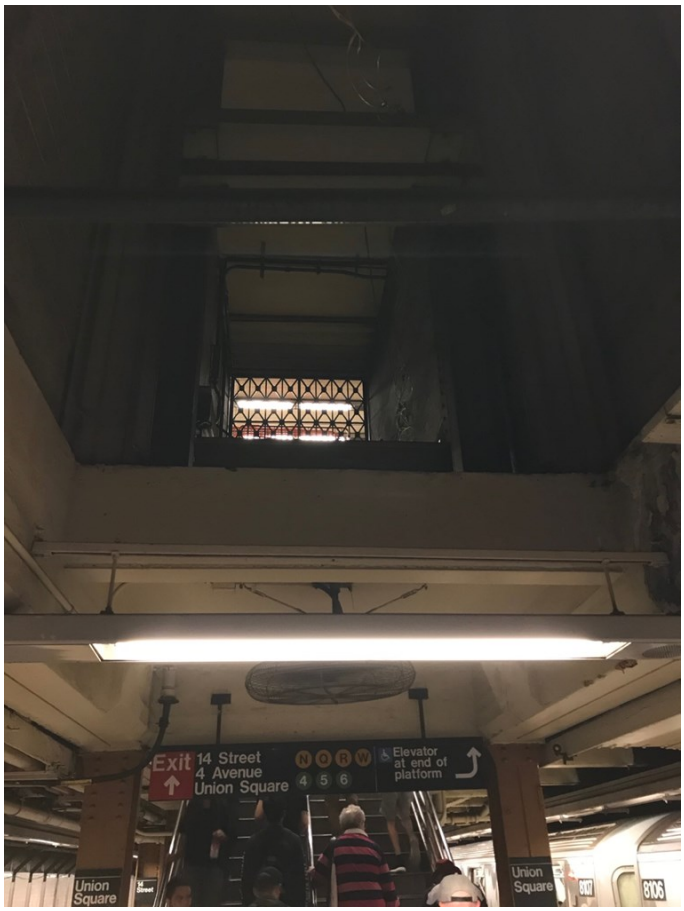
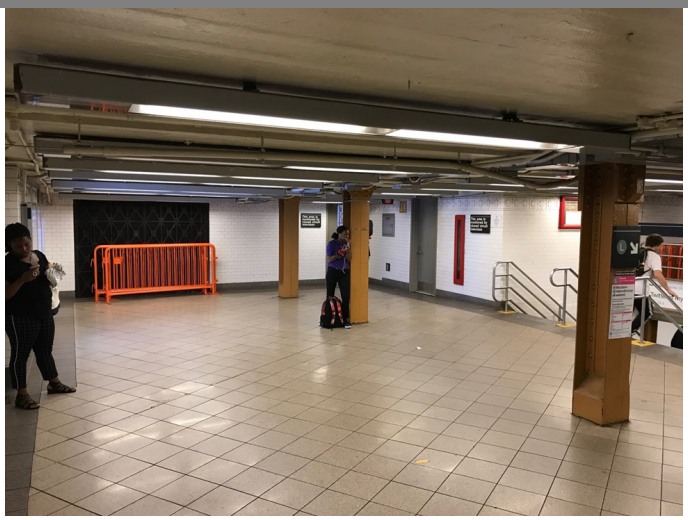


Looking up from the Canarsie Line platform at the 14 St-Union Square station, this is the ventilation void through which the new escalator is being installed. Visible at the top is the grille on the Lexington Avenue Line mezzanine, which will be removed and the opening rebuilt to accommodate the escalator's upper landing. (September 13, 2019)



On the Lexington Avenue Line mezzanine at the 14 St-Union Square station, in the left background is the ventilation grille which will be removed and the opening rebuilt to accommodate the upper landing of the escalator from the Canarsie Line. Over on the right is the existing P2/P3/ML5/ML6 stairway group, which is currently the most direct route for transfers between the L and the 4 5 6. The new escalator will provide much-needed relief to these stairs, especially during peak hours. (September 13, 2019)

Two months later, the escalator on the Canarsie Line platform at the 14 St-Union Square station has been installed. (November 5, 2019)

On the Lexington Avenue Line mezzanine at the 14 St-Union Square Station this is the construction enclosure behind which the reconstruction work is progressing to accommodate the top of the escalator from the Canarsie Line. (November 5,

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At the Bedford Av L station, a view of the new stair to the Driggs Avenue mezzanine. This stair is on the southeast corner of Driggs Avenue and N. 7th Street, facing south; the view is looking north. The original stair from 1924, out of the view to the right, is currently being reconstructed. This stair faces east along N. 7th Street. Both stairs join at a shared intermediate landing from which one wide stair descends to the mezzanine. This arrangement mirrors what has already been completed across N. 7th Street on the northeast corner of Driggs Avenue. (November 5, 2019)

At the Bedford Av L station, the frame for the new elevator on the northeast corner of Bedford Avenue and N. 7th Street. (November 5, 2019)

At the Broadway Junction station, the mezzanine above the JZ platforms. The view is looking straight towards the transfer to the L, with the transfer down to the AC on the right. Until recently this mezzanine was smaller in area, enclosed with NYCT support spaces up to the two stairs in the foreground, which were also modified. Two new stairs down to the Jamaica Line platforms are behind the camera. (October 19, 2019)

At the Broadway Junction station, the mezzanine above the Jamaica Line platforms. The view is looking towards the two new stairs down to the JZ platforms, which are in the background. Until recently, the area in the foreground was enclosed with NYCT support spaces, which has been reduced to the center area between the stairs. (October 19, 2019)

(To be continued)

THE GENESIS OF "DASHING DAN," PART SIX— ROUNDING OUT THE 'TEENS ON THE LIRR
by George Chiasson
(Continued from November, 2019 issue)

EVENTS ON THE ATLANTIC BRANCH

Ironically, the most significant changes to the Atlantic Division in the years after Penn Station's opening occurred not of its own volition but as a secondary result of the new terminal's final phase — that of creating the New York Connecting Railroad. This entity had been an inherent part of the overall New York Terminal plan since its inception in 1892, providing a means for the PRR to reach beyond its traditional service boundaries and into new territories throughout New England as well as Canada. Though its routing details were then still tentative, a tangible proposal for the line emerged in 1902 after which additional time was required to satisfactorily resolve extensive political wrangling with municipal authorities. The actual railway connection between Queens and the Bronx, though highly challenging in its own right, proved to be just a fraction of the widespread capital investment that was ultimately necessary to complete a workable whole with initial, associated construction started in the spring of 1904 on both the New York, New Haven & Hartford's Harlem River Branch and on the LIRR's Manhattan Beach Division. This set in motion more than a decade of right-of-way expansion and grade crossing elimination across the New York Connecting Railroad's entire route from southern Westchester County to the Brooklyn waterfront, including significant portions of the Bronx and Queens, all in support of its future role as a major freight main line.

With the new Hell Gate Bridge at last under actual construction, widening and improvement of the existing Manhattan Beach and Bay Ridge main line, by this time simply known as the "Manhattan Beach Division," commenced in 1913 from its projected union with the New York Connecting Railroad adjacent to the existing Fresh Pond Junction (that is, where the original New York & Manhattan Beach had been joined to the Montauk Division (former Southern) main line in 1883) to the waterfront facility at Bay Ridge itself. Included in this effort was the repositioning and concealment of the Bay Ridge line into a tunnel, where it had historically passed across a system of congested urban streets in East New York while negotiating its way through the cornucopia of BRT elevated and trolley lines which then graced Broadway and Fulton Street, as well as the LIRR's Atlantic Division and more surface car trackage on Liberty Avenue. Led in design by the "Brooklyn Grade Crossing Commission," a municipally-sponsored body that consisted of administrators from both the city (then under the leadership of Mayor Gaynor) and the Long Island Railroad (who in turn were responsible to senior executives of the parent Pennsylvania Railroad), the "Bay Ridge Improvements" encompassed 1) an expansion and depression of the line from New Lots Road (Avenue) to East New York Avenue, one block south of Atlantic Avenue; 2) construction of the new tunnel for it to pass underneath the Atlantic Division between East New York and Evergreen Avenues; and 3) the elevation of trackage above city streets from Evergreen Avenue to Fresh Pond Junction. The following year, a temporary two-track right-of-way was laid for the Manhattan Beach Division (more or less along Van Sinderen Avenue, just east of the original New York & Manhattan Beach surface alignment) from approximately Aberdeen Street in Bushwick to Liberty Avenue, being tucked against and even slightly beneath the BRT's Fulton Street (and Canarsie) elevated structure at its southerly extreme. For freight operations, a replacement double-track connection was installed from the temporary Bay Ridge alignment eastward to the 1903-elevated Atlantic Division, of necessity being moved around as the depression took shape through 1914.

When placed in service during November, 1915, the Manhattan Beach Division's tunnel consisted of one main track, though ultimately it was constructed to contain four, and had a new, high-platform station at its southerly mouth dubbed "Fulton Street," which, despite its name, was actually situated between East New York and Atlantic Avenues. There, passengers could exit via stairway or connect to the existing East New York station of the Atlantic Division. Finally, the East New York station of the Atlantic Division (as it had again been known since late 1905) was shifted several yards eastward to occupy what was actually the fourth position in its long history. Originally, the stop had been situated by Stone Avenue from 1843 to 1877; it was then relocated to the actual "Manhattan Beach Crossing" (intersection of the Brooklyn & Jamaica and New York & Manhattan Beach alignments at Vesta, later Van Sinderen Avenue) until 1902 when it was pushed farther west again toward Sackman Street to provide more stopping space and allow for the line's upward incline to the elevated structure between Williams and Shepherd Avenues that opened in 1903. After the Manhattan Beach Division depression was completed in November, 1915, the East New York station was once again moved back east to sit atop the new tunnel between East New York Avenue and Jardine Place. This was astride the original New York & Manhattan Beach alignment and almost in the same position it held between 1877 and 1902, but without the at-grade intersection of trackage, and it was there that a set of wooden high platforms were placed in service on April 30, 1920. At the same time, a wooden pedestrian overpass, situated between Havens Place and Van Sinderen Avenue was opened across the en-

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tirety of Atlantic Avenue (LIRR station included), which replaced an existing ground-level access way which crossed the tracks at grade. As it turned out, the new and actually quite-ideal locations for both passenger stations (East New York and "Fulton Street") eased the LIRR's relationship between they and the surrounding streetscape. Convenient access between the two railroad lines was formed by a walk from the stairway at the northwest corner of Van Sinderen and East New York Avenues that led from the underground Fulton Street stop, northeast one block to the brief entry stairs on either side of the tracks at the East New York and Atlantic Avenues grade crossing. Nevertheless, the continued presence of the surface-level Atlantic Division main line and its associated pair of grade crossings at either end of the Atlantic Division station presented a significant danger to pedestrians for some time to come.

After the crossing of the Atlantic and Manhattan Beach Divisions was physically eliminated, "NO" Interlocking (formerly Tower 63) was closed as the last bits of new construction in the area were completed by February 1, 1916. That June it was succeeded by "PR" Cabin, located at Pennsylvania Avenue where the Manhattan Beach Division lead joined the Atlantic Division mains on the elevated structure, which up to that time had been a hand-thrown connection. As for the former "Tower 72," which had overseen the southerly connection from the Bay Ridge line to the Atlantic Division since December, 1895, it was re-identified as "LM" in 1907, then lost to the reconstruction process during 1914 and not restored when the revised connection was put in place. At a later date another control point known as "KN Cabin" was situated at Pitkin Avenue, somewhat close to its former location, but this facility was entirely associated with functions of the New York Connecting Railroad. Of further import on the Atlantic Division in this time period, a new high-level boarding platform was squeezed between Tracks 1 and 2 at Flatbush Avenue by 1916, intended to aid in crowd relief as passengers at times moved in human waves between the same cramped stairs and passageways that connected the LIRR, IRT subway, and nearby streets. Elsewhere, an in-fill "Flag Stop" was added on November 15, 1917 along the "Old Southern" portion of the Atlantic Division at South Street, being located at ground level just around the turn from "JE" interlocking east of Jamaica station and across the abbreviated Liberty Avenue viaduct. In about 1918 the short-lived station stop at Clear Stream Road in Valley Stream was eliminated (actually on both the Atlantic and Montauk Divisions), while the equally fleeting "LA" tower installation next to Jamaica Race Track was closed and demolished in 1919, with the event siding and special platform then being accessed solely by hand until it died out completely some 40 years later.

Another peculiarity at Flatbush Avenue that ended in October, 1916 was use of the connection between Track 6 and the adjacent IRT subway, a matter which has engendered a fair bit of anxiety for rapid transit historians ever since. This single-track tie-in was an abbreviated version of that originally envisioned and designed into the LIRR terminal as a thrifty, convenient, and thoroughly compatible means of providing through service from the electrified reaches of Queens and Nassau Counties to New York City points (perhaps even the Bronx) via the Interborough Rapid Transit Company's municipal subway system. As explained previously, by the time the IRT's "Contract II" subway extension was later built from the Bowling Green station in Lower Manhattan to Atlantic Avenue, the concept of institutionalized, joint service between the LIRR and IRT had "come a cropper" of the parent Pennsylvania's overarching corporate goal of installing Penn Station in Midtown Manhattan and was, but for this single-track connection, omitted from its construction. Existence of the tie-in itself was a sign of August Belmont II's tremendous societal and entrepreneurial influence; he had long maintained a cherished position on the Long Island Railroad's Board of Directors. In addition, he is long- (and perhaps best-) remembered for being the first president of the Interborough Rapid Transit Company, which was a wholly owned subsidiary of a mother company known as the "Interborough-Metropolitan." To entertain mayors, governors, captains of industry, and anyone else whom he desired, Belmont would arrange for the passage of his private IRT motor car *Mineola* (with a "Composite" motor attached as a trailing buffer car) from its quarters at Lenox Shops onto the LIRR through the Flatbush Avenue connection as early as the summer of 1908, usually in association with a racing meet or other occasion at Belmont Park. This was no small task as a temporary platform "bridge" had to be removed which was otherwise needed to keep public access available to Tracks 6, 7, and 8 (as well as the Long Island Express platforms). It remains unknown exactly how often such excursions occurred, but Belmont's authority as a board member and well-placed associate of LIRR President Peters was evidently of sufficient substance to keep the connection in a functional and available state for many years.

As with other events of that era, its end was not so much instantaneous as epochal; Belmont had in fact vacated his standing as chief executive of the IRT in March, 1907, though he also retained a seat on that company's Board of Directors after its presidency was assumed by Edward P. Bryan. August II then embarked on a series of personal ventures, the most famous of which may have been construction of the original Cape Cod Canal, which was opened in 1914. Meanwhile, "E.P." Bryan was an experienced Midwesterner who had joined Belmont's company early on from the Louisville & Nashville Railroad, and was probably judged by his voluble demeanor as best to handle the turbulent functions of New York City's first subway. Such a potentially explosive disposition may have proved fatal, however, as Bryan died from the effects of a severe stroke while va-

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cationing in Puerto Rico during 1910 and was succeeded on short notice by Theodore P. Shonts, who had been heading the Interborough-Metropolitan Company and was also stationed as Vice President of the IRT. As such, it is highly likely that the *Mineola* passed through Flatbush Avenue during those years with more hosts aboard than just August Belmont, though any move the custom parlor car made, potentially bound for any number of destinations (it was sometimes towed to non-electrified territories under steam) and for any number of reasons, was probably arranged through his office. What did change after the end of Belmont Park's 1916 racing season that October was the United States' involvement in the Great War in Europe, a state formally declared upon Germany effective April 6, 1917. This was just before the racing venue's annual reopening and as a man animated by his times, August Belmont II volunteered his services to the armed forces forthwith at the ripened age of 64, was inducted into the U.S. Army, and thus relinquished his attentions to the sporting and business worlds for the duration. With Belmont then no longer in a position to shepherd use of the LIRR/IRT siding as a personal priority, it fell into a state of disuse and was ultimately retired sometime in 1919 to make way for the addition of stairs that connected with the Atlantic Avenue BRT (Brighton Line) subway station then being added. As part of the same initiative the terminal's short and oddly-configured Track 7 was done away with sometime in 1920. As for August II himself, by the time of the Armistice in November, 1918 and his subsequent discharge at 65 (almost 66), Mr. Belmont had attained a full commission in the U.S. Army Air Service, then re-settled into a life of retirement on Long Island at his estate near Belmont Lake, while keeping a separate Manhattan apartment, until his death from pneumonia in December, 1924 at the age of 71. Referenced to 2019, his family's former property was located at what is now Belmont Lake State Park, off the Southern State Parkway near its "Belmont Avenue" exit in North Babylon.

THE FLATBUSH AVENUE LIRR TERMINAL AND ITS SUBWAYS: DEVELOPMENTS TO 1920

A sequence of events during this era which bears explanation, though indirect in its involvement with the Long Island Railroad, was the exponential increase in connecting subway services made available at the Atlantic and Flatbush Avenues terminus, which for lack of a better description could truly have been designated a "multimodal transit hub" in its own time. There, commuter and subway trains were first conjoined by the May, 1908 opening of the IRT Company's Joralemon Street Tunnel, through which the "Bronx Express," a progenitor of today's ❷ train, roared to access the length of Manhattan en route to its namesake borough by way of Park Avenue South, 42nd Street, Broadway, and Lenox Avenue. Almost a year later, those trains between Atlantic Avenue and the Bronx were buttressed by the similar extension of "Broadway Express" (née ❶) service commencing on February 23, 1909.

As elements of the city's rapid transit system were upgraded under municipal guidance through the landmark "Dual Contracts" agreements of 1913, the allocation of such assets focused on passing through or near the Long Island Railroad's main Brooklyn terminus was emphasized commensurately by both of its main partakers, the Interborough and the Brooklyn Rapid Transit Company. The actual construction of a new subway that would stream southward beneath Fourth Avenue in Brooklyn, including a station a block away from the LIRR that later opened as Pacific Street, was initiated under the earlier "Tri-Borough Plan" of 1907 even before that initial IRT extension to Atlantic Avenue opened for service. It was employed several years later as part of the BRT's very first Dual Contracts "Subway" from the Municipal Building in Manhattan (Chambers and Centre Streets) to the "West End Terminal" at Coney Island via a totally-reconstituted Sea Beach Line on June 22, 1915. A pedestrian tunnel was included which connected from the Pacific Street subway station to both the sidewalk outside the LIRR terminal and the cross-passage beneath the four (then-gated) commuter platforms, with then-unpaid access also available along the way to the three IRT platforms above. The destination value (i.e. functionality) of Pacific Street was soon enhanced with the start of Sea Beach Express, Bay Ridge Local, and West End trains in 1916, while those patrons dependent on the Culver Line for best mobility would be excluded from this convenient place of connectivity for another decade and a half.

As might have been expected, virtually all of the newer subterranean construction adjoining the LIRR's foremost Brooklyn terminus was centered beneath the surface of Flatbush Avenue on behalf of both operators. This thoroughfare ventured southeastward away from the BRT's key Manhattan Bridge crossing to the burgeoning neighborhoods then re-making several of the former Kings County townships toward Coney Island. It also passed through Grand Army Plaza and intersected the recently-created Eastern Parkway, which would eventually hold the IRT's extended subway as it crossed developing areas of Crown Heights toward Brownsville.

In addition, the Interborough established a second subaqueous tunnel between Downtown Brooklyn and Lower Manhattan under Clark Street in Brooklyn Heights. This was designed to feed into the new Midtown trunk beneath Seventh Avenue, thereby abetting the overall creation of its new "H" system of lines serving both sides (East and West) of New York's main commercial district. At its outward end, the Clark Street "Tube" undulated southward beneath Fulton Street (now Cadman Plaza West) to intercept the (1908) Joralemon Street IRT tunnel next to Brooklyn Borough Hall. At that point, it was spliced into the pre-existing subway (where it physically occupied the outer tracks), resulting in an

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The Genesis of Dashing Dan

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alignment which directed its trains to and from the East and West Sides of Manhattan by design.

So it was that on August 1, 1918 both existing IRT "Express" services from Atlantic Avenue were replaced by a single route which traveled through Manhattan to 167th Street in the Bronx by way of the newly-created East Side (i.e. Lexington Avenue) trunk. This service has continued (and evolved) ever since, being better known in 2019 as the 4. The previously existing Broadway (née 1) and Bronx (née 2) services concurrently formed the bases of the equally new Seventh Avenue-Broadway (West Side) lines, which were then extended through the nascent Clark Street Tunnel from their temporary terminus at Wall & William Streets to Atlantic Avenue on April 15, 1919. From that time forward, suburban passengers transferring between the Long Island Railroad's Flatbush Avenue (now Atlantic) terminal and the IRT have enjoyed easy access to Downtown Brooklyn, all Manhattan destinations, and a variety of points in the Bronx, today utilizing MTA New York City Transit's 2, 3, 4, and 5 trains when doing so.

At that time, the IRT also instituted a single-track shuttle on Track 4 (northbound local) from Atlantic Avenue (the platform nearest to the LIRR) to the station at Grand Army Plaza, with an additional stop at Bergen Street en route. Such was how deeper access into Brooklyn via the IRT was modestly begun, but a year and half later (on August 23, 1920), alternating trains of the Broadway Express were at last extended all the way to their newly-completed termini. This was solely accomplished during commission (rush) hours by use of the express tracks as far as Franklin Avenue, then either of the divergent local routes beneath Eastern Parkway to Utica Avenue or under Nostrand Avenue to Flatbush. Through trains from Manhattan and the Bronx continued to terminate at Atlantic Avenue during off-peak times for the next few years, being overlapped by alternating shuttle services from Atlantic to Utica and Flatbush Avenues, which used the middle track in Nevins Street to relay. Rush hour service was then substantially modified when the local tracks (1 and 4) were fully activated between Atlantic and Franklin Avenues on October 10, at which time the Broadway Express assumed its full identity as a Brooklyn Local and the initial single-track shuttle terminated. To achieve full service to both outward terminals, each full-length through train was made or broken at the Eastern Parkway-Brooklyn Museum stop, with separate sections continuing from there to either Utica or Flatbush Avenues and back. An identical procedure was also put in effect during non-rush hours, with the complete trains being relayed in the middle siding at Nevins Street. As we shall learn, these services eventually matured in succeeding years as additional rolling stock was delivered and more IRT trains could be extended farther into Brooklyn, but it would be several more years before the range of currently-recognizable IRT routings south of Atlantic Avenue became an established norm.

The first BRT trains to reach Midtown after passing through Pacific Street and rumbling across the north tracks of the Manhattan Bridge, then using the new subway beneath Broadway, were full-time Sea Beach Expresses and rush hour West End Locals, both of which were operated as far as 14th Street-Union Square starting on September 5, 1917. Previously-existing, full-time West End service to Chambers Street then also became an "Express," joining trains from the Sea Beach Line on the middle irons north of 36th Street on the Fourth Avenue Line. The two Manhattan termini for West End service were then swapped on January 5. 1918, with the newly-rerouted West End and Sea Beach Express services concurrently extended to Times Square via the local tracks.

That status quo was singly transformed when the BRT's long-awaited tunnels extending beneath the East River and Montague and Willoughby Streets in Downtown Brooklyn, along with another under Flatbush Avenue from Fourth Avenue to Prospect Park, were concurrently opened on August 1, 1920. Instantly, this created a renowned cross-convergence (i.e. "bottleneck") on either side of the DeKalb Avenue station, wherein its currents of traffic to and from the Manhattan Bridge and Montague Street Tunnel have been subject to potential conflict with various movements to and from the Fourth Avenue Subway and the route under Flatbush Avenue. Starting on that date, Sea Beach and West End Expresses began using their namesake tracks on the Broadway Line under Manhattan as far as Times Square. Meanwhile, all Bay Ridge-Fourth Avenue Local trains were re-directed from the south tracks of the Manhattan Bridge to the Montague Street Tunnel and began making all the stops from DeKalb Avenue in Brooklyn to Queensboro Plaza, connecting there with IRT shuttle services to Corona and Astoria. In part they were complemented by re-routed West End Locals during rush hours, which followed the Montague Street Tunnel routing as far as the City Hall station, where they were relayed on the header tracks near the lower platforms at Canal Street.

The new Flatbush Avenue tunnel was actually one component of an extensive cut-and-cover project surrounding the LIRR terminal that jointly provided four tracks for the IRT, woven above and below at various points with the pair of BRT irons that continued all the way to the existing Brighton Line, originally the Brooklyn, Flatbush & Coney Island Railway. When service started in August of 1920, Brighton Locals were operated in a manner similar to that of today's Q train: all stops from Coney Island to DeKalb Avenue and then across the Manhattan Bridge to Canal Street before they assumed the express tracks on Broadway to Times Square. North of 34th Street, Brighton Local service was crossed to the local track and extended to Queensboro Plaza except for rush hours, when the increased volume of traffic forced it to be curtailed at 57th Street.

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Conversely, the first "subway" iteration of the Brighton Express was only available during rush hours, with service offered between Kings Highway and Times Square. These ran local through the Montague Street Tunnel and up the Broadway Line, where they were crossed to the express tracks north of 34th Street and relayed with Sea Beach and West End Expresses near the 49th Street station.

Contained in the new subway beneath Flatbush Avenue were four stations overall, two for IRT locals at Bergen Street and Grand Army Plaza; and two for BRT Brighton trains at Atlantic and Seventh Avenues. Again by design, that at Atlantic Avenue was specifically intended as a point of ready connectivity between the newly-expanded BRT and the Long Island Railroad, with a direct (but unpaid) passage between them provided at the terminal's western entry, beneath Hanson Place. It was also able to accommodate transfers to the location's other subway lines, in that time for paid BRT customers at Pacific Street, or for unpaid IRT patrons at its Atlantic Avenue complex. Though the actual line identities have changed many times through the decades, Long Island Rail Road users have enjoyed convenient, on-the-spot access from their commuter trains to BMT services ever since; those of the Fourth Avenue Subway via Pacific Street (currently the D, N, and R lines at Atlantic Avenue-Barclays Center); and to Brighton Local (now Q) and Express (now B) trains through the latter-day station at Atlantic Avenue. As for those aspiring patrons of the Culver Line that were left out in 1916, their trains were finally routed into the Fourth Avenue Subway in May, 1931 and passed the Flatbush Avenue LIRR terminal along the way, but such direct connectivity lasted only 23 years until Culver service was again diverted to the IND's Sixth Avenue Subway, as its D line, in late October of 1954.

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Around New York's Transit System

MTA Announces OMNY 3 Million Taps, Next Stations to be Upgraded

The Metropolitan Transportation Authority (MTA) announced that OMNY, the new contactless fare payment system, surpassed three million taps on November 5. The tremendous growth in use comes over the course of just six weeks, a week faster than the system's growth from one million to two million taps and four weeks faster than it took OMNY to reach one million taps.

Adoption rates of OMNY thus far have exceeded even the most optimistic of internal forecasts initially set by MTA officials prior to launch.

MTA officials also unveiled the next several stations where OMNY contactless readers will be available starting next month. Those stations include:

- Penn Station 1 2 3 A C E
- Whitehall St R W
- South Ferry 1
- 86 St-Bay Ridge R
- Sutphin Blvd-Archer Av-JFK E J Z
- St. George and Tompkinsville on the Staten Island Railway

Additionally, by year's end, OMNY will be available at several more stations on the 4 5 6 lines and the 1 2 3 lines in Manhattan and the Bronx. The arrival of OMNY at all of these locations marks the first time that OMNY will touch all five boroughs.

December is the beginning of a blitz phase of installations that will bring the popular new contactless fare payment system to all 472 stations as well as all MTA bus routes by the end of next year.

Line segments to be added in December include:

- 51 St to 125 St 4 5 6
- 138 St-Grand Concourse to Woodlawn 4
- Rector St to 59 St-Columbus Circle 1

The OMNY system has been built based on global payment standards, and to date has accepted successful taps from bank cards issued in over 112 countries, including the U.S. These countries span six of the world's seven continents, all except Antarctica.

"Our customers have adopted OMNY at impressive levels during the public pilot and I expect that to continue now that we're beginning to roll out to the rest of the system," said Al Putre, OMNY Program Executive. "We have a tremendous project team in place and Cubic has been a world-class partner in helping roll out this game-changing technology to our riders. We are working relentlessly to deliver this new fare payment system effectively through meticulous and continuous testing and monitoring. We are excited to start this next phase to bring all MTA customers the ease and convenience of tapping at the turnstile."

"Some of the next stations to receive this payment technology will allow Staten Island bus customers in particular who use OMNY to seamlessly utilize all available free transfer capabilities for Staten Island bus routes just as a MetroCard user might today", continued Mr. Putre. "The public pilot has been immensely successful and what we've learned over these last several months will inform our work ahead as we scale OMNY across the entire transit system.

8 Av N Becomes Partially Accessible

On November 4, the northbound (Manhattan-bound) platform of the 8 Av N station became ADA-accessible

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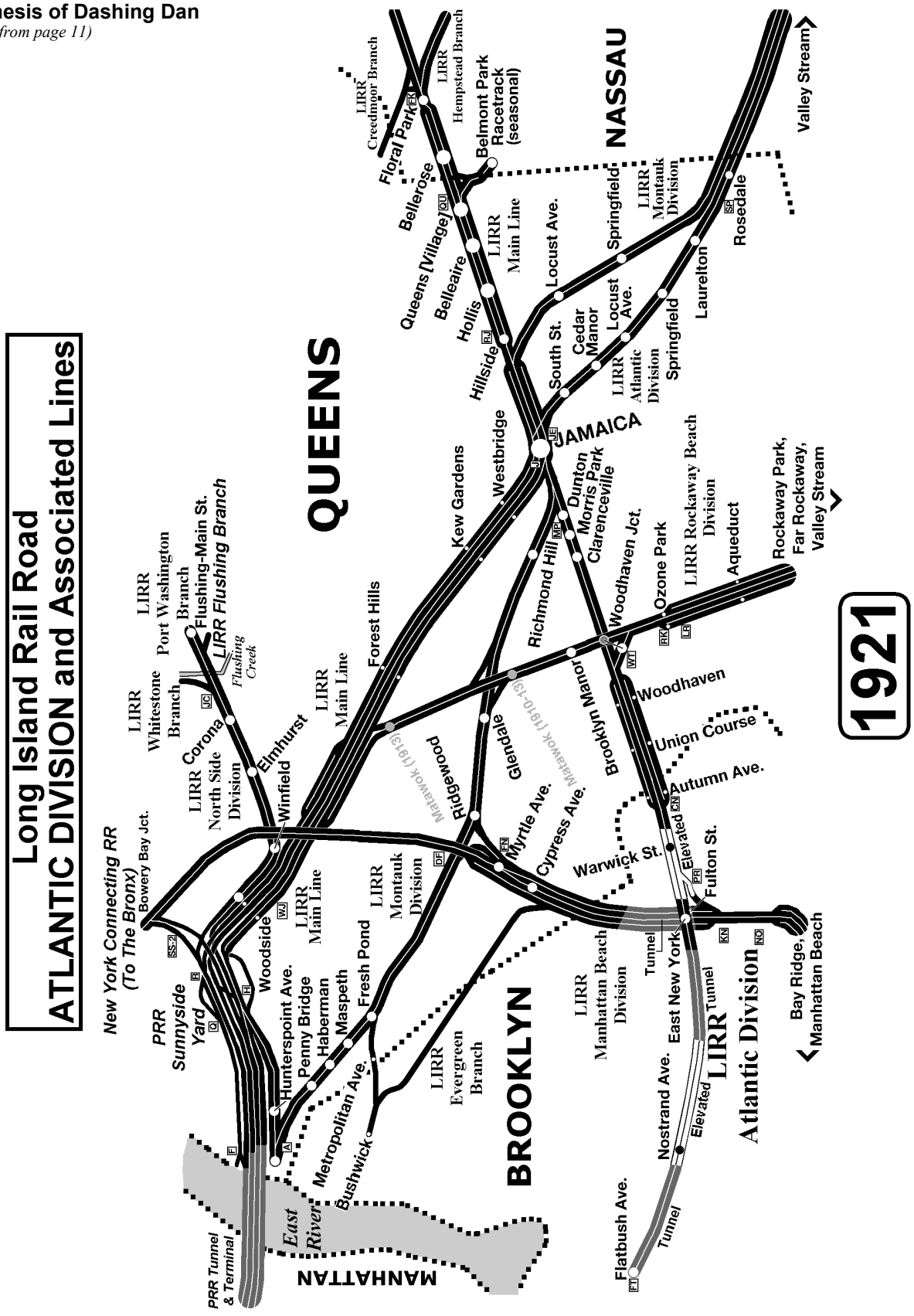

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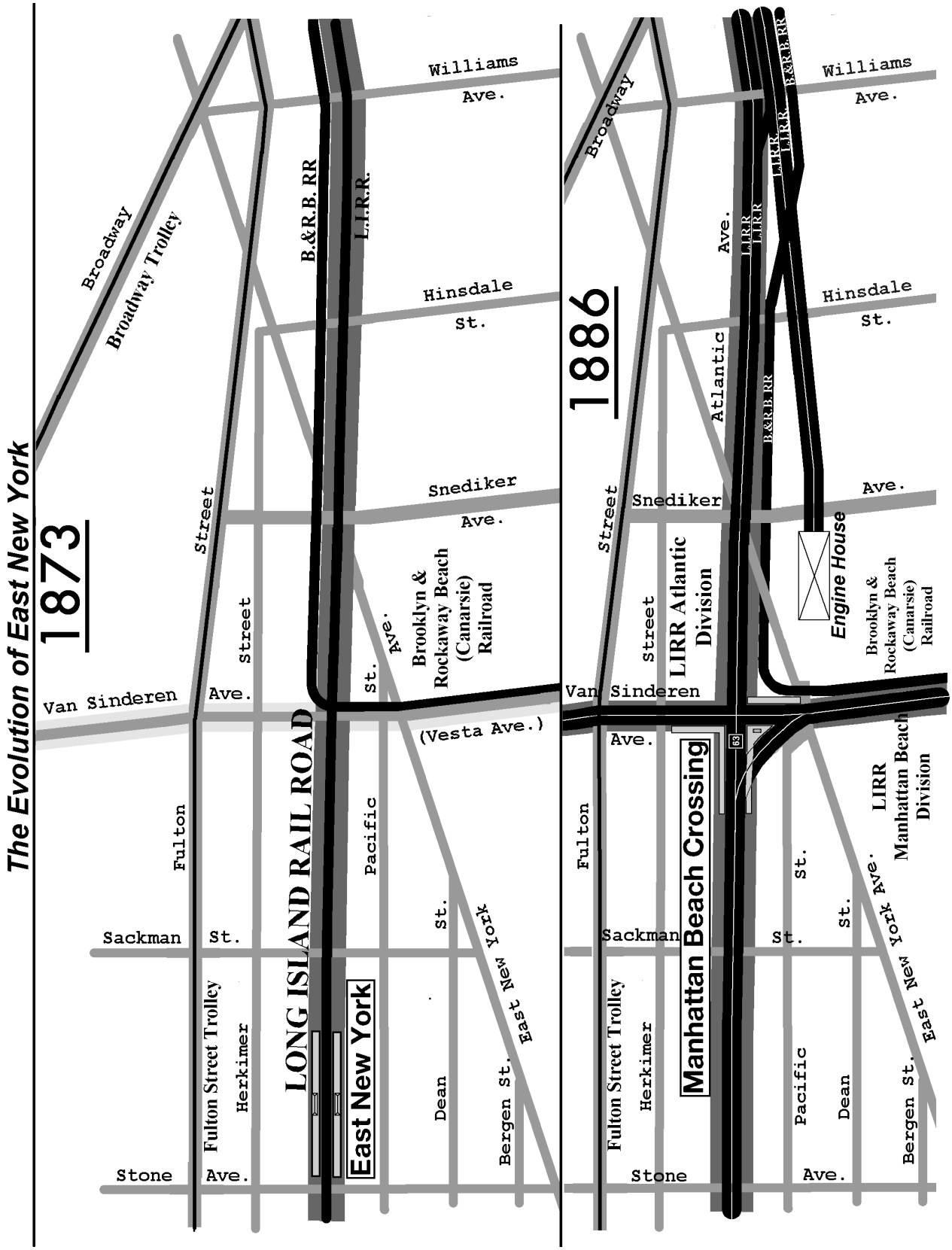

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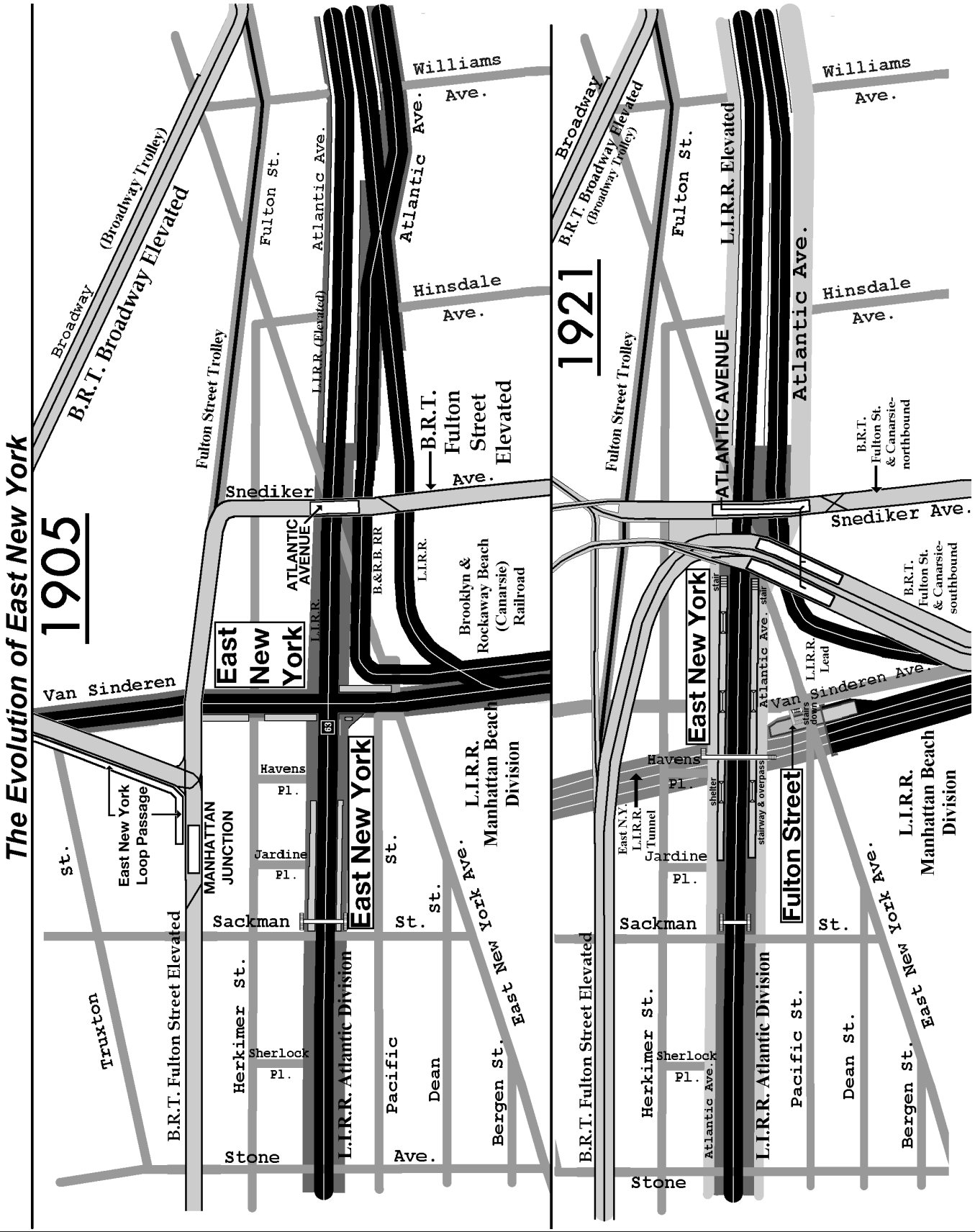

STATUS OF NORTH AMERICAN TRANSIT PROJECT OPENINGS SCHEDULED FOR 2019
by Randy Glucksman

Nine projects were completed this year. BART's extension to Berryessa is postponed to 2020 and the Amtrak extension to Miami International Airport has been removed since there has been no recent update.

DATE	AGENCY	CITY	TYPE	LINE	DETAILS	NOTES
January 10	Ft. Worth Transportation Authority	Ft. Worth, Texas	DMU	TEX Rail	Texas Railway Express T&P Station to DFW Terminal B 26.8 miles, 9 stations	
February 26	Massachusetts Bay Transportation Authority	Boston, Massachusetts	CR	Fairmount	Blue Hill Avenue (between Fairmount and Morton Street stations) opens	
April 25	Valley Metro Regional Public Transportation Authority	Phoenix, Arizona	LR	Valley Light Rail	50th Street (infill) station	
April 26	Denver RTD	Denver, Colorado	CR	G (Gold) Line	Union Station to Wheat Ridge-Ward 11.2 miles, 8 stations	From 2016
May 17	Denver RTD	Denver, Colorado	LR	E/F/R - Southeast Rail Extension	Lincoln to RidgeGate Parkway 2.3 miles, 3 stations	
May 18	Valley Metro Rail	Phoenix, Arizona	LR	Gilbert Road Extension (From Mesa Extension)	Mesa Drive to Gilbert Road 1.9 miles, 2 stations	
June 21	Region of Waterloo	Kitchener-Waterloo, Ontario	LR	K-W LRT (ION) Phase I	Fairview Park Mall to Conestoga Mall 11.8 miles, 22 stations	From 2017
September 14	OC Transpo (O-Train)	Ottawa, Ontario	LR	Confederation	Tunney's Pasture to Blair Road 7.75 miles, 13 stations	From 2018
October 21	Massachusetts Bay Transportation Authority	Foxborough, Massachusetts	CR	Providence	Service extension, Readville to Gillette Stadium (Foxborough) - 11-month pilot 13 miles, 1 station	
December ?	Bay Area Rapid Transit / Valley Transportation Authority	San Jose, California	HR	Berryessa Extension Phase I	Warm Springs to Berryessa/North San Jose 10 miles, 2 stations	From 2016

Legend:
CR: Commuter Rail HR: Heavy Rail
DMU: Diesel Multiple Unit

Around New York's Transit System

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when that elevator was placed into service.

"I'm very pleased that our Brooklyn customers heading to Manhattan and Queens now have a new point of accessibility at 8 Av," said MTA NYC Transit President Andy Byford. "My team is pushing ahead with our Fast Forward plan to bring on more accessibility projects as quickly as possible and look forward to returning to this station when we install the elevator for the southbound platform."

"This is another significant step toward making the subway system in Brooklyn more accessible," said Alex Elegudin, NYC Transit's Senior Advisor for Systemwide Accessibility. "Every additional accessibility project means that more customers can transfer between our accessible buses and the subway, giving this area even more transit alternatives."

The elevator at the 8 Av station opened for service to the northbound platform, which is the peak direction of service during the station's busiest times of the day, and another new elevator will be installed for access to the southbound platform next year. Once installed, the new elevators at the station will benefit more than 11,400 customers daily, particularly those with limited mobility or those with luggage or strollers who transfer between NYC Transit's fully accessible buses and the subway in this area.

Commuter and Transit Notes

No. 371

by Ronald Yee and Alexander Ivanoff

Amtrak

In a lawsuit dated November 7, HHP-8 lessors Philip Morris Capital Corporation and HNB Investment Corporation are going after Amtrak in New York federal court to recover $92.9 million for what they claim is a breach of contract for the retired HHP-8 electric locomotives used on the Northeast Corridor. Amtrak retired its HHP-8 fleet at the end of 2014, declining to rebuild them and instead purchasing an expanded fleet of Siemens-built ACS-64 electric locomotives.

The lawsuit claims that Amtrak is cannibalizing the HHP-8 fleet to maintain other pieces of equipment, with the two lessors accusing Amtrak of making misleading claims regarding the status of the HHP-8s along with alleging that Amtrak failed to perform required maintenance procedures in the years leading up to the claim that the HHP-8s were unreliable.

HHP-8 units purchased by MARC (Maryland Area Regional Commuter) are still in daily service on the Penn Line, after plans to replace them were dropped. At least two of the engines have been rebuilt and are not exhibiting problems; word is the remaining six will also be rebuilt. *(Editor's note by Alexander Ivanoff: I can't see how this will end well for Amtrak. You wouldn't cannibalize a car that you lease, right?)* (***Railway Age***, November 11)

Other Transit Systems

Atlanta, Georgia

MARTA and Stadler Railcar have finalized a $600 million contract for 254 cars (127 married pairs) with two options for 50 cars each. The trains will be Americans with Disabilities Act (ADA)-compliant and will have Wi-Fi, power sockets, LED lighting, and large luggage racks for services to Hartsfield-Jackson Atlanta International Airport. The MARTA and Stadler agreement was first mentioned in the May, 2019 ***Bulletin*** but at that point had not been finalized.

Stadler will assemble the vehicles at its plant in Salt Lake City and the first trains will enter service in 2023. This the largest single order for vehicles in Stadler's history, and its first major metro order in the United States. (***International Railway Journal***, November 15)

Seattle, Washington

Sound Transit will continue to develop a new naming convention for its expanding light rail network, but future maps will not include a "Red Line." Sound Transit CEO Peter Rogoff informed members of the System Expansion Committee the color name, which had been used to describe the University of Washington to Angle Lake section of the Link system, will no longer be used and the section will be referred to as the Link light rail. Community leaders have compared the line's name to the practice of redlining, which was the refusal of services, such as a home loan, to a person deemed a poor financial risk based on the area where the person lives. The practice was banned with the Fair Housing Act of 1968. (***Mass Transit*** Magazine, November 15)

San Francisco, California

Bay Area Rapid Transit (BART) has decommissioned the first of its 669 legacy rail cars after carrying customers for more than two million miles. The legacy cars are being replaced by the Fleet of the Future, built by Bombardier primarily at its Plattsburgh, New York facility.

On November 8, car 2528, the first to be retired, was lowered by a crane onto the back of a big-rig truck. Its final journey was 20 miles to Schnitzer Steel in Oakland.

Car 2528 could be considered a "shop queen", ending up being shopped numerous times since 2014. BART's shop forces have been using parts from 2528. (***Mass Transit*** Magazine, November 12)

San Bernardino, California

The San Bernardino County Transportation Authority has awarded Stadler a contract to supply a Flirt H2 hydrogen fuel cell-powered multiple-unit to enter passenger service in 2024, with an option for a further four units.

The Flirt H2 unit will have two cars with a total of 108 seats and "generous" standing room, plus a central power module holding the fuel cells and the hydrogen tanks. It will have a maximum speed of 79 mph.

It is to be deployed on the Redlands Passenger Rail Project, a nine-mile passenger service which is being developed on a former Santa Fe freight railway alignment between the University of Redlands and the Metrolink commuter rail station in San Bernardino.

In 2017 SBCTA ordered three diesel-electric Flirt units for the line, which is currently being built by Flatiron Construction Corporation. The Arrow-branded service is expected to launch in late 2021. (***Railway Gazette***, November 14)

London, England

Elizabeth Line project promoter Crossrail Ltd. has announced further delays and cost increases to the project.

Earlier this year Crossrail Ltd. announced that it had identified a six-month delivery window between October, 2020 and March, 2021. Its updated forecast is that the tunnels under central London will now open "as soon as practically possible in 2021." A more specific update is expected to be given in early 2020.

Dynamic testing of the Bombardier Transportation Class 345 electric multiple-units in the core tunnels has been underway since October, 2017 and is currently taking place four days a week using four EMUs. Trial running is expected to begin in 2020.

The project cost is now forecast to be higher than previously, owing to higher levels of risk contingency. It would exceed the financing package from the Depart-

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Commuter and Transit Notes

(Continued from page 16)

ment for Transport, the Greater London Authority, and Transport for London announced in December, 2018 by up to £650 million, and discussions are taking place between TfL and DfT about how to fund the shortfall.

The central section is expected to be "substantially complete" by the end of March, 2020, except for the Bond Street and Whitechapel stations. The Tottenham Court Road, Farringdon, and Custom House stations are due to be completed by the end of 2019, with fit-out of the central tunnels finished the following month. Signaling software development and the handover process still remain outstanding.

Victoria Dock Portal and Pudding Mill Lane Portal were transferred to Rail for London Infrastructure in September. The infrastructure manager is now responsible for maintaining these assets, with maintenance work carried out by a team based at Plumstead Depot. The next site to be handed over will be Mile End shaft, leaving 27 "major" handovers.

MTR Crossrail is due to start operating stopping services on the Great Western Main Line between Paddington and Reading from December 15 under the TfL Rail brand. Enhancement works at stations on this section are expected to be completed by the end of 2020, along with enhancements at Ilford and Romford on the Great Eastern Main Line on the other side of London. (***Metro Report International***, November 8)

Metro Report International photograph

Manchester, England

The first LRV has traversed Manchester Metrolink's Trafford Park extension in preparation for opening the £350 million line in the first half of 2020.

This follows the completion of track laying in early November by contractors M-Pact Thales on the 5.5-kilometer branch which runs from Pomona through Trafford Park, Europe's largest trading estate and home to more than 1,300 businesses employing over 35,000 people, to the Traffic Centre shopping mall.

Testing is expected to last several months before driver training can start. The line will be operated by KeolisAmey Metrolink, which runs the exiting 93-kilometer network using a fleet of Bombardier Flexity Swift M5000 LRVs.

"When the line opens next year, it will provide a major boost to regional regeneration and economic growth by improving access to the large amount of retail, leisure, business and employment opportunities that exist in Trafford Park," says Councilor Mark Aldred, chair of Greater Manchester Transport Committee. "It will also help towards reducing congestion and tackling air quality as we give people another, more environmentally-friendly alternative to the car." (***International Railway Journal***, November 12)

The first LRV traverses Manchester Metrolink's Trafford Park extension at walking speed.
International Railway Journal photograph

Elbląg, Poland

The first Moderus Beta tram that Modertrans is supplying to Elbląg has arrived in Łódź for testing on that city's network.

In 2017 Modertrans was the sole bidder in a tender to supply four trams to the northern Polish city. Deliveries of the single-section MF 09 AC vehicles are due in the first quarter of 2020. The partly low-floor metre-gauge trams are 14.5 meters long.

The Poznań-based manufacturer says that it is testing the first tram on the metre-gauge network in Łódź to see its performance in a range of conditions, and because Łódź is closer to the factory than Elbląg. (***Metro Report International***, November 6)

Metro Report International photograph

THREE ISLANDS OF ITALY
by Jack May
(Continued from November, 2019 issue)
(Photographs by the author)

FRIDAY, APRIL 15

Today was getaway day, but since our plane was not due to leave Malpensa until after 4 o'clock in the afternoon, we would try to devote a full morning to the varied attractions of Milan. Our last breakfast in Italy was excellent, and soon we checked out of our charming accommodations. To avoid an additional 8-block round trip to the B&B, we rolled our luggage to Centrale, and stowed it in the left luggage office. We wanted to make hay while the sun shined, and it certainly was out in full force. Clare headed for the Contemporary Art Museum, while I decided to head for the southern suburbs and work my way back toward downtown on various tram lines.

The tram network now consists of 18 urban lines covering a little over 100 route miles, plus one interurban line (which I last rode in 2014). Like most legacy tramways, the oldest lines run on streets, while new routes and extensions run on reserved track, both center- and side-of-the-road.

I rode subway Line 3 to Duomo and then transferred to a Route 3 "Jumbo" tram, which I rode to the end of the line at Gratosoglio, where Route 15 continues even further southward (see http://www.urbanrail.net/eu/it/mil/tram/milano-tram.htm). I took a few photos at various points out there, but oh-oh, clouds were moving in from the south. The forecast had been for blue skies, but as much as I tried I could not keep up with the fast-moving clouds, as you will see in the accompanying photos.

I rode the 15 in a Eurotram back to downtown (Missori), where I took a few more photos in the Duomo area. I then continued toward Centrale on a Route 1 Peter Witt to Repubblica, and finally rode a Sirietto on Route 9 to the railroad station, where I met Clare at 12:30 for the train to the airport. While not perfect conditions for photography, I got slides of almost all the types of cars currently operating on the urban system (missing the 4600/4700 six-axle double articulateds). I observed Peter Witts running on Routes 1, 5, 10, 33, and partly on the 9. Since I did not see Route 23, I do not know if they are still assigned to that service, but I suspect so. Route 10 is new since my last visit, and appears to have taken over parts of the former 29/30 circular route, so combined with the 9, a streetcar enthusiast can again traverse the old loop, which intersects most of Milan's other tram lines.

First, my Thursday view of a Peter Witt near our hotel.

Peter Witt 1531, operating on Route 1, is shown operating southbound along Via Giulio e Corrado Venini approaching Viale Brianza in a residential section of Milan, somewhat near Central Station. Except for two prototypes built in 1927 and 1928, Milan's fleet of 502 iconic Peter Witt cars were delivered from six different manufacturers between 1929 and 1930. Their number has been reduced drastically since the end of World War II, as newer models of trams started being introduced as Milan began to modernize its rolling stock. The advent of Milan's subway also reduced the need for streetcars. The roster of Peter Witts is now down to under 150 units, all having been renovated since 2010. Milan's loss, of course, has been San Francisco's gain, as eleven of these sturdy and dependable cars now operate on the Municipal Railway's F Line (one also occasionally runs in San Jose and two are available, if desired, in St. Louis). Originally equipped with trolley poles, over the years the Witts received pantographs and their color scheme was changed at least three times. The current livery is very close to the one used upon their delivery almost 90 years ago. They are not particularly fast, but do well in mixed street traffic.

Photos from Friday morning are on the following pages.

After bailing out our luggage, we boarded the 12:55 train to the airport, which left on time and arrived at Malpensa at 13:47 (46). It was a hop, skip, and jump to check-in and security. The loading of our Emirates double-deck A-380 was efficient and everybody was seated well ahead of our scheduled departure time. We pushed off at 16:08 (15) and were in the air by 16:24. The flight was uneventful. I would say the seats were more comfortable this time around, but maybe it was my imagination. We had dinner and a snack aboard the aircraft before landing. Our arrival at JFK was quite early, as we

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Three Islands of Italy

(Continued from page 18)

hit the ground at 18:09 and reached the gate at 18:18 (19:00). Getting through customs and immigration was a snap now that much of the procedure is automated.

We boarded our Jamaica-bound Airtrain vehicle at 19:13 and arrived at the joint Long Island Rail Road/ New York subway transfer station at 19:26. Buying our LIRR tickets to Penn Station from a machine was quick and easy, and we boarded the 19:33 train of M-7 cars, which ran non-stop, coming to a halt in the cavernous depot at 19:52 (50). We arrived well before the scheduled departure of NJ Transit's 20:35 train to Watchung Avenue, and debated getting slices of Pizza at Rose's, but decided that we had been sufficiently fed by Emirates. Instead I purchased our tickets and we went to the Amtrak/NJT waiting room in the main hall until the platform for our train was announced. We arrived at Watchung Avenue at 21:15 (15). I walked home, got the car, and then picked up Clare and the bags. At 21:30 we were greeted by two weeks of mail (and emails galore) and soon settled in to our normal routine.

It was a great trip, but we were also happy to come home.

This is the final installment of the trip report. I hope you have found it informative and enjoyable.

"Jumbo" streetcar 4955 is shown on the joint trackage of Routes 3 and 15 on Via dei Missaglia south of the city. Constructed between 1976 and 1978, the first 50 of the three-section 4900-series cars came from Fiat while the last 50 (including 4955) were built by Stanga. These eight-axle single-ended units are asymmetrical, which apparently allows them greater passenger capacity. The last high-floor cars built for the ATM, many are now air-conditioned and have been rebuilt with more rounded front and rear panels with attractive black striping on their orange exteriors (this one not).

Piazza Giuseppe Missori in Milan's city center, just south of the Duomo, is a hotbed of electric traction, being served by five busy tram lines. In the left view, Eurotram 7024 on the 15 is shown turning into the Piazza from Via Alberico Albricci after leaving its Piazza Fontana terminal behind the Duomo. The street to the left is Via Giuseppe Mazzini, which carries Routes 12, 16, 24, and 27. The right photo shows Sirio car 7101 leaving the Piazza and continuing onto Corso Italia. The 16 and 24 turn left onto the tracks leading off the right edge of the photo onto Corsso di Porta Romana. Both types of trams retain their green as-delivered liveries. Milan's Eurotrams were built by Adtranz starting in 1999 and were the ATM's first low-floor cars. The model, touted for its large expanse of glass and 100-percent stepless low floors, was pioneered as a breakthrough in modern design in Strasbourg in 1994 by ABB, before the Swedish-Swiss multinational was folded into Adtranz. After taking over Adtranz, Bombardier built Eurotrams for Porto in 2004, but soon withdrew the model from marketing in favor of its Flexity Outlook family of vehicles. Much of the glass in all 26 of these units is wrapped in advertising, contradicting the original purpose of the design. Milan's are the only single-ended versions of the Eurotram design. AnsaldoBreda delivered Milan's 58 Sirio units in 2002. This family of trams with its distinctive stylized ends, has also been built for Florence, Naples and Sassari in Italy, and has been exported to cities in other countries, including Athens in Greece, Samsun and Kayseri inTurkey and Zhuhai in China.

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Three Islands of Italy

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With modern trams providing service on the five routes traversing the Piazza Missori area, visits by Peter Witt cars are not the norm. However, a private sightseeing company, TraMilano, operates a hop-on/hop-off service with two chartered 1928-built Witts. 1821 and 1823 have been repainted into this distinctive color scheme, and operate every 90 minutes or so on a circular touristic route. Passage costs 15 euros, and riders are provided with earphones for sightseeing commentary in various languages, as well as an ATM day pass valid for journeys throughout the city.

Milan's AnsaldoBreda-built Sirios come in both large and small versions. 7604 shown here has five sections with 54 seats and is 87 feet long, while 7101 (photo above this one) has seven sections, seating 71 in its 116-foot length. There are 35 cars in the initial 7500-series, which were painted green when delivered in 2002. The 33 units in the 7600-series, which are slightly longer and have a door in the rear, began arriving in 2008. The location is along the public gardens on Viale Citta di Fiume, just east of Piazza della Republica.

Finally, a view at the loop on the west side of Milano Centrale, used by Route 9 cars. Two Siriettos are shown in their smart yellow-orange livery.