The Bulletin

Electric Railroaders' Association, Incorporated

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The Bulletin

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This Month's Cover Photo:
M3 9810 (Budd-GE, 11/1985) leads a short six-car PTC test train through Mineola on 11/28/2020.
Jeff Erlitz photograph

MYSTERY STREETCAR BY UNION SQUARE
by Henry Raudenbush

Some time ago, somebody sent me a picture of a streetcar in Manhattan. The picture was credited to the Museum of the City of New York.

The picture caption said the location was at Fourth and Madison Avenues – but this is impossible as these are parallel streets. Correctly, as lettered on the car, the car was on the Fourth & Madison Line, serving Fourth Avenue south of E. 42nd Street and Madison Avenue above.

I found the location with Google Street View. The tallest building, on the right, has been replaced by a later building, but the building to the left, with the bay windows, more or less in line with the platform of the car, is still there; 37 E. 17th Street, a Barnes & Noble store.

I did not pick up at first on how the car was propelled. There is no trolley – overhead was not permitted in Manhattan; there is no slot in the street for cable or conduit electric; and there is no harness for a horse. Just above the "o" in "Madison" on the dash, one man has his hand on what certainly looks like an electric controller. The gentlemen on the platform look like a group of New York & Harlem

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THE HISTORY CORNER

Peter Witt 8011 (J G Brill, 1923) is operating on the DeKalb Avenue Line and is on its way to the Sands Street terminal. It is seen here on DeKalb Avenue at Washington Avenue on 10/28/1947.
Max H. Hubacher (1900-1989) photo, New York Public Library

Mystery Streetcar by Union Square

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executives making an experimental trip.

Finally, I realized the answer was right there, lettered on the darker side panel – The car is on the "Julien Storage System" - a Battery car. The full story is on pages 31, 58 and 59 of the ERA book ***Pioneers of Electric Traction***. The New York & Harlem acquired ten battery cars (the one in the picture is #8) for the 4th & Madison Line about 1890. The Julien company went broke in a merger in 1891, and the New York cars stopped running at that time, returning the 4th & Madison Line back to horse cars, until conduit electrics came in the late 1890s.

The Fourth & Madison Line became bus route M1 in 1934. With one-way streets, the line now runs on Madison & Fifth Avenues.

This seems timely, as MABSTOA is introducing battery powered buses now – perhaps even on the M1 – 130 some years later!

THE BOARD OF DIRECTORS EXPRESSES ITS DEEPEST APPRECIATION FOR 7 MEMBER DONATIONS IN FEBRUARY, 2021

AMOUNT	DONOR(S)		
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THE GENESIS OF "DASHING DAN," PART SIX— ROUNDING OUT THE 'TEENS ON THE LIRR
by George Chiasson
(Continued from March, 2021 issue)

EVENTS ON THE LONG BEACH AND WEST HEMPSTEAD BRANCHES

Since our original visit to the Long Beach Branch a few years ago during the ongoing "Genesis of Dashing Dan" series, one amplification recently came to light about the opening of the new Long Beach terminal (i.e. ***The Bulletin***, February, 2014 issue). While previously published treatment of the subject was rather ambiguous within Volume 5 of the late Vincent Seyfried's ***Comprehensive History of the Long Island Rail Road***, another of his former contemporaries (Bob Emery) categorically disclosed that the contained terminus with which we are familiar in 2021 was thrown into public use at 4:00 on the early morning of "Independence Day," July 4, 1909. Long since having been rooted as a local architectural landmark, the Beaux-Arts style terminal depot with its distinctive Spanish-tiled roof has been a great compliment to the otherwise everyday LIRR terminal, being originally designed by Kenneth MacKenzie Murchison, Jr. who also conceived the new Jamaica Station that was then almost ready to start construction (and opened itself in 1913). As might be recalled the 1909 terminal installation was part of a vast reconstruction of the overall Long Beach community. This was part of an effort to achieve a degree of pedological instability that had not been previously available given the railroad's prior, natural, seasonal volatility.

In addition, further study of Bob Emery's notations reveals that some very interesting alterations were made to the Long Beach terminal during the 'teens era. These included the addition of seven Team Tracks northwest of the passenger platforms in 1915 which existed for the next three decades. A wye track was appended from Track 10 to the west which stub-ended right at Fulton Street before swinging back to the "throat" between 1918 and 1920. We can easily presume this gave the terminal's needed fluidity for steam-operated trains toting express shipments or even the modest freight tonnage that wandered out to Long Beach in the Branch's early years. It would also have eased the drafting of summertime excursion trains to operate to Long Beach, when desirable. By the start of the 1913 summer season, the LIRR installed "BG" Cabin at the important confluence of all tracks, to oversee the jigsaw of switchwork leading into its eight terminal tracks, plus Tracks 9 and 10, which actually behaved more like sidings than termini. Despite the overall building having been rebuilt extensively more than once in its long history, the station's original rivet-adorned canopy structures from its long-forgotten initiation (mostly) survive now in 2021 to protect the LIRR's generally unaware passengers from the heat of Summer and precipitation all year round as they march into and out of the current MU fleet, a century well past their fabrication.

An important correction of local geography was also discovered regarding the small extension of double track on the Long Beach Branch from Lynbrook to South Lynbrook, associated with its initial operation to Penn Station. In actuality, that first piece of second track was created just after the September 8, 1910 initiation of electrified Long Beach Branch service to and from Penn Station and/or Flatbush Avenue. It did so by joining the "new" parallel third and fourth tracks (i.e., Long Beach Branch Tracks 1 and 2) that were added along the southward edge of the original South Side Railroad survey eastward with a pre-existing runaround on the Long Beach Branch side of the original Lynbrook depot, which ended at approximately Centre Place (now Lincoln Place) and not Ocean Avenue, as originally informed in the April, 2015 ***Bulletin***. However, there was also a very short (150-foot) "hole" to this whole, where the two new tracks arriving from Valley Stream were merged to allow just enough space for the addition of "KN" Cabin next to the track as it crossed Atlantic Avenue. Ergo the following: "KN" was abolished and the former runaround (by that time more accurately a siding) also incorporated into the extension of double track from Centre Place (née Lincoln Place), Lynbrook to Ocean Avenue in East Rockaway in 1913. On May 1, 1915 a new station was opened under the name "Oceanside" after some perfunctory development had begun to sprout in the original tidal marshes, creeks and inlets between East Rockaway and Barnum Island. Actually, about a mile west of the village of that name which ultimately took shape, it was located off Lawson Avenue (now Boulevard) at (West) Windsor Parkway in what was then still a sparsely populated area, whose southward expansion would be muzzled by private property holdings for some time to come.

Despite the opening of Penn Station and expansion of service elsewhere, things had not changed much on the New York Bay Extension (West Hempstead Branch) by 1912, which still offered a relatively mild slate of steam-powered service from Long Island City to a series of sedate, ineffectual stations between the branch's end points at Valley Stream and Mineola. Minor improvements of the era included a new depot building at Hempstead Gardens (originally West Hempstead) during 1913, while the station at Norwood was renamed as Malverne that February in reflection of a locally popularized geographic change which eventually found that (unincorporated) village. Another called "Lakeside" that was carved out of what had been the municipality of Norwood before the start of World War I eventually gave rise to the latter-day station of Lakeview in 1921 which

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The Genesis of "Dashing Dan"

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thereafter was simply a new name for the pre-existing stop called Woodfield.

As described last month, the new in-fill station at Country Life Press was added to the West Hempstead Branch's lineup of stops on May 25, 1913, but a truly significant change of its fortune occurred in June when the LIRR assigned two of its "battery cars" to serve the line as a shuttle between Valley Stream and Mineola. These "Beach-Edison" cars (originally built by the Federal Storage Battery Company) were also deployed on the Bushwick Branch for a number of years, the first of them (Combine 1) having served in a similar "dinky" type of role between the Bushwick Terminal and Bushwick Junction (Fresh Pond) beginning in April, 1911. After a period of technical evaluation and in consideration of their potential savings in operating cost, the LIRR ordered four additional battery cars from the same company in 1912, by which time it had reorganized as the Railway Storage Battery Company, with offices in Manhattan and a manufacturing plant in Silver Lake, New Jersey (believed to be a part of Belleville today). As noted previously, these were internally powered electric vehicles with a general appearance similar to miniature trolleys or express motors that sported a single truck with two widely spaced axles. They were capable of frequent, self-propelled operation on trips of short to medium duration and used cable-tethered "recharging stations" at each end of the line between trips. There were two types of cars as ordered by the Long Island Rail Road over and above "pilot" Combine 1, including Combine 2 and Coaches 3-5. It would be two more years before all five were on hand and there was some shuffling during the delivery phase as a result, with the railroad anxious to economize certain aspects of its operation in the face of continued financial hazard.

So it was that car 1, in company with what may have been Beach-Edison's own demonstrator (numbered as "1A"), began shuttling between Valley Stream and Mineola in June, 1913, while new Coach 3, soon joined by Coach 5, took its place on the Bushwick Branch. This service was largely an alternative to the through trains that continued to operate between Long Island City and Mineola via Valley Stream (at least in rush hours), though it is uncertain how much through service to Queens remained after this alteration went into effect. A recharging station was set up for the battery cars inside a new shed adjacent to the station at Valley Stream (being protected from the weather), while at the Mineola end, they relayed at a short platform on the west leg of the wye as had the existing trains (though their motive power had been turned on the wye since the beginning in 1893). The battery cars were sometimes operated as single units during off-peak hours and made each of the same stops as regular "New York Bay Extension" trains (Valley Stream, Malverne, Woodfield, Hempstead Gardens and Hempstead Crossing), with a diminutive new way station added on the north side of the Hempstead Avenue grade crossing, designated as "West Hempstead") that was not initially used by trains to and from Long Island City. By sometime in 1914, battery car couplet 2 (Combine) and 4 (Coach) was assigned to the "New York Bay" shuttle, with 1 having taken up its well-established partnership with car 3 on the Bushwick Branch. After its initial period on the Bushwick Branch, coach 5 was also reassigned to a similar short line that was established at the outer end of the Manhattan Beach Branch in August of 1913. Meanwhile the mysterious car "1A" had departed the scene, its true nature never to be revealed with any certainty.

Battery car 4 is on the west leg of the wye at Mineola in September, 1926. The third rails are newly installed and will be placed into service the following month. With that, the battery cars will no longer be used on the branch. Substation #8 is in the background, along with MT (now Nassau) Tower to the right of it. Both of those structures are still standing today, but will be demolished very soon.
Photographer unknown, Jeff Erlitz collection

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The Genesis of "Dashing Dan"

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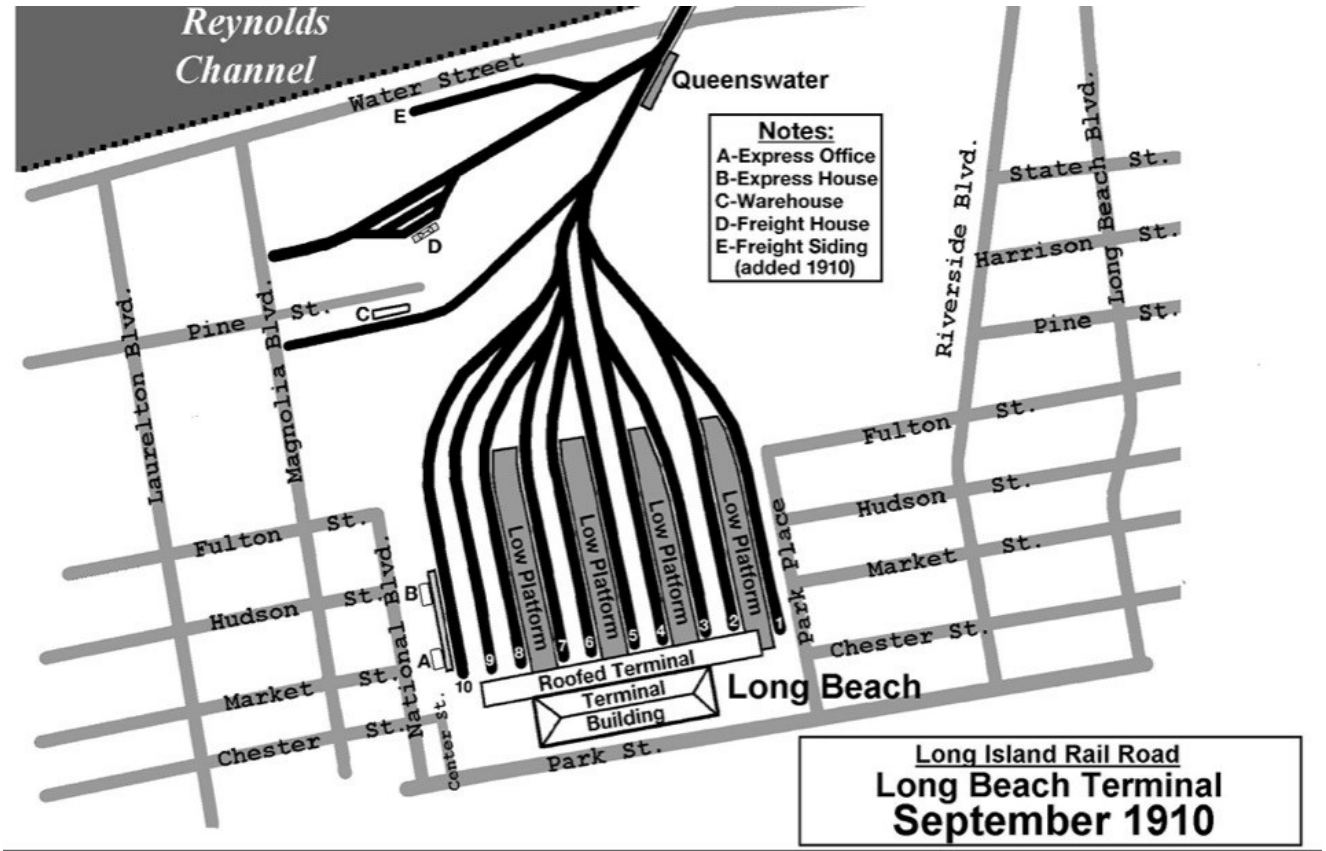

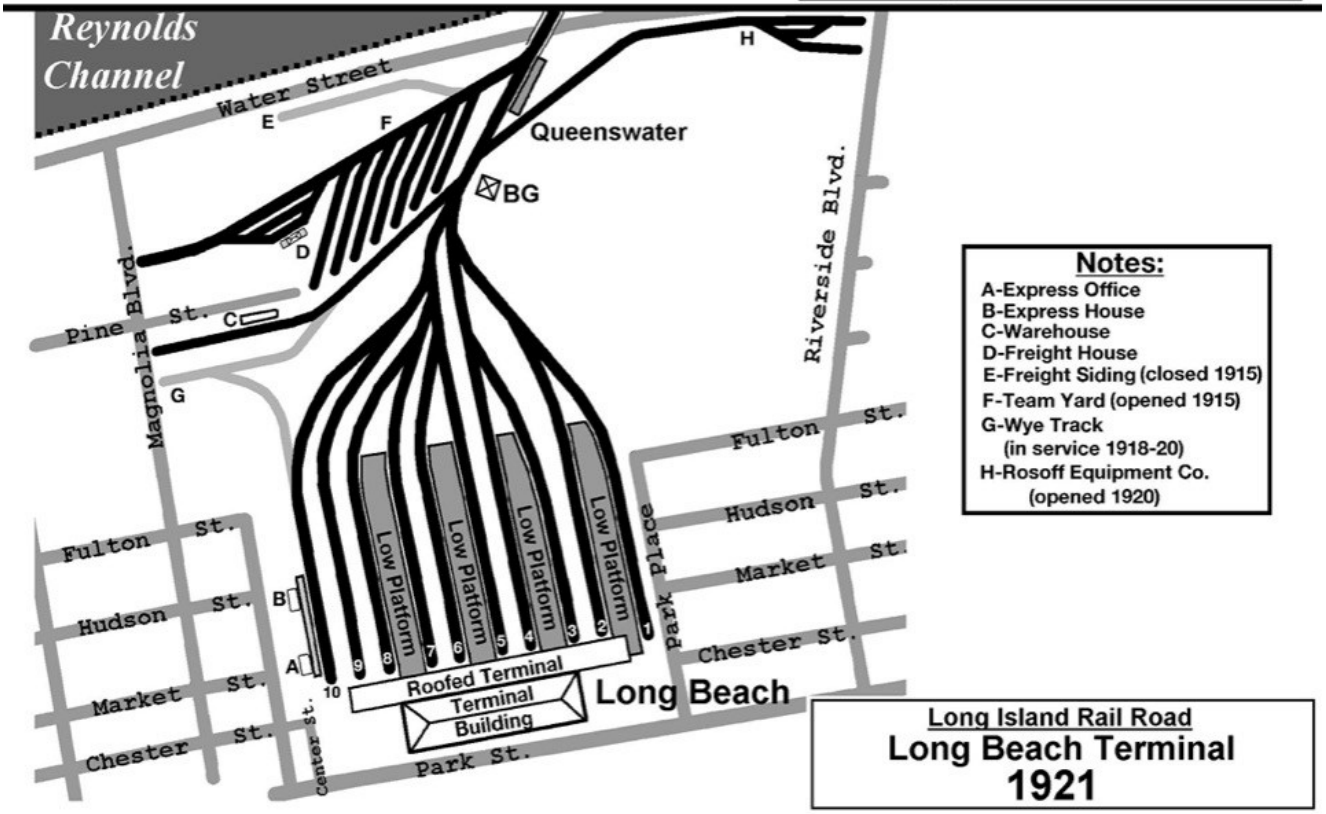

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The Genesis of "Dashing Dan"

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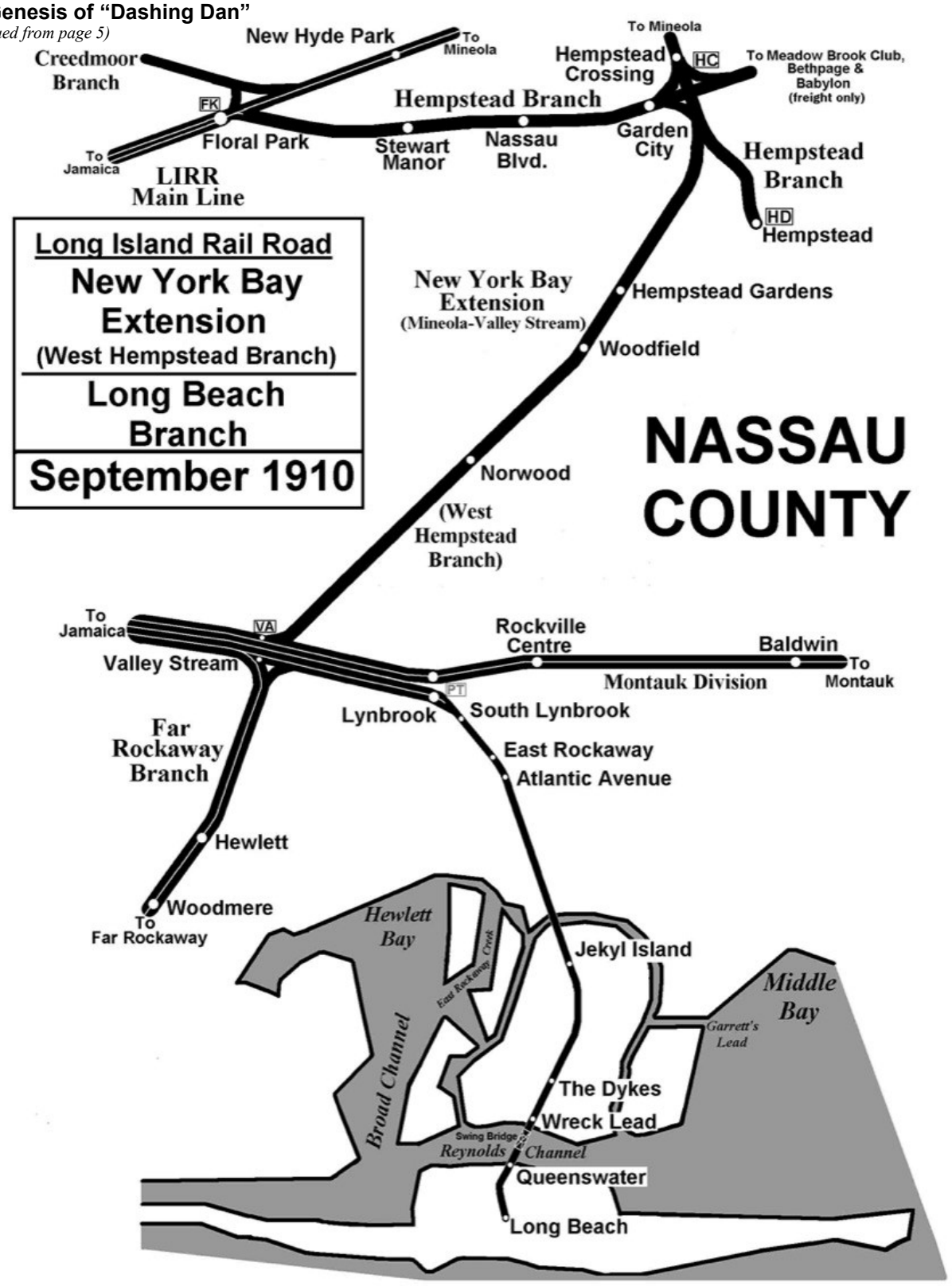

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The Genesis of "Dashing Dan"

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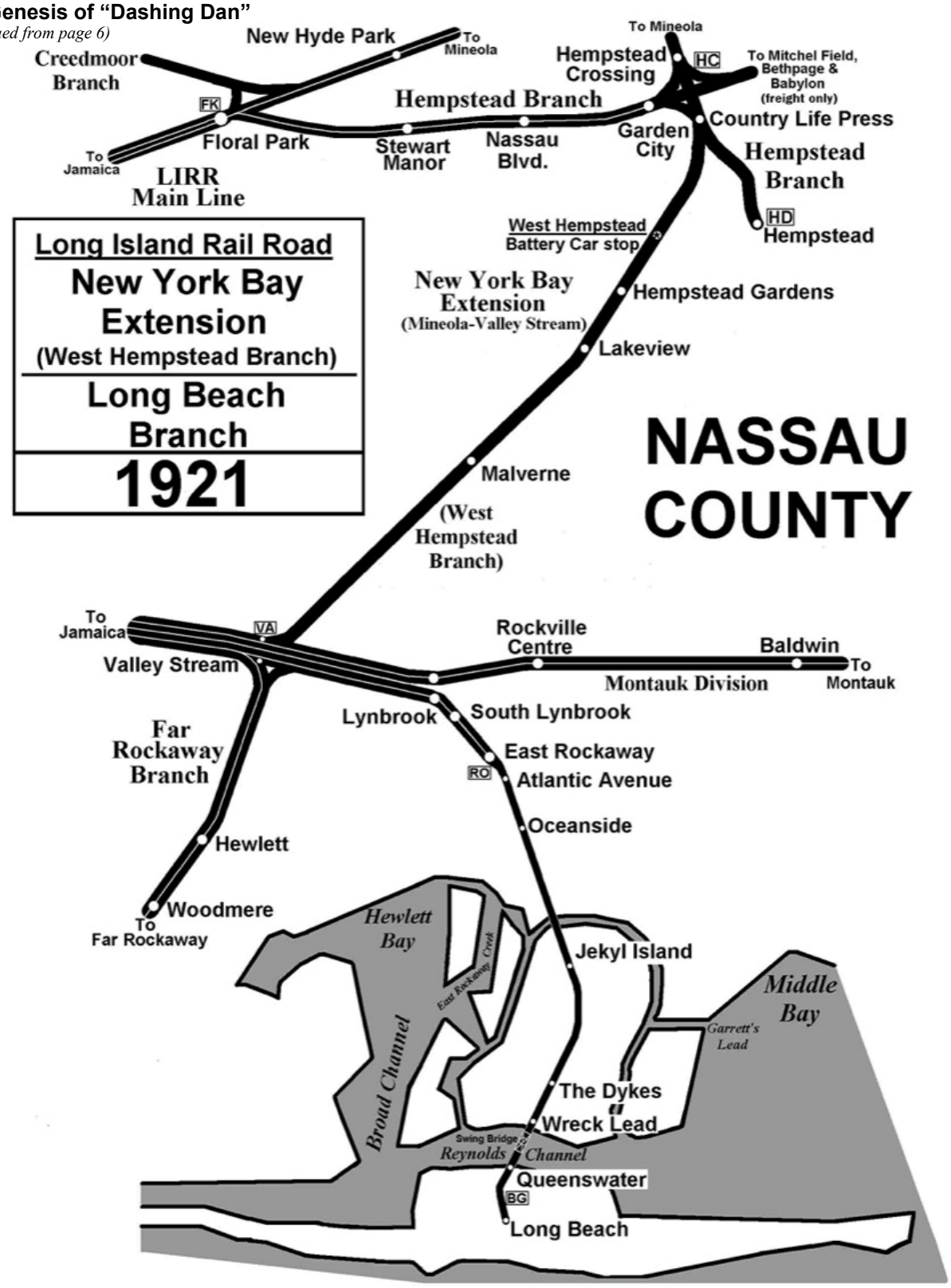

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Rail News in Review

New York Metropolitan Area

MTA New York City Transit

(Editor's Note: The following was missing from the January **Bulletin**.*)* Back on December 16 of last year, the MTA announced an accessibility project including eight stations throughout the five boroughs that will result in 17 new elevators. This project is being funded by federal grant money already received by the MTA.

The aggressive pace of work is a hallmark of the new MTA Construction & Development (C&D) organization, finding new ways of doing business to drive down costs and perform work more quickly. The winning proposal, which came in at a cost below the MTA's budget estimates, includes a separate 15-year maintenance agreement, making it a design-build-maintain (DBM) project.

The MTA's $54.8 billion 2020-24 Capital Plan and its 2015-19 Capital Plan amendment included funding for 70 ADA projects in the subway system and the Staten Island Railway. But most of the capital plan is on-hold due to the COVID-19 crisis. The only way to ensure that this initiative — the largest commitment to new ADA stations in history — moves forward is for the federal government to deliver significant funding to the MTA as part of any future COVID relief package. However, the eight ADA elevator projects awarded in this procurement were able to move forward because of existing federal grant money.

The following stations are included in this project:

7 Avenue (F)(G) - 3 elevators

Grand Street (L) - 2 elevators

Metropolitan Avenue-Lorimer Street (G)(L) - 5 elevators, 3 at Lorimer and 2 at Metropolitan

E. 149 Street (6) - 2 elevators

Dyckman Street (1) - 1 elevator (Dyckman Street is already accessible in the southbound direction. This project will add an elevator on the northbound side)

B. 67 Street (A) - 2 elevators

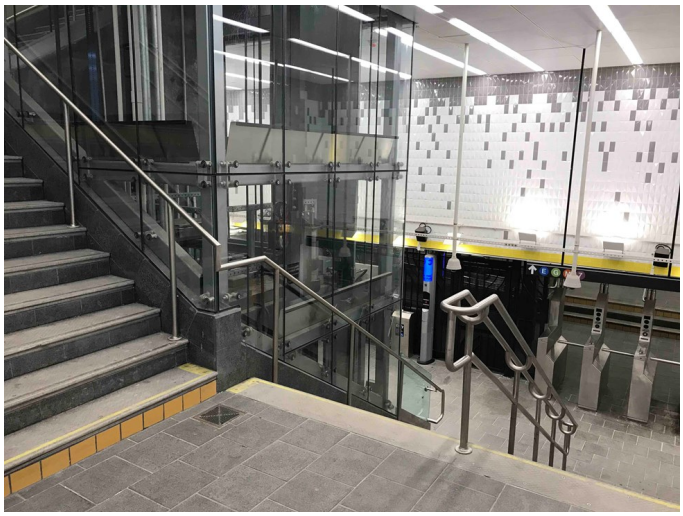
New Dorp (SIR) - 2 elevators

(MTA press release, December 16)

On March 2, the Manhattan-bound (southbound) side of the Court Square-23 Street (E)(M) subway station in Long Island City, Queens, was made accessible in accordance with the Americans with Disabilities Act (ADA), with plans to make the Queens-bound (northbound) side accessible as part of the 2020-24 MTA Capital Program. The recently completed accessible entrance is adjacent to and built by the developers of the new Skyline Tower residential skyscraper at 23-15 44th Drive. The upgrades include a new elevator, ramp, gate for wheelchair access and additional low turnstiles to make the platform served by Manhattan-bound (E) and (M) trains fully accessible and to improve passenger flow.

The Manhattan-bound accessibility project was completed through the MTA's Transit-Oriented Development Program and the MTA External Partner Program, in which the MTA works with developers, architects and contractors to enhance the MTA system when property is being developed near MTA facilities. The improvements were built and financed by developers United Construction & Development Group, FSA Capital and Risland US Holdings LLC.

View looking northwest from the north sidewalk of 44th Drive to the elevator and staircase down to the Manhattan (south)-bound (E)(M) platform. This photo and the two that follow were taken March 3.
Subutay Musluoglu photograph



View southeast of the new accessible fare control area from the middle of the street stair. The fare control area is three steps below the level of the platform so there is a ramp to it from the fare control area.
Subutay Musluoglu photograph

The Court Square complex is composed of two other stations in addition to the Court Square-23 Street (E)(M)

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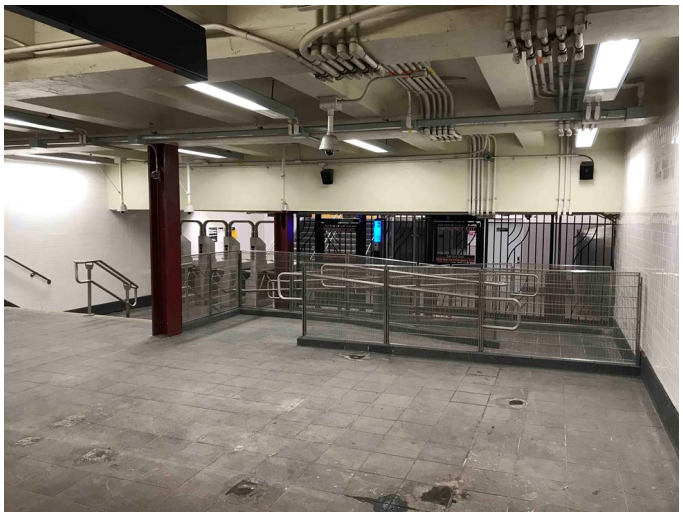
station: one serving the 7 line which is fully accessible, and one serving the G line. In 2011, the station complex expanded with a transfer linking all the lines. The transfer area has two escalators, three elevators that are compliant with the Americans with Disabilities Act, a transfer stairway between the G and 7 mezzanines and a stairway connecting the Court Square 7 station's mezzanine with the northeast corner of Jackson Avenue and 23rd Street. A passageway connects the G line with the E M lines. A future developer-built elevator will connect the Manhattan-bound E M platform to the rest of the station complex. (MTA press release, March 2)



View north from the platform to the fare control area. Note the ramp on the right and the small, three-step stair on the left. We are guessing that this was done to avoid the large utility structure that runs across the fare array in the ceiling.
Subutay Musluoglu photograph

On March 7 it was announced that the OMNY fare payment system has now recorded more than 50 million taps. There are currently more than 15,000 OMNY readers at all 472 subway stations, on all 5,800 buses and at Staten Island Railway stations. Passengers can use OMNY to pay their fares by a simple tap of their contactless credit card or mobile device.

On an average weekday, the MTA receives 307,000 OMNY taps. Seventy-nine percent of those are at subway stations and the other 21% are on buses. The highest one-day tap total since OMNY was launched in May, 2019 came on March 5, with 339,000 taps.

OMNY currently accounts for nearly 10% of all taps in the system, 12.4% in the subway system and 4.5% on buses. A year ago, that figure was at over 4% and the figure is expected to grow throughout 2021.

Beginning this year, customers will be able to purchase the OMNY card — a contactless fare card — at retail locations throughout the region. OMNY will also begin expanding fare options in 2021 with the introduction of reduced fares for senior customers and riders with disabilities and the integration with paratransit services. The card will eventually be available at vending machines in stations as well.

Improvements to the digital experience are also set to debut this year, including a refresh of the OMNY website and the launch of the OMNY mobile app. These efforts will give customers additional flexibility and choice in where, when and how their fare is paid. (MTA press release, March 7)

More subway trips were recorded Friday, March 12 than on any other single day since the start of the COVID-19 pandemic last March. The 1,912,774 paid trips on that day surpassed the previous post-pandemic high of 1,881,024 trips on Thursday, March 11. The increase in ridership comes on the heels of news that the recently passed federal stimulus package includes some $6 billion in MTA funding. Approximately 1.13 million additional daily trips were recorded on NYCT buses, taking the total number of daily trips systemwide to just under three million for the day.

Prior to the pandemic, average weekday ridership totals routinely exceeded five million in the subway system. That figure fell by more than 90 percent to a low of roughly 300,000 daily trips last April as the number of COVID-19 cases reached their apex in the New York City area. Daily bus trips at that time were down close to 75 percent from pre-pandemic figures and fell to approximately 600,000. Despite the immense reduction in daily ridership, service was continued to be provided for the frontline healthcare professionals and other essential workers who needed to get to work during some of the bleakest days in New York City history. (MTA press release, March 15)

MTA Long Island Rail Road

New timetables were issued again effective Monday, March 8. This schedule change was not issued under the railroad's "normal" General Order process but rather as an operating "service plan." Similar to the railroad's Essential Service Plan from March 27, 2020, it is the weekend timetable operating seven days a week with some added "peak period" trains. Two such examples are the single dual-mode round trips from Penn Station to Port Jefferson and Oyster Bay.

The most unusual aspect of this timetable change was the introduction of four MU trips in each peak period between Jamaica and Long Island City with one intermediate stop at Hunterspoint Avenue. This was the first time trains like this have operated since at least June of 1949.

After the first morning of operation, there were so many complaints of overcrowded peak period trains, the railroad started adding additional trips. The first such additions were on the afternoon of that first day of operation. Several other trips were added in the following few days.

The following day, March 9, it was announced that the previous timetable would be restored on March 29.

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M9 awaits departure at LIC on shuttle 7856 to Jamaica. Track 7 was only electrified a few years ago as part of a Sandy resiliency project.
Sunny Zheng photograph

C3 5021 (Kawasaki Rail Car, 12/1998) is leading, with DM30AC 512 (EMD, 8/1999, s/n 956623-13) pushing from behind, Train #553 from Oyster Bay to Jamaica in this view east from the platform at the Merillon Avenue station on March 4. The new Nassau 1 Interlocking, with its Reduced Aspect signals, can be seen towards the rear of the train.
Jeff Erlitz photograph

On Sunday, February 28, the railroad relocated the interlocking known as Nassau 1 from west of the Merillon Avenue station to east of it, roughly 4,400 feet east of its former location. This was part of the Main Line Third Track Project and is the first of the new interlockings associated with this project. As you may notice in the above photo, this new interlocking is the first one with the "Reduced Aspect" signals that were introduced on the Main Line Second Track Project between Farmingdale and Ronkonkoma a couple of years ago.

In addition to the new interlocking, all of the new signal track circuits were placed into service between Queens Interlocking, in Queens Village, and Nassau 2 Interlocking in Mineola. With that, both Main Line tracks were renumbered between Queens and Divide 1 Interlocking, about a mile and a half west of Hicksville station. Westbound Track 1 became Track 3 and eastbound Track 2 (what be the middle track in the future) became Track 1. All of the signage at the stations from Floral Park to Westbury had to updated to reflect this change.

On Monday, March 8, one of the contractors working on the Main Line Third Track Project began the demolition of historic Substation 8 in Mineola. Built in 1910,

Looking north at the ongoing demolition of former Substation 8 in Mineola on Tuesday, March 9. For the first time since it was built in 1923, Nassau Tower, between the substation and the tracks, is now plainly visible from the south.
Jeff Erlitz photograph

this substation had not actively been supplying power to the third rails since about the 1970s. Efforts had been made to save the building and repurpose it to house, possibly, a museum but nothing came of that. The substation was standing in the area where a new Kiss 'n' Ride area is supposed to be constructed.

On the morning of Tuesday, March 9, during demolition, a piece of the north wall of the substation fell in the wrong direction and hit the southwest corner of Nassau Tower, removing a small piece of the roof and some of the gutters along the edge of the roof and blocking the entrance to the tower. There were some railroad employees in the tower at the time but fortunately no one was injured. Those employees had to escape the building through a window.

Nassau Tower, also the subject of some unsuccessful preservation efforts, is literally standing in the path of the future third track and will be demolished after it is abated, probably in early April.

On Saturday, March 13, during an all-day shut-down of the Main Line between Floral Park and Hicksville, the new pedestrian overpass at the east end of Mineola station was hoisted into place. This overpass will be accessible, with elevators on both sides of the right of way. Sadly, during this work, the crane doing the lift came into contact with one of the overhead high-tension power lines which created a short-circuit and a contractor working on the overpass was electrocuted and seriously injured.

As a result, all contractor work on the Main Line Third Track Project was halted pending a safety investigation.

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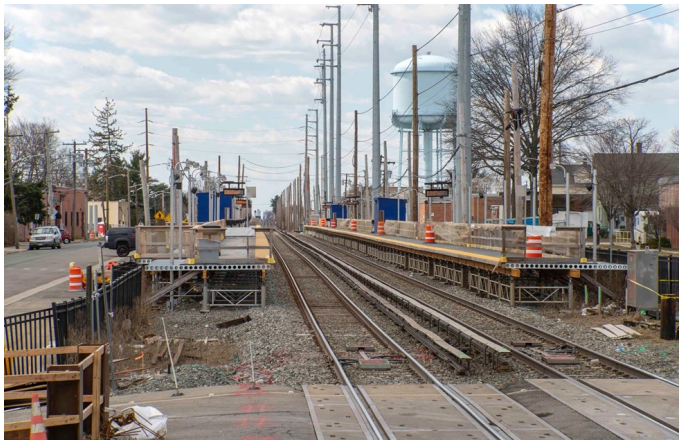
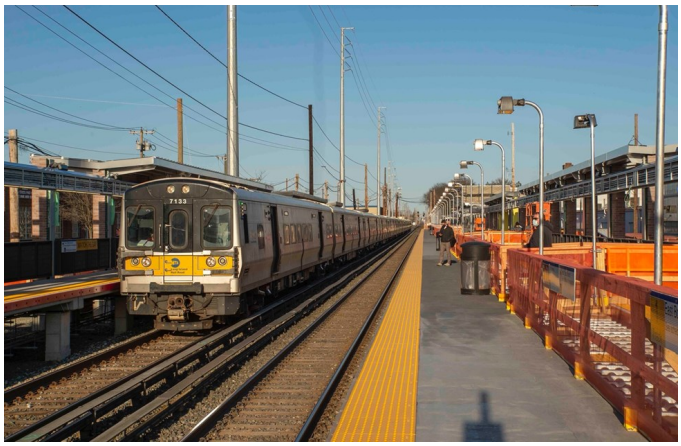


Sunday, March 14 was the last day of service for the temporary platforms at the New Hyde Park station on the LIRR's Main Line. This view looking west across the former S. 12th Street grade crossing was taken from the new temporary eastbound platform. Photo taken on March 14.
Jeff Erlitz photograph



Monday, March 15, the day of this photo, was the first day of service for the new permanent platforms at New Hyde Park. This view looking east is on the new temporary eastbound platform built over a section of new third track. M7 7133 (Bombardier Transportation, 6/2003) is seen here leading Train #7721 from Huntington to Penn Station and is about to make its station stop.
Jeff Erlitz photograph

An independent safety consultant was hired on March 16 following an ironworker being electrocuted at the Mineola station site. According to the Metropolitan Transportation Authority, there has been a rash of incidents on the third track expansion project recently. Work has been suspended.

The latest mishap happened while a contractor was installing a prefabricated pedestrian bridge at the Mineola station. After the job was done the contractor decided to move another piece of steel with a crane. During the process the crane came in contact with energized overhead cables, electrocuting the worker, who was touching the piece of steel.

MTA Capital Construction says some protocols and procedures were not properly observed during the move. Additionally, the work did not have the required safety work plan and involved equipment that was not supposed to be used.

LIRR union leaders have been complaining about safety violations for weeks, most of them committed by outside contractors. The quest for finishing the project on time has led to builders cutting corners. (***Railway Track & Structures***, March 18)

Two days later, on Monday, March 15, operations at the New Hyde Park station were relocated from the temporary platforms west of the former S. 12th Street crossing to the new permanent platforms located between S. 12th Street and New Hyde Park Road. For the time being, these new platforms are only ten car lengths long. This is because the S. 12th Street grade crossing is in the way of the eventual 12-car lengths. Also, work is underway constructing a new, accessible pedestrian underpass at S. 12th Street. That grade crossing was permanently closed back on October 26, 2020.

The new eastbound platform, like at the Carle Place station, is also temporary and is built over a ten-car-long section of newly installed third track.

MTA Metro-North Railroad

With the northbound platform at the Williams Bridge station undergoing repairs, Bx41 buses will now cross-honor Metro-North tickets for Williams Bridge passengers traveling between the Williams Bridge and Botanical Garden stations. The Bx41 bus is another way for passengers to access northbound service while work is being completed on Track 3, effective Thursday, February 25. Using the bus service will enable passengers to have more train schedule options at the Botanical Garden station. As an alternative, passengers can now use their Metro-North ticket to board a Bx41 bus south to the Botanical Garden station, where they can access northbound service. Passengers who wish to travel from Botanical Garden to Williams Bridge can board a Bx41 and travel north to the Williams Bridge station. (Metro-North service alert, February 26)

NJ Transit

Many have lamented the loss of New York City's iconic steel and stone Penn Station. The neoclassical edifice was designed by the pre-eminent firm of McKim, Mead & White and built in 1910 by the Pennsylvania Railroad, the largest corporation in the world at its peak. Felled by the wrecking ball in 1963, the station's soulless subterranean replacement is much unloved.

But there is another Penn Station, just a 16-minute train trip away, in New Jersey. The Newark Penn Station was also built by the Pennsylvania Railroad, and also designed by McKim, Mead & White. But unlike its departed cousin across the Hudson River, it is still in use today, and one of the busiest transit hubs in the country. Opened during the Great Depression, Newark's station is long overdue for refurbishment. But help is on the way. A recently announced plan to invest millions of dollars in the aging station is expected not only to improve transit but revitalize downtown Newark as well.

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The investment is needed. In 2019, nearly 732,000 intercity passengers used the station, a seven-year high, according to Amtrak. It is also served by Newark's light rail system, commuter rail and PATH. Newark's Penn Station is also the hub for 33 local and regional bus lines.

Eighty-six years ago this month, in the depths of the Great Depression, Martin W. Clement, Vice President of the Pennsylvania Railroad, formally presented the new Pennsylvania Station to Newark Mayor Meyer C. Ellenstein. A printed program passed out at the commemoration confirmed the importance of rail service to the city. "Civic growth goes hand in hand with rail transportation. Courage can find a city. Vision can expand it. But only transportation can populate it, feed it and make it commercially important."

A special train, "one of the most luxurious passenger trains ever assembled by an American railroad," was brought in for the occasion and offered for inspection. It included eight different types of Pullman cars, "combining every known comfort, convenience and luxury for travelers." Several other Pennsylvania Railroad cars were also made available as well as a Class GG1 locomotive, "the most powerful electric streamlined engine in the world."

Even with the impressive display of rolling stock, it was the new, modern station that everyone had come to see. While New York's Penn Station mimicked the architecture of ancient Rome, Newark's version is a prime example of art deco design, with surfaces of sleek geometric shapes and long unbroken lines that evoke speed and motion. The building's polished aluminum trim and decoration are a bow to the modern age of machines and industry.

This past December, New Jersey Governor Phil Murphy announced plans to immediately commit $30 million to the restoration and modernization of Newark's long-neglected station, with another $160 million to follow over the next five years. The first work to be done will focus on restoration and updates to the exterior and main waiting room.

Outside, the grey Indiana limestone walls will get a thorough cleaning and repair as needed. Inside, brighter and more efficient lighting will be installed, restrooms modernized, and air handling brought up to date. Two of the original, classic wood benches have already been refinished and would be in use today if not for COVID-related restrictions currently in place. Plans also call for updating the station's well-worn infrastructure, as well as adding user amenities for the 50,000 passengers who pass through the station daily. (***Governing***, March 12)

NJ Transit/Amtrak

Amtrak has awarded a contract and work has begun on behalf of the Gateway Program to relocate utilities out of the future path of the third and final section of the Hudson Yards concrete casing, as part of the Hudson Tunnel Project.

The announcement comes as the Gateway Development Commission conducts its first Board meeting and provides an update on the Hudson Tunnel Project that included the Hudson Yards work.

The $25 million early work project is the latest step in preparing for the full construction of the new Hudson River Tunnel and rehabilitation of the existing tunnel. The early work project will create jobs and provide an economic boost as the region continues to work through the COVID-19 crisis.

Initial work has begun on the early work project, including conducting testing and digging of pits and materials staging. The project is expected to be completed during the fourth quarter of this year.

Planned in collaboration with the Long Island Rail Road (LIRR) and The Related Companies, the utility relocation project involving the LIRR's Emergency Services Building is a critical path activity that allows future construction of the concrete casing itself. The advancement of utility relocation was a key recommendation received from the private sector during the Gateway Partners' Request for Information process to reduce project risks and unknowns during full construction. The development of the future construction of the final section of the concrete casing is continuing.

To protect the future rail right-of-way under the Hudson Yards development complex, two sections of the concrete casing were built underground in the block bordered by 10th and 11th Avenues and W. 30th and 33rd Streets. Construction of the first 800-foot section (between 10th and 11th Avenues) began in August 2013. The second section extended the project west another 105 feet under the 11th Avenue viaduct in Manhattan. Both sections were completed in 2016.

This next step involves extending the casing on a diagonal alignment from 11th Avenue to W. 30th Street, where it will link up with the new Hudson River Tunnel. The third section of the Hudson Yards Concrete Casing can be advanced ahead of the new Hudson River Tunnel because it has completed the environmental review process with the FTA and FRA as a right-of-way preservation project. The Hudson Tunnel Project will fit out the entire Hudson Yards Concrete Casing with rails, signals and other infrastructure. (***Mass Transit***, March 8)

Other Systems

Pittsburgh, Pennsylvania

As part of its long-range NEXTransit plans, Port Authority is talking about costly projects such as extending the light rail system and Martin Luther King Jr. East Busway over the next 25 years.

But what could be the agency's most expensive looming project is not part of that process: replacing 35-year-old light rail vehicles that come with a total price tag of $400 million to $500 million.

In most cases, light rail cars have a life expectancy of about 35 years. Many of the agency's 53 cars manufactured by Siemens AG date back to the opening of the

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light rail system in the mid-1980s and already have had midlife overhauls.

The 28 newer cars manufactured by CAF in the early 2000s are ready for their midlife updates.

Since it can take five to eight years from the time new cars are ordered until they are delivered, the agency is reviewing how it should proceed.

"We're at the point where we're having that discussion," Authority spokesman Adam Brandolph said. "First, we have to make a decision on rehab or replace.

"It's not necessarily to the point where they're going to kick the bucket. It's going to reach the point where it doesn't make fiscal sense to [rehabilitate]."

The decision has to be made relatively soon because it takes six to nine months to prepare specifications and five to eight years for manufacturers to produce light rail vehicles.

Mr. Brandolph noted that is a huge difference from the bus fleet, where it takes about a year to receive new vehicles. The agency replaces about 40 buses a year, which means the fleet is turned over about every eight years.

CEO Katharine Eagan Kelleman told the Pittsburgh Technology Council during a recent lunchtime virtual appearance that replacing the light rail cars is on her radar. Those would come with a huge price tag, although since only about 60 are in service at any one time the agency likely would buy about 75.

"If you can plan for it, you can pay for it," Ms. Kelleman told the council.

Mr. Brandolph said that if the agency goes that route, it likely will set aside funds for several years in advance of the purchase.

"It's a significant amount of money," he said. "The upside is railcars tend to last 30 years or more."

In the interim, the agency is going through the slow process of rebuilding what are known as railcar trucks, similar to a car chassis that sits under the body, at its South Hills Village maintenance facility. Crews have completed 110 of the 250 overhauls, which can add about eight years to the vehicle's life span.

Some of the cars have two smaller trucks, one at each end, that take a total of about 400 hours to rebuild at a cost of about $24,000. Others have a larger center truck that takes about 200 hours to upgrade for $22,000.

"Obviously, we take really good care of them," Mr. Brandolph said. "Replacing the trucks is a major part of that and it certainly has extended their life. You'd probably be hard-pressed to find cars as old as they are in as good shape as these are.

"That's allowing us to take time with this important decision. We're going to eke out as much as we can from them for as long as we can. But the window certainly is closing." (***Pittsburgh Post-Gazette***, March 8)

BALTIMORE, MARYLAND

Three design-build teams have been shortlisted to bid for the contract to finish the Purple Line by Purple Line Transit Partners (PLTP), which worked in partnership with the Maryland Department of Transportation (MDOT) and the Maryland Transit Administration (MTA).

PLTP received statements of qualifications from five design-build teams and shortlisted the three with the best qualifications to complete the project. The teams shortlisted include:

- Halmar International
- Maryland Transit Solutions (comprised of Dragados USA Inc. and OHL USA Inc.)
- Tutor-Perini/Lunda, a Joint Venture

A selection is expected in mid-June. PLTP anticipates a rapid mobilization and full-scale construction to resume as quickly as possible after terms are reached with the selected contractor. (***Mass Transit***, March 4)

A Purple Line rail car at the CAF facility in this 2019 photo.
Maryland Transit Administration photograph

WASHINGTON, D.C. AREA

The second phase of the Silver Line Metrorail project could be turned over to the Washington Metropolitan Area Transit Authority (WMATA) by Labor Day weekend in September, 2021, according to the Metropolitan Washington Airports Authority (MWAA).

MWAA is managing construction of the 23-mile extension of the Metrorail system between Reston and Ashburn in Loudoun County, Virginia.

MWAA project managers base their expectation for substantial completion of Phase 2 on careful analysis of the latest data, the pace of testing by contractors and meetings with project partners and WMATA. Substantial completion means the project is ready to be turned over to WMATA for further testing, training and operational demonstrations, which would then lead to WMATA setting a future date for passenger service.

Phase 1 of the project, which extends to Reston, Virginia, was completed and began passenger service in 2014. Phase 2 extends the line to Washington Dulles International Airport and points beyond in Loudoun County. Phase 2 includes six new Metrorail stations and a rail maintenance facility. The rail line and stations are being built under contract with MWAA by Capital Rail Constructors, and the rail yard and maintenance facility, on more than 90 acres of land at Dulles International Airport, is being built by Hensel Phelps. (***Mass Transit***, March 8)

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Minneapolis, Minnesota

Illustration of route options between Brooklyn Park and Minneapolis. The four northern stations are likely to remain the same as the previous route. It connects to Bottineau Boulevard, and then shows two main options at the southern end, with five additional options to reach Target Field.
Metropolitan Council map

Six months after shelving original plans to build a northwest extension of the Metro Transit METRO Blue Line along BNSF right-of-way, the Metropolitan Council (Met Council) and Hennepin County have released several options to bring the route from Target Field in Minneapolis to the planned Brooklyn Boulevard station.

The Blue Line route for the final four stations — Brooklyn Boulevard, 85th Avenue, 93rd Avenue and Oak Grove — is proposed to run along West Broadway and is expected to remain the same.

Met Council and Hennepin County explain the potential routes grew out of technical and community discussions over several months and serve as a starting point for upcoming conversations. The goal is to identify a single community-supported route by the end of 2021 to advance through official design and review processes.

The project's leaders have requested community input on the proposed routes, potential station locations, important destinations and what future riders would want from the system.

Following the decision to rework the project alignment following resistance from BNSF, project partners worked together with stakeholders and community and business members to create a set of project principles to guide project work and engagement. These principles include:

- Maintain the existing alignment as much as possible
- Engage, inform and consult diverse communities to co-create project solutions that reduce disparities
- Complement existing and planned transit investments
- Mitigate negative impacts
- Meet Federal Transit Administration New Starts criteria

The project stakeholders believe the new route options meet the goals mapped out by the principles. (***Mass Transit***, March 12)

Tempe, Arizona

New Liberty NXT streetcar for Tempe.
Brookville photograph

The first of six all new Liberty NXT Streetcar vehicles from Brookville Equipment Corporation (Brookville) have been delivered to Valley Metro for its Tempe Streetcar System, which is slated to open later this year.

The 72-foot vehicles are part of a $33-million contract for the design, build and test of six streetcar vehicles for the three-mile system, which will connect Tempe residents and visitors, as well as Arizona State University (ASU) students, with current and emerging local destinations.

Like the previous iteration of the Liberty Streetcar, the Liberty NXT Streetcars for Tempe Streetcar will utilize a lithium-ion battery onboard energy storage system (OESS) to traverse sections of the alignment without dependence on an overhead catenary system (OCS). The streetcar batteries will recharge while connected to areas where there is overhead wire.

The Liberty NXT Streetcars feature a three-section car body connected by two articulation joints with more than 70 percent available low-floor standing area, station-level easy boarding achieved through an automatic load leveling system, seating for 40 passengers and the abil-

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ity to comfortably transport 120 passengers.

The Liberty NXT Streetcars also include a crashworthy frame, designed in compliance with ASME RT-1 standards for streetcar vehicles and California Public Utilities Commission (CPUC) buff strength requirements. The Liberty NXT also complies with Buy America requirements of 70 percent or greater US content. (***Mass Transit***, March 16)

SAN FRANCISCO, CALIFORNIA

The Powell/Hyde Cable Car turnaround at Fisherman's Wharf.
SFMTA photograph

The San Francisco Municipal Transportation Agency (SFMTA) has developed a timeline to phase in cable car service, as well as bring back service on the historic F Line fleet.

These services were temporarily halted last March in response to COVID-19 to help best protect operators and the public. SFMTA then shifted resources to a core network to serve essential workers and accommodate physical distancing on its most utilized lines and to retain access for transit dependent neighborhoods.

Now, thanks to the acceleration of the COVID-19 vaccine and a more optimistic outlook for federal funding for public transit, SFMTA says it can craft a path forward. The plan is to resume F Line service this May, seven days a week. Cable car service will return on the Powell-Hyde line, between Market Street and Fisherman's Wharf, first this fall — ahead of the holiday season. The cable cars run through the heart of the city and will play a fundamental role in helping the city's economy recover.

In the meantime, SFMTA notes there is a lot of work ahead before service returns such as retraining operators, hiring line inspectors and preparing infrastructure to accommodate daily ridership again.

SFMTA says it is committed to restarting cable car service and is aware of the value they have for San Francisco's history and economy. (***Mass Transit***, March 4)

MARIN COUNTY, CALIFORNIA

It was a dark and rainy night 80 years ago on February 28, 1941. That was the night they scrapped the best transit system Marin County ever had.

The occasion was the last run of the Northwestern Pacific commuter rail line, which linked Fairfax, the Ross Valley, San Rafael and Mill Valley with San Francisco by way of a ferry connection from Sausalito. The ferries and trains were abandoned because people thought they were old-fashioned and obsolete. But as it turns out, the old transit system was faster, cleaner and more efficient than the buses that replaced them.

Even with a ferry connection, the Northwestern Pacific electric trains took commuters from the city to places such as San Rafael and Mill Valley faster than Golden Gate Transit buses do today.

For example, a trip by ferry and train from San Francisco to San Rafael by way of Greenbrae took 53 minutes back then. Now Golden Gate Transit's rush hour Highway 101 service is scheduled to take an hour 10 minutes for the same run.

The electric trains made the difference. Zipping along at 50 mph or so on their own private right of way, they could make the short run from Sausalito to Mill Valley in 15 minutes. They ran every half hour from 5:45 AM to 1:15 AM. The modern buses run half as often and are twice as slow. "It was quite a service," said Fred Codoni, a Marin County rail historian.

It all began in 1868, just after the Civil War, when a land development company bought the ferry steamer Princess and began service from San Francisco to Sausalito, then described as "unknown country." Rail service to the inland towns began six years later, and the Marin commuter was born. The North Bay has always had an uneasy relationship with the outfits that provided transportation. The early trains, which were steam-powered, noisy and slow, were regarded as old-fashioned even then.

But just after the turn of the 20th century, two entrepreneurs, Eugene de Sabla and John Martin, took over the decrepit North Pacific Coast Railroad and modernized it. They ran power lines from the Sierra and built a complete commuter railroad powered by electricity. It had an innovative signal system that was the envy of the transit world.

By the Roaring '20s, the railroad, now renamed the Northwestern Pacific, was booming. Its commute service trains ran to the Russian River, to the Sonoma Valley, and all the way to Eureka, through the heart of what boosters called the Redwood Empire.

"On a busy day, there would be 20,000 or 30,000 people pouring through the terminal in Sausalito," Codoni said.

The railroad invested millions of dollars in new steel railcars, handsome new station buildings in San Rafael, Larkspur, Mill Valley and three other towns, and new ferryboats, including three sleek new automobile boats. The flagship of the fleet, the steamer *Eureka*, could carry 3,000 passengers at once and was the largest passenger ferry in the world.

"But then, three things happened: the Depression, the automobile and the Golden Gate Bridge," Codoni said.

When the Roaring '20s were really roaring, cars

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poured into Marin, then and now famous for its beauty, a perfect escape from the city. The ferries could not handle all the business — on sunny Sundays and holidays, cars backed up bumper to bumper on Highway 101 all the way from Sausalito to Larkspur. Sometimes after waiting in line for hours, a driver in the family car would be told the last boat had left and the next boat was at dawn.

When the bridge opened in 1937, the commuters deserted in droves; financial losses mounted, and the state gave the Northwestern Pacific permission to abandon the system.

It was rainy and stormy on Friday, February 28, the last day. "The bay was angry," wrote the Sausalito News. "They say it was because they were to say farewell to the ferries that night."

It was an epic farewell. The Northwestern Pacific Historical Society's newsletter tells the story of Jack Farley, who got on the last round-trip electric train at the B Street station in San Rafael.

"Everybody and his brother was there," he said. "Anything went. There was dancing in the aisles, horns, music and booze."

By the time they got to Sausalito, the train was 16 or 17 cars long. The passengers piled aboard the ferry Eureka for the last trip. "There was music, food and beer in the restaurant," the San Anselmo paper reported.

Another crowd came aboard in San Francisco, and on the way back, the boat rocked and rolled, nostalgia mixed with alcohol. The crowd decided to take souvenirs, including life jackets and anything not tied down. When they got to Sausalito, Farley said, every cop in Marin was on hand to reclaim the "souvenirs." Farley and his friends boarded the final, final electric train. "I got home at 3 AM," he said.

There is nothing much left of the railroad: a few pieces of track here and there, station buildings at Mill Valley, Larkspur and San Rafael. The ferryboat Eureka shifted to the Oakland ferry run and is now a floating exhibit at the San Francisco Maritime National Historical Park.

Some people wonder what might have happened if the Marin system had survived another 10 months, until December, 1941, when the attack on Pearl Harbor changed the world. Surely a transit system like that would never have been abandoned in wartime.

After the war, the rail system might have become the backbone of a big-time transit operation and transformed Marin County the way BART transformed Contra Costa and Alameda counties.

"They always wanted to bring something like BART to Marin," Codoni said. "Thank God that never happened." (***San Francisco Chronicle***, February 27)

Los Angeles, California

The first tunnel boring machine (TBM), named Elsie, broke through to the Los Angeles County Metropolitan Transportation Authority's (L.A. Metro) Wilshire/La Cienega subway station in Beverly Hills.

It is the first of two TBMs that will reach this last station on Section 1 of the L.A. Metro D Line (Purple) Extension project.

Tunneling for the first four-mile section of the subway project is now two-thirds complete. More than 90 percent of the tunnels have been mined safely and L.A. Metro anticipates completing tunnel mining this summer. Excavation for all three subway station boxes beneath Wilshire Boulevard has been completed.

Elsie, the 1,000-ton, 400-foot-long TBM, started west at the Wilshire/Fairfax station on May 29, 2020 and broke through to the Wilshire/La Cienega station site about one mile away on February 25. L.A. Metro's first TBM arrived at Wilshire/Fairfax on April 4, 2020.

Reaching this milestone is a significant win for L.A. Metro. Section 1 of project tunneling has presented challenges that have been successfully overcome. En route to Wilshire/La Cienega, the agency's modern, high-tech TBMs have mined through a unique combination of soils and geologic conditions, including tar sands and methane gas.

L.A. Metro's TBMs were first lowered into the ground at the Wilshire/La Brea station site in the Miracle Mile area of Wilshire in October, 2018. While advancing, the TBM tunneled about 60 feet per day. They worked five days a week, 20 hours a day.

L.A. Metro's TBMs are pressurized, closed-face machines that minimize ground settlement during excavation. The tunnel is lined with precast concrete segments that are bolted together to form a ring. Segments are also gasketed to make the joints between segments water- and gas-tight.

When tunneling is finished for this project section, both of L.A. Metro's TBMs will have mined nearly half a million cubic yards of earth — the equivalent of filling 2.3 million bathtubs with dirt.

The TBMs were manufactured in Germany by Herrenknecht AG. L.A. Metro has contracted with Skanska Traylor Shea (STS), a joint venture to design and build the first section of the project.

The $9.3-billion Metro Purple Line Extension is a nine-mile underground subway project that will extend the Metro Purple Line from its terminus in Koreatown to Westwood/VA Hospital in West Los Angeles. Section 1 is expected to be completed in 2023, Section 2 in 2025 and Section 3 in 2027. (***Mass Transit***, March 2)

Honolulu, Hawaii

The city's $11 billion rail project has a budget shortfall of $3 billion and the new interim CEO sees no clear path to plugging the deficit.

The money gap comes even as the Honolulu Authority for Rapid Transportation expects a $70 million infusion of federal COVID-19 relief funds to make up for HART's 2020 drop in general excise and transient accommodations taxes, HART's new interim CEO and Executive Director Lori Kahikina told the ***Honolulu Star-Advertiser***'s Spotlight Hawaii online video program on March 11.

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The Federal Transit Administration extended HART's deadline to come up with a financing plan from December 31, 2020, to December 31, 2021, for building and paying for the final leg of the 20-mile, 21-station project to Ala Moana Center.

A draft of HART's response the previous week showed that "what we're looking at is about a $3 billion shortfall," Kahikina said. "It's not all due to COVID...The majority is the increase in cost and construction costs and how we do things. There's a huge gap that we need to fill...I don't have the answers how to fix it."

HART's Board knew that bids to build the final, four-mile, eight-station segment to Ala Moana Center came in more than $1 billion over HART's $1.4 billion budget. But Board members have not been told by Kahikina that the project is $3 billion short and were surprised by her announcement.

Two HART Board committees are scheduled to meet on March 11, including the project oversight committee, and the full Board is scheduled to meet on March 18.

Kahikina, HART's seventh leader since voters approved the transportation board's concept in 2010, said she wants the job permanently.

From her first day at HART just over two months ago, Kahikina said she has identified inefficiencies and redundancies, canceled the contract for the problem-plagued route down congested Dillingham Boulevard and is planning unspecified job cuts to HART staff, consultants and contractors.

Kahikina expects to have all job decisions made by the end of the month but some already have been made.

And she has canceled the contract to build rail through Dillingham Boulevard, which is plagued by issues of burying utility lines in a tight corridor where HART does not yet have access to needed property.

The original $400 million Dillingham contract ballooned to $650 million so "I did stop that, " Kahikina said. "....The way we contracted that project was not the correct vehicle to use."

Instead of running rail's overhead guideway straight down Dillingham Boulevard, Kahikina said the guideway is now planned for the Mauka side, which will eliminate the need to put both Makai and Mauka Hawaiian Electric Company power lines underground.

But the shift means that HART will have to work with the University of Hawaii and Kamehameha Schools for rights-of-way to use their land.

Making HART more efficient and cutting costs will not plug the $3 billion deficit, Kahikina said, but will hopefully make the rail project more attractive to getting more federal assistance, possible private support and give taxpayers greater confidence.

The entire project was supposed to be finished by

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VIENNA-BRATISLAVA-UKRAINE
by Jack May
(Continued from March, 2021 issue)
(Photographs by the author, except where noted)

Last month's installment related the completion of our second day in Vienna on Wednesday, June 14. But this report is not about the following day, as on Thursday I took a day-trip to Bratislava while Clare continued her exploration of museums. To keep the narrative about Vienna continuous, I'll relegate Bratislava to the next two issues.

As the weatherman had predicted, Friday, June 16 dawned dank and drizzly. After another good hotel breakfast we were off to the museum quarter, which is served by the Museumsquartier station of the U2, to which we transferred from the U1 at Karlsplatz. From its name I suspect you can figure out that the area has a number of cultural institutions, which include theaters and a major library; as well as a fine arts museum; a museum of mathematics; the Kunstalle, a museum of photography and videography; and best of all, the Leopold Museum, which is devoted to Art Nouveau and Modernism, dating from just before and after the turn of the 20th century.

At the beginning of our trip Clare had made a list of museums she wanted to visit, and as I had planned to spend one day accompanying her to some of these institutions, I selected the Leopold as my first choice. I've often been exposed to the work of Gustav Klimt and Egon Schiele, as they are the mainstays of the Neue Gallerie in New York City (although its Cafe Sabarsky in the basement, with its wonderful German and Viennese food and pastries, might just attract me to the gallery as much as the art). Anyway, we dodged the raindrops crossing the street from the U-bahn station and spent several hours enjoying the paintings, ancient photographs and sculpture.

It was hunger that finally prompted us to leave, and we ended up having an excellent lunch at the Saigon, a Vietnamese restaurant on Gerreidemarkt on our way toward the Secession building (1897), which houses a museum containing a Klimt mural and is especially noted for its dome of gilded laurels. It fit right in with our day's agenda, as the Secession School was home to rebel artists of the time like Klimt and Schiele, and currently their followers.

We were now very close to Karlsplatz and decided to visit various points of interest in that area, including the restored facade of the Otto Wagner-designed Stadtbahn

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Vienna-Bratislava-Ukraine

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station from 1899 (which is now part of today's U-bahn complex), and the adjacent Karlskirche, a Vienna landmark. By now the clouds had vanished. The baroque St. Charles Church dates from 1737 and its architecture is stunning. A live concert of Vivaldi's Four Seasons was scheduled for the evening and we purchased tickets. We had paid €2.50 for admission to the beautiful church and it was well worth it, but we also paid an additional €3.50 for a ride up the "Panoramalift" to see the city from above. That was a major rip-off. First you had to climb 12 flights of stairs after being carried to the top of the elevator to get up in the dome (Clare could not) and then all views of the skyline were blocked off by mesh (see here). And the field of vision for the frescoes painted on the ceilings in the dome could also have been better. On an earlier visit to Vienna we climbed to the top of St. Stephen's (located inside the Ring) and had a spectacular view of the city.

After returning to the ground level, I took a number of photos in the area, and then we walked back to the Ring (Opernring), where, of all things, a heritage tram serendipitously appeared. The car carried the letters VEF on its route number sign, indicating the 4-wheeler was one of the cars owned and operated by the Verband der Eisenbahn Freunde, or Friends of the Railway Association. These vintage cars frequently can be found operating on the Wiener Linien system, in competition with the equipment of the transit company's own Tramway Museum. Both charge the same rates, just below €300 per hour. How many cities have two sources for old-time trams vying for prominence and tourist dollars, not to mention weddings, parties, etc., on their streets? Buses yes, but streetcars? See http://www.rentabim.at/docs/RaB-English.pdf and http://tram.at/vienna-by-tram/Rentable-Tramcars/?lang=en. In addition to its fantastic museum, Wiener Linien operates a scheduled tour tram, painted yellow, that circles the Ring hourly at a fare of €8. I saw 4867, an E1 car, several times, but never was in position to photograph it.

We then rode back to the hotel, and after resting, traveled back to Karlsplatz, arriving early for the 20:15 concert. As a result we had a choice of seats (first come, first served open seating). Why was the music of Antonio Vivaldi specifically being performed? Because he was buried a few yards from the church in 1741. We enjoyed the 90-minute violin and choral performance, although at certain times it sounded like the principal soloist was lip-synching. By the time we left it was drizzling again and we decided that our pho and pork chops (plus a snack of pastries) were sufficient to hold us over until breakfast, so we just rode the U1 back to our hotel.

Saturday, June 17

Today was getaway day, but after breakfast we still had a modest amount of time before our 13:00 flight. Our plan was to take the 11:12 Railjet for the 15-minute ride, and I had already purchased the extra zone step-up tickets for it the previous evening. (Our 72-hour tickets lasted from Tuesday noon to Friday noon and I had purchased 24-hour ones for us after we left the museums on the previous day.)

So with about two hours in hand before our departure, Clare decided to sleep in and pack after breakfast, and I went for a quick excursion. With the O tram nearby I continued southward from Columbusplatz to its terminal at Raxstraße. It is joined by the 67 and I continued further, but then noticed that the next stop, Sahulkastraße, was a good location for a photo and so I alit for a picture. Luckily I looked at my watch, as by then it was getting late and I figured I had a choice, wait for another outbound 67 and ride to its final stop at Otto-Probst-Platz, or head back right now, stopping for one more photo when I transferred back to the O line, as I had no time to accomplish both (map at http://www.urbanrail.net/eu/at/vienna/tram/wien-tram-map.htm). I chose the latter, and two of my photos are displayed below.

I was back at 10:45 and we quickly checked out of the hotel and rolled our carry-ons to the Hauptbahnhof, arriving about 10 minutes before our train's 11:12 scheduled departure. I explained the service pattern for airport travel at the start of the report so I will not go into it again, other than to say service frequency on this route is half-hourly. When our locomotive-hauled push-pull Railjet pulled in from Bregenz (virtually the Swiss border), Innsbruck, Salzburg and Linz, almost all of the passengers detrained and our coach was mostly empty for the non-stop run to the airport; we left at 11:12 (12) and arrived 15 minutes later on time. Our tickets were not inspected.

Our routing to Lviv was via Warsaw and a change of planes. We checked our carry-on bags and quickly reached the gate for our bus to Austrian Airlines Flight 623, an Embraer 195 with 2-and-2 seating, which loaded through both front and rear door stairways from the tarmac. I would say it was about 70 percent full and because we ended up departing a little bit late, we were subjected to the Blue Danube Waltz for a little longer than expected (fortunately pleasant). The aircraft began taxiing at 13:15 (13:00) and left the ground 8 minutes later. We were served soft drinks and crackers, and soon were descending. We hit the ground in cloudy Warsaw at 14:20 and reached the gate 4 minutes later, so we were only 9 minutes late. Our continuation flight on LOT to Lviv also involved riding a bus to reach the aircraft, this time an Embraer 170. It was a bit smaller than the 195, but had similar seating. The bus left the gate on time at 15:35 and the plane began to move at 15:59, taking flight at 16:03. We were served a chocolate wafer with a choice of coffee, tea or water. We landed at 17:47 and reached the gate only two minutes later, so we were off the mark by only 14 minutes.

Lviv Danylo Halytskyi Airport was crowded with kids, but it was still easy to get through immigration and retrieve our luggage. We used an ATM to buy Hryvnia, Ukraine's currency, and even though the number 9 trolleybus would get us very close to our hotel, took a taxi

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for the 4-mile ride. Despite the fact that the most of the tour members, who were traveling together from Germany via Kiev, had not yet arrived, the hotel was expecting us and we were checked in quickly — and taken to our room by an old-fashioned bellhop. After unpacking and freshening up we went back to the lobby to greet and be greeted by those other members of the group who reached Lviv on their own, some via the 9 trolleybus. The group's flight was not due to arrive in Lviv until 21:00, and fortunately it was not delayed. A chartered bus brought the throng to the hotel, where room keys were distributed, and finally we sat down for our orientation dinner.

The food was decent and the ambiance proved to be very pleasant. Clare and I drifted over to our friends Dick Aaron and John Wilkins, as well as to Alan Murray from Britain, a regular attendee of ERA conventions, plus some Europeans whom we knew from our participation in the organization's journey to North Africa three years earlier.

The July issue will start the description of our activities in Ukraine, but my day trip to Bratislava will come first, over the May and June issues.

Two views of the tramway at Karlsplatz. The left photo shows a Type A1 (Siemens, 2015) Route 62 car operating outbound along the west side of the square, on tracks shared with Route 1 and the Wiener Lokalbahn. The track joining the right-of-way from the right carries inbound cars past the stop illustrated in the right photo. One of Vienna's iconic car stop signs is located in front of the rear of a subway entrance that dates from 1899.

At left is the front facade of the Otto Wagner-designed Karlsplatz station, which now serves the U1, U2 and U4 subway lines. It was an appropriate structure for us to visit, for it linked the highlights of the day together, as like Schiele and Klimt, Wagner was a member of the Secession movement (see https://thebeautyoftransport.com/2012/11/28/the-life-nouveau-wagners-vienna-stadtbahn-stations/). [When in Vienna the Hietzing station of the U4 line, close by the Schoenbrunn Palace, is also well worth a visit, as it is adjacent to the Court Pavilion, Wagner's private Stadtbahn station for Kaiser Franz Josef, which contains an Art Nouveau interior (see https://www.wienmuseum.at/en/locations/otto-wagner-hofpavillon-hietzing).] At right is another of Vienna's treasures, the Karlskirche.

The 18th century Karlskirche (Church of St. Charles) rests beside a well-kept pond. Although you cannot see it from this photo, the dome of the beautiful baroque structure is elliptical rather than round. A picture is worth a thousand words, but If you need more words, see https://www.habsburger.net/en/chapter/karlskirche?language=en.

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"At the risk of being shot by the public and other stakeholders, we are actually estimating maybe 2031 that everything is complete, " Kahikina said.

Asked about her initial observations of HART, Kahikina said, "I do see quite a bit of redundancies and inefficiencies."

She spoke of "layers upon layers — of whether it's consultants, staff and the way we procure things with the contractors. It's not the most efficient way. That's the most surprising thing I've found here."

But she repeated HART's position that the project has to be built all the way to Ala Moana Center, the state's busiest transit hub, and to fulfill its original funding agreement with the FTA.

"A lot of the feedback from the public is, 'Just kill it. Just kill it at Middle Street, '" Kahikina said.

But ending rail earlier than planned would make it "a train to nowhere, "

Kahikina said, while putting $800 million in federal funds in jeopardy.

"We have to make it, " she said, "we have to make it to Ala Moana." (***Honolulu Star-Advertiser***, March 11)

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Wiener Linien Type M 4023 was built by Grazer Waggonfabrik in 1927 as one of 150 such cars ordered from this carbuilder (and also Lohner and Simmering). This particular unit operated in regular passenger service on the network until November 16, 1978 and then continued as a work car until April 17, 1981.

Type A1 120 (Siemens, 2015) is waiting for time at its Oper terminal, shared with the interurban line from Vienna to Baden. As soon as it departs the 100-series car of the WLB in the background will pull up and begin loading the remaining passengers waiting at the stop. The platform is directly accessible from the Oper/Karlsplatz station of the U-bahn.

Type B1 758 (Siemens, 2013) is shown operating on Route 67 toward the city approaching the Sahulkastraße station. I stopped here to record the ballasted track on private right-of-way in the center of the road (Neilreichgaße), which is unusual for Vienna's system, which is dominated by street running shared with motor traffic. On September 1, 2019, Route 67 was replaced by Route 11.

High-floor Type E2 4319 (Bombardier, 1989) is pulling a trailer on an outbound run of Route 67 along Laxenburger Straße and has just left the Arthaber Platz stop. As mentioned in the caption to the left, Route 67 was replaced by the new Route 11 on September 1, 2019. The shadows are still long in this early morning photo.

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