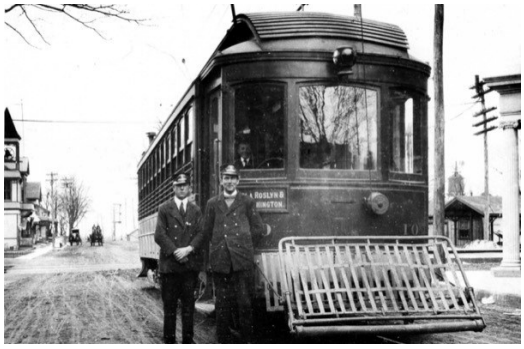
The Bulletin



Electric Railroaders' Association, Incorporated

Vol. 64, No. 7 July, 2021

The Bulletin

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This Month's Cover Photo:
New York & North Shore Traction #10 (John Stephenson, 1907) at the Mineola terminal in 1909. Joseph Burt (1886-1971), photographer, Port Washington Public Library collection.

In This Issue:

FIRST FIVE R-211 CARS DELIVERED!
by Jeff Erlitz

Andrew Grahl photograph

The first five R-211 cars, 4060 and 4064 ("A" cars) and 4061-4062-4063 ("B" cars), were delivered to the South Brooklyn Railway in the early morning hours of Tuesday, June 29 and Wednesday, June 30. These cars had been delivered by truck from Kawasaki's plant in Lincoln, Nebraska. Unlike many recent car orders, these came delivered wrapped in protective tarps.

The cars were transferred from truck to track via a prefabricated ramp placed atop the South Brooklyn track located inside the South Brooklyn Marine Terminal between First and Second Avenues immediately north of 39th Street. This is the track that connects the South Brooklyn to New York New Jersey Rail, operator of the trackage on First Avenue and in the old Bush Terminal Yard.

The MTA held a press conference on Thursday morning, July 1, to introduce the new subway cars to the public. After the press conference ended, two NYC Transit diesels, with a rider car in between, coupled up to the R-211 set (using a coupler adapter) and dragged them to Coney Island Yard. They will eventually make their way to Pitkin Yard, to be tested on the Subdivision "B" test track on the IND Rockaway Line north of Broad Channel.

(Continued on page 2)

First Five R-211 Cars Delivered!

(Continued from page 1)

The first two R-211 cars (4063 and 4064) wait in the oversize cargo holding area of the Goethals Bridge in the Bayway section of Elizabeth, New Jersey on the afternoon of June 28.
Max Diamond photograph

The first two R-211 cars are delivered by truck to the South Brooklyn Railway in the early morning hours of June 29. View northeast at 39th Street and First Avenue.
Max Diamond photograph

A GLIMPSE OF THE LIRR's EAST SIDE ACCESS
by Jeff Erlitz
(Photographs by the author)

Very recently, this writer had the privilege of touring some of the facilities of the Long Island Rail Road's East Side Access project. A "pictorial" essay follows.

(Continued on page 3)

SUBDIVISION "A" CAR ASSIGNMENTS
CARS REQUIRED JUNE 27, 2021

The following is different from the assignment that appeared in the June, 2020 ***Bulletin*** and the update that appeared in the October, 2020 ***Bulletin***:

LINE	AM RUSH	PM RUSH
Ⓢ	6 R-62A	6 R-62A

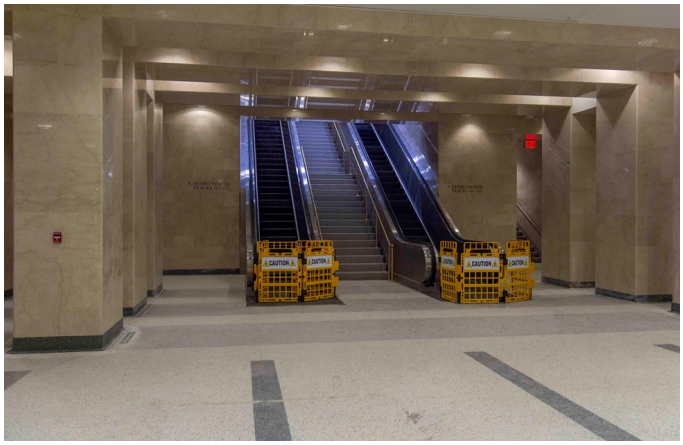
THE BOARD OF DIRECTORS EXPRESSES ITS DEEPEST APPRECIATION FOR 3 MEMBER DONATIONS IN MAY, 2021

AMOUNT	DONOR(S)	
$100 and up	Alfred Gaus	Carl Jackson
Up to $50	James Koryta	

ERA is a 501(c)(3) tax exempt corporation. Your donations are fully tax deductible and can be made either with your 2021 renewal, or by using our donation form on our website: www.erausa.org/donate. Your donation helps to maintain ERA's 87-year-long tradition of traction education and entertainment!

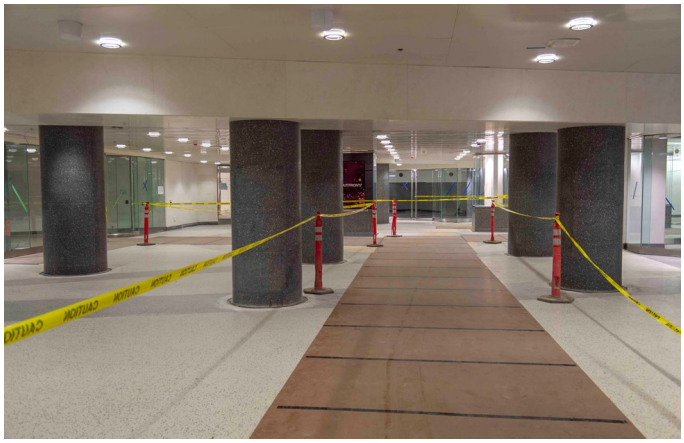
A Glimpse of the LIRR's East Side Access

(Continued from page 2)

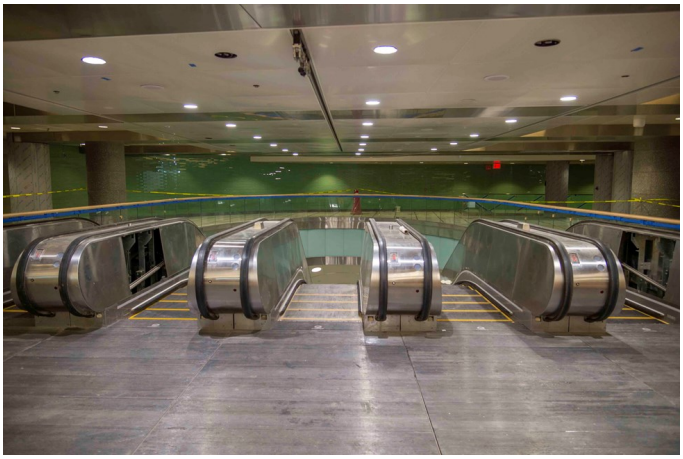


View east of stairs and escalators from LIRR concourse to Metro-North's Lower Level (Dining) concourse.

View north on the LIRR concourse just south of 45th Street. Note how the architecture and signage matches exactly that of the rest of Grand Central Terminal upstairs. The LIRR concourse was built in the space of the former Metro-North Madison Avenue Yard.



View west of LIRR concourse between 42nd and 43rd Streets. In the distance is the lower-level entrance to One Vanderbilt.



View east of Wellway 1 at 45th Street. This is the southernmost access point to the LIRR mezzanine and platforms. These may be the longest escalators anywhere in New York City.

View north on the LIRR concourse at 43rd Street. Retail outlets will occupy the spaces to the right. The LIRR concourse runs underneath Vanderbilt Avenue.

View north of the ticket windows at 46th Street. Designed many years before the advent of mobile ticketing applications, most of these windows will apparently not be used for passenger ticketing when the complex opens to the public late next year.

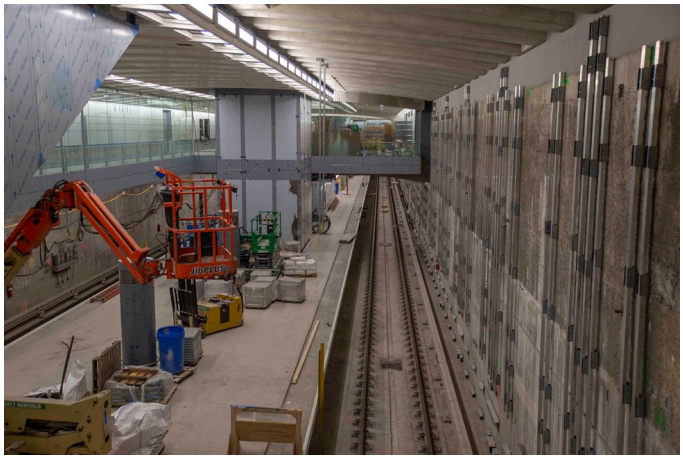
(Continued on page 4)

A Glimpse of the LIRR's East Side Access

(Continued from page 3)

View west of the 47th Street cross passage down on the LIRR mezzanine level. Like NYC Transit's W. 4th Street-Washington Square station, the LIRR's mezzanine in Grand Central is between the upper and lower-level platforms.

Looking south down the East Cavern mezzanine from the 47th Street cross passage.



Looking north from the mezzanine at the lower-level platform and tracks of the East Cavern.

View north along the upper-level platform of the East Cavern. According to the one sign already installed, the track on the left is 203, with Track 204 on the right. The track numbers appear to be numbered west to east, opposite to the way Metro-North's are numbered. The upper level tracks are 201-204 and the lower level are 301-304.

View south on Track EB4 at GCT-3 Interlocking. This is the eastbound track to Queens. You can see the westbound track from Queens on the right in the cavern up ahead at the double crossover. All the signals at five of the six "GCT" interlockings are already energized. The signal equipment was supplied by Union Switch and Signal (Hitachi STS these days) and are Style M-3 switch machines and Transit signal heads.

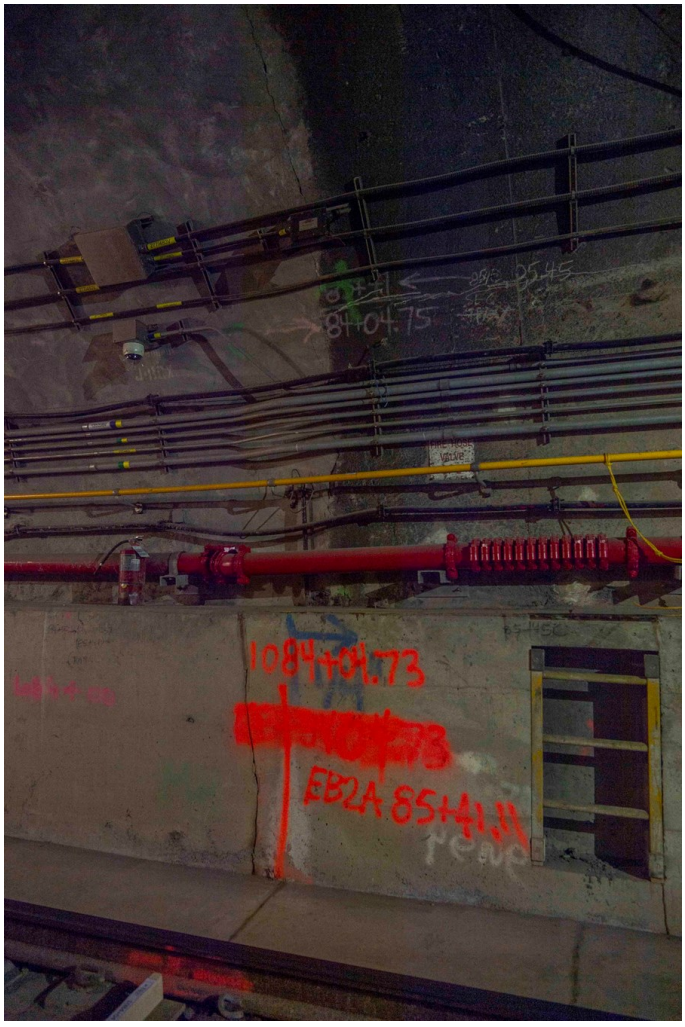
Looking south at switch 542 in GCT-5 Interlocking. Track EB4 from the upper level is at the left and Track EB2 from the lower level is on the right. You can see the grade changes to the upper and lower levels in the distance.

(Continued on page 5)

A Glimpse of the LIRR's East Side Access

(Continued from page 4)

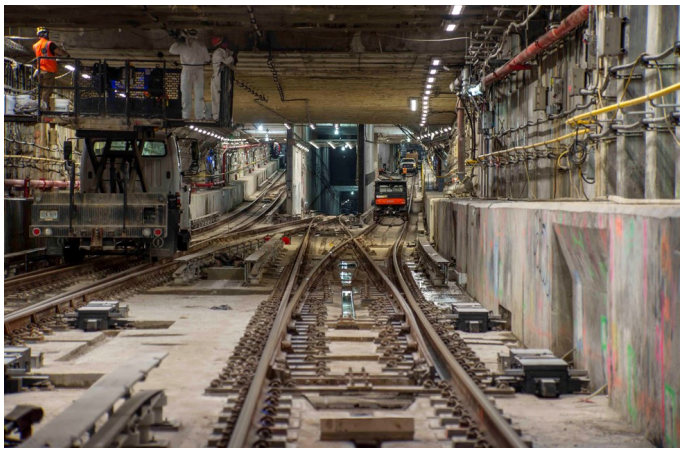
Automatic block signal 2G12 on Track EB2, located between GCT-5 and GCT-6 Interlockings. The tunnel is curving towards 63rd Street at this point.



This is the point near Second Avenue, just off 63rd Street, where the new tunneling to the west and south meets the original 63rd Street tunnel to the east.

Looking east at GCT-6 Interlocking under 63rd Street. I believe this is directly under the IND 63rd Street Line's FDR Drive Interlocking. At the far end of the crossovers is the FDR Drive ventilation shaft and emergency exit.

Eastbound Track EB2 under Roosevelt Island. The Ⓕ train is directly above.



Looking east at Plaza Interlocking. This is the point where the two tracks from Manhattan split into the three tunnels up to Harold Interlocking and one tunnel to the Midday Storage Yard. In this view you can easily see the tracks on the left and right beginning their ascent up to Harold. The track in the middle (Track LL) descends a bit and then curves around to the left, eventually rising to the surface in the northeast corner of Sunnyside Yard.

Rail News in Review

New York Metropolitan Area

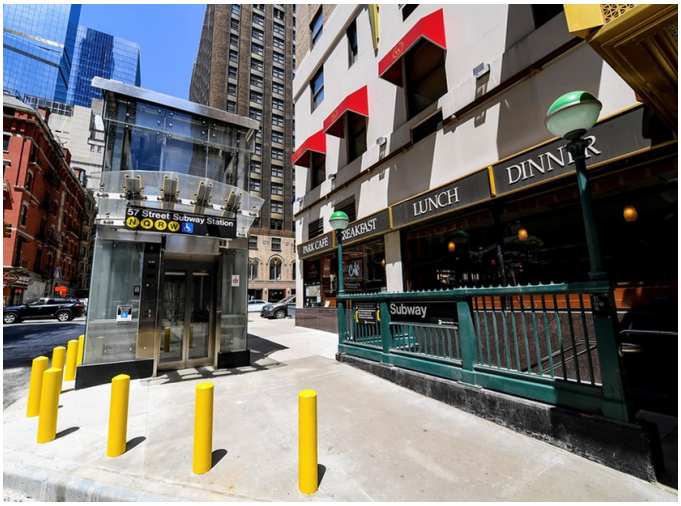
Metropolitan Transportation Authority

Effective July 31, Sarah Feinberg, current NYC Transit President, serving since March, 2020, will be appointed by New York Governor Andrew Cuomo, to the post of MTA Chairperson and MTA Capital Construction head Janno Lieber as Chief Executive Officer. They will replace Patrick Foye, current MTA Chairman and CEO, who is leaving the MTA to become interim President and CEO of the Empire State Development Corporation. (MTA press release, June 8)

New York City Subway, Long Island Rail Road and Metro-North Railroad broke pandemic-era ridership records on consecutive days in June. The streak culminated on Friday, June 18, with the subways carrying 2.57 million riders, the LIRR carrying 122,848 passengers, and Metro-North carrying 104,304 passengers – the first time Metro-North has surpassed 100,000 riders since the start of the pandemic.

Combined subway and bus ridership of more than 3.7 million is close to 50% of pre-pandemic levels. (MTA press release, June 22)

MTA New York City Transit



The new elevator from the street to the 55th Street mezzanine. View is looking west on May 25 and the elevator was built on a sidewalk "bulb-out."
Marc Hermann/MTA photograph

The 57th Street ⓃⓆⓇⓌ subway station in Midtown Manhattan is now fully accessible in accordance with the Americans with Disabilities Act (ADA).

The project, which was completed within budget, includes a street-to-mezzanine elevator along with one more elevator from the mezzanine to each of the northbound and southbound platforms. The mezzanine was expanded on the 55th Street side of the station, and crews also rebuilt two staircases leading from the mezzanine to the platforms.

The new accessibility information is being adding for the station to print and digital assets over the coming days. (MTA press release, June 1)

A track renewal project this summer on the Sixth Avenue Line (ⒷⒹⒻⓂ) includes replacement of the downtown express track (Track B3) at 47-50th Streets-Rockefeller Center. The existing track has reached the end of its useful life and requires complete replacement. To minimize service changes and future outages the work will occur concurrently with the Eighth Avenue Line Signal Modernization (CBTC) project.

The signal modernization work along the Eighth Avenue Line (ⒶⒸⒺ) will include the installation of axle counter technology, which will improve the availability of the new signal system, by replacing less reliable components of the legacy signal system. Track switch diagnostics that will predictively gauge the health of switch machine movement and remotely report potential failures will also be installed. Once completed, the modern CBTC signaling system will be installed between 59th Street-Columbus Circle in Manhattan and High Street in Brooklyn.

Weeknight work starts at approximately 9:45 PM Mondays through Thursdays and ends at 5 AM Tuesdays through Fridays, as of Monday, June 14. Weekend work will begin on Friday, July 2 with work starting Fridays at 9:45 PM and concluding by 5 AM on Mondays.

Weeknights

Projected work schedule: Monday through Friday, June 14 through August 20

- Downtown (Brooklyn-bound) Ⓓ trains will operate via the Eighth Avenue line between 59th Street-Columbus Circle and W. 4th Street. Ⓓ trains will run via the Ⓕ line between W. 4th Street and Coney Island-Stillwell Avenue, making all local stops
- Uptown (Manhattan-bound) Ⓓ trains will operate via the Ⓕ line between Coney Island-Stillwell Avenue and 34th Street-Herald Square making all local stops
- Ⓕ trains in both directions will operate via the Ⓓ line between W. 4th Street and Coney Island-Stillwell Avenue in both directions, making all local stops

Weekends

Projected work schedule: Friday through Monday morning, July 2 through August 2

The weekend service changes will include Ⓓ trains operating in two sections: between Norwood-205th Street and World Trade Center and between W. 4th Street and Coney Island-Stillwell Avenue.

Northern Ⓓ Train: Norwood-205th Street to World Trade Center

- Southbound Ⓓ trains will operate via the Eighth

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Rail News in Review

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Avenue Line from 59th Street-Columbus Circle to World Trade Center, making all local stops. At W. 4th Street, trains will stop on the upper level (Eighth Avenue Line) downtown local track

- Northbound Ⓓ trains will operate via the Eighth Avenue Line from World Trade Center to W. 4th Street and via the Sixth Avenue Line from W. 4th Street to 34th Street-Herald Square, making all local stops. At W. 4th Street, trains will stop on the lower level (Sixth Avenue Line) uptown local track

Southern Ⓓ Train: W. 4th Street and Coney Island-Stillwell Avenue

- Ⓓ trains in both directions will operate between W. 4th Street and Coney Island-Stillwell Avenue. At W. 4th Street, trains will stop on the lower level (Sixth Avenue Line) express tracks

ⒶⒸⒺ Trains

- Northbound Ⓔ trains will operate express from Canal Street to 42nd Street-Port Authority Bus Terminal. Downtown trains will operate normally
- Northbound ⒶⒸ trains will operate via Sixth Avenue from Jay Street to W. 4th Street and via the Eighth Avenue Line making local stops from W. 4th Street to 59th Street-Columbus Circle. Southbound trains will operate normally
- There will be no northbound service on the Ⓐ or Ⓒ line at Chambers, Fulton or High Streets

(MTA press release, June 4)

MTA Long Island Rail Road

The new elevator to the eastbound platform to Hempstead on opening day, June 16.
Glen Sager/LIRR photograph

New elevators at the Floral Park station were placed in service, with a ribbon-cutting ceremony, on Wednesday, June 16. The three elevators, one for each platform, provide access from the street level to the platform level and make the station fully accessible to all in accordance with the Americans with Disabilities Act. The elevators are part of the Third Track Project, which will introduce 10 miles of new track between Floral Park and Hicksville.

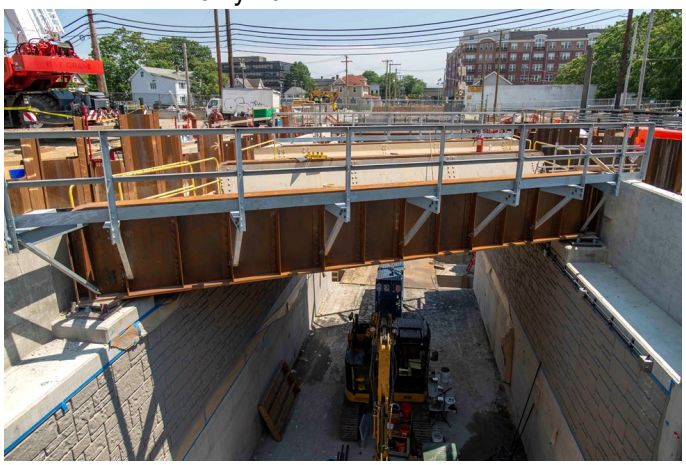
These improvements were developed based on community feedback received as part of a comprehensive environmental review and public involvement process for the LIRR Expansion Project in 2017.

The three new elevators at the Floral Park station cost $10 million, which is comparatively less expensive than similar projects in the subway system — where utilities and stairs must be moved and, in some cases, entire mezzanines must be expanded and reconfigured. This value was achieved by following the Design-Build project delivery system, where projects are bundled to improve efficiency and reduce costs.

The Floral Park station was built in 1878 and converted to an elevated station in 1960. The station services both the Main Line and the Hempstead Branch and serves nearly 3,000 customers each weekday. (MTA press release, June 16)

Over the weekend of June 25-26, the contractors working on the Main Line Third Track Project rolled the new Willis Avenue bridge into place under the Oyster Bay Branch tracks, just east of the Mineola station. This was the eighth all-new bridge installed under this project. (The bridges at Plainfield Avenue in Floral Park and the Meadowbrook Parkway in Carle Place had a third bay added to their existing bridges.) Unlike all of the other bridge installations, this one was only for two tracks as the Oyster Bay Branch is not getting (nor does it need) a third track.

The bridge "push" for the Main Line is scheduled for the weekend of July 10-11.



View south of the new Willis Avenue undergrade bridge in Mineola on June 20, one week before being rolled into position. The view is from the former street grade crossing. Hard to see here and in the distance just beyond this bridge, is the new three-track bridge for the Main Line crossing of Willis Avenue.
Jeff Erlitz photograph

Nearby, construction has been moving along at the station in Mineola. The east end of the new eastbound platform, on the south side of the right of way, is now well along. The photo captions below give some of the details.

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Rail News in Review

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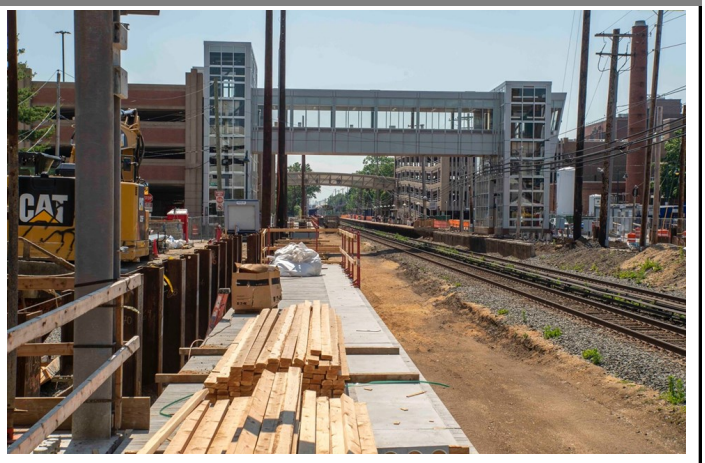
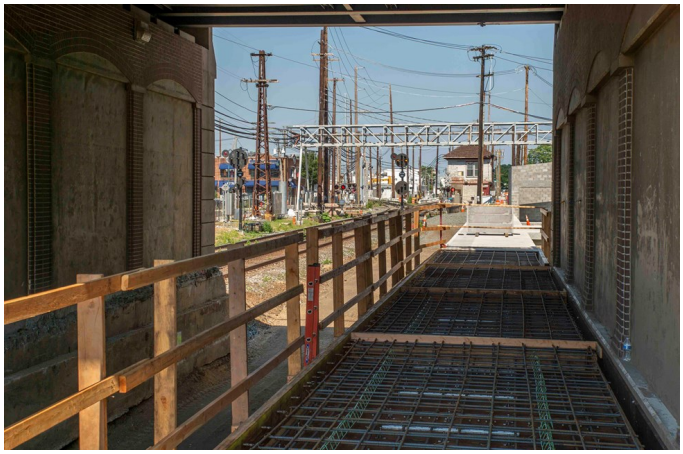
View looking west from the top of the parking garage across Mineola Boulevard from the station on June 20. The east end pedestrian overpass is in the foreground. On the left side of the overpass, you can see the new eastbound platform. In the mid-distance is the overpass constructed when the Mineola intermodal bus terminal was built. In the far distance you can see the overpass built when Winthrop University Hospital built their garage.
Jeff Erlitz photograph

Looking east at the new east end overpass. As was done with the Carle Place overpass, this one has the name of the station installed at the center bottom of it, though the lettering does not contrast very well with the light gray paint of the structure.
Jeff Erlitz photograph



View west from the easterly end of the newly constructed eastbound platform. The current platforms can be seen in the distance. The right of way has been graded for the new third track.
Jeff Erlitz photograph

M7 7243 (Bombardier Transportation, 3/2004) leads train #7711 (Huntington-Penn Station) under the Mineola Boulevard overpass and into the station area on June 20. Rebuilt in 2003, this bridge was designed with space for an eventual third track. As you can see here, the space barely accommodates the new track and platform.
Jeff Erlitz photograph



The forms and rebar have been installed and are awaiting the concrete pour in this view east through the Mineola Boulevard overpass. In the distance, old Nassau Tower still stands, awaiting asbestos remediation before being demolished to make way for the third track.
Jeff Erlitz photograph

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Rail News in Review

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MTA Metro-North Railroad

Effective Monday, June 21, Metro-North Railroad riders will be afforded a higher level of service on all three east-of-Hudson lines as ridership continues to recover post-pandemic. These service increases are an enhancement to the April 12 timetable that added trains to the New Haven Line and restored weekend service to Wassaic. The service improvements are summarized below:

Hudson Line

Morning peak-period service will increase from 18 trains to 22, while afternoon peak-period service increases from 17 trains to 21. Two round-trips are being added between Croton-Harmon and Grand Central. These trains will make all stops between Croton-Harmon and Hastings-on-Hudson, then Yonkers, Harlem-125th Street and Grand Central. Two round-trip trains between Poughkeepsie and Grand Central will be added. These trains will make all stops between Poughkeepsie and Croton-Harmon before operating express to Harlem-125th Street and Grand Central. The Breakneck Ridge station remains temporarily closed for station safety improvements. *(Editor's Note by Ron Yee: At last report, Metro-North has been planning to build a brand-new station facility with high-level island platform just north of the Breakneck Tunnel located about ½-mile south of the existing station with a very short low-level platform on either side of the two-track line.)*

Harlem Line

On the Harlem Line, both morning and afternoon peak-period service will increase to 25 trains, up from 21. In the morning, two new southbound trains stop at all stations between Crestwood and Mount Vernon West, then Fordham, Harlem-125th Street and Grand Central. In the afternoon, a new northbound train will stop at Harlem-125th Street and make all stops between Mount Vernon West and Crestwood. A second northbound train will stop at Harlem-125th Street, then will operate express to Crestwood, Scarsdale, Hartsdale, White Plains and North White Plains. In addition, four trains are being added between Southeast and Grand Central. In the morning, two southbound trains will make all station stops between Southeast and Mount Kisco, then operate express to Harlem-125th Street and Grand Central. In the afternoon, two northbound trains will stop at Harlem-125th Street and then operate express to White Plains and make all local stops to Southeast.

New Haven Line

Both morning and afternoon peak-period service will increase from 22 trains to 26. Two Stamford-to-Grand Central local trains are being added. The first train will operate from Stamford to Greenwich, make all stops to Larchmont and then operate express to Harlem-125th Street and Grand Central. A second Grand Central-bound train will operate from Harrison to Grand Central, stopping at Mamaroneck, Larchmont and Harlem-125th Street. The 7:20 AM Grand Central-bound local train from Stamford will make additional stops at Old Greenwich, Riverside and Cos Cob, while bypassing stops at Harrison, Mamaroneck and Larchmont, which will be served by one of the added trains. In the afternoon, two Stamford-bound departures are being added from Grand Central, stopping at Harlem-125th Street, then express to New Rochelle before making all stops to Stamford. Two trains from New Haven to Grand Central are being added on weekday mornings, stopping at all stations between New Haven and Fairfield, then express to Stamford, Harlem-125th Street and Grand Central. In the afternoon, two New Haven-bound trains are being added from Grand Central, stopping at Harlem-125th Street, then express to Stamford, then all stops to New Haven. *(Editor's Note by Ron Yee: The 25 single non-powered M8 coaches which had been sidelined during the pandemic have recently been seen in service, providing the ability to make up nine-car trains to increase capacity and provide a bit of social distancing aboard.)*

View south along the new 10th Avenue bridge over the New Haven Line on June 2. Note the "camera-friendly" fencing on the left (east) side of the bridge. Presumably, this will replace the "chain-link" fencing on the west side also.
MTA photograph

The Metropolitan Transportation Authority (MTA) announced the reopening of the 10th Avenue Bridge in downtown Mount Vernon. The bridge is one of six bridges that span Metro-North Railroad's New Haven Line in downtown Mount Vernon that the MTA is replacing. The reopening of the 10th Avenue Bridge further knits the Mount Vernon downtown area together and marks the public completion of a project that began in March, 2019.

The replacement of the bridge was part of a combined $23 million project to replace the 6th Avenue Bridge and 10th Avenue Bridge in the City of Mount Vernon. Funding for the project came from the MTA's 2015-2019 Capital Program and cost approximately $11.5 million to complete.

"The completion of this project shows our commitment

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Rail News in Review

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to being strong partners with Mount Vernon, and improves connectivity to the downtown area" said Catherine Rinaldi, President of Metro-North Railroad. "MTA will continue to advance bridge replacement projects in the City of Mount Vernon and to provide reliable train service in support of the region's recovery."

"The MTA is transforming the way we deliver construction projects so we get work done on time and on budget," said Janno Lieber, President of MTA Construction & Development. "We are using a broad range of tools including financial incentives to hold contractors accountable, and finding efficiencies by bundling projects that are geographically close. Here at Mount Vernon these new approaches are helping us ensure we can reopen these bridges on the timeframe we promised the community."

Mount Vernon Mayor Shawyn Patterson-Howard said: "We are excited to see the reopening of the 10th Avenue Bridges this month. For years it has been closed, depriving residents and our public safety vehicles a key access point to cross our city. This bridge has been closed for years and I want to thank the MTA for working with the City of Mount Vernon to ensure that these bridges opened on schedule. I look forward to the reopening of the 3rd Avenue bridge in the very near future."

Construction work included demolishing the old bridge and its road decks and rehabilitating its masonry abutments followed by installing replacement girders and the concrete decks of the bridge. Signal cables were also relocated. Additionally, as contractors worked to replace the bridge and install new metal fencing, street lighting and traffic signals, crews also conducted lead abatement and asbestos removal. The contract to replace the bridge was awarded to E.E Cruz, a civil construction contractor based in New York City.

The 10th Avenue Bridge is one of six bridges the MTA is replacing across the New Haven Line in downtown Mount Vernon. Construction began on the Third Avenue Bridge in April, 2020 and is expected to take 18 months to complete. Metro-North reopened the 6th Avenue Bridge ahead of schedule in September, 2020. The 14th Street Bridge opened on July 3, 2019, and the Park Avenue/1st Avenue Bridge was replaced in 2011. (MTA press release, June 2)

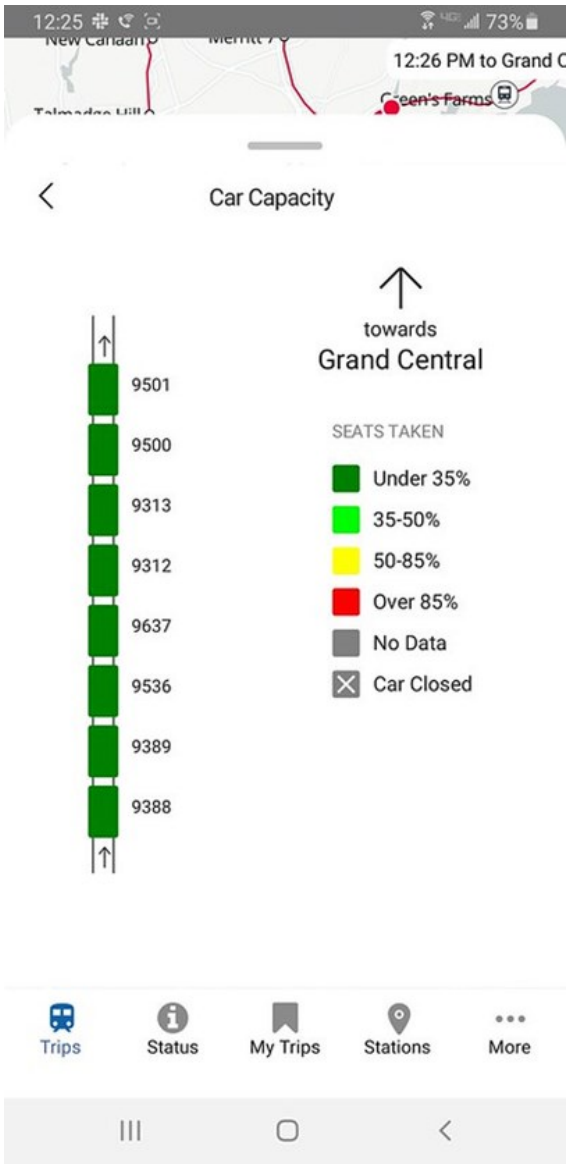
New Haven Line passengers can now see the amount of space available on each car of an approaching train by looking at digital signs on platforms five minutes before a train arrives or by using the Metro-North Train Time app at any time. The feature is designed to help customers find cars with the most available seats on a train before boarding. The technology was launched on the Harlem and Hudson Lines in November, 2020.

The capacity tracking feature was rolled out by car fleet. It became available in November, 2020 for most trains operating on electric portions of the Harlem Line and Hudson Line — trains composed of the newer M7 railcars. Crews continue to work to bring capacity tracking technology to the diesel sections of the lines and to older M3 electric rail cars.

Passengers who already have the app installed will receive an automatic update with the new feature.

The project was completed by Metro-North in-house staff.

Since its inception in 2013, the free mobile app, which is available from Google Play and the AppStore, has provided real-time status and schedule information to customers via their smartphones, along with destination, track assignment and real-time position of the next 12 trains at a given station. Features also include service alerts, fare information, ADA accessibility, parking availability and connecting services. The app is also translated into six languages — English, Spanish, Chinese, Yiddish, Portuguese and Italian. (MTA press release, June 7)



Screenshot example of Metro-North train showing consist and car capacities.
MTA screenshot

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Rail News in Review

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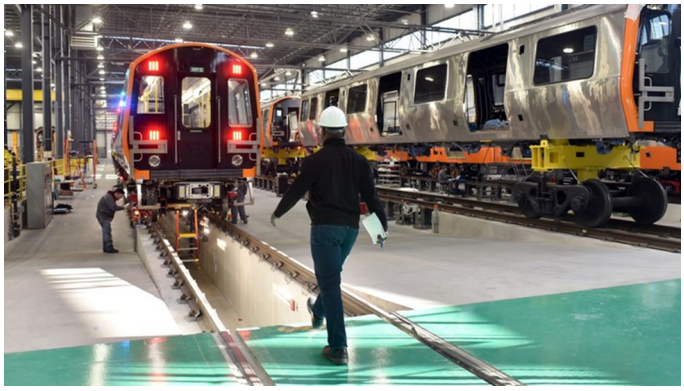
Other Systems

Boston, Massachusetts



Rail cars are being built at the CRRC MA rail car facility in East Springfield, seen here on December 23, 2019.
Don Treeger/***Republican*** photograph

The MBTA acknowledged on June 7 that the switch in the tracks where a Springfield-built CRRC Orange Line subway car derailed in March likely contributed to the derailment.

Jeff Gonneville, deputy general manager of the Massachusetts Bay Transportation Authority, also said another contributing factor in the March derailment near Wellington Station in Medford — one that has kept the Springfield-built cars out of service for about three months — was that the more the cars traveled the harder it became to turn the assembly that attaches the wheels to the rest of the car, an assembly called the truck. At fault are parts called side bearer pads designed to regulate the amount of force needed to turn the wheels. Those pads deteriorated.

Gonneville had first reported on the side bearer pads issue last month.

To date, just 36 Orange Line cars and six Red Line cars have been delivered to the MBTA.

CRRC believes the switch, especially the lack of a guard rail, the pitch of the track and the coefficient of force needed to roll wheels across the track all played a larger role in the derailment, according to Gonneville.

Gonneville said the MBTA feels strongly that the lack of a guardrail and the bearer pads issue in the wheel assemblies on the cars were both contributing factors. The CRRC and the MBTA both acknowledge that the force needed to turn the wheels exceeds design specifications, he said.

The MBTA and CRRC are working to restore the Springfield-built cars to service, said Gonneville, but he had no date yet.

And Gonneville said the switch and adjacent tracks at the Wellington station site of the derailment will be rebuilt.

CRRC said through a spokeswoman that it disagrees with MBTA's contention that the side bearer pads were a key contributing factor to the derailment.

The June 7 meeting came the day before CRRC planned to host the media and city officials Tuesday, June 8 at its Springfield factory to celebrate work beginning here on subway cars for Los Angeles.

CRRC received a $566 million contract from the MBTA in 2014 to build 152 Orange Line cars and 252 Red Line cars in Springfield. In 2016, the state upped the order with another 120 Red Line cars, with a production cost of $277 million.

The Orange Line project is expected to be completed in 2023, the Red Line in 2024.

As part of the deal, Chinese-owned CRRC built a factory in Springfield to assemble the cars — shells built in China but a bout 60% of the parts are U.S.-made.

The idea was to create an industry here making transit and rail passenger cars. Following the MBTA deal, other transit agencies signed on.

Southern California officials voted in 2016 to buy 64 new subway cars for the Los Angeles-area Metro Red Line and Purple Line from CRRC at a cost of $178.4 million.

In 2017, the Southeastern Pennsylvania Transportation Authority ordered 45 double-decker rail cars from CRRC at a cost of $137.5 million. Today, the cost is up slightly to $138 million.

But there have been problems with the MBTA cars.

Mechanical problems, including noise coming from the undercarriage and trouble with doors, cropped up on Orange Line cars already in service in Greater Boston in late 2019.

And production has been delayed due to supply problems, issues with getting and training workers and the pandemic.

CRRC has also been hampered by difficult trade relations with China and federal lawmakers insistent on keeping the Chinese out of the transit industry.

U.S. Rep. Richard E. Neal, D-Springfield, was able to broker a compromise on some of the trade issues.

At the start of 2021, CRRC had 376 employees in the state, 293 of them at the Springfield plant and the rest in Boston working with the MBTA.

Of the Springfield employees, 212 are union production workers. (masslive.com via ***Mass Transit***, June 9)

Seattle, Washington

Sound Transit placed into service the first six of its new Series 2 light-rail vehicles (LRVs) into passenger service on May 14. The Siemens-made Series 2 vehicles have larger windows, wider center aisles, more room to stow luggage, seating for 70 and double the bike hooks. In addition, each car is equipped with dynamic passenger information displays and LED lighting improvements. Sound Transit initially ordered 122 new Series 2 light-rail vehicles from Siemens Mobility in 2016, followed by an additional 30 in 2017, bringing the total order to 152 LRVs for $642.5 million. These 152 new LRVs will join Sound Transit's current fleet of 62 Series 1 vehicles, which were made by Kinkisharyo.

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Sound Transit intends to retrofit the Series 1 fleet with an on-board system updated for new speed codes required for the future East Link Line. The Series 1 vehicles will be swapped out of service for Series 2 vehicles as the new LRVs enter service. The first Series 2 LRV arrived from the Siemens manufacturing facility in Sacramento, California in June, 2019 and as of now, Sound Transit has taken delivery of 41 LRVs. Sound Transit expects to receive between one and three new Series 2 light-rail vehicles every month through 2024. (***Mass Transit***, May 17)

Type 2 Siemens light-rail vehicle testing at the Capitol Hill station on January 24.
Sound Transit photograph

San Francisco, California

Caltrain's first Stadler EMUs shown testing at the DOT's Pueblo, Colorado test track.
Caltrain photograph

Caltrain provided updated information about its electrification project on June 3 and the information was not good news: the project is delayed, and costs have increased.

Electrified service on Caltrain, a key component of the Caltrain Modernization Program, will not be a reality until late 2024 and it will take an additional $333 million to deliver the project. Service was originally slated to begin in the second quarter of 2022.

The Federal Transit Administration (FTA) is reviewing the delay and Caltrain says the lag is the result of several factors from complications in the installation of signal systems to unforeseen conditions under Caltrain's tracks and severe disruptions to supply chains caused by the COVID-19 pandemic.

Caltrain Executive Director Michelle Bouchard recognizes the disappointment from the delay but says the rail service provider is fully committed to seeing the project delivered.

Caltrain says progress to date on the construction of the project includes:

- 75 percent of foundations for the catenary poles are complete
- 60 percent of the poles have been installed
- All 10 of the traction power facilities are under construction
- The overhead contact system has been installed in all of Caltrain's four tunnels; and
- The first electric trainset has been completed and is currently being tested at the Transportation Technology Center in Pueblo, Colorado

The project will electrify a 51-mile corridor from San Francisco's 4th and King Caltrain station to the Tamien Caltrain station and replace 75 percent of Caltrain's diesel service with electric. The rolling stock components of the project included the design and purchase of 96 Electric Multiple Units, while the infrastructure side of the project included the installation of an Overhead Contact System and traction power substations. Once complete, the project will provide cleaner, greener and improved service to riders.

FTA prepared and shared with Caltrain a draft Risk Refresh Report based on the project's progress. The report estimates the project will need an additional $333 million, increasing the project cost from $1.98 billion to $2.3 billion. Caltrain says it has identified a funding plan for the known and allocated costs of $161 million out of the forecasted $333 million. The remaining $172 million is in unallocated costs that has been set aside as a reserve for unknown risks.

Caltrain and FTA signed a $647-million Full Funding Grant Agreement in May, 2017. Through Fiscal Year 2020, Congress has appropriated a total of $472.96 million for the project.

Caltrain said it will be developing a funding plan over the next several months in coordination with the project funding partners. (**Mass Transit**, June 4)

The San Francisco Municipal Transportation Agency's (SFMTA) cable cars will return to the streets this summer as downtown economic activity returns.

SFMTA staff will conduct mechanical inspections of the historic vehicles and operator retraining in mid-July. By the first week of August, SFMTA will test the system by inviting passengers aboard for the duration of a mock service trial, riding the lines where cable cars are operating and making stops. This mock service will be irregular, not following a particular schedule, as SFMTA works out any kinks in the system that might arise.

By early September, cable car service will return — first to the Powell-Hyde Line from about 7:30 AM until

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about 10 PM (though cars returning to the cable car barn after 10 PM will continue to take riders to Chinatown). Service on the Powell-Mason and California routes will then follow.

Last March, in response to the COVID-19 pandemic, SFMTA temporarily halted cable car service as part of the city's emergency response. This decision was made to best protect operators and the public. Muni resources were then shifted to a core network — a limited number of the most in-demand routes — to serve essential workers and accommodate physical distancing on San Francisco's most utilized lines.

The result was the longest cable car shutdown since the full system reconstruction in the 1980s. Now, to reboot the system requires significant work. Leading up to the return of San Francisco's cable cars, the SFMTA will recertify operators, hire line inspectors and prepare infrastructure to accommodate service. (***Mass Transit***, June 16)

Los Angeles, California

The Los Angeles County Metropolitan Transportation Authority (L.A. Metro) began construction June 21 on a station it envisions as being a "Multi-Modal Transit Gateway" to Los Angeles International Airport (LAX).

The $898.6-million project will provide a direct connection to the under-construction Los Angeles World Airports (LAWA) Automated People Mover project through a ninth station on the Crenshaw/LAX line. L.A. Metro says the goal of the Airport Metro Connector Transit Station (AMC) is to provide a reliable, fast and convenient connection for passengers traveling between LAX and the regional bus and rail transit system.

The new AMC station will be located at Aviation and 96th Street and will include:

- Platforms to access L.A. Metro light-rail trains
- 16-bay bus plaza to serve L.A. Metro and other municipal bus operators including Santa Monica Big Blue Bus, Culver City Bus, Torrance Transit, GTrans (Gardena) and Beach Cities Transit
- A bike hub, a private vehicle drop-off zone and easy access to the LAX people mover
- A new L.A. Metro customer service center; and
- Interactive information kiosks, public restrooms and commercial space for tenants who will provide passenger conveniences

The rail station portion of the project will contain two light-rail platforms that L.A. Metro says will be easily accessed via escalators and elevators, new ADA compliant swing door faregates to allow for smooth passage with luggage and a full roof covering the entire platform.

The project has been designed to achieve a Leadership in Energy and Environmental Design (LEED) Gold rating with sustainable features that include 550,000-plus kilowatts of solar panels, large native landscaping areas and electric bus charging stations.

The LAWA Automated People Mover project is scheduled to be in operation in 2023 and the AMC project is forecast to be completed in 2024. (***Mass Transit***, June 22)

San Diego, California

County Supervisor Nathan Fletcher speaks during the opening ceremonies of the new trolley stop at the VA Medical Center on Wednesday, June 23.
Jarrod Valliere/***The San Diego Union-Tribune*** photograph

Map of the Mid-Coast Corridor Transit Project, the extension of the Blue Line.
SANDAG drawing

The VA Medical Center trolley station was unveiled on June 23, the latest milestone in San Diego's more than $2 billion rail project extending from downtown up to UC San Diego and University City.

The facility — located at the VA San Diego Healthcare System campus at 3350 La Jolla Village Drive — is the first of nine new stations to be revealed through the summer and fall.

The Mid-Coast Trolley extension began construction

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about five years ago and is slated to begin service in November, according to the San Diego Association of Governments, or SANDAG. The agency constructed the project with funds from the half-cent sales tax dubbed Transnet.

The new 11 miles of track will service the Blue Line trolley, which currently runs between San Ysidro and Santa Fe Depot in downtown San Diego. The project will allow for one-seat travel from the Mexico border to one of the region's larger job centers, adding new stops along Mission Bay, just east of Pacific Beach, UCSD and ending at the Westfield UTC mall.

Once construction is completed, the San Diego Metropolitan Transit System (MTS) will take over operations of the new trolley line. The agency said it plans to unveil additional stations throughout the summer and fall. (***San Diego Union-Tribune*** via ***Mass Transit***, June 25)

TORONTO, ONTARIO, CANADA

Following years of discussion, months of negotiations and securement of funding, the first of the Government of Ontario's priority transit projects broke ground June 23.

The Scarborough Subway Extension will add three stops and bring Toronto Transit Commission's Line 2 subway nearly five miles from the Kennedy station to Sheppard Avenue and McCowan Road in Scarborough. The extension will replace a rapid transit line and provide connections to other transit options in the region.

When service begins between 2029 and 2030, it is expected 38,000 people will be within walking distance of rapid transit access with the extension's anticipated daily boardings reaching 105,000 by 2041.

At a virtual event marking the start of construction on the project, many provincial and local leaders recognized the significance of the event in delivering on the long-discussed project.

The extension is expected to cost C$5.5 billion (US$4.56 billion) to build and the project is part of the province's largest ever transit expansion plan. In addition to the Scarborough Subway Extension, the priority transit projects included in the province's C$26.8 billion (US$22.12 billion) transit plan are the Ontario Line, the Yonge North Subway Extension and the Eglinton Crosstown West Extension.

Earlier this year, the government of Canada agreed to finance up to 40 percent of the priority transit projects, which would be C$2.26 billion (US$1.84 billion) for the Scarborough Subway Extension.

Construction on the extension will be covered in two contracts in order to accelerate construction and delivery of the project. The first contract was awarded to Strabag AG at the end of May and includes design, launch and construction of the tunnels. A separate contract will be issued for remaining work on the extension including stations, fitting out the tunnel and installing and commissioning the systems to put the subway in to service.

Metrolinx reports crews have been working at the launch shaft site for where the tunnel boring machine (TBM) will eventually be lowered into the ground. Drill rigs have also arrived on site where they will create a watertight, foundational wall around the launch shaft before excavation can begin. The massive TBM is expected to arrive in 2022 and Metrolinx plans to hold a community contest later this year to crowdsource a name for the machine. (***Mass Transit***, June 24)

EDMONTON, ALBERTA, CANADA

A rendering of the Capital Line South light-rail extension.
City of Edmonton photograph

The Edmonton City Council approved funding for one light-rail extension and received updates on three additional light-rail transit (LRT) projects.

The City Council has approved C$333 million (US$26.91 million) of municipal funding for the Capital Line South LRT Extension from Century Park to the Heritage Valley Park & Ride.

The city of Edmonton has received C$1.47 billion (US$1.19 billion) in previous funding commitments from both the federal and provincial governments for LRT expansion. The Capital Line funding application is currently with the federal government for review and submission to the federal Treasury Board by the fall of this year.

The City Administration also delivered an LRT Network update to City Council that outlined the work being completed across the Valley Line LRT and Metro Northwest.

Construction on the Metro Line extension from NAIT into Blatchford is continuing with track being installed, stations being constructed and landscaping work happening to accommodate the line. Early work on the Valley Line West is underway and includes preparing project plans and designs, procuring major construction contracts and conducting geotechnical investigations along the alignment. Construction activities are set to ramp up in early 2022 and will eventually connect to the operational Valley Line Southeast.

The Valley Line Southeast will run 13 kilometers (approximately eight miles) from downtown to Mill Woods and will operate as Edmonton's first low-floor "urban-style" LRT. TransEd began construction on the Valley Line Southeast in Spring, 2016. (***Mass Transit***,

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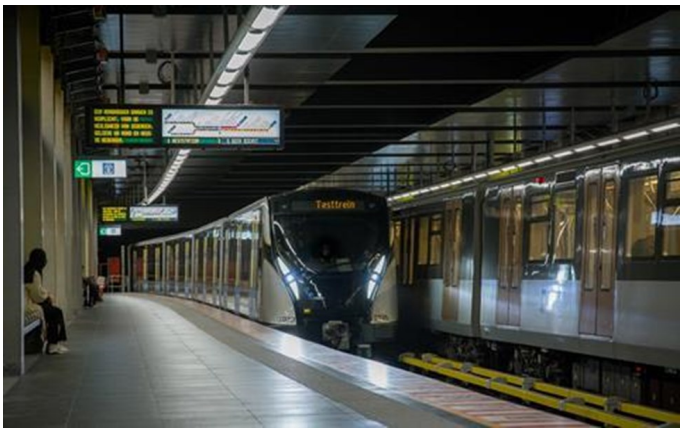
BRUSSELS, BELGIUM



New M7 train set.
H Welter/***Metro Report International*** photograph

Brussels metro operator STIB has officially launched its M7 series trainsets into operation, with CEO Brieuc Meeûs d'Argenteuil and the capital region's Minister of Mobility Elke van den Brandt taking invited guests for a short ride on the first unit from Erasmus station on Line 1.

Up to 43 trains are being supplied by CAF under a 12-year framework contract, awarded in 2016. The 308-foot-long through-gangwayed M7 is a derivative of the earlier M6 design. A pre-series trainset arrived at Haren Depot in July, 2020, and four units have now been delivered. Following extensive testing, the trains are expected to enter passenger service in the summer.

The first 22 trains have been ordered to increase the capacity of the existing network, and all are due to arrive by the end of 2022. The next batch will follow when the north-south pre-metro Line 3 between Albert to Nord Station is converted from tram operation to a driverless metro and extended north to Bordet.

The M7 sets provide a mix of transverse and longitudinal seating as well as open gangways.
H Welter/***Metro Report International*** photograph

Conversion work is already underway in the pre-metro tunnels each night. The platforms at the underground stations are being lengthened and raised to $3^{1}/_{3}$ feet above rail to suit the metro trainsets, while a 900-volt d.c. third-rail power supply is being installed. This work is expected to be completed by mid-2025, with the extension to Bordet now projected to open around 2030. In the longer term, a southern extension would take Line 3 to Ukkel.

Fleet evolution

The original Brussels metro fleet consists of 53 two-car and 37 three-car units of types M1 to M5 built by Bombardier and Alstom between 1976 and 1999, plus the 21 six-car M6 sets delivered by CAF in 2007-2008 which have Elin traction equipment and TSA motors.

The M7 sets are due to be introduced on Lines 1 and 5, alongside the M6 units. This will displace older stock to Lines 2 and 6, allowing frequencies to be increased on both routes. STIB anticipates that this will raise the capacity of Lines 1 and 5 by 5,000 passengers per hour and that of Lines 2 and 6 by 3,000 when all 22 sets have been commissioned.

The use of leather seat coverings is expected to reduce vandalism.
H Welter/***Metro Report International*** photograph

There are a number of differences between the M6 and M7 trainsets. In particular, the newer sets are formed as a single six-car train, and the ability to split a formation in two using separate auxiliary controls at the center of the train has not been retained. Removal of the hostler cabs has increased the capacity of each train from 728 to 742 passengers, with around 200 seated and the rest standing at 4 persons per square meter.

The M7 has been re-designed by Antwerpen-based design agency Yellow Window, and the seats have leather covers as used on STIB's T3000 and T4000 trams, which has had a positive impact in reducing vandalism. The ventilation and air-conditioning system has also been enhanced.

The floor height has been lowered from 3½ to $3^{1}/_{3}$ feet above rail to match the station platforms and give level boarding, while the doorways have been widened from 4¾ to 5¼ feet. Each train has 18 sets of doors per side,

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supplied by IFE. Green LED indicators signal when the doors are open, changing to red to warn closure is imminent.

The M7s have four motored cars and two trailer vehicles, with CAF IGBT controls and asynchronous traction motors supplied by ABB from Sweden. The trains are designed for retrofitting with the new Hitachi Rail CBTC which is being installed to ultimately permit driverless operation. Testing of the new signaling is expected to start in 2023. (***Metro Report International***, June 8)

FRANCE

An Alstom Regiolis cross-border train on test at Velim.
Quintus Vosman photograph

Testing of the first new Alstom Regiolis for cross-border services between Eastern France and southwest Germany has begun at the Velim test center in the Czech Republic.

Alstom is building 30 four-car sets. These have diesel engines and will be dual-voltage — 25,000 volts a.c. and 15,000 volts 16.66Hz so that they can operate services linking eastern France with the German states of Saarland, Rhineland-Palatinate and Baden-Württemberg.

The trains have a maximum speed of 100 mph and will also have first-class accommodation and bicycle spaces.

Funding for the trains is via an agreement between Grand Est and the Council of Ministers of the German state of Saarland. Delivery of the trains will continue until 2024.

Also on test at Velim is the first of 255 NG trains built by Alstom and Bombardier for the RER lines D and E in Paris.

A €3.75 billion framework contract was awarded by French National Railways (SNCF) in January, 2017 for the X'Trapolis Cityduplex trains, which are due to enter traffic this year.

The order is for 56 six-car 36foot-long and 15 five-car 427-foot-long trains. The latter will be able to carry up to 1,860 passengers.

Fitted with air-conditioning, the trains will have single-deck end coaches and double-deck intermediate coaches, with wide inter-coach gangways, 6.5' wide doors and larger vestibules designed to help speed up boarding and alighting. (***International Railway Journal***, June 28)

RER new generation trains.
Quintus Vosman photograph

Rendering of CAF's new trams for the Ruhrbahn.
Metro Report International photograph

ESSEN AND MÜLHEIM, GERMANY

Essen and Mülheim transport operator Ruhrbahn has awarded CAF a €150 million contract to supply 51 light rail vehicles, which will enable the complete replacement of its Stadtbahn-B cars as well as the P86/P89 sets which were acquired second-hand from London's Docklands Light Railway.

The 92'-foot-long and 8.7-foot-wide bidirectional high-floor LRVs will have a capacity of 173 passengers, with two multipurpose areas for wheelchairs or prams and interiors similar to the operator's NF2 and NF4 LRVs. They will be fitted with a driver assistance system, and rear-view cameras instead of mirrors.

Ruhrbahn specified the use of air spring trucks, which the operator said had been proven by the smooth running and comfort of the Stadtbahn-B cars.

CAF is scheduled to delivery two pre-series LRVs in the first half of 2024, with series vehicles following until

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2026. (***Metro Report International***, June 18)

GDAŃSK, POLAND

N8C-MF01 1138 (Düwag, 1981). These were bought second-hand from Dortmund, Germany in 2008-2009.
Metro Report International photograph

Gdańsk's tram operator Zakład Komunikacji Miejskiejhas (ZKM) awarded sole bidder 4iB a 12.7 million złoty contract to overhaul 10 Düwag N8C-MF01 trams.

The 12-month project will include modernization of the traction and control systems, mechanical repairs and upgrading of the passenger information systems on the vehicles, which were originally built for use in Dortmund. (***Metro Report International***, June 21)

ŁODŹ, POLAND

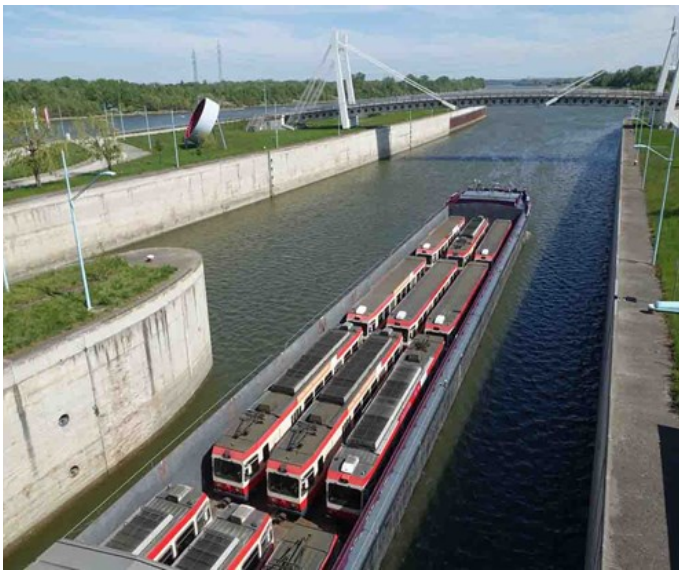
Two of the 40 Variotrams which have been withdrawn from service in Helsinki are to be tested in Łódź this summer, with the city's transport operator potentially looking to acquire further vehicles if the trials prove successful.

MPK Łódź will be able to use the two trams free of charge for eight months, paying only the cost of transport. The test period has been selected to cover both summer and winter conditions.

The 40 meter-gauge trams were delivered to Helsinki by Adtranz and Bombardier Transportation in 1998-2003 but suffered from problems with track profiles and operating conditions on the Finnish capital's network. Modifications were undertaken in 2006-2007 and Bombardier took over the responsibility for maintenance. However, it provided impractical to make the vehicles fully compatible.

In 2017 two of the trams were sent for testing in Mannheim, Heidelberg and Ludwigshafen. Helsinki transport operator HKL and Bombardier then agreed to co-operate to try to find the fleet a new home, and in early 2021 HKL signed a contract to sell the fleet to an undisclosed customer. (***Metro Report International***, June 17)

SLOVAKIA



Waldenburgerbahn cars in a barge on delivery to Slovakia. Seen here leaving a lock on the Danube Canal in Vienna, Austria on May 10.
Loris Giuseppe Knoll photograph

As part of ambitious plans to provide year-round passenger services on a 760-millimeter gauge former forestry railway, non-profit heritage organization Čiernohronská Železnica has taken delivery of a fleet of electric railcars formerly used on Switzerland's Waldenburgerbahn.

The Čierny Hron valley revitalization project, which has the backing of the Banská Bystrica regional authority, includes modernization and electrification of the 10½-mile line between Čierny Balog, Hronec and Podbrezová, which is claimed to be the only railway in the word to run alongside the pitch inside a football stadium.

Construction of an extension to ski resorts in the Chopok mountain foothills is also envisaged. Heritage steam services would be retained.

The Waldenburgerbahn was Switzerland's only conventional 750-millimeter gauge passenger railway, and the seven BDe4/4 power cars and 10 Bt driving trailers built in 1985–1993 were put up for sale as part of the rebuilding of the line to meter gauge which began this April.

The vehicles left the port of Basel on April 30 and traveled by boat via the Rhein-Main-Donau canal to Bratislava, where they were loaded on flat wagons on May 13 for the last leg of their journey to Hronec via Levice and Zvolen.

Waldenburgerbahn operator Baselland Transport sold the vehicles for a symbolic price of SFr80,000, as it was keen for them to find a new use, however delivery cost €250,000. (***Railway Gazette International***, June 21)

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

Sunday, June 18

The day dawned bright and clear and after breakfast all 48 of us boarded our chartered bus, which departed on time at 9:00 for the short trip to Lviv's main carhouse. Upon our arrival the group scattered to places inside and outside the facility, including nooks and crannies where unusual work cars could be spotted and photographed. We had free rein for photography and soon enough we were able to board our pair of old-time trams for the first part of our tour of Lviv's tram network.

Lviv lies at the western end of Ukraine, about 45 miles from the Polish border, and its history is intertwined with Poland's. In the days of Austria-Hungary, Lviv was called Lemberg, but it was actually founded by King Daniel of Galicia in the 13th century, who named it after his son, Lev. Galicia was part of Ruthenia, which evolved into Ukraine. But during the next century it was conquered by King Casimir of Poland and remained under Polish rule until 1772, when Poland was partitioned among its neighbors. For the next century the Hapsburg emperors attempted "Germanization," hence the name Lemberg, but the Polish and Ukrainian languages persisted. With the fall of the Austro-Hungarian empire at the end of the First World War, civil war erupted between the Roman Catholic Poles, who used the Roman alphabet, and the Eastern Orthodox Ukrainians, who used the Cyrillic alphabet, with the League of Nations finally giving the city and its surrounding area to Poland, mainly because its population was mostly Polish.

That was the status quo until Hitler's invasion of Poland, which started the Second World War. With Poland being partitioned again, Lviv fell to the Red Army, and Ukrainian culture and language began to be encouraged, but worse would happen to the majority Polish (and Jewish) population under German occupation. Finally the Red Army reconquered the area, and it became part of the Soviet Union, annexed and absorbed into the Ukrainian Soviet Socialist Republic. At that time large numbers of Polish residents were expelled (unnecessary for Jews) and ethnic Ukrainians migrated into the city. Thus today Lviv's Polish and Austrian past is noticeable from its substantial Central European appearance and its many Roman Catholic churches, but the city is totally integrated into Ukraine, with Cyrillic Ukrainian being the language of record. As far as religion is concerned the city's majority is aligned with the Roman Catholic Greek Eastern Rite (with allegiance to the Pope), while the Ukrainian Orthodox church is secondary. But if you take the entire country into account, you'd find that various forms of Orthodox Christianity dominate and Roman Catholicism is followed by less than 10 percent of the population.

Fortunately Lviv was not destroyed during the war and many of its buildings have been restored, so a great deal of the city retains a skyline featuring older buildings and a large number of church spires. Its center looks like it could easily be in Poland, Hungary or Slovakia, or any other eastern European metropolis emerging from communist rule. Thus its down side is the huge amount of automobile traffic through much of its downtown.

With a population of just under 750,000, it is a lovely and vibrant place, and has begun attracting large numbers of tourists. And it provides a great setting for riding and photographing streetcars. Lviv's meter-gauge tramway network covers a little under 25 miles of route, encompassing 11 lines (see http://www.urbanrail.net/eu/ua/lviv/lviv.htm). Its rolling stock is almost exclusively high-floor Tatra KT4 2-section articulated units, but these are now being supplemented by some new and rebuilt cars.

We would not be able to ride the entire system, as Routes 10 and 11 were temporarily closed for extensive track rebuilding, which included the line to the railroad station, and other routes were looping at the depot instead. After some photos there, we were soon off on our chartered 4-wheelers, circling through downtown and pausing for a number of photo stops of the museum equipment before regular service caught up.

Soon enough we were back at the carhouse, and transferring to a pair of modernized KT4 units. This second trip, with cars 1100 and 1088, covered additional lines, including the brand new and very impressive 3.3-mile extension of Route 8 southward on reserved track to a developing neighborhood. En route we had some opportunities to photograph new Electron 3-section low-floor cars in regular service.

Some of us left the charter once we reached Pidvalna Street downtown (a block away from the Rynok, or central marketplace), where an unmotored replica tram serves as a visitor center adjacent to a flea market for books. After taking some photos and accomplishing some more riding (including the lovely Route 8 extension), we returned to the hotel by tram, which entailed a long uphill walk at the finish.

The group had dinner at a nice restaurant, to which we were conveyed by minibuses. It was a little slow and Clare and I were tired, so we left before dessert and used a taxi to return to the hotel.

Next month's installment covers the afternoon and our next day in Lviv, including scenes of everyday operation and photographs of the Route 8 extension.

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Vienna-Bratislava-Ukraine

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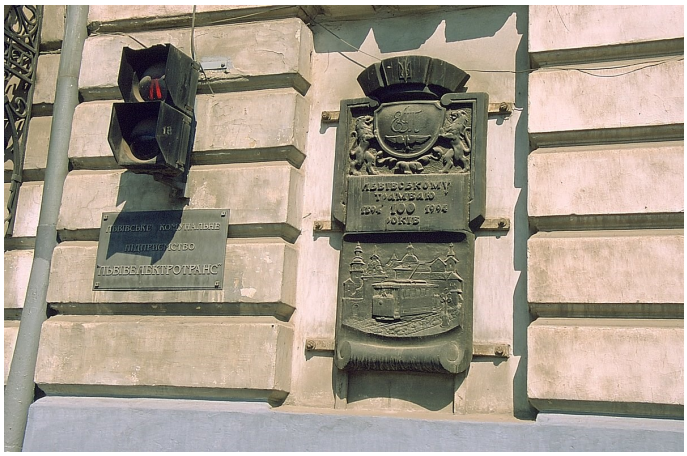
The two Tatra KT4 articulated PCCs are typical of the tramway's current rolling stock. 1088, which would be one of our chartered cars later in the day, has been renovated, and does not carry advertising. The two cars were built in 1988 and 1985 respectively.

Left: Our two fantrip four-wheelers. 002 is a restored single-ended Gotha T59, constructed in 1960. Double-ended 093 was built around 1909 (websites disagree on the exact year) by a carbuilder in Sanok, Poland (then also part of Austria-Hungary) as one of 8 cars for the town of Tarnow's new tramway (also in Poland). In 1942, during World War II, the German occupiers shut down the tramway in Tarnow and transferred its 8 cars to Lviv, which then numbered them from 87-94. No matter what its exact heritage is, it has been beautifully restored and certainly the oldest car on the roster. (Tarnow is 150 miles west of Lviv and Sanok is in between, a little to the south; Lviv, Sanok and Tarnow are all considered to be within the historic boundaries of Galicia.) Right: When I saw this vehicle I mused that perhaps it was not a KT4, but rather a training cockpit for United Airlines pilots. I would see it in service on the following day, when it was flying the friendly rails.



A KT4 in service on the 2 line passes the second of our fantrip cars in the left view, while the second photo is a close-up of the plaque on the side of the building at the Kyivska stop.

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Vienna-Bratislava-Ukraine

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Three-quarter views of our two chartered cars, also at Kyivska. 002 is shown near the junction with the line to the railroad station (which was out of service). The photo at right was one of the first of the day, before the crew finally figured out that they should stay out of the way of photographers. A bigger problem was the size of the group: 48. Many had cameras that were outfitted with wide-angle lenses, which meant they could stand close to the trams at photo stops, making it difficult to achieve photos with a great deal of background unless some of the participants were included.

1180 is one of eight 3-section 100-percent low-floor cars built by a local company, Electron (note the spelling of the manufacturer's name in Cyrillic on the side of the vehicle). I rode one of these cars on the following day. Electron also has constructed a 5-section car for Lviv, 1179, which was photographed by many members of the group in the carhouse prior to the beginning of the fantrip. A few days later I was able to ride and photograph one of the six 5-section units Electron built for Kiev. "Amerika" apparently is a real-estate company that uses Uncle Sam as its trademark, as shown in the right photo.

Our second pair of chartered cars, both modernized Tatra KT4 units. Note the two different types of pantographs.

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