

BULLETIN

Volume 66, Number 9 | September 2023

63rd Street Track Reconstruction Work Begins

Beginning Monday, August 28 at 5:00 AM and continuing through to Friday, November 24 for this first phase, the IND 63rd Street Line was partially removed from service. This is for major track reconstruction work being performed by Railworks, Inc./L.K. Comstock & Company, Inc. under contract M-44146.

This is the same contract, and contractors, that rebuilt the BMT Jamaica Line tracks in the lower level of Archer Avenue between July and September of last year (see the July 2022 *Bulletin*, page 5). Tracks D1A and D2A on the upper level of Archer Avenue were also previously done by this team, that job being completed at the end of November 2020.

If the rebuilding of track on the 63rd Street Line sounds familiar, that's because it should. Back in the late 1990s, in preparation for future increased service on that line, much of the original direct fixation (Type VIII) track was replaced.

The contract to perform that work, C-33207, was titled *63rd Street Line Rehabilitation; Track, Signal and Water Remedy Work*. The prime contractor was a joint venture between Slattery Associates, Inc. and Perini Corp. The sub-contractor that performed the signal work was Welsbach Electric Corp.

The reason for the signal work was that, as originally

designed and constructed, the 63rd Street Line could only handle about 15 trains per hour on each track. That was clearly going to be insufficient once the connection to the Queens Boulevard Line opened, with the possibility for a doubling of service to 30 trains per hour.

Several additional automatic block signals were added and the limits of control for many of the existing signals were modified.

This earlier project was designed between May 1995 and July 1996. Construction began November 27, 1996 and was substantially completed December 22, 1999.

The limits of track reconstruction then were from north of IND 57th Street-Sixth Avenue and BMT 57th Street-Seventh Avenue to at least 1,000 feet south of Lexington Avenue and from 380 feet north of Lexington Avenue to almost 1,100 feet south of 21st Street-Queensbridge.

We do not have a copy of the contract drawings for the current work so we really do not know the actual extent(s) of the track being replaced this time around.

Under the current phase of work, which began on August 28, northbound Track B6 and T2 from the south end of 57th Street-Sixth Avenue Station to the south end of the 36th

Continued on page 3



Electric Railroaders Association

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The *Bulletin* is published monthly and sent free to all ERA members.

Back Issues

PDFs of previous issues can be downloaded at erausa.org/bulletin

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Trip Announcements

September 30: MNYBA Westchester and Connecticut trip.

For information, call or send a text to 917-714-7087.

October 13-15: Motor Bus Society Fall Convention, San Diego.

Visit <https://erausa.org/regional-trips/2023/10/> for details.

President's Message

I am sad to report that our 1st Vice President, Headlights Editor and Webmaster Sandy Campbell is in the hospital. Please keep him in your thoughts and prayers for his full recovery.

Cover Photo

A classic scene of a tram in an iconic location. Peter Witt 1641 (Società Italiana Ernesto Breda, 1929) is seen operating on Milano, Italy's route 5 at the Piazza Duca D'Aosta, in front of Stazione Centrale (Central Station). The station opened on July 1, 1931. The view is looking northeast in mid-afternoon on September 11, 2022. There are still about 100 of these Peter Witt style trams trundling through the streets of Milano. Interestingly, examples from all six original manufacturers are present in today's roster. Jeff Erlitz photo

Donations

ERA is a 501(c)(3) tax exempt corporation. Your donations are fully tax deductible and can be made either with your membership renewal or using our donation form on our website: www.erausa.org/donate. Your donation helps to maintain ERA's 88-year long tradition of traction education and entertainment!

Monthly Zoom Meeting

Friday, September 29, 2023 at 7:30 PM. Note: This is the fifth Friday of the month due to the Jewish Holidays and travel.

Presenting This Month: Clark Frazier

Clark will be showing some of his most favorite slides, starting in 1956, of electric streetcars and interurbans. Locations all over the U.S., Canada and Mexico will be seen as well as Costa Rica and, in Europe, the Czech Republic, Portugal and Yugoslavia.

A native of central California, Clark graduated from the Massachusetts Institute of Technology with a master of science degree in transportation but spent most of his career in the field of information technology. He started taking color slides in 1956 and continued to do so until 2000. He has traveled extensively in Central and South America as well as Europe and Asia.

How to Join Our Zoom Meeting

The Zoom registration link for this meeting is: <https://us02web.zoom.us/join/9174824235>. You can sign in at 7:15 PM. The show begins at 7:30 PM. If you have any problems, email Bob Newhouser at bnnyc1955@aol.com, or on the night of the meeting, text or call Bob at 917-482-4235.

2024 Benelux Trip

ERA is planning a tour next year to Belgium, the Netherlands and Luxembourg. The tour will begin in Amsterdam on May 10 and end in Brussels on May 25 and will be based in Amsterdam and Brussels. We are planning to visit many tram operations and tram and railway museums in Amsterdam, Den Haag, Rotterdam, Arnhem, Utrecht, Brussels, Antwerp, the Oostende-Knokke Coastal Tram, Brugge, Gent, Charleroi, Thuin and Luxembourg. Group and optional sightseeing will be available. Included travel will be by rail and day passes will be provided for local transit. Booking has now begun! Visit <https://erausa.org/international-tours/2024/> for all the details.



Street Interlocking (Queens Boulevard Line) is out of service.

As was done before the 63rd Street Connection opened, all F trains are operating via 53rd Street in both directions 24 hours per day, seven days per week. In addition, there is a single-track F shuttle service operating on southbound Track T1 between 21st Street-Queensbridge and Lexington Avenue/63rd Street. This shuttle operates from 5:00 AM to midnight every day with trains operating every 20 minutes. These shuttles leave 21st Street at :00, :20 and :40 minutes past the hour. They return from Lexington Avenue at :10, :30 and :50 minutes past the hour.

The shuttles have only three minutes for their scheduled layover at 21st Street and five and a half minutes at Lexington Avenue. All of these shuttle trips are double-ended, meaning they have train operators at both ends. This helps to minimize the turn-around times at each end.

Interestingly, after discharging passengers, the southbound

shuttle trips need to proceed south of Lexington Avenue to clear the northbound home signal at the double crossover in order for "traffic" to be changed for the northbound move.

Another oddity in the E and F schedules for the duration of this project is that they operate local in Queens, southbound from 10:30 to 11:30 AM and northbound from 10:45 to 11:45 AM. Northbound E and F trains also operate local on Queens Boulevard from 8:30 to 9:00 PM. These are to allow for work train moves to and from 63rd Street.

Weekday M service is being shortlined from Forest Hills-71st Avenue to 57th Street-Sixth Avenue. Since Track B6 in the station is out of service, all trains must turn on southbound Track B5, so it's a single-track terminal.

57th Street-Sixth Avenue Station is closed at night and all day on weekends. Roosevelt Island and 21st Street-Queensbridge are closed between midnight and 5:00 AM when the shuttle doesn't operate.

Worldwide Suburban Electric Railway, Metro and Tramway Openings in August 2023

Table with 6 columns: Date, Country, City, Segment, Distance (miles), Rail/Metro/Tram. Rows include openings in India, Finland, Israel, Japan, China, Indonesia, and Turkey.

URBAN RAIL NEWS, AUGUST 31

Rail News in Review

New York Metropolitan Area

METROPOLITAN TRANSPORTATION AUTHORITY (MTA)

Interborough Express Consultant Selected

WSP USA, Inc. has been selected to perform the environmental review of MTA's Interborough Express, a proposed 14-mile, 19-station light rail transit project first announced in 2022 that would connect communities in Brooklyn and Queens to 17 subway lines and the Long Island Rail Road, reducing travel times within and between the two boroughs.

The Interborough Express would use the existing Bay Ridge Branch freight line — owned by LIRR and operated by New

York & Atlantic — and CSX's Fremont Secondary line. The project would include several new connections in neighborhoods that currently lack efficient connections to each other, and in some cases, to Manhattan.

MTA Construction & Development will direct WSP USA's work, which will cover the period up to and including the issuance of a Record of Decision, and include further advancement of conceptual design and general planning support, preparation of the Scoping Information Packet, preparation of the Environmental Impact Statement (EIS), support at EIS public hearings, and support for the Preliminary Engineering and Federal Transit Administration Capital Investment Grants program application.

RAILWAY AGE TRANSIT BRIEFS, August 3



NEW YORK CITY TRANSIT (NYCT)

Subway Service Improvements - Phase 2

The second phase of subway schedule improvements (see the June 2023 *Bulletin*, page 1) was implemented during the month of August.

Monday, August 7 saw the first of three improvements, for weekday midday service on the **C** line. Headways were decreased from 10 minutes to eight.

There are not that many Division B spare cars laying around these days, so to provide this added service three trainsets are borrowed from **A** service. Two of those trains are put-in at 168th Street at 9:56 and 11:10 AM and the third one at Euclid Avenue at 10:44 AM. In the afternoon, two **C** trains lay-up in 174th Street Yard (north of 168th Street) at 2:23 and 3:04 PM. Those two then return to **A** service. The third “borrowed” train set arrives at Euclid Avenue at 2:58 PM and then operates light to Lefferts Boulevard where it returns to **A** service.

To provide for this extra **C** service, four extra crews are needed, three AM and one PM.

On Saturday, August 12, the second of the service improvements went into effect, on the **1** and **6** lines. The headways on both lines decreased from eight to six minutes on Saturday and Sunday afternoons.

The actual time periods for the six-minute headways are shown in the table below:

Route	Day	Time Period
1	Saturday	2:30-6:30 PM
"	Sunday	1:30-5:30 PM
6	Saturday	2:00-6:00 PM
"	Sunday	1:30-6:00 PM

On both Saturday and Sunday, six extra crews are needed on the **1**. On Saturday, all six are PM jobs, but on Sunday five of the extra crews are AM jobs and one is a PM job.

To provide the additional service on the **6**, six extra crews are also needed on Saturday (one AM job and five PM jobs) but only five are needed on Sunday (four AM jobs and one PM).

The third installment of the service improvements under Phase 2 started on Monday, August 28, when midday headways were reduced from 10 to eight minutes on the **N** and **R** lines. Note that service on the **W** was not improved and it remains on a 10-minute midday headway. This does make for some uneven intervals leaving Ditmars Boulevard station in Astoria.

Once again, extra train crews are needed to provide this increased service. The **N** only needs five (four AM and one PM) but the **R** needs 12, all AM jobs.

Long-Term Track and Platform Outages

From Monday, August 14 to Monday, September 18, the southbound platform at Westchester Square **6** Station is out

of service to permit MLJ Contracting, under contract A-37146, to demolish and rebuild platform stairs and install a new canopy roof.

Up on the IRT Dyre Avenue Line, in addition to the Track Y3 outage mentioned last month, Track Y4 (what would be the northbound express but is only a storage/turn-back track) is out of service for its entire length from August 19 to September 24. Track Y4 extends from Morris Park Interlocking north to almost the north tunnel portal, north of Pelham Parkway **5** Station. This will allow Judlau Contracting, Inc., under contract C-35311, to clean and paint bridges at Bogart, Muliner and Brady/Matthews Avenues.

Speaking of Track Y3 being out of service, that work has been extended from September 25 to October 2.

The station rehabilitation work that has been going on at 75th Street-Elderts Lane and Woodhaven Boulevard on the BMT Jamaica Line has now been extended four months. Initially targeted to conclude on August 28, they are now scheduled to wrap up on December 2.

IND Queens Boulevard Line **E F R** Service Changes Extended Again

The service changes mentioned in the May and August *Bulletins* regarding the relocation of weeknight and weekend layups on Queens Boulevard have been extended four more months, from August 14 to December 16.

207th Street Yard Signal Work Completed

Over the long Labor Day weekend (September 1-5), the last phase of signal and switch cut-ins was scheduled to take place up at 207th Street Yard. (See the June 2023 *Bulletin* for a detailed description of this signal project.)

This final phase involved just the yard lead tracks between Dyckman Street **A** Station and the yard.

On a sad note, as part of this work, the largest remaining interlocking machine on the entire subway system will have been removed from service. This was the 107-lever US&S Model 14 machine in Tower A. The 55-lever US&S Model 14 machine in Tower B, at the north end of the yard, came out of service the week before, on August 28.

Station Re-NEW-Vation Progress

Since we last reported in the August *Bulletin*, the following stations have been completed in this station renovation program:

Station	Weekend
Avenue I F	August 5-6
Sutter Avenue L	August 12-13
Spring Street C E	August 19-20
Canarsie-Rockaway Parkway L	August 26-27

MTA PRESS RELEASES, August 8-30

LONG ISLAND RAIL ROAD (LIRR)

September Timetable Change

Last month's *Bulletin* described most of the timetable changes that will take place on September 5. There are some additional changes, though.

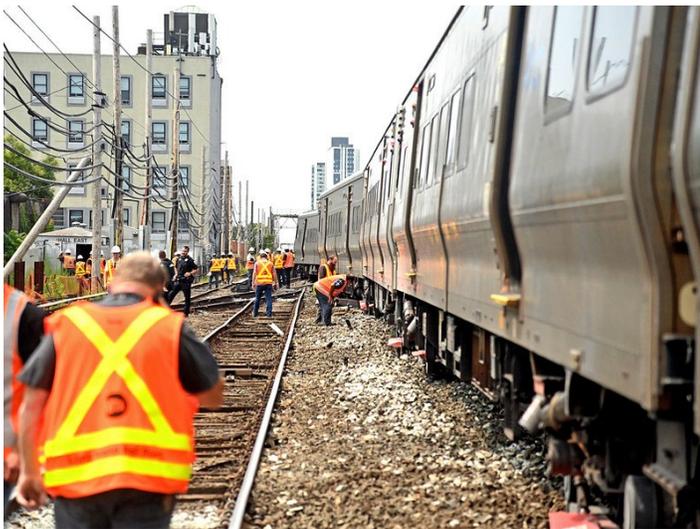
Train #1761 (7:01 PM West Hempstead-Atlantic Terminal) is now an equipment move from West Hempstead to Jamaica. Train #509 (6:55 AM Oyster Bay-Hunterspoint Avenue) will depart Oyster Bay six minutes later and become a "limited-stop" service, skipping Glen Cove, Sea Cliff, Greenvale, Albertson and Mineola. We believe that this is the first time in the Long Island Rail Road's entire history that an Oyster Bay train is skipping more than one or two stops on the branch.

After eliminating all "Jamaica Flyers" (trains that skip Jamaica) when Grand Central Madison opened last February, four were reintroduced with this timetable change. These trains are:

- #2017 (6:29 AM Ronkonkoma-Grand Central);
- #1233 (7:49 AM Freeport-Atlantic Terminal);
- #2066 (4:55 PM Grand Central-Ronkonkoma);
- #1662 (5:34 PM Grand Central-Huntington).

Hempstead Train Derails

On August 3, train #722 (10:43 AM Grand Central-Hempstead) derailed at approximately 11:12 AM about one mile east of Jamaica Station. It occurred within the limits of Hall East Interlocking near where 168th Street crosses underneath.



View west along Secondary Track No. 5 (leading to Hillside Yard) at the derailed train along Main Line Track 4 on August 3.

Marc A. Hermann/MTA photo

All eight cars of the M7-equipped train derailed but remained upright. There were some injuries but, thankfully, none were major.

A rescue train was brought to the scene after about 90 minutes and all passengers were transferred to it and

brought back to Jamaica Station.

It is believed that of the two crossover switches that the train was passing over as it traveled east on Main Line Track 4, one set of switch points and the movable point switch frog associated with that same switch were "out of correspondence." In other words, the switch points were correctly lined for a straight (normal) move but the switch frog was incorrectly lined for a diverging (reverse) move. Under normal circumstances, this cannot occur. An investigation will determine the cause of this mishap.

[MTA PRESS RELEASE](#), August 3

METRO-NORTH RAILROAD (MNR)

Second Heritage Locomotive Unveiled

MNR has rebranded a second locomotive with special colors and designs as part of a Heritage Series highlighting the railroad's 40 years of service.

Workers at the North White Plains Shop applied a vinyl wrap to P32AC-DM 201 (General Electric, 7/1995) that pays tribute to Conrail, MNR's immediate predecessor. The locomotive made its debut on the Hudson Line on Monday, August 14, departing Croton-Harmon Station at 7:31 AM, and arriving at Grand Central Terminal at 8:26 AM.



P32AC-DM 201 is seen at Harmon Locomotive Shop right after being outshopped. This scheme is reminiscent of Conrail's FL9s. Penn Central introduced this paint scheme, though with a slightly darker shade of blue, in August 1970. Marc A. Hermann/MTA photo

In March 2023, Metro-North received special permission from Conrail to apply its colors, name and logo to one of its locomotives. The design of the wrap mimics the paint scheme applied to older FL9 locomotives that Conrail operated for the MTA over the Hudson, Harlem and New Haven Lines from 1976 to 1982.

The first rebrand in the series was locomotive 208, which made its debut in May. Workers at the North White Plains Shop applied the vinyl wrap with the colors of silver, blue and red to pay homage to MNR's original design. The design was

created upon the railroad's founding in 1983 for the railroad's historic FL9 locomotives and worn by them until the last was retired in April 2007.

Additional locomotives will be wrapped in the heritage liveries that were worn by predecessor railroads. The wrapped locomotives will remain in service for the foreseeable future.

[MTA PRESS RELEASE](#), August 11

CTRAIL

New Cars Ordered

Alstom and the Connecticut Department of Transportation (CTDOT) confirmed a \$315 million base order for 60 single-level commuter railcars, with options to build 313 more as part of the state's railcar renewal program to replace its aging fleet of non-powered coaches and control (cab) cars. Delivery of the first cars is expected to begin in 2026. It is anticipated that power will be provided by Siemens Charger dual-mode locomotives that are part of a larger order by Metro-North.



Rendering of Alstom's design for CTRail. Alstom

Based on Alstom's Adessia platform, the new railcars will be prioritized for use on the non-electrified Hartford Line, as well as the non-electrified branches of the New Haven Line. They will feature a two-by-two seating configuration with foldable tables and access for riders using mobility aids; overhead luggage racks, workstation tables and a bicycle storage area; Wi-Fi access; real-time information on upcoming stops; power outlets and USB ports; panoramic balcony-style windows at wheeled mobility spaces; and the most current cybersecurity safety features, according to Alstom.

Additionally, each stainless steel 85-foot-long railcar will be designed for continuous operation of up to 24 hours and 1,200 miles daily and will have at least a 40-year design life. They will be customized to meet Federal Railroad Administration requirements and tailored for CTDOT.

[RAILWAY AGE](#), August 9

Other U.S. Systems

CHICAGO

Metra Electric Blue Island Service Improvement

Beginning August 14, Metra added four trains to the Metra Electric Line's Blue Island Branch schedule and Electric Line riders on all branches saw minor changes to the existing schedule to address ridership trends and service gaps to Hyde Park and areas south to 115th/Kensington Station.

Since the pandemic, Hyde Park stations have seen a higher recovery in ridership compared with other locations on the Metra system; specifically, reverse-peak ridership on the Metra Electric now exceeds pre-pandemic levels. The updated schedule offers new options for those riders.

Metra Electric provides approximately 16,900 passenger trips on weekdays, or 60 percent of its pre-COVID ridership. The new schedule brings service levels on the line to 85 percent of what was provided pre-pandemic.

[RAILWAY AGE TRANSIT BRIEFS](#), August 3

Forest Park Blue Line Rebuild Progress

Part B of Phase 1 of this project began on August 20. Blue Line trains resumed serving the Clinton and UIC-Halsted Stations and operates in two sections, between O'Hare and UIC-Halsted and between Forest Park and Illinois Medical District (IMD). There is no rail service between the UIC-Halsted and IMD stations during part of the project, which is expected to conclude in early October. The Racine Station will remain fully closed during this time.

As part of this \$268 million project, crews are completely rebuilding 15,000 feet, or almost three miles, of track between the LaSalle and IMD Stations; demolishing and completely rebuilding the Racine Station to meet modern accessibility guidelines; and upgrading the traction power system.

As part of Part-A project work, a roughly three-mile stretch of track and the underlying drainage system between the UIC-Halsted and LaSalle Stations has been completely removed and rebuilt.

Under Part-B work, crews will rebuild the track between the IMD and UIC-Halsted Stations. Upon completion of track work, the Loomis St. auxiliary entrance of the Racine Station will re-open. The main entrance of the Racine Station will remain closed and is expected to re-open in late-2024, at which time the Loomis St. auxiliary entrance will close for reconstruction through 2025.

[CTA PRESS RELEASE](#), August 15

CLEVELAND

Blue & Green Line Rail Service Suspension

Beginning August 20 and running through September 30, 67R buses will replace the suspended Blue and Green Line rail service east of Tower City Station due to track, signal, and station repairs. Last summer, the GCRTA Board of Trustees awarded \$3.5 million in contracted work to support



Rendering of the future 12th Street Station. DART

Map of the replacement service. GCRTA

improvements along the two rail lines.

During this six-week timeframe, GCRTA has also scheduled several additional light rail system improvements, to take advantage of power outages and warmer weather conditions. Among the improvements includes work at the Shaker Square Station consisting of repairs to the platforms, replacement of the station service building roof, system control boxes, several catenary pole suspension/pullover bands and replacement of a signal transformer amongst other enhancements to the lines.

Replacement 67R bus service will be available operating to/from Green Road via Van Aken Blvd. and Warrensville Center Road. These buses will operate every 15 minutes during weekday rush periods and every 30 minutes all other times. Riders should look for the orange colored 67R bus stop signs along the route to board the replacement bus. The Blue/Green Line will reopen on Sunday, October 1.

[GCRTA PRESS RELEASE](#), August 17

DALLAS

Downtown Subway Cancelled

Dallas Area Rapid Transit announced on August 15 that the Dallas downtown subway transit project, known as D-2, has been removed from the agency’s 20-year financial plan.

D-2 was to be the second light rail transit line through downtown Dallas to relieve crowding on the existing single path.

In March 2021, the Dallas City Council unanimously supported the plan, which had reached a price tag of \$1.7 billion, and the agency prepared an animation of how several planned stations and the subway tunnel might look. The design was 30 percent complete.

[RAILWAY AGE TRANSIT BRIEFS](#), August 16

Silver Line Project

DART will begin construction on its 12th Street Station in Plano on August 26th. In doing so, it will suspend service on its Red Line light rail north of CityLine/Bush Station through the end of scheduled service, with regular service resuming the next day on August 27. Third-party shuttle buses will provide transportation for riders between CityLine/Bush

Station, Downtown Plano Station, and Parker Road Station.

Once the construction is finished, the 12th Street Station will allow for ease of transfer between DART’s Red and Orange Lines, as well as DART’s future Silver Line. The station will have 313 parking places, five DART bus bays and access to a future Cotton Belt Regional Trail.

The future Silver Line will provide passenger rail connections and service for those in the surrounding areas and will operate on the Cotton Belt Corridor and extend between the DFW airport and Shiloh Road in Plano. It will travel between the airport and Grapevine, Coppell, Dallas, Carrollton, Addison, Richardson and Plano. It will also have 10 stations along the line. It links riders to major employment, population and activity centers in the northern part of the DART service area. The Silver Line will also connect to the Trinity Metro TEXRail line at DFW North station and provide access to the Denton County Transportation Authority (DCTA) A-Train commuter rail line connecting to Denton County locations, DART’s Green Line, Dallas Love Field and Downtown Dallas via Downtown Carrollton Station and DART’s Red and Orange Lines at CityLine/Bush Station.

[RAILWAY TRACK & STRUCTURES](#), August 22

LOS ANGELES

New HR4000 Cars Unveiled

LA Metro took to social media to show off the exterior of the agency’s new HR4000 trains, one of which appears to have bright yellow accents to contrast with the classic metal outside of the subway cars.

Manufactured by CRRC (China Railway Rolling Stock Corp.) and assembled in Springfield, Mass., the new railcars are set to replace some original A650 subway vehicles built by Breda that are nearing the end of their service lifespan.

A total of 64 new subway cars arrived in Los Angeles on August 5 to add capacity to the B and D lines as the system grows.

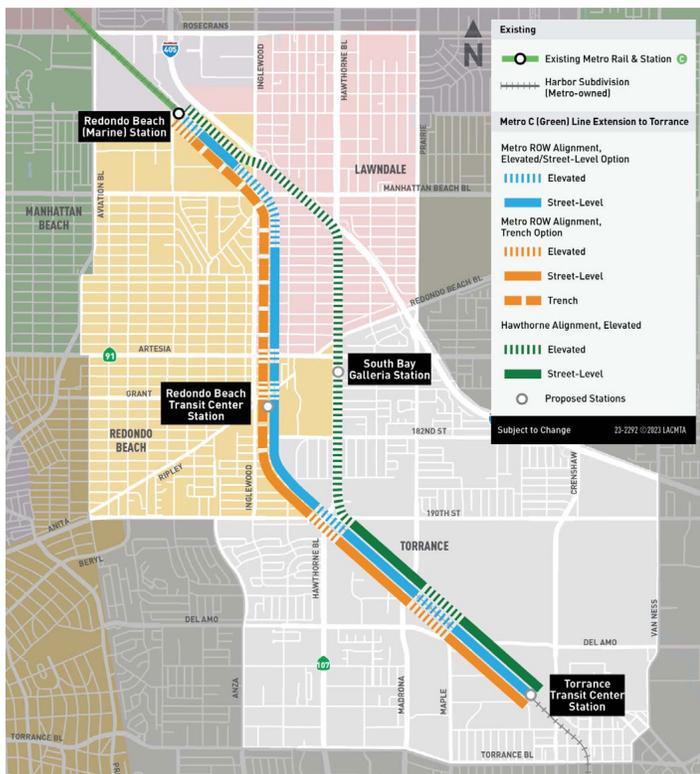
The cars are arranged in a side (longitudinal) seating layout. Additionally, there will be an open gangway design between cars, so that riders will no longer have to open emergency doors to travel from car to car.

All construction work on the D Line extension through central and western Los Angeles is expected to be completed by 2027.
[RAILWAY AGE TRANSIT BRIEFS](#), August 8

C Line Extension to Torrance

A recent poll shows support for the C Line (Green) Extension to Torrance Project from residents in Lawndale, Redondo Beach and Torrance, Calif. A market research firm surveyed 670 residents through randomized phone calls across the three project cities and found that 60 percent of residents are familiar with the project and 67 percent are supportive of it. On average, eight percent of residents across the three cities oppose the project and 24 percent had no opinion of it.

LACMTA plans to expand the C Line from the Redondo Beach (Marine) Station to the new Torrance Transit Center, bringing light rail to the area; providing an alternative to congestion along the I-405 corridor; and connecting to the existing K (Crenshaw), J (Silver) and A (Blue) lines.



C Line Torrance Transit Project Study Area LACMTA

The LACMTA Board recently approved a new operating plan that will make the light rail extension to Torrance part of the Metro K Line. This change means that travelers will have a one-seat ride (no transfers) from the South Bay to LAX, Inglewood, and the Metro E (Expo) Line — with easy connections to the Westside and Downtown Los Angeles.

Data from the Southern California Association of Governments anticipates the existing jobs/housing imbalance to worsen in the coming decades with employment growing twice as fast as the population in the South Bay. Connecting the South Bay to the regional rail network is critical to meeting

future travel demand, expanding mobility options, and increasing access to opportunities for transit dependent riders.

The transit authority on January 27 released a Draft Environmental Impact Report for public review, evaluating three alignments. It collected public comments over a 61-day review period, including five public hearings. Nearly 2,200 comments were received during the review period, with the majority — more than 1,800 comments — focused on alignment preferences. More than two-thirds of the alignment comments were in support of the transit authority’s elevated at-grade alignment. Only 6 percent were in opposition to the project.

LAMTA said it is reviewing public comments. It is slated to provide a project presentation to a Board committee next month and will return to the Board with a staff recommendation for a Locally Preferred Alternative in October.

[RAILWAY AGE TRANSIT BRIEFS](#), August 17

West Santa Ana Branch Transit Corridor

The Los Angeles County Metropolitan Transportation Authority (LACMTA) is seeking the public’s help to rename the West Santa Ana Branch Transit Corridor project prior to the release of the Final EIS/EIR in summer 2024. The planned 14.5-mile, nine-station light rail line will link southeast Los Angeles County and downtown Los Angeles.

Why a new name? “While the existing project name carries historical significance — using the name of the rail corridor previously owned by Pacific Electric, which prior to the early 1960s, ran service from Downtown Los Angeles to the city of Santa Ana in Orange County — the new line won’t go as far as the city of Santa Ana. Rather, the line will terminate in Artesia. A new name will eliminate this confusion,” LACMTA explained.

The transit authority said it is looking to the public to provide names that reflect their communities and their histories and that reflect the character, culture and experience of the people who live, work and play in the cities this new line will serve.

Participants must be at least 13 years or older to submit a name at www.renamewsab.com or by calling the project helpline at (213) 922-6262. The deadline is September 29. All participants will be entered for a chance to win a \$100 gift card.

A panel of local judges will shortlist the top five names, which will then be showcased in a public voting campaign slated for November. The raffle winner will be announced in early October. The name with the most votes will be selected and announced in January 2024. Once approved, the new name will remain in place throughout the construction phase, and once construction is complete, the rail line will receive a newly designated line letter and line color as the project prepares for revenue service.

[RAILWAY AGE TRANSIT BRIEFS](#), August 23

MILWAUKEE

Lakefront Streetcar Extension

The lakefront extension of Milwaukee’s streetcar system finally has an opening date, even if it’s only for limited



Car 05 (Brookville, 2018) is turning off of the shared trackage on N. Milwaukee Street to run east on E. Michigan Street towards N. Lincoln Memorial Drive. Bill Becwar photo

parking revenue. Direct revenue sources include Potawatomi Hotel & Casino (\$833,333), other sponsors (\$390,000), a federal pandemic-related transit grant (\$2.1 million) and a federal transit support grant (\$214,000).

Ridership has climbed year-over-year for 28 straight months. [URBAN MILWAUKEE](#), August 22

MINNEAPOLIS, MINN.

Metro Green Line Extension Update

The Metropolitan Council in partnership with Hennepin County has resolved the current funding deficit for the Green Line Extension Light Rail Transit Line.

The two entities have collaborated for several months to define funding sources and reach a resolution to close the remaining funding gap. A funding agreement has been reached where the Met Council and County will share equally in funding the gap in capital and startup costs.

The funding agreement has the Metropolitan Council responsible for the startup costs prior to the line opening and contributing 45 percent of the funds needed to complete the capital construction of the project. The Metropolitan Council's share will primarily come from federal capital formula program funds the next three years. Hennepin County will provide 55 percent of the capital costs from their transit sales tax.

A new project budget will be sent to the Federal Transit Administration (FTA) and adopted early next year following an FTA financial review of the project.

The funding agreement is subject to approval by both the Metropolitan Council and the Hennepin County Board. [METROPOLITAN COUNCIL PRESS RELEASE](#), August 21

Green Line Extension Funding Issue Resolved

Minnesota's Metropolitan Council, in partnership with Hennepin County, announced August 21 that it has resolved the current funding deficit for the Green Line Extension, which will connect downtown Minneapolis with Eden Prairie, Minn.

The two entities have collaborated for several months to define funding sources and reached a resolution to close the remaining funding gap. A funding agreement has been reached where the Met Council and County will share equally in funding the gap in capital and startup costs. The funding agreement is subject to approval by both the Met Council and the Hennepin County Board.

The Met Council didn't give a dollar amount when announcing the deal, but an auditor's report late last year said the \$535 million of the project was unfunded.

The funding agreement has the Met Council responsible for the startup costs prior to the line opening and contributing 45 percent of the funds needed to complete the capital construction of the project. The Met Council's share will primarily come from Federal capital formula program funds the next three years. Hennepin County will provide 55 percent of the capital costs from their transit sales tax.

“preview” service. Starting October 29, the long-awaited extension will begin operating on Sundays along E. Michigan Street and E. Clybourn Street.

Known as the L Line, the extension will use a single vehicle to run a figure-eight-style route that incorporates the lakefront spur with the core north-south route along N. Broadway and N. Milwaukee Street between E. Kilbourn Avenue and E. St. Paul Avenue.

The route will not initially stop in the base of The Couture tower, but will ride through the 44-story tower's first floor while the remainder of the building is under construction.

The extension was approved and funded alongside the initial route in 2015, with much of the track work completed alongside the base route's 2018 opening. But the connection through The Couture was repeatedly delayed alongside the building itself, ultimately requiring Congress in 2022 to approve an extension of the \$14.2 million federal grant that pays for much of the extension.

Three new stations are included with the extension: eastbound at E. Michigan St. and N. Jackson St., The Couture's transit concourse and westbound at E. Clybourn St. and N. Jefferson St. Five overlapping stations with the M Line will be served: the City Hall stations, the Wisconsin Ave. stations and the Historic Third Ward eastbound station. A single vehicle, from the pool of five existing vehicles, will be used to operate the route and will make the loop in approximately 20 minutes.

Testing of the route has occurred this summer as a contracting team completed the guideway for the fixed-rail system. Much of the L Line will operate without an overhead wire, with the vehicles running on battery power.

According to a press release, more information on how to ride the L Line is expected to be published on [TheHopMKE.com](#) as the opening draws closer.

The 2.1-mile system is currently free to ride. The 2023 city budget calls for \$4.9 million to be spent on operating the streetcar system. That expense is to be offset by \$3.5 million in direct revenue, with the remainder coming from the city's

A new project budget will be sent to the Federal Transit Administration (FTA) and adopted early next year (2024) following an FTA financial review of the project.

[RAILWAY AGE TRANSIT BRIEFS](#), August 22

PHILADELPHIA

New Regional Rail Schedules

Some changes were made to most Regional Rail schedules starting August 27. These updates impacted the Airport, Chestnut Hill East, Chestnut Hill West, Glenside, Lansdale/Doylestown, Manayunk/Norristown, Media/Wawa, Paoli/Thorndale, Trenton, Warminster, West Trenton and Wilmington/Newark Lines.

There were significant adjustments on the Wilmington/Newark Line to accommodate Amtrak state of good repair bridge work in the Chester area, which begins in mid-September.

Some highlights of the upcoming service changes:

Wilmington/Newark

- All SEPTA and Amtrak inbound traffic will be merged to Track 2 between Marcus Hook and Darby stations.

Chestnut Hill East

- Midday service reductions to accommodate track and survey work for station and bridge rehabilitation projects.

Chestnut Hill West

- Service adjustments to accommodate school travel.

These changes maintained Regional Rail service at 75 percent of pre-COVID levels. Regional Rail ridership has returned gradually and is currently at about 60 percent of pre-pandemic levels.

[SEPTA PRESS RELEASE](#), August 23

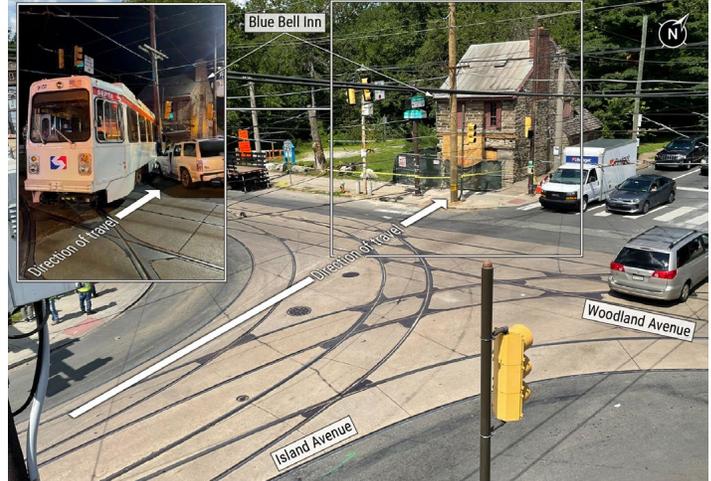
Trolley Derailment Preliminary Report Issued

The National Transportation Safety Board (NTSB) has issued a [preliminary report](#) on the July 27 Southeastern Pennsylvania Transportation Authority (SEPTA) trolley derailment. The report outlines the facts of the incident.

A SEPTA trolley derailed at the intersection of Island Avenue and Woodland Avenue in Philadelphia and struck a sport utility vehicle and the Blue Bell Inn. A SEPTA maintenance technician was moving the trolley from the Elmwood maintenance facility to the adjoining yard for temporary storage when the brakes failed. Two people in the SUV and the technician were injured.

NTSB investigators have examined the accident location, equipment and track; completed interviews; tested the trolley's brake system; and gathered records related to employee training and certification as well as SEPTA policies and procedures. Future investigative activity will focus on SEPTA's trolley repair and maintenance practices, including pre-movement procedures for maintenance personnel as well as maintenance personnel training and supervision, and railroad oversight, according to an NTSB news release.

According to an article in the Philadelphia Inquirer, the



View of the intersection of Woodland and Island Avenues, scene of the accident. LRV 9107, the car involved, in the inset, after crashing into the Blue Bell Inn. SEPTA photo

incident was one of eight major crashes involving SEPTA buses and trolleys in a span of 20 days, beginning July 21. The accidents resulted in one fatality and caused injuries to at least 40 people.

[PROGRESSIVE RAILROADING](#), August 23

SAN FRANCISCO

Caltrain Orders a BEMU

The California Transportation Commission on August 17 approved the allocation of funds from an \$80 million California State Transportation Agency grant for one battery electric multiple unit (BEMU); testing at the Transportation Technology Center in Pueblo, Colo.; and upgrades to the San Jose Central Maintenance Facility and Gilroy layover and station area to facilitate charging and maintenance.

The current demonstration plan will have the “first-in-the-nation” bilevel BEMU charge while in operation between San Francisco and San Jose, when the route is electrified in 2024, and then use battery power to run on the non-electrified route between San Jose and Gilroy, with intermittent demonstration trips to Salinas. The goal is to show successful service operations and learn from the implementation to provide a roadmap for future BEMU operations and procurements and ultimately lead the way for Caltrain to operate a fully zero-emission service in the future.

The train will go into operation after additional testing and certifications from regulatory agencies, the commuter railroad said.

If successful, BEMUs could replace aging diesel locomotives on non-electrified tracks at Caltrain. The benefits of this would not only be a reduction in greenhouse gas emissions and improved air quality, but also significant service upgrades. This includes potential improved service times to Gilroy resulting from better performance of the BEMU

compared to diesel locomotives, improved travel times on the entire corridor, and decreased service costs resulting from removing diesel locomotives from service, and increased reliability should overhead power systems fail or utilities experience outages.

Caltrain is due to launch electrified service in fall 2024, which is two years later than planned. The railroad's \$2.4 billion electrification project will upgrade and electrify its double-track system from the 4th and King Station in San Francisco to the Tamien Station in San Jose. Stadler-built KISS bilevel EMUs will replace Caltrain's existing diesel fleet. Caltrain awarded Stadler a \$551 million contract in August 2016 for 16 six-car EMUs, with an option for a further 96 cars worth an additional \$385 million. In December 2018, Caltrain exercised an option to extend the trains from six to seven cars and ordered another three seven-car trains. Caltrain has received four EMUs with further deliveries expected this fall.

Caltrain on August 17 reported that its Board earlier this month approved exercising options on its contract with Stadler for four more EMUs.

In the spring, the commuter railroad ran for the first time EMUs under power from the overhead contact system between Santa Clara and College Park on the Santa Clara Drill Track; testing was to extend to the main line between San Antonio and San Jose Diridon later this summer.

[RAILWAY AGE](#), August 18

SEATTLE

East Link Extension Update

Seattle's Sound Transit reported that the Link 2 light rail line will begin operating between the South Bellevue and Redmond Technology stations in Spring 2024. The Sound Transit Board approved opening the eight-station segment for service prior to completion of the full East Link Extension in 2025.

Service on the Link 2 line is proposed to run with two-car trains every 10 minutes, 16 hours per day. The final service level will be approved by the Sound Transit Board as part of the 2024 Service Plan, which is expected to be released in October 2023.

The Board's action included provisions to meet ridership demand on the 1 Line, including maximizing peak-hour service, adding bus service in Snohomish County and support for Lynnwood riders until the opening of the full East Link Extension.

Sound Transit said it is working with regional transit partners on plans to coordinate the 2 Line opening closely with other spring service changes on ST Express, King County Metro Transit and Community Transit bus routes. Existing ST Express and King County Metro routes including Route 550, B Line, and other local routes are anticipated to continue operating on their current routes until the full 2 Line opens.

Voters approved the East Link Extension in 2008 as part of the Sound Transit 2 ballot measure. Construction on the project began in 2017, including sequential excavation mining of the one-half-mile Bellevue tunnel, which was

completed in 2020. Light rail test trains have been operating across the alignment to test the overhead electrical power system and train signal system and simulated service is expected to begin in early 2024.

The Board authorized up to \$43 million from the existing East Link Extension \$3.68 billion budget to fund the activities necessary to open the East Link starter line in spring 2024.

[RAILWAY AGE TRANSIT BRIEFS](#), August 25

TACOMA, WASH.

Hilltop Link Extension Set to Open

After extensive quality and safety testing and 20 years since service first began on its initial segment, Sound Transit's Hilltop Tacoma Link Extension of the T Line will open to passengers on September 16.

(Editor's Note: Refer to page 12 in last month's Bulletin for a map of the new extension.)

The 2.4-mile Hilltop extension doubles the length of the T Line and includes seven new stations:

- St. Joseph (Martin Luther King Jr. Way south of South 17th St.);
- Hilltop District (South 11th and M.L.K. Way);
- 6th Avenue (at M.L.K. Way);
- Tacoma General (M.L.K. Way at MultiCare Tacoma General Hospital);
- Stadium District (North 1st St. at North G St.);
- South 4th (at South Stadium Way);
- Old City Hall Station (Commerce St. north of South 7th St.).

Passengers will have access to Wright Park, major medical facilities and regional transit via the Tacoma Dome Station. Trains will run from 5 AM to 10 PM, Monday through Friday; 7:20 AM to 10 PM on Saturdays; and 10 AM to 6 PM on Sundays. Monday through Saturday, trains will run at approximately 12-minute intervals from 6 AM to 8 PM and every 20 minutes all other times and Sundays.

Sound Transit will begin charging fares via ORCA, paper tickets, and the Transit GO app (\$2 per trip for adults; \$4 day pass, or free for youth 18 and under) and will conduct a targeted ORCA LIFT reduced fare promotion and awareness campaign in Tacoma.

[RAILWAY AGE TRANSIT BRIEFS](#), August 22

WASHINGTON

New Fare Gate Follow-up

The Washington Metropolitan Area Transit Authority (WMATA) reported releasing preliminary data that shows its new, higher fare gates are reducing fare evasion by more than 70 percent at the first stations to be equipped with them, including Fort Totten, Pentagon City, Bethesda, Vienna, Mt. Vernon Square and Addison Road. The authority said it is now publishing both paid and unpaid ridership data on its online ridership portal to provide transparency on the effectiveness

of fare evasion reduction strategies and a more complete picture of total ridership to the public.

New faregate installation at Congress Heights was completed August 22 and installation at Federal Center SW, Wheaton, and Court House is slated for completion by early September, followed by the rest of the rapid transit system. WMATA will continue to monitor new faregate performance as the rollout is completed.

As mentioned in the August 2023 *Bulletin* (pages 13-14), the new design includes an L-shape door panel that extends over the faregate to minimize gaps between the openings. The increase in barrier height from the original 28-to-48-inch prototype to 55 inches also makes it more difficult to jump over faregates.

The swing doors are made of a polycarbonate, which is 200 times stronger than glass, lighter weight and more durable. The final design includes more robust hinges and a more powerful motor to strengthen the door. As stations are retrofitted with the new barriers, the transit authority is also raising the height of fencing and emergency gates.

[RAILWAY AGE TRANSIT BRIEFS](#), August 23

International

Editor's Note: Starting with this issue, measurements stated in metric units will no longer be converted into "English" units. On occasion, as in the news item below for Ottawa, both units will be shown as this was how it was written in the sourced publication.

AUGSBURG, GERMANY

New Trams Finally Begin Arriving

The first of 11 Stadler Tramlink trams has been delivered to Augsburg, following production delays caused by the coronavirus pandemic and the Russian war against Ukraine.

Stadtwerke Augsburg placed the €57 million order in October 2019 to enable it to replace its almost 30-year-old Adtranz GT6 cars. There is an option for a for a further 16 trams.

The seven-section low-floor meter gauge unidirectional tram is 42 meters long. It has a capacity of 231 passengers, including 86 seated, with multifunctional areas with space for wheelchair users and pushchairs. A CO₂ sensor will adapt the air-conditioning to suit passenger loadings.

The livery was chosen by public vote, and is based on the silver of the local buses, with a green and red band.

The 52-ton tram was split into two and five-section parts for delivery. These were transported by road from Stadler's factory in Valencia to Santander and then by sea to Brugge (Belgium) and road to Augsburg, where they arrived in the early hours of August 3.

The first tram was originally scheduled to be delivered in July 2022, but the date was pushed back because of the impact of the pandemic on the Spanish factory and on global supply chains. Russia's war in Ukraine added to the problems, as electronic components are produced in Ukraine and

Belarus and delivery was delayed or affected by sanctions.

Testing is planned from September, when the second tram is due to arrive. This will be followed by driver training ahead of entry into passenger service at the beginning of 2024.

All 11 trams are due to arrive over the next year, at which point the Augsburg fleet will comprise only modern Siemens Mobility Combino, Bombardier Transportation Cityflex and Stadler Tramlink trams.

[METRO REPORT INTERNATIONAL](#), August 10

Old Trams Sold

Zagreb transport operator ZET has bought 11 secondhand trams from Stadtwerke Augsburg for a total of €2.1 million.

The 11 GT6M trams were built by Adtranz in 1996. They are due to be replaced in Augsburg by new Stadler Tramlink vehicles, the first of which was delivered in early August (see above).



Looking north up the Remboldstraße at GT6M 611 (Adtranz, 1996) operating on Augsburg's route 6 bound for the Hauptbahnhof (Main Railway Station) on June 4, 2019. This is immediately north of the Augsburg, Hochschule stop.

Lothar Fehrmann photo via Urban Electric Transit

The German city's operator submitted the only bid in response to a tender for secondhand trams called by ZET on June 23, and they are scheduled to be delivered to Zagreb between October 2023 and December 2024.

ZET currently operates 140 Končar TMK 2200 five-section low-floor trams, two three-section TMK 2300 trams, and some older Đuro Đaković and ČKD cars. In June it ordered 20 three-section Končar TMK 2400 trams for delivery by the end of 2025.

[METRO REPORT INTERNATIONAL](#), August 15

DÜSSELDORF, GERMANY

Light Rail Extensions Studied

The city of Düsseldorf and transport operator Rheinbahn have undertaken a study of 23 potential light rail expansion projects.

Seven of the proposals were rated as very good, including a one-kilometer two-stop extension of the Wehrhahn tunnel south to the university, the Benrath–Garath and Holthausen–Hassels extensions, and an extension of U79 by 700 meters from Südpark to Universität West.

Nine projects were rated good, including elements of a northern and eastern orbital route.

Seven projects were rated medium; none of the projects considered received a poor score.

The results of the study will now be incorporated into the local transport plan.

[METRO REPORT INTERNATIONAL](#), August 25

LISBON

New Trams Testing

Lisbon bus and tram operator Carris has begun testing and driver training with its first new trams in 28 years.

In December 2019 CAF beat Stadler to be named preferred bidder for a €43.4 million contract to supply 15 trams and provide five years of maintenance, but the order was not confirmed until April 2021.

The five-section unidirectional 900 mm gauge low-floor vehicles from CAF's Urbos family are 28½ meters long with a maximum speed of 70 km/h. They have provision for the future retrofitting of onboard energy storage equipment to enable catenary-free operation in architecturally sensitive areas.



CAF Urbos 604 tram on test. Henrique Marques photo

The first of the trams was delivered to the Portuguese capital from CAF's Navarra plant in April this year, and five have now arrived with the rest scheduled for delivery by the beginning of 2024. The trams will be based at the Santo Amaro Depot, which is currently being expanded to accommodate them.

They are scheduled to enter service from September on the busy Route 15 which runs parallel to River Tajo from Praça da Figueira to Algés, connecting the city center with tourist destinations including Belém and the Jerónimos Monastery.

In the future they will be used on extensions to Cruz

Quebrada and Santa Apolónia station.

[METRO REPORT INTERNATIONAL](#), August 16

LONDON

New Piccadilly Line Trains Ready for Testing

The first of the trainsets which Siemens Mobility is supplying to replace the existing 1970s fleet on London Underground's Piccadilly Line has arrived at the Wegberg–Wildenrath Test & Validation Center in Germany from the company's factory at Wien in Austria.

Tests will include acceleration, braking, noise and vibration, as well as onboard hardware and software and interfaces with off-train equipment. Delivery to the UK is planned for 2024, ahead of the trains entering service in 2025.

The trains are based on Siemens Mobility's Inspiro metro family. The articulated configuration with a walk-through interior is designed to increase capacity by 10 percent compared to the current 1973 stock, while offering improved accessibility. Wider doors will speed up boarding and alighting, while passengers will be able to move along the train to find more room. The articulated design reduces the total number of trucks, making the new trains lighter.



First Siemens Mobility train for London Underground's Piccadilly line at the Wien factory. Siemens Mobility photo

They will be the first trains on London's small-profile deep-level tube network to be fitted with air-conditioning.

Around half of the 94 nine-car trainsets will be produced in Wien, with the rest to be assembled at a £200 million factory at Goole in East Yorkshire, which is currently being fitted out ready for production to start in early 2024.

The Piccadilly Line fleet replacement contract which Transport for London awarded to Siemens Mobility in November 2018 is valued at around £1.48 billion plus VAT.

TfL has options to order further trains for use on the Bakerloo, Central and Waterloo & City Lines, subject to funding being secured.

[METRO REPORT INTERNATIONAL](#), August 1

Next Docklands Operator Sought

Transport for London has invited expressions of interest in the next franchise to operate and maintain the Docklands Light Railway automated light metro.

The current contract held by the KeolisAmey Docklands joint venture of Keolis (70 percent) and Amey (30 percent) is due to expire on April 1, 2025.

TfL's objectives for the next contract include driving demand recovery and ridership growth, delivering environmental goals, providing good working conditions for staff and optimizing performance and financial efficiency through continuous improvement and innovation, flexibility and collaboration.

Requests to participate in the procurement are to be submitted by October 2, with invitations to tender expected to be issued to a maximum of five prequalified candidates by January 2 of next year.

The contract would run for an initial period of eight years, with an option to extend by up to two years and a separate option for a further seven months. It has an estimated value of £2.3 billion, with the franchisee to be paid a specified fee along with performance-based incentives and deductions.

[RAILWAY GAZETTE INTERNATIONAL](#), August 22

OTTAWA, CANADA

Rail Service Resumes

Twenty-eight days after service was abruptly halted, Ottawa's light rail Confederation Line light rail was slated to resume operation on August 14, using shorter trainsets while work continues to address axle bearing issues.



Confederation Line train at the Blair stop. OC Transpo photo

CTV News reported plans call for 11 single-car trains to provide service on five-minute headways over the full 12.5-kilometer (7.8-mile), 13-station route during the morning rush hours, and 13 trains to operate on four-minute headways during evening peak periods. During non-peak periods, nine trains will run on six-minute intervals. For at

least the first day, the bus system that replaced the light rail service will continue to operate; further decisions on bus operations are yet to come.

Trains began operating over a portion of the system on August 8. The system was shut down during the afternoon rush hour on July 17 after a bearing issue was discovered on one car during routine maintenance.

Short-term remedies to the bearing issues that have plagued the system include replacement of wheel hub assemblies on the Alstom light rail vehicles and repositioning of restraining rails at 16 curves where those are used to prevent contact with wheelsets. The Ottawa Citizen reports that as of August 13, 28 of the 45 trainsets have had the hub replacements completed and all 16 restraining rails have been adjusted.

A longer-term solution will involve redesign of the car axles, which will take more than a year.

[TRAINS NEWS WIRE](#), August 14

PARIS

Line 8 Train Refurbishment Gets Underway

Refurbishment of the 44 Alstom (*Editor's Note: Around June 1998 Alstom was renamed Alstom*) MF77 trainsets used on Paris Métro Line 8 has begun at the ACC M plant in Clermont-Ferrand.



Paris Métro Line 8 MF77 train refurbishment. Jeremie Anne photo

The work will be similar to that undertaken by the company on the Line 7 fleet. It will take 29 days to refurbish each train. The vehicles will be stripped down and asbestos removed, and they will then be reassembled with replacement flooring, lighting and handrails as well as new seats to be supplied by Compin-Fainsa.

Mechanical equipment is being retained, but there will be repairs to the cabs. The cars will be repainted in the colors of transport authority Ile-de-France-Mobilités, which is funding the refurbishment at cost of €40 million as part of a wider €480 million modernization of Line 8 ahead of the entry into service of new Alstom MF19 trainsets from 2029.

Tenders are to be called in December for the installation of an Octys CBTC system similar to Lines 3, 6 and 11, followed next year by a contract for a new control center. Javel Depot will also be fully refurbished to support maintenance of the MF19 fleet.

[METRO REPORT INTERNATIONAL](#), August 9

SINGAPORE

North East Line Fleet Grows

The first of six additional Metropolis trainsets supplied by Alstom entered service on July 28 on Singapore's North East Line. The six-car trains will increase the North East Line fleet from 43 to 49; all six are due to be in service by the end of September. They were ordered to boost capacity ahead of the opening next year of a 1.6-kilometer one-station north-eastern extension being built from Punggol to Punggol Coast.

Alstom is supplying the trains under a contract signed in April 2018; they were manufactured at Alstom's factory in Barcelona and arrived in Singapore in April 2021. Alstom is also building 23 three-car trains of the same type for the Circle Line.

The trainsets are equipped with condition monitoring systems to support a predictive maintenance regime. Two of the trains are being fitted with an automated track inspection system, the first such installation on the North East Line. Cameras and sensors are to be installed on the underframe of the two trains to improve the detection of track defects such as rail cracks, rail corrugation and missing rail fastenings.

In other news from Singapore, Land Transport Authority has announced that mid-life overhauls have been completed on four of the original batch of 25 North East Line trainsets which were manufactured by Alstom in 2000-01. The refresh is being undertaken by CRRC Nanjing Puzhen and includes installation of air-conditioning and condition-monitoring equipment. The remaining 21 trains are to be refurbished by 2026.

[METRO REPORT INTERNATIONAL](#), August 17

SYDNEY

Rail to Metro Conversion Confirmed

The New South Wales government has committed to completing the conversion of Sydney's T3 Bankstown Line from a suburban railway to an automated metro, as the final section of the City & Southwest Metro project.

When the current state government was elected in March, it commissioned an independent review of the Sydney Metro program. This initially focused on the City & Southwest project because of its advanced stage of delivery and budget challenges.

An interim report from the review recommended that conversion of the Bankstown Line should continue, as this would deliver significant benefits across the transport network.

Work has been underway for some time to upgrade the stations and infrastructure along a 13-kilometer section of the route, which is due to be disconnected from the suburban network and linked to the metro at Sydenham. Test running

on the 15.5-kilometer cross-harbor extension from Chatswood to Sydenham began in April, and this section is expected to open in early 2024.

Responding to the recommendation, the state government confirmed on August 1 that it would "salvage" the project by committing a further A\$1.1 billion to begin the process of conversion which will require heavy rail services to be suspended. Conversion of the Sydenham-Bankstown section is now expected to start at some point between July and October 2024, with metro services to be introduced from late 2025 following a period of testing and commissioning.

Transport for NSW and Sydney Metro are currently developing a temporary transport plan for the closure period, including the provision of rail-replacement express bus services. The outer section of T3 between Bankstown and Lidcombe will also provide an alternative route for passengers to reach the Sydney CBD.

[METRO REPORT INTERNATIONAL](#), August 1

TAMPERE, FINLAND

First Phase of Tramway Extension Opens

The first stage of the 6.7-kilometer Pyyrikintori-Lentävänniemi extension of the Tampere tram network opened on August 7, running two kilometers to Santalahti and adding three stops.

Construction began in November 2020, and opening celebrations were held on August 6 on this extension of Tampere's route 3.

Work on the next section from Santalahti to Lentävänniemi began in March 2022 and opening is scheduled for January 7, 2025.

Construction of the entire extension, including nine stops, is expected to cost €99.5 million.

[METRO REPORT INTERNATIONAL](#), August 14



ForCity Smart Artic X34 TRO20 (Škoda, 9/2021) has just come to a stop at Kalevanrinne on route 3 in Tampere on September 3, 2022, on its way to the original terminal at Pyyrikintori.

Andrey photo via Urban Electric Transit

TEL AVIV, ISRAEL

Light Rail Service Begins

After long years of planning, searching for funding, redesigning and rescheduling, and finally construction with various delays, the Red Line went into operation on August 18 as the first part of a new light rail system. The new line runs over 24 kilometers and serves 34 stops, 10 of them are underground. The average distance between the underground stations is about one kilometer, while above ground it is only about half that. Within the Gush Dan — the Tel Aviv Metropolitan Region — the line passes through the districts of Petah Tikva, Bnei Brak, Ramat Gan, Bat Yam and Tel Aviv Central Area. The railway is officially called Tel Aviv Metropolitan Area's Light Rail, with the brand name "Dankal."



The Red Line uses a total of 90 low-floor light rail cars delivered by Chinese manufacturer CRRC Changchun Car 1016, and another, are laying over on the middle track at Elifelet Station on August 18, opening day. This is the south terminal of route R3 and is just south of the long underground segment.

alex26 photo via Urban Electric Transit

Railway Vehicles Co, Ltd since 2021. They are each 34.78 meters long, 2.65 meters wide and can accommodate up to 274 passengers. They operate exclusively as coupled pairs. With a total of 45 such trainsets, there is sufficient capacity for the six-minute intervals on the line during rush hour.

The Red Line is part of a light rail network consisting of initially three lines in the Gush Dan metropolitan area, which is to be fully operational with a length of 90 km and 139 stations by the end of this decade. The other two lines, the Purple Line and the Green Line, have also been under construction since 2017. Passenger numbers on this network are expected to be around 230 million, of which around 70 million will be on the Red Line, equivalent to approximately 234,000 on an average working day according to current estimates by NTA Metropolitan Mass Transit System Ltd, the publicly owned operator of the new light rail system.

In addition to the new light rail network, three metro lines and a Bus Rapid Transit network will be built — the opening

date for the first metro line is currently scheduled for 2032. [URBAN TRANSPORT MAGAZINE](#), August 18

TORONTO

Additional Flexities Begin Arriving

The first of the 60 additional streetcars for Toronto's fleet arrived at the Hillcrest Shops on August 9. Based on the budgeted cash flow over coming years, delivery of these cars is expected to complete in 2025.

The currently active streetcar yards at Leslie, Russell and Roncesvalles can absorb 35 of these cars, but the remaining 25 will need additional storage and servicing facilities elsewhere. The TTC plans to adapt part of their Hillcrest site as a small carhouse that will serve the 512 St. Clair and possibly 511 Bathurst lines. Aside from providing space, this will also reduce dead-head costs for cars that now come to St. Clair from Leslie Carhouse.

The first 35 cars can be accommodated elsewhere, so changes at the Hillcrest Shops do not have to be ready until the latter half of the order arrives.

Some of the Hillcrest reconstruction project schedule extends into 2027 and this begs the question of why the work will take so long.



Car 4604 at Harvey Shops on August 9. Anonymous photo

The TTC plans consultation sessions in the Hillcrest neighborhood in August, although they have not yet announced dates or locations.

The version of the plan shown in a presentation would reverse the direction of travel of streetcars around the site. Today, cars enter from Bathurst Street and turn north into the Harvey Shops building. (*Editor's Note: Harvey Shops is inside the Hillcrest complex*). The track layout above changes the circulation from counter-clockwise to clockwise so that cars would enter the shops and new storage tracks from the north after running around the building.

One feature of Harvey Shops that will disappear is the transfer table used to move streetcars and buses from the entrance to the various repair bays.

The Flexity streetcars are twice the length of the transfer table, and their primary maintenance location is at Leslie Carhouse that was built for their size. Although it is not mentioned in the presentation, I understand that the transfer table area will be paved so that buses can move around within the building. With the switch to electric buses, Harvey Shops (which once looked after the trolley coach fleet) is well suited.

(For those who are wondering, the ALRVs used a small area at the east end of the shops where bays north of the transfer table were long enough to hold them, and cars reached these bays by driving across the transfer table from entrance tracks outside.)

Other changes planned for the site include a shift of the bus brake test area from the west site of Duncan Shops (the main bus shops) which is beside a residential area to the space between Duncan and Harvey shops which will also include a new streetcar brake test track.

Clearly visible on 4604 is a trolley pole although for almost all parts of the network pantographs are now standard. In many areas poles cannot be used because the overhead is no longer compatible. I have asked the TTC about this as well as what changes have been made to the car specs, but have yet to hear back. I will update this article if and when they reply.

Although it is heart-warming to see the fleet expanding, the real question is where will we use these cars. With pandemic era cutbacks plus seemingly endless construction projects that trigger bus replacements, peak streetcar service sits at about 150 cars out of a 204-car fleet, a generous spare ratio. There is no sign of a Waterfront LRT project getting underway soon.

Full service will return to 501 Queen, 503 Kingston Road, 504 King, 505 Dundas and 506 Carlton later in 2023 or early 2024 as various construction projects complete, but 512 St. Clair will convert to bus operations for track reconstruction at St. Clair West Station. Substantial increases in streetcar service also depend on budget support from City Council.

[STEVE MUNRO TRANSIT & POLITICS](#), August 10

Scarborough RT Service Ends

The TTC and the City of Toronto are taking steps to improve the Line 3 Scarborough RT bus replacement service in advance of back-to-school in September. The TTC confirmed that train service on Line 3, originally scheduled to end on November 18, will not restart following a July 24 derailment.

Service on Line 3 was suspended following the derailment south of Ellesmere Station and replaced with frequent shuttle bus service. A comprehensive review, that includes the participation of industry-leading consultants, is still underway. However, given the time required to complete the review, the decision has been made to permanently close the line and begin to implement elements of the replacement plan. These measures will improve transit priority and operations, provide frequent, high-capacity bus service and ensure riders can plan their trips online in September.

Starting August 22, TTC contractors, working with the City of Toronto Transportation Services department, began the installation of temporary road markings and signage to establish bus-only lanes. One curb lane southbound on

Midland Avenue and one northbound on Kennedy Road between Eglinton Avenue and Ellesmere Road will be created. The new shuttle routing was implemented on August 26.

TTC and City of Toronto staff had already been working toward a November 19 start for the full bus replacement of the 6.4-kilometer SRT before the derailment occurred. Line 3 moves approximately 30,000 trips a day.

The November replacement plan includes running frequent express shuttle bus service between Scarborough Centre and Kennedy stations southbound via Midland Avenue and northbound via Kennedy Road.

Other features such as red painted lanes, new queue-jump lanes and signal priority to allow buses quicker movement through mixed traffic will be rolled out over the next three months. Changes to the bus terminal at Scarborough Centre Station to accommodate Line 3 bus replacement were also completed ahead of schedule.

The TTC and City of Toronto are now exploring ways to advance the on-street improvements while also creating a temporary bus staging area on the north side of Kennedy Station to relieve congestion at the busy station while construction on the new bus terminal continues.

Upon completion of a new bus terminal at Kennedy Station in November, eight bus routes will be extended to Kennedy Station, eliminating the need to transfer. This will give thousands of riders in a large part of Scarborough a direct connection to the Line 2 subway. The TTC has also committed to using newer hybrid buses and larger articulated buses on the 903 Kennedy-Scarborough Centre Express, the core bus replacement route connecting to Centennial College Progress Campus.

In the longer term, buses will operate in a dedicated right-of-way along the Line 3 corridor until the Line 2 east subway extension opens. The TTC is also exploring ways to remove the existing track and power systems, and build and open the right-of-way sooner than planned.

The TTC's bus replacement plan not only addresses Line 3's reliability issues, it provides AODA-compliant (Accessibility for Ontarians with Disabilities Act, akin to the US's ADA laws) service. Four of the existing six Line 3 stations are not accessible, but the interim express bus program will ensure that AODA standards are met, providing accessible transportation options for riders in this corridor of the city.

Line 3 Scarborough opened in 1985 and was operating more than 10 years beyond its design life. Reliability has proven a challenge, particularly in extreme weather conditions.

[TTC PRESS RELEASE](#), August 24

VANCOUVER, CANADA

New SkyTrain Cars Unveiled

British Columbia's TransLink provided a first look at its new Mark V SkyTrain cars, which have entered the testing phase at an Alstom facility in Kingston, Ontario. The 205 new cars, to run as 41 five-car trainsets, were ordered in 2020 from

Bombardier, which was acquired by Alstom in 2021. They will eventually replace the original Mark I models, which SkyTrain operator TransLink said are slated for retirement by the end of 2027.



TransLink's Mark V SkyTrain cars. TransLink photo

The Mark V cars feature an open-gangway design with mostly forward-facing seating, and they include more space for bikes, luggage and leaning pads. Their digital interior

information displays will provide riders with improved onboard transit alerts. Strip indicator lights at the doors will assist people who have hearing loss by flashing when doors close, fault warnings are issued, or when emergency brakes are deployed. The Mark V trains will operate with door chimes and on-train announcements to assist customers who are visually impaired.

The SkyTrain car purchase is part of the Expo Millennium Line Upgrade Program, which is funded by an investment of C\$1.47 billion through the Investing in Canada Infrastructure Program and contributions from the government of Canada, government of British Columbia and TransLink. The program also includes expanded vehicle storage facilities to accommodate the new fleet and upgrades to operations and maintenance centers, mainline power, and control systems to support more frequent train service and longer trains. When the program is fully implemented, the Expo Line will be able to move 17,500 riders per hour per direction, and the Millennium Line will be able to move 7,500 riders per hour per direction. This represents a 32 percent and 96 percent increase respectively over the existing capacity, according to TransLink.

[RAILWAY AGE TRANSIT BRIEFS](#), August 23

Book Review

By *Bob Wright*

Streetcar Memories, various titles/cities

by Kenneth Springirth.

Over the past several years, Mr. Springirth has been busily authoring and assembling interesting books on the street railway and trolley operations in several cities. Based on this reviewer's encounters with him at several rail and hobby shows during this time, he admits to being well into his eighties and has only recently teamed with a co-author to continue to produce a handful of railroad history books. While his portfolio includes a number of treatises on several railroads, significant railroad main lines and branch lines, and electric railway operations in various formats and book sizes, this review will concentrate on those which cover "Streetcar Memories," "Streetcars of..." "Streetcar Heritage," and similar titles. He has completed these for Toronto (2013), New Orleans (2014), San Francisco (2015), Pennsylvania (2016), Washington, D.C. (2016), Baltimore (2017), Cincinnati (2017), Chicago (2018), Detroit (2018), Philadelphia Streetcars (2018), Philadelphia Suburban/Red Arrow (2018), Philadelphia Heritage (2019) and Pittsburgh (2021). Of these, this reviewer has had the pleasure to read the Toronto, Washington, Baltimore, Cincinnati, Chicago and Detroit volumes, as well as those that address his "home turf" (the three Philadelphia-area books).

The books on these locations are in an 8½" x 11" format with 128 pages (with the exception of Toronto, which is a

smaller size). Mr. Springirth has in several cases gathered historical information and data through library sources and reference materials, as he indicates in several of the books' forewords. He has additionally managed to amass and assemble photographs from several sources, including some of his own, mostly black and white but with some color shots mixed in. These mainly concentrate on the post-World War II period when these systems were still fairly strong and well-used but also well-worn (as many of the photos illustrate) from the crush of ridership during the war. For several of the properties covered in these volumes, the unfortunate decline of the operations through the 1950s and 1960s is also documented, as a result of disinvestment, ridership decline, and in several cases takeover by newly formed public transit agencies which were often not completely up to the task of reversing the downward spiral of physical plant and passenger counts. Thus, the entire "spectrum" of the operations is chronicled, including the phase-out of conventional streetcar equipment and replacement by new PCC fleets (and for several properties the retirement and phase-out of the PCCs themselves, sometimes resulting in the cessation of trolley/rail service, sometimes surrendering to a modern fleet for continued rail operation).

The introductory text and chapters offer a concise history

and stream of events to give some overview, context and perspective on how the operations and properties started and later evolved. Mr. Springirth provides a useful background and history for each city to take the reader from the very beginnings of rail transit through electrification and in many cases acquisitions, mergers and consolidations which resulted in the companies that were in place around the time of World War II. The histories of the development of the properties are cursory although some details are provided, but the intent of the background and historical information appears to be to set the stage for the more “mature” level of operations that were in place when the photos and more detailed information are introduced to the reader. This background is generally sufficient to give the reader enough context to be useful as one proceeds through the book and offers some answers on how the systems grew, merged, were purchased, and in many cases ended rail service.

The historical information is by no means intended to be comprehensive but again provides sufficient background for the information to come, mainly through short write-ups on the various routes and services on the subject property, further explained through the photos and captions. He includes hand-drawn track and route maps from a point in time, generally at the peak of rail operation, which helps the reader in many respects to reference some of the photographs particularly for those not familiar with the subject city’s geography. The photos are a good mixture of color and black/white photos, primarily the latter given the time periods covered and mainly post-World War II although there are some oldies in the mix.

Mr. Springirth breaks the text into chapters on operating routes/lines on each property, tending to do so by common areas and corridors that the lines cover. The chapters

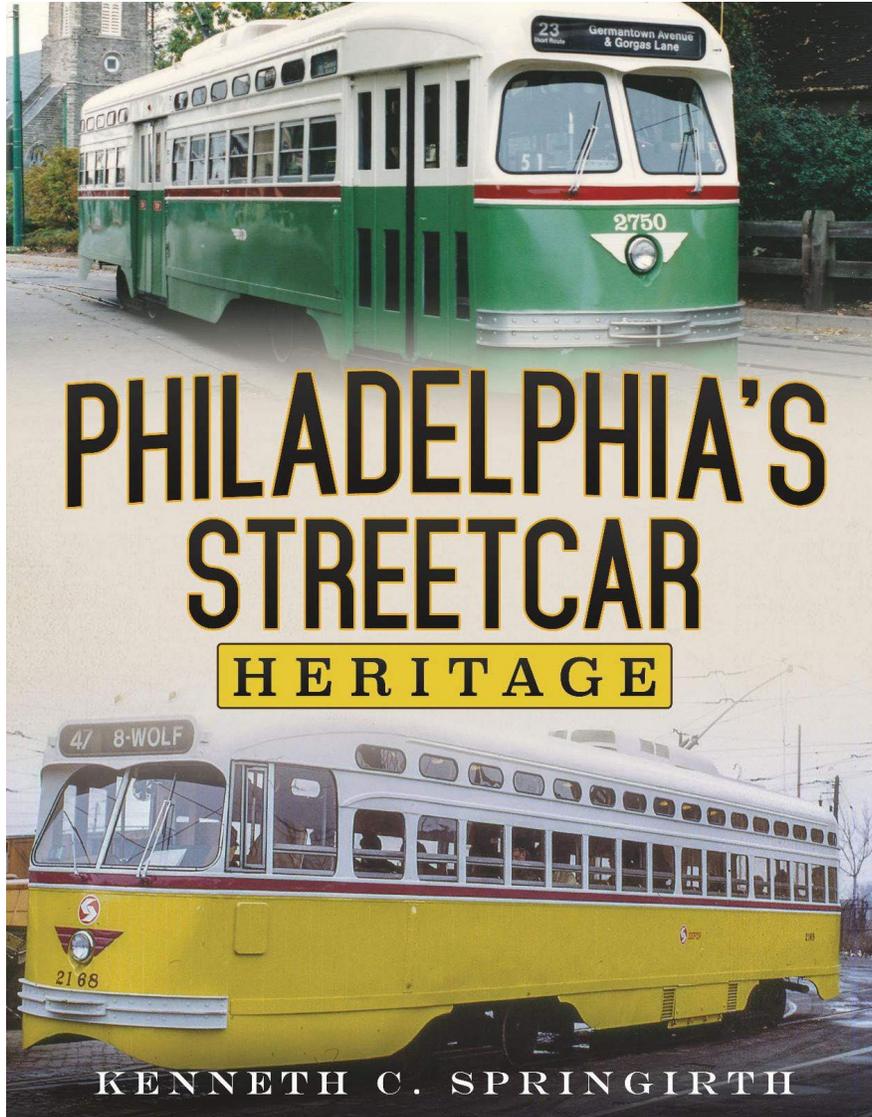
generally address smaller groupings by route numbers and/or designations, often combining routes that served common or close-by areas, neighborhoods and corridors. Separate sections address trackless trolley/trolley coach conversions and routes/operations and there is additionally some coverage of present-day reincarnations of rail service through modern light rail operations.

The chapter breakdowns may not always help the reader as route numbers/names are used for this purpose and in most places the route numbering was random and not necessarily geographically or consistency related. As noted, however, the purpose of the books is to provide an overview and not a comprehensive history.

The primary content of each book is photos, which do a good job of chronicling the systems and fleets operated. Photo captions are generally good and very descriptive, particularly when it comes to the car type, builder and similar data, which is often provided in great detail (car builder/orders, dimensions, weight, etc.) In some

places the captions have typos or are lacking location details, but overall, they give a good sense of the photo subject. The photographs are generally clear and sharp and represent the covered routes well.

From this reviewer’s standpoint, the books serve a good purpose for those readers who may not be looking for more than some cursory and casual information and vehicle photos for a particular operation/property. Falling back to the Philadelphia books, where this reviewer has a good deal of knowledge of transit history, the books provided a good source of photo documentation of the system in its heyday. These books are highly recommended for that purpose, which they serve very well.



An Italian Shocker in Suburban St. Louis

By Paul Grether (ERA #6933)

Following the North American Transit Historical Society 2023 Hoosier Traction Meet in August, your author along with a couple of fellow ERA members traveled to St. Louis to visit the National Museum of Transportation (NMOT) for the first time. The collection of electric railway equipment is impressive and includes streetcars, a Milwaukee Road Bi-Polar, New York Central S-Motor and Pennsylvania Railroad P-5 electric locomotives, and an early Hudson & Manhattan rapid transit car. There is an 1890s Chicago elevated rapid transit Forney type steam locomotive similar to those used in New York City.

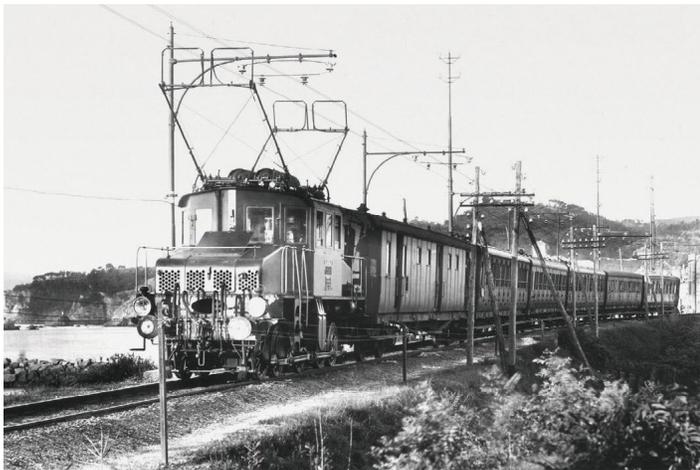
Curiosity about the off-limits part of the museum yard led to a conversation with a friendly museum volunteer who offered to supervise an inspection. Around the corner of a building was a piece of astonishing equipment that due to its distinctive appearance could only be one thing, an Italian three-phase AC electric locomotive! Closer examination revealed Italian State Railways (FS) E550.025, a class E550 freight locomotive with unique roof mounted twin bow collectors for double contact wire required by three-phase electrification.



Arrival of E550.025 at the museum in St. Louis in 1968.
National Museum of Transportation photos



Great Northern first generation three-phase electric locomotives with double trolley poles. Postcard photo/public domain



Early photo taken in 1916 of one of the E550 class three-phase electric locomotives at Albisola on the Genoa-Savona line.
Unknown photographer, public domain

After initial disbelief, the encounter with the locomotive raised questions. What are the details of Italian three-phase electrification? Why and how did this locomotive get to suburban St. Louis? What is its future?

The E550.025 was built between 1908 and 1910 for the newly electrified Torino-Genoa line of the Italian State Railways. The line was electrified for the Giovi Pass tunnel. In 1898 the use of steam locomotion through the tunnel led to a major crash when a freight train crew asphyxiated and the runaway crashed into a standing passenger train resulting in loss of life. The tunnel had also reached its

maximum capacity with steam and conversion to electric would add tonnage throughput.

The FS already had experience with three-phase electrification on the Valtellina lines. The E550 class was designed for 3.4kv AC three-phase power at 15.8 Hz. The design is a frame locomotive, "E" wheel arrangement, with twin traction motors mechanically connected to wheels on all five axles through side rods. The weight is 60 tons and 2,000 hp output for one hour. A unique characteristic of early AC propulsion is motors operating at fixed speeds, so the locomotive had only two running speeds, 15.5 and 31 mph with a liquid rheostat for starting. Despite the atypical design features of the locomotives, the power to weight ratio was good and a successful reputation of reliability was earned. Passenger express locomotives were also developed. In 1965 the last FS three-phase system was de-energized and converted to 3kv DC (single contact wire) and E550.025 was retired.



E550.025 at the National Museum of Transportation in St. Louis, August 27, 2023. Paul Grether photo

The early Italian experience with three-phase electrification influenced the United States. For the first (original) Cascade Tunnel, the Great Northern Railway (GN) adopted three-phase electrification. Despite countermeasures, GN steam operations in the tunnel resulted in several crew asphyxiation related crashes. Similar to the Italian experience, the GN found the three-phase AC approach to be particularly suited to heavy mountain and tunnel railroading since the traction motors could withstand abuse, braking was regenerative and torque constant. These advantages offset the issues created by the complicated double overhead wires and allowed the operation of heavy trains over the 2.2 percent extended ruling grade and through the over seven-mile-long tunnel. The GN contracted with General Electric (GE) for a 6.6kv AC three-phase system at 25 Hz. Four locomotives with twin trolley poles were built by GE with ALCo carbodies. The units weighed 115 tons, were 44 feet long and produced 80,000 lbs. maximum tractive effort at 15.7 or 7 mph fixed speeds. The system operated from 1909 until abandonment in 1927 in preparation for the opening of the new shorter and flatter GN Cascade tunnel territory with an extended single wire 11kv AC single-phase system.

The E550.025 was donated to the NMOT in St. Louis by the Italian government in 1968. It arrived from Genoa to the Port of New Orleans on the MS Sheldon Lykes, was loaded onto a flatcar and shipped to the museum via the Illinois Central, Missouri Pacific and Terminal Railroad Association of St. Louis railroads. After offloading, Italian government officials participated in a donation ceremony at the museum.

The future of E550.025 at NMOT is uncertain. It has been outside since the 1968 arrival at the museum and is in poor cosmetic state, however it appears complete and to be in remarkably good structural condition. In 2010 management of NMOT de-accessioned E550.025 from the collection and offered it to other railway preservation organizations. Since 2009 a fundraising effort is underway to repatriate the locomotive to the Piedmont Railway Museum in Savigliano,



Close up photo of the original number plate and the museum's informational sign. Paul Grether photo

Italy but the associated web site is off-line and the effort appears stalled. Sister unit E550.030 is preserved in Milano at the Italian National Museum of Science and Industry.

Stumbling upon E550.025 at the NMOT triggered reading and research that sparked an interest in a small and unusual facet of electric railroading. In that sense the initial preservation of E550.025 accomplished an educational objective. Let's hope that the future status of E550.025 improves so that others can learn from this fascinating artifact.

For further reading...

Books

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Travels with Jack May

Britain and the Baltics — Part XIX

By Jack May (Photographs by the author)

Friday, August 25

This was our last day in Riga, and it dawned dark and drizzly, and remained that way until late in the afternoon. I decided to do some riding and photographing on my own prior to meeting the group (which planned to concentrate on trolley-buses) at 3:30 PM for a walking tour of Riga's old city. As a result, there was no reason to get up early, and for a change, Karl-Heinz and I had breakfast at a leisurely pace after which I purchased a 24-hour ticket from a newspaper kiosk for €5.

By now I had ridden all the tram lines except the outer end of the 7 beyond Carhouse 3, so my plan for the morning was to finish my inspection of the network. Route 7 employs Riga's newer PCC cars, the T6s, which we rode on our first fantrip. Like most of the other routes the 7, which runs on a frequent headway, operates on the street for its inner section, and then uses center-of-the-road or side-of-the-road reservation in the less built-up areas further out. There is one place, however, where elevated roadways leading to a bridge over the Daugava River results in the line operating over a section of right-of-way not directly adjacent to the street. I took advantage of the overpasses and also stopped to snap some other photos.



An outbound train of T6s on route 7 has just turned off Maskavas iela near its Eljas iela stop and will thread its way through some underpasses to avoid a complex intersection at the end of a bridge over the Daugava River before returning to the same street.

It was odd to get *deja vu* (all over again), as while I was walking the line, two of the chartered cars from our Tuesday fantrips came along (separately).



(Above and below) Tuesday morning's charter revisited on route 7. In the upper photo, replica 1901 decorated for a wedding party came upon me by surprise, and the best I could do was to snap a photo from the rear. Below a very old wooden house stands at the corner of Maskavas iela and Daugavpils iela as Training Car 88032 heads inbound.



After finishing with the 7, I went out on the single-track route 10 for some photography, hoping the weather would clear (it didn't, photos were shown in Part XVIII), followed by a visit to the Latvian Railway Museum, which was conveniently on the way back, being just across the river from downtown and accessible by tram lines 1, 2, 5 and 10. It is quite extensive, with displays both indoors and out, but after paying my €2.50 entry fee, I found out that the captions for all the exhibits are only in Latvian, no spoken or written English. But there were a number of things I could figure out.



The courtyard of the Latvian Railway Museum, where two trains with large locomotives from the Soviet era are exhibited. At left a TEP60 with Russian markings, one of 1,241 made in various Soviet plants from 1960 to 1985, is shown. No. 1206 was manufactured in Kolomna, not far from Moscow. To its right is a class 52 (now class TE) 2-10-0 locomotive built by Henschel in 1942 for the Deutsche Reichsbahn. This World War II *Kriegslokomotive* was one of 6,719 that served Germany's war effort. In 1947 No. 036 became one of many "war trophies" sent to the USSR as reparations and was regauged to five-foot (1524 mm) for service throughout the Soviet Union, including in Latvia.

I then headed for the main railway station for some more photos.



Both electric and diesel electric MU trains are shown together at Riga's railway station. At left is an unmodernized ER2T, built in 1987. Contrast the body of this unit with the one shown at the top of the next column. The track at the other side of the platform hosts a DR1A diesel MU, capable of 75 mph, which was built in 1973. Many (if not all) of these cars were built by RVR in Riga, at one time the USSR's largest builder of electric and diesel trains. According to Julien Wolfe, who rode on some of the electric units that afternoon, "this train was like a time machine, . . . , as the intense traction sounds were unlike any I had heard in the past 50 years. These cars generated a perfect rendering of how B-Types, Lo-Vs or Lackawanna eMUs sounded when starting and achieving good speed."



A modernized train of ER2 eMU cars on the 1524-mm gauge Latvian Railways at Riga's railway station. These were among the second generation of Soviet eMUs (*Elektrichkas*) when built in 1962 for operation under 3000v DC catenary. Capable of a maximum speed of 80 mph, No. 989 was substantially rebuilt and overhauled in 2010.

Afterwards, I consumed an ice cream pop (my typical lunch when on the road) and did some shopping for a gift for Clare, who so kindly let me go on this trip on my own. Then it was time to meet the group (including Karl-Heinz) and their Latvian/German/English-speaking city tour leader. This turned out to be rather tiresome, as we must have spent an hour in the market, which is located in huge halls that were repurposed from Zeppelin hangars. We looked at a broad variety of plentiful food, with a narration that was 95 percent in German.

Karl-Heinz and I decided to abandon the tour and visit the old city ourselves. We walked onto the Daugava bridge (used by the tram lines) and took some photos of Riga's skyline as the horizon lightened. Then it was into the quaint and attractive old city on our own, where we found charming views and finally a pleasant restaurant for dinner, which provided us with tasty, well-prepared cuisine.



The steeples of three churches that date back to the 13th century appear in this view from the bridge (Akmens Tilts, not Arthur Miller) that carries Riga's trams to the west side of the Daugava. From left to right they are the Cathedral (Lutheran), St. Jacob's (Roman Catholic) and St. Peter's (Lutheran), with the tower of City Hall just peeking out in the center of the photo.



T3A 30046 (ČKD-Tatra, 1977) rolls down 11 Novembra krastmala along the Daugava, with the spire of the old city's St. Peter's Lutheran Church in the background. Back in 1997 Clare and I rode an elevator to the tower for an excellent view of the city.



The facade of the Pullman Hotel, which dates back to 1789. Now part of one of Accor's luxury chains, I had to wait a few minutes to get a photo that didn't include any of the many Mercedes that pulled up to its main entrance.



The tower of the 13th century Cathedral dominates this view of one of the many cul-de-sacs that crowd Riga's charming old city.



One of my last views of the old city, showing a number of the restaurants that sport outdoor seating. The tower of City Hall is behind the buildings.

Despite the weather I had a good day. Part XX of this report will revert back to Wednesday, when we traveled to Daugavpils for another day on the trams.