



BULLETIN

Volume 65, Number 11 | November 2022

First R-211T Delivered R-211 Option Ordered

The first five R-211T cars have been delivered to the Transit Authority. Cars 4041, 4042 and 4043 arrived on November 1 and cars 4040 and 4044 arrived the following day.

The R-211Ts are the cars with the open gangways between them. Specifically meant as a test train, they will be evaluated to see if the use of open gangways works well enough for New York. The five other cars needed to make a full-length ten-car test train should arrive soon.

Overnight from November 2 to 3, the set was transferred to the Main Shop at Coney Island Yard. There, the equipment for the gangway enclosures were installed. Testing will probably start shortly, initially in non-revenue service.

In other R-211 news, the Metropolitan Transportation Authority (MTA) Board's New York City Transit Committee approved on October 24 an order for 640 more R-211 cars, authorizing the full MTA Board to consider the order at their meeting on October 26. The cars will be manufactured by Kawasaki Rail Car, Inc., at its facilities in Lincoln, Nebraska and Yonkers, New York. The

state-of-the-art Lincoln facility will manufacture the car body structure and install interior equipment, while final assembly and function testing will be performed at the Lincoln and Yonkers facilities.

Qualification testing on the R211s already delivered is underway with passenger service expected by the spring.

The option, an addition to the base order of 535 cars awarded in 2018, would bring the total number of R-211 cars ordered to 1,175, including 75 Staten Island rail cars and 20 cars that feature open gangways.

The R-211s are initially planned for the **A** and **C** lines and the Staten Island Railway. They feature 58-inch-wide door openings that are eight inches wider than standard door openings on existing cars. The wider doorways are designed to speed up boarding and reduce the amount of time trains sit in stations.

The cars also include security cameras, digital displays that will provide information about service and stations, and brighter lighting and signage, slicker bonnet design, among other features.

(continued on page 3)



Electric Railroaders Association, Inc.

Founded August 15, 1934 by E.J. Quinby
P.O. Box 3323,
New York, NY 10163
<https://erausa.org>

Editorial Staff

Editor-in-Chief

Jeff Erlitz

Associate Editor

Subutay Musluoglu

Circulation Managers

Robert Colorafi (Electronic)

David Ross (Print)

Contact

erausa.org/contact

Subscriptions

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Back Issues

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

In This Issue

Worldwide Electric Railway, Metro and Tramway Openings	3
New York Area News	4
News from Other US Systems	6
International News	10
100 Years of the Frankford El	18
Book Review	21
Travels with Jack May	22

New Members

The E.R.A. welcomes the following new members who joined in September:

- Kristen Fredericksen, Pittsburgh, Pennsylvania
- Nicholas Kalis, McLean, Virginia
- Phoenix Trolley Museum, Gilbert, Arizona

Cover Photo

On Wednesday, November 2, the first five-car set of R-211Ts are seen at the South Brooklyn Marine Terminal, where New York New Jersey Rail (the car float operator between Greenville, NJ and Bay Ridge, Brooklyn) interchanges with the MTA's South Brooklyn Railway. That night, the set was transferred to Coney Island Yard's Main Shop.

Andrew Grahl photo

Donations

The ERA Board of Directors express their deepest appreciation for one member donation in September 2022.

Up to \$49

Joseph Diecidue

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!

Meeting

Our next Zoom Meeting is on Friday, November 18, 2022 at 7:30 PM.

Presenting This Month: Andrew Grahl

Andrew will present updates from New York City, Shore Line East, Montreal, Chicago, Philadelphia and Boston. Additional historic slide scans from the 1950s, as well as other updates from Philadelphia, Pittsburgh and Atlanta will be shown. NJT Heritage and Amtrak special wraps will also be included.

How to Join Our Zoom Meeting

A Zoom login button will be posted on www.erausa.org about five days before Andrew's presentation. 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.

E.R.A.'s Online Archive

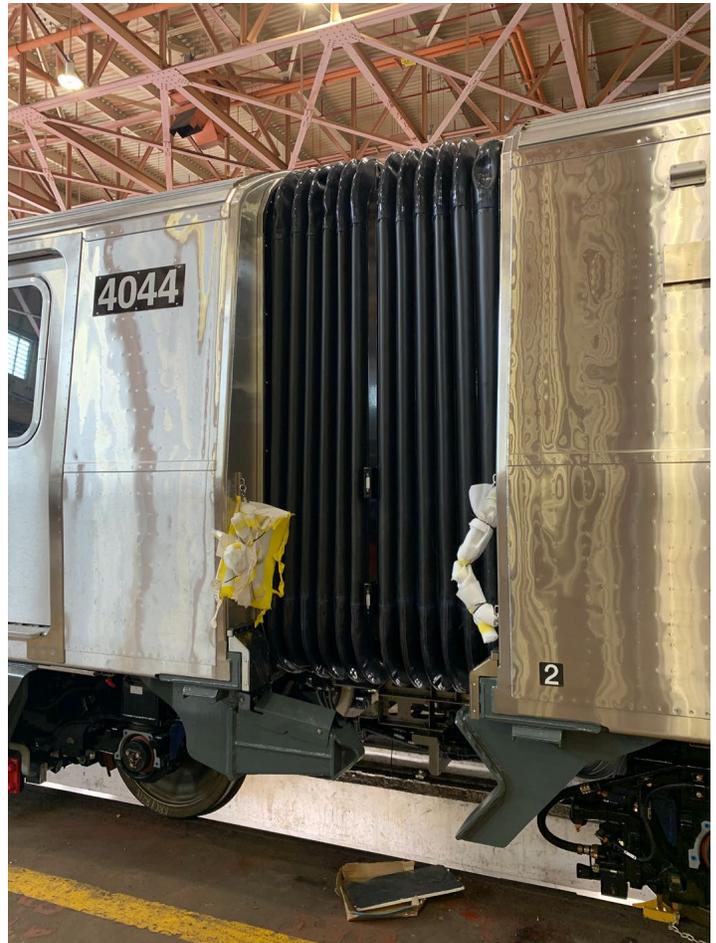
The E.R.A. has a project to scan and post on our website all sorts of ephemera from our long history. Convention flyers, excursion tickets, maps, meeting notices and trip notices are some of the topics you will find at <https://erausa.org/vintage-collection/conventions/#gsc.tab=0>.

A major portion of this project is to scan all past issues of Headlights, the Bulletin and the special issues of Electric Railroads. Printed material from any of the other E.R.A. divisions is also needed, especially their regular publications.

We currently have a complete set of Bulletins (formerly New York Division) but are missing the following national publications:

- Headlights: all of Volumes 1 and 2 (1939 and 1940);
- Headlights indexes: Volumes 1 through 4;
- Electric Railroads: Numbers 1 and 2.

If any you have the above in your collection, or any other printed E.R.A. material, please contact us at either of the addresses at the top-left of this page and let us know what you have. We would only need to borrow, not keep, any items. We would greatly appreciate it!



(Above) R-211T 4044-4043-4042-4041-4040 is in the Main Shop at Coney Island Yard on November 4 while being outfitted with its gangway assemblies. Eric Oszustowicz photo

(Right) Closeup of the gangway assembly between cars 4044 and 4043. Inside the Main Shop at Coney Island Yard on November 4. Eric Oszustowicz photo

Worldwide Electric Railway, Metro and Tramway Openings in October

Date	Country	City	Segment	Distance (miles)	Rail/Metro/Tram
10/2	India	Ahmedabad	Blue Line: Apparel Park to Thaltej	7.5	M
	Turkey	Istanbul	M4: Tavşantepe to Sabiha Gökçen Havalimani	4.6	M
10/5	Taiwan	Kaohsiung	Circular Tram: Museum of Fine Arts TRA Station to Heart of Love River	1.5	T
10/6	India	Ahmedabad	Red Line: APMC to Motera Stadium	11.7	M
	Egypt	Cairo	Line 3: Attaba to Kit Kat	~2.5	M
10/7	U.S.A.	Los Angeles	Line K: Expo/Crenshaw to Westchester/Veterans	6.0	T
10/9	Australia	Perth	Bayswater to High Wycombe	5.3	R
10/10	Mauritius	Port Louis	Phoenix to Curepipe Central	4.3	T
	Greece	Athens	Line 3: Nikaia to Dimotiko Theatro	2.2	M
10/17	Finland	Helsinki	Line 9: Eesterinportti to Ilmalantori	0.8	T
10/26	Spain	Bahía de Cádiz	TramBahía: Cádiz to Chiclana Pelagatos	14.9	T
10/28	China	Shenzhen	Line 14: Gangxia North to Shatian	31.3	M

URBAN RAIL NEWS WEBSITE, OCTOBER 31



Rail News in Review

New York Metropolitan Area

METROPOLITAN TRANSPORTATION AUTHORITY (MTA)

OMNY for Reduced-Fare Riders

On October 24 the MTA announced that Reduced-Fare riders can now put their reduced fare benefit on any personal payment device compatible with OMNY, becoming the first major transit system to offer reduced fares on personal payment devices. Seniors and people with disabilities who qualify for Reduced-Fare will now have more choice on how to pay their fare on public transit. The MTA is enabling riders to make this switch online, anytime from anywhere, in three easy steps.

Ahead of this system-wide launch, the MTA successfully conducted a multi-month soft launch, in which several hundred Reduced-Fare riders switched from MetroCard to OMNY online and used OMNY on subways and buses. The MTA solicited feedback from these riders to develop rider resources and instruct call center staff to ensure riders have a seamless transition to OMNY.

By using a contactless card or smart device, Reduced-Fare riders benefit from increased accessibility to the transit system in a variety of ways. Riders will no longer need to track a card that must be replaced upon expiration nor pre-load value onto a MetroCard. OMNY also gives Reduced-Fare riders the opportunity to benefit from the MTA's ongoing "Lucky 13" fare capping program, where riders ride free after 12 paid OMNY taps in a week from Monday to Sunday.

Reduced-Fare riders can make the switch from MetroCard to OMNY seamlessly online with the OMNY digital assistant, available 24/7 at [OMNY.info](https://www.omny.info). This process takes three easy steps – a how-to video for riders who want to switch to OMNY can be seen at <https://www.youtube.com/watch?v=yvzgt9eGMiE>.

Riders can visit [omny.info](https://www.omny.info) and create a free OMNY account. From the homepage, riders should navigate to the Digital Assistant (or "chat") and input their Reduced-Fare MetroCard information. Once the information is included, riders should select the contactless credit, debit card or smart device they would like as their OMNY payment method and put in an associated card number. When a "SUCCESS" message appears, the rider is now good to tap and go with OMNY and receive reduced fare on that card or device.

The OMNY call center is available to assist riders with the process as needed.

The MTA will soon also launch locations to help riders make the switch to OMNY in-person. In addition, for riders who do not have their own contactless payment cards or mobile devices, or who prefer to use a physical OMNY card,

the MTA will begin providing free Reduced-Fare OMNY cards to eligible riders in 2023.

To inform Reduced-Fare riders that they can easily switch to OMNY, the MTA is launching a system-wide campaign with digital advertisements on subway and bus, a new OMNY for Reduced-Fare webpage, and extensive digital and in-person outreach to seniors and people with disabilities across New York City.

OMNY usage continues to surge across the New York City Transit system. On September 15, the MTA recorded the 500 millionth OMNY tap at Grand Central Terminal, and on Saturday, October 8 OMNY usage on the subway reached a weekend record of 1.071 million taps.

[MTA PRESS RELEASE](#), OCTOBER 24

NEW YORK CITY TRANSIT (NYCT)

Various Track Outages End

On October 14, peak-period/peak-direction **4** service resumed skipping 138th St-Grand Concourse. It had been suspended on May 20 when the middle track (Track M) at 149th Street-Grand Concourse was removed from service to aid in the installation of new ADA-compliant elevators between the platforms and the mezzanine.

Back on September 26, all of the switches at the south end of Dyckman Street **A** were removed from service for switch renewal work. This work was being done by the joint venture of JT TC (J-Track LLC and TC Electric, LLC) under contract S-32156, Sandy Repairs, 200-207th Street, Signals, Track & Switches. They were returned to service on Monday, October 31.

NEW YORK CITY TRANSIT GENERAL ORDERS

LONG ISLAND RAIL ROAD (LIRR)

Elmont Station Completed

On October 6, the westbound platform (Platform A) at Elmont-UBS Arena station was placed in service. On the same day, the west end of the eastbound platform (Platform B) was extended 340 feet west and now has a capacity of 12 cars. When the station opened on November 22, 2021, (with service only at the eastbound platform) Platform B had a capacity of only eight cars. This was due to the fact that girders had not yet been installed over the Cross Island Parkway to enable a full-length platform.

Trains are now able to stop in both directions here for events at the UBS Arena nearby. Shuttle buses, which had been operating between the Queens Village station and the arena before and after events, are now no longer needed.

When Elmont first opened, the station signs had a gold stripe along the top border of each sign. This was because

that is the color of the Hempstead Branch timetables. However, when the Main Line Third Track opened for service, the stations at Elmont, Bellerose and Floral Park were officially transferred from the Hempstead Branch to the Main Line. By October 6, all of the original station signs, which were not even one year old, were replaced with new signs that have a blue stripe (for the Port Jefferson Branch, whose trains mostly serve the Main Line) and the new name for the station, Elmont-UBS Arena.

Queens Interlocking Changes

Over the weekend of October 29-30, three additional single crossovers were placed into service between Elmont-UBS Arena and Bellerose stations. Several signal changes were also made on this weekend, as well as the previous weekend and back on September 10-11.

Queens Interlocking is comprised of four separate interlockings, Queens 1 through Queens 4. The first three are contiguous, stretching from the east end of Queens Village station to the west end of Bellerose station. Queens 4 is separate, located at the west end of Floral Park station.

The three new crossovers are located in Queens 3. With these now in service, westbound Hempstead Branch trains are now able to make station stops at Elmont-UBS Arena.



Back on April 28 of this year, Ronkonkoma to Penn Station train 2041 has M7 7409 (Bombardier Transportation, 4/2005) leading and is seen going under Signal Bridge 3, just east of the Elmont-UBS Arena station in Queens 3 Interlocking. The bridge still had a full complement of position light signals. Jeff Erlitz photo

Another part of this signal cutover at Queens was the modification of eight of the home signals that had been mounted on Signal Bridge 3, located off the east end of the Elmont-UBS Arena platforms. The westbound signals were relocated from the signal bridge to the ground but the eastbound signals, in addition to being relocated off of the signal bridge, were converted from traditional position light signals to the new-style color light “reduced aspect” signals. These reduced aspect signals were introduced with the new interlockings built as part of the Main Line Third Track project.



On November 2, the last four signals on the bridge are now out of service, with their ground-level replacements now in service. Note the color light “reduced aspect” signals on Tracks 2 and 4, on the right. M7 7339 (Bombardier Transportation, 12/2004) is on the point of train 1701 from Huntington to Penn Station. Jeff Erlitz photo

M9 Deliveries Continue

Since the February issue of the Bulletin, 22 additional M9 cars have been delivered to the LIRR, as follows:

Date	Cars	Date	Cars
1/28/2022	9173-9174	6/10/2022	9093-9094
1/28/2022	9177-9178	6/10/2022	9187-9188
2/25/2022	9181-9182	6/10/2022	9189-9190
4/1/2022	9179-9180	7/22/2022	9095-9096
4/8/2022	9183-9184	7/26/2022	9149-9150
5/6/2022	9185-9186		



M9 9025 (Kawasaki Rail Car, 9/2019) heads train 1707 from Huntington to Penn Station and will momentarily make its station stop at Mineola. This is the site of the former Main Street grade crossing, which was eliminated during the Main Line Third Track project. The concrete pad you see on Track 2 on the right is to enable high-rail equipment to gain access to the track. Jeff Erlitz photo

Northport Platform Replacement

Back on April 29, LoSardo General Contractors Inc. was awarded the contract to replace the high-level platform at Northport station on the Port Jefferson Branch.

Starting on Monday, September 12, 510 feet of the west end of the platform was removed from service to enable the renovation to begin. The remaining platform at the east end is still long enough to platform six cars. With the exception of the two eight-car dual-mode trains to Penn Station, all Port Jefferson trains are only four cars long so there is little to no impact on regular train service here.



Looking west from the pedestrian overpass at Northport on November 1, the platform has already been removed from its footings as the renovations proceed. Jeff Erlitz photo

NJ TRANSIT (NJT)**Glassboro-Camden Line Moves Forward**

The Glassboro-Camden Line (GCL) Project Team has selected the infrastructure consulting firm, South Jersey Transit Partners (SJTP), to provide preliminary engineering and design (PED), project management, and professional services for the pre-construction phase of the light rail line. SJTP is a joint venture between AECOM and STV Incorporated, two nationally recognized transit planning and engineering firms.

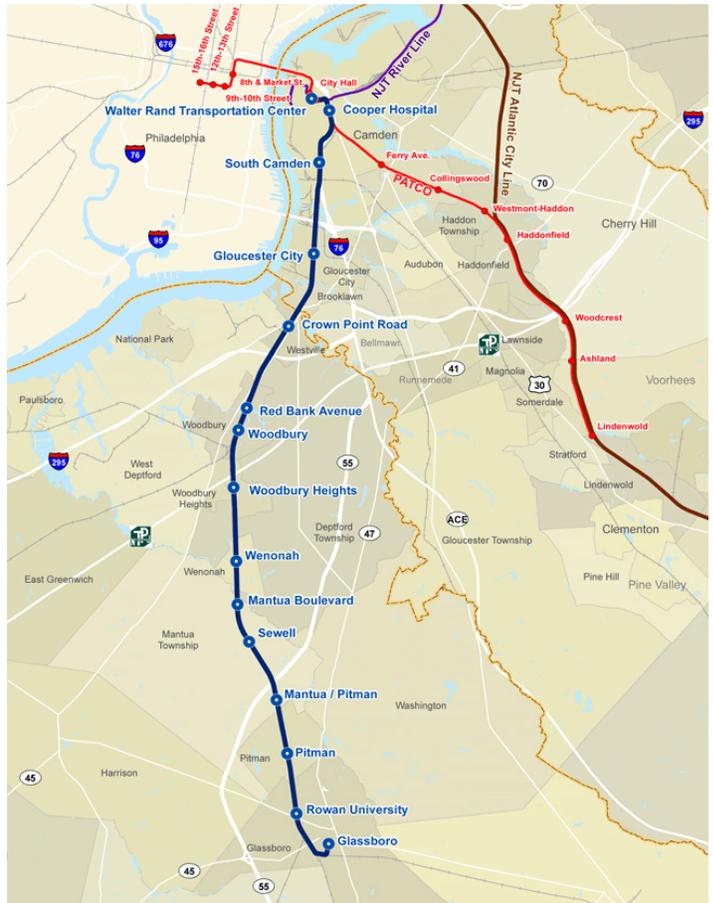
This action moves the GCL closer to construction with the start of the next phase of this important project that will expand connections between communities in South Jersey by restoring passenger rail service.

The PED phase is a critical part of the project as it will define the overall project configuration and develop a strategic construction plan. This phase, which is expected to take three years, provides design specifications and contract documents, secures right-of-way acquisitions and easements, and performs geotechnical and utility surveys.

In addition, SJTP will provide project management office functions, including continued community relations and public involvement for the GCL throughout the design and construction phases.

The Glassboro-Camden Line is an 18-mile light rail line that

will traverse Gloucester and Camden counties. It will restore passenger rail service along an existing rail line, with the goal of increasing mobility and improving links between established communities, jobs, and activity centers in the region.



Map of the Glassboro-Camden Line. GCL project website

The GCL project is managed by the Delaware River Port Authority with NJT and the South Jersey Transportation Authority serving as project partners.

[GLASSBORO-CAMDEN LINE PROJECT WEBSITE](#), OCTOBER 27

Metropark Development Project Moves Forward

October 12 marked the selection of DOR Woodbridge, LLC – a joint venture of Russo Development, Onyx Equities, and Dinallo Development LLC/Terminal Construction – to advance a transit-oriented development (TOD) project at Metropark Station in Woodbridge.

The Metropark Development Project will support local and regional economic development through the creation of Class A office and retail space, housing opportunities (20 percent of which will be designated as affordable housing), community amenities, and station-area improvements, including bicycle, pedestrian, and infrastructure upgrades. These strategic investments and development of a cohesive community centered at the station will enhance mobility options and help connect New Jerseyans to employment, education, health care, and other opportunities through improved



access to NJT's transportation system.

In the coming months, DOR Woodbridge, LLC will perform site due diligence and collaborate with NJT, Woodbridge Township, and broader project stakeholders to advance the project design and related financing, phasing, and implementation plans.

Facilitating the development of TOD is one of the five goals in NJT's 2030 10-year Strategic Plan, through which the agency is promoting a more sustainable future for the planet by developing walkable communities, engaging in adaptive reuse of property to maximize its value, and fostering a green economy by reducing emissions related to transportation.

[NJ TRANSIT PRESS RELEASE](#), OCTOBER 12

New Schedules

NJT introduced new schedules on November 13. All timetables were reprinted but only the Northeast Corridor and North Jersey Coast Lines actually had changes, as follows:

Northeast Corridor Line – Weekdays

- Current Train 3864 will be renumbered as 3862, departing Trenton at 4:41PM and continuing to arrive in New York at 6:09PM. This train will continue to operate non-stop from Rahway to Newark Airport stations;
- Current Train 3866 will be renumbered as 3864 and will add a North Elizabeth stop, with minor time changes at Linden and Elizabeth stations;
- Current Train 3898 will be renumbered as 3866 and add stops at New Brunswick, Edison, Metuchen, Metropark, Rahway, Linden, Elizabeth, and North Elizabeth stations. Train 3866 will depart Trenton at 5:27PM and arrive in New York at 6:56PM.

Northeast Corridor Line – Weekends

- Train 7669 will no longer operate. Riders traveling from New York to Secaucus, Newark Penn Station and Newark Airport can use Trains 7867 or 7269. Riders traveling to stations from North Elizabeth through Rahway should use Train 7269;
- New Trains 7660 (7:46PM from Rahway, arriving to New York at 8:32PM) and 7665 (departing New York at 6:01PM, arriving to Rahway at 6:40PM) will now operate;
- All 7600-series trains now make stops to and from Rahway in both directions.
- Other trains have been adjusted to support NJ TRANSIT and Amtrak maintenance work on both the Northeast Corridor and the North Jersey Coast Line.

North Jersey Coast Line – Weekdays

- Train 3266 will now depart Long Branch five minutes later (4:46PM) and no longer stop at North Elizabeth. It will continue to arrive to New York at 6:25PM. North Elizabeth riders traveling to New York should use new Train 3864 (6:05PM at North Elizabeth);

- Train 3598 will now depart South Amboy 14 minutes earlier (5:47PM), add an Avenel stop but no longer stop at Linden, Elizabeth or North Elizabeth stations, arriving in New York at 6:44PM. Riders traveling to Newark and New York from Linden, Elizabeth and North Elizabeth can use new Train 3866. Riders traveling from North Jersey Coast Line stations to Linden, Elizabeth, and North Elizabeth can transfer to Train 3866 at Rahway.

North Jersey Coast Line – Weekends

- All 7600-series trains now make stops to and from Rahway in both directions;
- Other trains have been adjusted to support NJT and Amtrak maintenance work on both the Northeast Corridor and the North Jersey Coast Line.

[NJ TRANSIT SERVICE ADVISORY](#), NOVEMBER 3

Other US Systems

CHICAGO

Red Line Extension Project

The Chicago Transit Board approved on October 14 two new measures that will allow the Chicago Transit Authority (CTA) to begin the process of acquiring previously identified properties needed as part of the highly anticipated Red Line Extension (RLE) project – one of the most critical investments in CTA's history, and a transformative investment for Chicago and its Far South Side communities.

The planned \$3.6 billion RLE project will extend the Red Line 5.6 miles from the existing southern terminal at 95th Street to 130th Street, while also providing long-awaited and much needed connection to jobs, education, and commerce, while also serving as a catalyst for economic development. As part of construction work, four new accessible rail stations will be added, plus a new a modern, efficient railcar storage yard and maintenance facility that will benefit users of the entire Red Line.

Completion of the RLE project is dependent on securing funding, but the Board action allows CTA to commence the process of negotiating and purchasing up to 216 previously identified property parcels, of which 103 are privately owned. Of the privately owned parcels, 64 are occupied and either commercial or residential. CTA informed property owners approximately six years ago of the possible acquisitions.

The Red Line Extension plans were designed to minimize the amount of private property needed for construction. Commencing these acquisition efforts now will help expedite overall project development and ensure CTA maintains its timeline to begin construction as early as 2025.

To aid in the property acquisition process, also approved was a new intergovernmental agreement between the CTA

and the Cook County Land Bank Authority (CCLBA). As part of this agreement, CTA will pay the CCLBA up to \$3.83 million for the acquisition, holding and maintaining of the 55 vacant parcels, until it is ready to take ownership.

CTA will adhere to the guidelines of the Uniform Relocation Assistance and Real Property Acquisition Policies Act, along with state and federal statutes, to assure full protection of the rights of each property owner. Among other requirements, these guidelines state that CTA must offer at least fair market value for any property it seeks to acquire, as well as provide financial assistance and relocation services for those who must move because of the RLE Project.

CTA's outreach team continues to work with both property owners and tenants within the communities regarding next steps. Coordination for pre-acquisition activities is ongoing. CTA will continue working with a dedicated team of community liaisons as it moves forward with the RLE planning process.

[CTA PRESS RELEASE](#), OCTOBER 14

LOS ANGELES

K Line Opens

The October 7 launch of LACMTA's K Line marked the official return of rail service on Crenshaw Boulevard. The last Los Angeles Railway Line 5 yellow streetcars ran in 1955, according to the transit agency. The \$2.1 billion line, whose opening was announced last month, is expected to provide new access to opportunity for numerous south Los Angeles communities, including the Crenshaw Corridor, Hyde Park, Leimert Park, Fairview Heights, Inglewood and Westchester, by connecting these communities with new local destinations as well as the rest of Los Angeles County's expanding Metro Rail system. More than 32,000 daily boardings are anticipated by 2035.



Opening day of the Crenshaw corridor. LACMTA photo

The K Line's first seven stations—Expo/Crenshaw, Martin L. King Jr., Leimert Park, Hyde Park, Fairview Heights, Downtown Inglewood and Westchester/Veterans—are operational. According to LACMTA, the Aviation/Century station

is projected to open in late 2023, along with a rail connection to the C (Green) Line. The LAX (Los Angeles International Airport)/Metro Transit Center Station along the new K Line tracks, now under construction, is planned to open in late 2024, offering transfers between LACMTA and the LAX Automated People Mover.

The transit agency said it plans to expand the K Line north. It is developing a draft environmental impact report that will explore alternatives for extending the K Line to reach Hollywood. A draft report release is planned for 2023.

[RAILWAY AGE](#), October 11

Purple Line Construction Halted

LA Metro has halted construction for two weeks on the second phase of the Purple Line subway extension under Wilshire Boulevard citing numerous injuries and “ongoing safety concerns,” documents show.

In a letter to contractor Tutor Perini O&G (TPOG), part of a staff report sent to the Board of Directors on October 21, Metro officials cited dozens of injuries since July 2021, including several workers who fell from ladders, one who slipped and broke his foot, others with lacerated and crushed fingers, one with a flash burn to the eyes and several struck by pipes and hoses not properly fastened.

The nine-mile, \$9.5 billion D Line extension project, under construction since 2014, is being built in three sections extending from Koreatown at Wilshire and Western to the Westwood/VA station, the western terminus. Phase one, from Wilshire and Western to Wilshire and La Cienega, is expected to be completed in 2024. The second phase extends about 2.6 miles to Century City/Constellation, with completion expected in 2025, and the third phase extends to the West Los Angeles VA campus, with expected completion in 2027.

In the board report, Metro said it has sent 10 letters since October 2020 to the contractor outlining safety concerns. But, the report says, the situation has worsened. The letter to TPOG cites nine injuries plus other incidents in the last year, including five injuries in the last three months and two in the last 10 days.

Aside from worker injuries, the Metro letter cites safety issues that the transit agency says have plagued this section of the project, and notes that the company has not followed basic safety protocols.

The problems include tunnels that are not passable and others that are “extremely dusty” and contain silica dust; and ventilation in some areas that is not in compliance with a Cal/OSHA-approved plan. The letter also says the tunnels often contain standing water and muck, causing workers to slip.

In order for the work suspension to be lifted, the letter says Metro will require TPOG to conduct a thorough evaluation of the past injuries and report back to Metro. It also asks that TPOG prepare a revised safety plan including additional safety training and safety meetings, and adhere to standards for housekeeping measures and operation of construction equipment.

If Metro is not satisfied with TPOG's response, it can

remove certain TPOG personnel from the job.

[WHITTIER DAILY NEWS VIA MASS TRANSIT](#), OCTOBER 27

SAN FRANCISCO

BART Celebrates Its 50th Anniversary

The story of BART goes back decades before the opening in September 1972. It wasn't until the early 1960s that a plan and funding were in place for BART to come to fruition.

Originally, five counties formed the Bay Area Rapid Transit District. In a 1960 engineering report, proposed route maps showed lines extending both north across the Golden Gate into Marin and south down the Peninsula to Palo Alto. After Marin and San Mateo counties withdrew from the district, a final plan was drawn up to serve mainly the East Bay and San Francisco.

Groundbreaking on construction for San Francisco's Market Street Subway took place in July 1967. This construction not only included the main BART stations downtown, but also stations for Muni Metro at Church, Castro and West Portal. Forest Hill Station was modified with new platforms and equipment to fit Muni's incoming light rail vehicles. The funding and planning power of the BART District brought to life an idea that had been floated since at least 1913.



A PCC snakes its way through the construction zone in this overhead view looking at the site of Castro Station in October 1973. SFMTA photo

Construction along Market Street was extremely disruptive for the city's busiest corridor. During construction, Muni streetcars and buses had to navigate constantly shifting reroutes, wooden plank roadways, and sinkholes on top of all the usual street hazards. One of the most dramatic engineering feats was a temporary bridge built over a huge open pit at Collingwood Street. Here, streetcars traveling towards West Portal crossed over top construction on Castro Station to enter the Twin Peaks Tunnel. The temporary ramps built to access the tunnel still exist today and are used for emergency and maintenance needs.

BART opened in San Francisco on November 3, 1973. For

the first time ever, San Franciscans could travel from downtown to the outer reaches of the city on an underground subway system. Service across the Bay opened 10 months later in September 1974. BART gave San Franciscans from Balboa Park to downtown improved access to jobs, shopping, and education as well as connections around the region.

Embarcadero Station, which was not part of the original plan, was built after the main subway. It opened on May 27, 1976, with Mayor George Moscone giving a speech at the end of the California Street cable car line. Today, Embarcadero Station is the busiest in the system, with more than 27,000 entries and exits logged in August 2022.

In the early 1980s, Muni and BART partnered to improve transit within the city through a combined Muni/BART monthly Fast Pass. Muni customers could ride BART between Embarcadero and Balboa Park on the same pass, making transfers between the two systems seamless.

Today, BART is a critical part of San Francisco's regional transportation network. Construction of BART in the mid-century also brought better service to the hundreds of thousands of Muni Metro riders within San Francisco.

[SFMTA WEBSITE](#), September 28

WASHINGTON D.C.

Silver Line Extension/7000 Series Cars

After successfully completing two weeks of simulated service, Metro leaders said that they will be able to open the extension to Dulles Airport Station in time for the start of busy Thanksgiving travel, subject to approvals this week from the Washington Metrorail Safety Commission (WMSC) of two submissions – a data-driven Return to Service Plan for 7000-series railcars, and a safety certification report of the Silver Line extension.

Metro took custody and control of the extension from the Airports Authority on June 23 and is finalizing its safety certification report to WMSC this week. WMSC has worked alongside Metro for months and has stated that it expects to add their concurrence to Metro's within hours or days after receiving the report from Metro's Chief Safety Officer. Metro does not view the final Silver Line safety certification report as a barrier to preparing for the opening of passenger service before Thanksgiving holiday travel.

More Trains Needed to Open

Last month, Metro's senior safety and operations officials expressed safety concerns about moving cars from other crowded lines for new service, and that more trains were needed to support the extension. Unfortunately, WMSC notified Metro on October 17 that it objects to Metro's new (phase three) Return to Service Plan for the 7000-series rail cars, following Metro's submission of additional data analysis Friday. (The plan was first submitted on September 28 and was not approved citing "lack of data" to support changing multiple variables at once).

The latest rejection letter continues confusing direction

provided to Metro:

- WMSC permits Metro to run trains inspected every seven days on any line, with employees operating and onboard. However, trains inspected every four days are only permitted to run with customers on the Red, Green and Yellow lines;
- The letter indicates that there are differences in the track interface with trains on Blue/Orange/Silver lines that require monitoring, then indicates permission to run on those lines temporarily, but offers no metrics for successful completion;
- The letter implies that Metro could swap axles to increase the fleet; however, that is operationally infeasible and would impact Metro's ability to safely and efficiently manage its fleet, as well as changes many variables at once;
- WMSC approved in December 2021 the use of the 7K fleet on all rail lines, and is now using the same data analysis to justify fleet restrictions, with no definitive root cause identified in the NTSB investigation.

Metro needs the WMSC's concurrence to safely transfer trains into the various yards to support the restoration of service for stations south of National Airport, and to mobilize trains for the start of passenger service at Dulles Rail Yard. Additionally, Metro needs to align real-time communications systems and finalize other details to support passenger service. Local bus service providers have also requested a minimum of three weeks' notice to provide connecting service to new rail stations.

The phase three return to service plan is needed for both increased service frequency for riders systemwide and the Silver Line extension.

The plan seeks to reconcile two current processes – one for test trains carrying Metro employees, the other for revenue trains – and to implement a single standard for trains carrying employees and riders on all lines with 7-day inspections. It should be noted that for months, Metro has operated 7K trains for testing and training purposes under the exact terms included in its phase three proposal, which demonstrates the safety of its approach.

While the National Transportation Safety Board (NTSB) investigation has not yet identified a root cause for the derailment, Metro is seeking WMSC's concurrence to adjust its fleet management while continuing the most robust program of wheel measurements in the transit industry by deploying:

- All 748 7000-series railcars for passenger service (first time since October 2021);
- 7000-series trains in service on all rail lines;
- Protocols to measure wheels every seven days.

Metro said it remains committed to safely returning all 748 railcars to passenger service and believes its 7000-series railcars are the safest, most reliable trains available to move passengers throughout the region.

(Editor's Note: The Silver Line is scheduled to open on November 15).

[WMATA PRESS RELEASE](#), October 19

International

ATHENS

Metro Line 3 Phase 2 Extension Opens

Operation has begun on the second phase of the €730 million Athens Metro Line 3 extension, with trains now running to Maniatika, Piraeus and Municipal Theatre stations.

The full 4.7-mile extension built by the Avax-Ghella-Alstom consortium includes six stations, with the first phase to Agia Varvara, Korydallos, and Nikaia opening in July 2020. The opening of the second phase is expected to increase passenger numbers on the metro network by 132,000 a day, removing 23,000 private road journeys and reducing CO2 by 120 tons.

The line is reducing travel times between the Port of Piraeus and Venizelos International Airport from 1 hour 10 minutes to 55 minutes. Services will operate at four-minute intervals on the Municipal Theatre – Dukissis Plakentias section during peak hours, reduced to every nine minutes between 10:00 PM and 12:20 AM.



Piraeus station on the Phase 2 extension of Line 3. Attiko Metro photo

Line 3 now has 27 stations. Piraeus station required special construction methods to prevent sea water entering the site and to ensure the structural integrity of adjacent historic buildings. The station also serves as an interchange between lines 1 and 3, the port, the suburban railway and light rail services, with an underground passage providing access to the port under Akti Kalimassioti Avenue.

The historic Municipal Theater Square was restored during the construction of Municipal Theater station, while a new square was created above Maniatika station.

Alstom's share of the project included design, supply and installation of the traction power systems, including third rail electrification, the medium-voltage supply and the distribution of low voltage. As part of the project, a software upgrade has been undertaken at the 76 equipment rooms already in operation on lines 2 and 3. Alstom installed its Iconis supervisory control and data acquisition solution for metro power supply systems.

Alongside the opening of the new sections, Alstom is

extending its Automatic Train Supervision system to cover the whole of lines 2 and 3, which will improve safety and operational efficiency.

Athens Metro also awarded the Avax-Ghella-Alstom consortium a \$US 1.8 billion contract for the construction of the first phase of the 23.7-mile Line 4 in November 2020. The contract covers the construction of the 8.0-mile Section A, which runs from Alsos Veikou via the city center to Goudi, with 15 stations including interchanges with lines 2 and 3. [INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 12

ENGLAND

High-Speed Javelin Fleet to Be Upgraded

Eversholt Rail, Southeastern and Hitachi Rail have signed an agreement worth £27 million to upgrade the 29 Class 395 Javelin high-speed trains which provide regional services on High Speed 1 between London St. Pancras and Kent.



A Southeastern Class 395 unit waits at Dover Priory, after terminating here from London St. Pancras on August 10, 2020. This unit has a sticker commemorating 10 years of service over the high-speed line.

Superalbs photo via Wikimedia Commons

The first phase of the program will take seven months to complete and will include design, engineering and procurement.

This will be followed by a full interior refurbishment of the fleet, which entered service in 2009, including new carpets and seats, and new seating layouts to assist passengers with reduced mobility. There will also be upgrades to the live passenger information system, including the installation of new media screens along with CCTV upgrades and installation of USB at-seat charging and LED lighting.

Work on the first of the trains will commence in March 2023 at Southeastern's Ashford depot. In addition, Hitachi will install its digital infrastructure monitoring technology on the fleet. Exterior roof-mounted cameras will monitor the condition of the pantograph as well as overhead lines and surrounding equipment.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 13

HAMBURG

Work Starts on Line U5

Work has started on the first section of Line U5 in Hamburg, following a groundbreaking ceremony at the site of a shaft that will be built to launch the first tunnel boring machine on the 3.6-mile route from Bramfeld to City Nord.

There will be new stations at Bramfeld, Steilshoop and Barmbek Nord – where construction will start in 2024 – and at City Nord. The first section of Line U5 will also serve the existing station at Sengelmannstraße on Line U1, which will be modified to provide interchange between the two routes.

The first section of Line U5 is expected to carry 20,000 passengers a day and will bring the metro to areas of Hamburg currently only served by buses.

From City North, Line U5 will run southwards via Jarrestraße and Uhlenhorst to the city center where it will serve Hamburg's principal railway station. The route then runs northwards and then to the west to terminate at Arenen Volkspark, serving Universität and University Hospital Eppendorf on the way.

Line U5 will have a total of 23 new stations, with seven providing interchange with other metro or S-Bahn routes. According to metro operator Hamburger Hochbahn, it is Germany's largest inner-city transport project and will connect 180,000 residents to the metro for the first time.

Line U5 is expected to carry 270,000 passengers a day when fully completed in the late 2030s.

Planning for all the remaining sections of the new line is underway with the aim of starting construction towards the city center at several locations from the mid-2020s. This will also enable new sections of the route to be commissioned as they are completed.

Line U5 will be Germany's first fully automated metro line with trains operating every 90 seconds, according to Hamburger Hochbahn CEO, Mr. Henrik Falk.

Testing will start at the end of 2027 between Sengelmannstrasse and City Nord, as it combines tunnel and surface sections and offers ideal conditions for testing automatic operation.

A fleet of 14 driverless trains will be required for the commissioning of the first section of Line U5 from Bramfeld and City Nord, and will form part of the next generation of Hamburger Hochbahn rolling stock.

The metro operator has called tenders for the supply of its new DT6 train under a framework agreement including an initial firm order for 48 trains.

The four-car DT6 train will be 131 feet long and fully accessible, with cars that are nine feet wide, four inches wider than existing rolling stock.

The framework will cover the supply of two variants, the DT6-F equipped with cabs for operation on the existing network and the DT6-A without cabs for fully automatic operation.

Hamburger Hochbahn is looking to order up to 250 DT6-F

trains, comprising 190 to replace its current fleet of 126 DT4 trains and 60 to serve planned network extensions. In the long term, it plans to order 120 DT6-A trains.

Hamburger Hochbahn says that sustainability will have major importance when evaluating bids, alongside price and technical performance. This will include train weight, energy consumption and supply chains, and the recycling rate for the new fleet should be a minimum of 94%.

The DT6 tender also covers the supply of a CBTC-based operations management system for the fully automated Line U5. This will control train operations and safety, as well as the passenger information systems, platform screen doors and communications technology.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 13

LONDON

Latest Phase of Bank Station Upgrade Opens

The latest phase of the upgrade of London Underground's (LU) Bank station in the financial heart of the capital has been completed with the opening of a new interchange route between the Northern Line and the Docklands Light Railway (DLR).



The new travelator between the Northern and Central Lines at Bank station. Diamond Geezer photo

The project to upgrade the station began in 2016 and has seen construction of almost 3,200 feet of new tunnels and the excavation of more than 200,000 tons of material, undertaken with great care due to the station being surrounded by 31 buildings listed for their historic and architectural merit.

Three new escalators now take riders between the spacious new Northern Line concourse, opened by Mayor of London, Sadiq Khan, in May, and the DLR concourse and platforms, shaving an estimated nine minutes off the journeys of passengers changing between the two lines.

Transport for London (TfL) estimates that this will benefit around 40% of passengers using the station.

Other improvements still to be completed include a new interchange route between the Northern and Central lines, with two 312-foot moving walkways and three escalators. There will also be a new station entrance on Cannon Street, provision of step-free access to the Northern Line for the first time via two new lifts, and improved step-free access to the DLR.

Bank station will have a total of 27 escalators once all work is completed – the largest number on the LU network – and TfL says completion of the Bank upgrade will see increase station capacity by 40%.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 17

MANCHESTER

Latest LRV Order Completed

Manchester's Metrolink light rail network has received the last of 27 new LRVs ordered from Bombardier Transportation UK – now Alstom – and Kiepe Electric by Transport for Greater Manchester (TfGM) in July 2018 as part of a £72 million investment in the network.

The last of the new M5000 high-floor LRVs was received by Metrolink operator KeolisAmey Metrolink (KAM) on September 24 and is undergoing testing and commissioning before entering service.

TfGM says the new vehicles will make Metrolink's fleet more resilient, boost capacity and allow more services to be operated during high-profile events in Greater Manchester.

The new LRVs are funded by the British government's Transforming Cities Fund, which has also helped provide more car parking capacity around the network, as well as extending the Metrolink rolling stock maintenance depots at Old Trafford and Queens Road.

The vehicles, based on Bombardier's Flexity Swift design, were originally due to be delivered between February 2020 and June 2021. The first LRV was delivered in November 2020. Metrolink's fleet of 147 LRVs have collectively covered more than 73 million miles, with the new fleet of vehicles approaching 1.3 million miles in service. On average, the LRVs cover 24,855 miles a day.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 13

MANILA

Work Starts on Subway

Construction has commenced on the first section of the Metro Manila Subway project, following a groundbreaking ceremony in Pasig City on October 3 led by the president of the Philippines, Mr. Ferdinand Marcos.

Manila's new metro line runs for 20.5 miles from Valenzuela City to Ninoy Aquino International Airport, serving a total of 17 stations. It is expected to be fully operational by 2028, with eight-car trains carrying up to 2,242 passengers each.

Work has started on Contract Package 104 (CP104), awarded to a joint venture of Japanese contractors Tokyu and Tobishima with Megawide Construction of the Philippines for Pesos 17.75 billion (\$US 301 million).

One of the seven civil works contracts for the Metro Manila Subway, CP104 covers the construction of the stations at Ortigas and Shaw Boulevard and 2.1 miles of tunnels using tunnel boring machines (TBMs). A further 19 TBMs will be launched on other sections by the end of this year.

The Department of Transportation has awarded CP103 to Sumitomo Mitsui Construction for Pesos 27 billion. The package comprises civil works for the stations at Anonas and Katipunan and the running tunnels between them.

A Pesos 17.37 billion contract to build stations and tunnels at Quezon Avenue and East Avenue has been awarded to a joint venture of Nishimatsu Construction of Japan and D M Consunji of the Philippines.

The Metro Manila Subway is costing a total of Pesos 488.47 billion, financed through a loan from Japan International Cooperation Agency. Once fully operational, it will be able to carry up to 519,000 passengers a day.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 5

MAURITIUS

Light Rail Phase 2C Opens

The next stage of the light rail line on the Indian Ocean island of Mauritius has been completed with the opening of the 4.0-mile Phase 2C, which extends the line from Phoenix to Curepipe. The section was opened by Mauritius' prime minister, Pravind Jugnauth, on October 9.



Urbos 100 111 (CAF, 2019) is seen at the terminal station at Curepipe Central on opening day, October 9. International Railway Journal photo

The Rs 18.8 billion (\$US 228.3 million) section was built by Larsen & Toubro (L&T), India. The line now runs for 16.2 miles from Port Louis in the north to Curepipe in the south, with 19 stations including 17 at-grade and two elevated.

Testing was conducted by Metro Express Ltd (MEL), Rites,

L&T, and CAF with oversight from Singapore metro operator SMRT to ensure the extension was integrated with the rest of the route. A trial run along the new alignment was held on September 16, attended by MEL CEO, Das Mootanah, SMRT international consultant, Lui Wai Meng, CAF project director, Ander Montes, MEL chief of operations, Parama Naidoo, and MEL chief of maintenance, Moorooogen Chinapen.

Phase 1, which runs for 7.7 miles from Victoria in Port Louis to Rose Hill, began commercial operation on January 10, 2020 after months of testing with passengers. The 1.6-mile Phase 2A from Rose Hill to Quatre Bornes opened on June 20 of last year, with the 2.2-mile Phase 2B to Curepipe opening on May 8. Phase 3, a branch from Rose Hill to Réduit, is expected to be completed before the end of this year.

In March 2017 the Indian government agreed to fully finance the project through a \$US 275 million grant to the Mauritian government and a line of credit to the State Bank of Mauritius. The same month Rites was appointed consultant and project supervisor, while Systra acted as detailed design consultant.

Phase 1 was also constructed by L&T under a Rs 18.8 billion (\$US 572 million) contract awarded in August 2017, with a contract to construct Phase 2A awarded to the company in February 2021. In December 2017, L&T awarded CAF a €100 million turnkey contract to supply 18 low-floor LRVs, signaling, an automatic vehicle location system, a traffic light priority system, depot equipment, and a driving simulator. Elis Infotech Systems, China, supplied the smart-card ticketing system.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 12

MILANO

Last Interurban Line Closes

The Limbiate interurban tram closed on September 30 on safety grounds, due to poor condition of the infrastructure. Refurbishment will cost a reported £7.2 million, but transport undertaking ATM currently has no identified budget for this.



Bloccati set 533+502+534 is shown in Limbiate, near the northern end of the line, on April 6, 2017. Giorgio Stagni photo

A bus replacement service is provided and heritage stock at Desio depot has been moved to Precotto for undercover storage.

In recent years the line has been operated only in the morning peak and with running time over the 7.3-mile route increased from 35 to 55 minutes due to speed restrictions. There is a single track located at the roadside, with passing sidings; the line was worked by three-car sets of bogie trams built in the ATM workshops in the 1960s.

Conversion to light rail operation has been long planned and £98 million was allocated in 2019, but the estimated cost has since increased and a contractor has still to be appointed; the work is still said to be scheduled for 2024-28, now costing £177 million.

TRAMWAYS & URBAN TRANSIT, October 2022

PERTH

Airport Line Opens

The 5.3-mile Forrestfield – Airport line in Perth, Western Australian, opened on October 10, more than two years later than planned, with Australian prime minister Anthony Albanese and Western Australian premier Mark McGowan, among the first passengers to use the line.

The new line runs underground in a twin-bore tunnel from Bayswater with three new stations at Redcliffe, Airport Central and High Wycombe. Fares are capped at \$A 5.00 (\$US 3.15) and 20,000 passengers are expected to use the new railway in its first year of operation.



The crowds at Redcliffe station on opening day. International Railway Journal photo

The line offers a journey time of 18 minutes from the city center to Perth Airport with services running every 12 minutes during the peak. Regular weekday services commenced at 5:12 AM on October 10 with trains remaining in service until around midnight.

Construction, which was funded using \$A 1.37 billion of state funds and \$A 490 million from the federal government, got underway in 2016. However, work was delayed by

several issues, including a water leak that led to a sinkhole, workplace safety concerns, labor shortages and supply disruptions resulting from the pandemic.

Webuild led construction of the project in an 80:20 joint venture with local partner NRW alongside a supply chain of 1,200 companies of which 91% are local. Webuild describes the excavation of the tunnels using two TBMs as “very challenging” due to the varying geology, and because work took place beneath operating railway lines and the airport’s runways as well as the Swan River where the tunnels reached a depth of 85 feet, their deepest point.

The joint venture partners will continue to maintain the line under a 10-year contract.

Webuild adds that the project’s sustainability features “mark an important step in the future of infrastructure.” For example, at High Wycombe, a solar panel system has been installed which will generate sufficient power to meet the average summer daylight electricity requirements for all three new stations.

Hitachi was responsible for the design, testing and installation of the line’s 4G telecommunications and signaling systems based on its Microlok interlocking package.

Four additional new suburban rail lines remain under construction or planned in Perth under the wider Metronet program, which will add 44.7 miles to the network. Alstom is supplying new-generation six-car C-series metro trains to Perth, including 102 cars for Metronet, with testing of the first commencing in August.

INTERNATIONAL RAILWAY JOURNAL, OCTOBER 10

PANAMA

Train Operation Tested on Airport Branch

Trial train operation is now in progress on the new branch extending Line 2 of the Panama Metro to Tocumen International Airport.

The trials are taking place at weekends throughout October.



Pre-revenue service testing at the new airport station. The Metropolis trainsets were supplied by Alstom. International Railway Journal photo

During the trials, Panama Metro staff are being deployed at stations on Line 2 to prevent passengers from boarding the

trains involved in the trials.

The new branch will benefit thousands of passengers and the 8,000 workers who travel to the airport every day, says Panama Metro.

There will be one intermediate station at ITSE, serving the Specialized Superior Technical Institute (ITSE) which has 5,000 students, as well as the nearby National Institute of Vocational Training (INADEH), schools and local communities.

Meanwhile, Panama Metro also reports that the first section of concrete guideway has been lifted into place on the first phase of Line 3, a 15.2-mile monorail running from Albrook to Ciudad del Futuro with 14 stations.

Work to build the elevated monorail guideway will continue until 2024, requiring the installation of 1,587 sections.

The guideway sections vary in length from 72 to 92 feet and weigh between 62 and 100 tons. The guideway is 2.6 feet wide.

Work is being undertaken by Panamanian contractors, assisted by specialists from Korea who worked on the construction of the 14.9-mile driverless monorail in Daegu.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 14

SPAIN

Bilbao Metro Line 5 Approved

The Basque regional government has given final approval for construction of Line 5 of the Bilbao metro network.

Under the latest plans, this 3.9-mile, five-station line would replace the existing double-track surface route used by Euskotren and Bilbao metro services between Etxebarri and Usánsolo with a largely underground alignment. This would better serve the densely-populated districts to the east of the city center in the Ibaizabal valley.

Local infrastructure manager Euskal Trenbide Sarea will now prepare the necessary final business case and environmental impact studies.

Line 5 trains would start at Etxebarri, where there is an interchange with metro lines 1 and 2, and serve five new stations at Sarratu, Aperribai, Bengoetxe, Galdakao and Hospital de Usánsolo. The new line would then rejoin the existing railway at Usánsolo.

Construction is planned to start next year for completion in 2029. The estimated cost of €360 million is to be funded from regional sources, although this excludes the cost of rolling stock, procurement of which will be the responsibility of Euskotren.

The current plan envisages the cessation of passenger services over the existing line, which is used mainly by Euskotren services on the intra-regional meter-gauge route towards San Sebastián. These would in future share the Line 5 corridor.

[METRO REPORT INTERNATIONAL](#), OCTOBER 4

Madrid – Valencia High-Speed Service Starts

French National Railways' (SNCF) low-cost subsidiary Ouigo began operating its second high-speed service in Spain

on October 7 on the Madrid – Valencia route following the successful launch of its Madrid to Barcelona route on May 10 of last year.

Ouigo is operating five round trips per day, two more than announced in June, between Madrid Chamartín-Clara Campoamor and Valencia-Joaquín Sorolla. The non-stop journey takes 1 hour 50 minutes. The lowest fare is €9 for a single journey, with 35,630 seats available each week.

Trains will eventually stop at Madrid Atocha when the platforms at Atocha on the high-speed tunnel to Chamartín open. Ouigo plans to open its third route, linking Madrid with Alicante, in the first half of 2023.

Renfe has responded to Ouigo entering the Madrid – Valencia market by introducing a new single fare of €7 and increasing the frequency of its Avlo low-cost services.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 14

STUTT GART

New LRVs Ordered

Public transport operator Stuttgart Tramways (SSB-Stuttgarter Straßenbahn) has ordered 40 LRVs from Stadler, with options to acquire up to 30 more.

The two-car S-DT8.16 LRVs are equipped with a cab at each end for bi-directional operation and feature high floors to match platforms on the SSB network. The step-free LRVs are 131 feet long and 8½ feet wide, and are able to accommodate over 250 passengers.

The car's interior will be bright and spacious, Stadler says, with four doors per side to ensure optimum passenger flow.

The S-DT8.16 also offers improved energy efficiency compared with previous LRV builds. Construction will make use of environmentally-friendly materials, according to the manufacturer.



DT8.12 3506 (Stadler, 2013) from a previous order. International Railway Journal photo

The new fleet will take to 100 the number of LRVs supplied to Stuttgart by Stadler, which has also built three

rack-and-pinion vehicles for SSB Line 10 from Marienplatz to Degerloch.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 17

TORONTO

Bloor-Yonge Station Contract Awarded

Toronto Transit Commission (TTC) has awarded a contract to AECOM which will act as owner's engineer on the Bloor-Yonge Capacity Improvements (BYCI) project to improve the busiest interchange station on the Toronto metro.

AECOM will provide consultancy services, including lean project delivery and building information modeling (BIM), through all phases of the project.



A view of the enlarged southbound platform on Line 1 at Bloor-Yonge.

AECOM rendering via TTC

The total cost of the BYCI project, estimated at \$C 1.5 billion (\$US 1.1 billion), is to be met equally by the city of Toronto, the province of Ontario and the Canadian federal government.

Originally built in 1953 and located at the intersection of the two major streets which provide its name, Bloor-Yonge station is expected to see a significant growth in passenger numbers due to the increasing population of the Toronto area and new transport infrastructure.

This includes a five-mile, five-station extension of Line 1 to Richmond Hill Centre, the opening of the Eglinton Crosstown LRT project, and the planned construction of the 9.7-mile, 15-station underground Ontario Line.

Even without these new developments, the platforms on lines 1 and 2 at Bloor-Yonge are already overcrowded during the morning and evening rush hours. In 2019 Line 1 had an average weekday ridership of more than 825,000 passengers, making it one of the busiest lines in North America.

The BYCI project includes extending both Line 1 platforms, constructing a new platform for Line 2, improving accessibility and safety, and enhancing the station's concourse level, entrances and exits.

[International Railway Journal](#), October 31

Line 1 ATC Completed

The Toronto Transit Commission's Automatic Train Control (ATC) communications-based train control (CBTC) system is now fully operational on Line 1 (Yonge-University-Spadina Line) of the agency's rapid transit network.

The Alstom Urbalis 400 technology was implemented in stages. Phase 1, the Vaughan Extension, was the first part of the TTC subway to feature CBTC and driver-assisted ATC between the Sheppard West and Vaughan Metropolitan Centre stations. The system is moving-block, which allows closer train spacing and thus extra capacity, because trains move along within their own "clearance envelopes," based on speed, curvature, grade, train length and weight, braking and acceleration curves, and other factors.

TTC's evolution to ATC was initially spearheaded by three experts who have since left the agency: CEO Andy Byford, Project Director-ATC Pete Tomlin, and Chief Operating Officer Mike Palmer. Byford and Tomlin went to New York City Transit as President and Vice President CBTC, Signals & Train Control Engineering, respectively. Palmer joined Parsons as Director of Rail Operations and CBTC. Byford subsequently returned to his native England as Commissioner of Transport for London, and now has left that agency to return to the U.S. Tomlin is now Rail & Transit Systems Sponsor – Canada at Kiewit.

After NYCT's ongoing CBTC program, the TTC's ATC program (also ongoing) is the largest and most advanced "brownfield" application of the technology in North America. Portions of the TTC's previous fixed-block signaling system dated back to the 1950s, when the subway first opened.

The ATC project, TTC noted, "was completed on schedule according to the updated plan approved by the TTC's Board in April 2019." Due to the project's scale, ATC installation and testing was conducted during non-revenue service hours, and was completed during weekend and early weeknight closures. Crews installed thousands of pieces of trackside signaling and radio equipment. This included 2,000 wayside transponders, 256 signals, and more than one million feet of cable. The TTC completed testing and commissioning the weekend of September 24; the system went live during the subway closure on October 1.

The TTC stated that the completion of ATC on Line 1 also means that trains can use electricity more efficiently, leading to lower operating costs. It will allow for more service flexibility if there is an operational issue on the line, with additional turn-back locations now available. ATC, with its reduced hardware and microprocessor-based wayside and onboard equipment, also provides lower life-cycle costs.

[RAILWAY AGE](#), October 4

VANCOUVER

Tunneling Starts on Broadway Subway

Tunneling has started on the Broadway Subway project in Vancouver, a 3.5-mile extension of the Millennium Line on

the SkyTrain automated metro.

The Broadway Subway will run from VCC-Clark to Arbutus with five intermediate stations, including an interchange with the Canada Line at Broadway-City Hall.

The twin bores of the Broadway Subway are being excavated using two tunnel boring machines (TBMs). They will be launched separately from the site of the future Great Northern Way-Emily Carr station to undertake 3.1-mile drives to Cypress Street, near the future Arbutus station.

Each TBM is 19¾ feet in diameter and weighs 1,000 tons. The first TBM will be launched shortly, with assembly underway on the second ahead of the start of work this winter. Each drive is expected to take 12 months to complete.

Preparatory work has included construction of a concrete base slab and the assembly of a conveyor system to handle spoil excavated by the TBMs. Lining rings for the twin tunnels have been manufactured off-site in Nanaimo.

Elsewhere on the route of the Broadway Subway, work is in progress on the elevated guideway and at station locations, including relocating utilities, building decks for road traffic and excavation.

Construction of the underground stations will begin when tunnel boring is completed. This will be followed by track laying and the installation of supporting systems, before testing and commissioning.

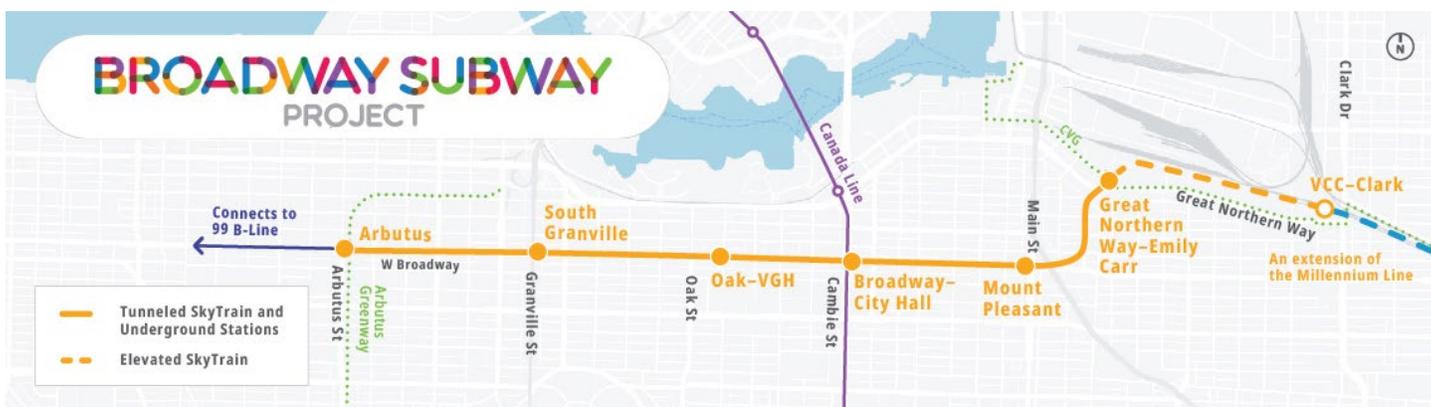
When completed, the journey time from VCC-Clark to Arbutus on the Broadway Subway will be 11 minutes, which will save the average commuter almost 30 minutes a day.

The extension will also relieve traffic congestion in the Broadway corridor, home to the second-largest employment center in British Columbia as well as healthcare facilities, an emerging innovation and research hub, and growing residential communities.

The Broadway Subway project will support new transit-oriented development that aims to create efficient, livable communities and maximize the opportunities provided by public investment in urban transport.

[INTERNATIONAL RAILWAY JOURNAL](#), OCTOBER 14

Map of the Broadway Subway project in Vancouver. Broadway Subway Project website



WIEN (VIENNA)

Class 4030 EMU Restored to Service

The Schwechat Railway Museum, on the southeast side of Wien, has completed the restoration of their Class 4030 EMU #210. Appropriately, it was repainted into its original colors of blue/cream/orange/silver. On October 11 the three-car unit passed its inspections with no exceptions taken.



Newly-restored Austrian Federal Railways (ÖBB) EMU 4030.210 (SGP-Siemens Graz Pauker/Brown Boveri, 10/1962) during one of its layovers at Wien-Floridsdorf on October 29. Alfred Klein-Wisenberg photo

With that, on Saturday, October 29, three trips, free to the public, were to be taken between Wien-West and Floridsdorf, starting at about 9:30 AM.

The Class 4030 EMUs were the equipment used when Wien's S-Bahn (suburban rail) network was initiated in the late 1950s.

The Schwechat Railway Museum is an office of the VEF-Verband der Eisenbahnfreunde (Association of Railway Enthusiasts).

[SCHWECHAT RAILWAY MUSEUM WEBSITE](#), OCTOBER 11

100 Years of the Frankford El

By Joe Boscia (E.R.A. #4501)

After New York City’s elevateds opened, there was pressure for a similar system in Philadelphia. Groups advocated for and against. When Boston opened the first North American subway on September 1, 1897, advocacy for franchises to do the same in Philadelphia gained momentum. When several franchises were granted shortly after the turn of the century, Philadelphia Rapid Transit (PRT) Company was formed to buy them out, and take over the Union Traction Company as well.

Construction rapidly began, and on December 15, 1905, the surface car subway under west Market Street from the Schuylkill River bridge to City Hall opened. It was part of a unique four track system, with surface cars on the outer tracks fanning out west of the bridge, and El trains in the inner tracks. The El ran from 69th Street above Market Street to the bridge, then into the subway. It opened in sections, debuting on March 4, 1907, and reaching completion to South Street over Delaware Avenue on October 4, 1908.

Its success sparked calls for more subways and Els, but PRT was unable to do it. First, it faced disastrous strikes in 1909 and 1910, and then finances were eaten up in the second decade by the Stokesbury/Mitten management push to modernize the surface system.

On July 1, 1913, the city established the Department of City Transit, under A. Merritt Taylor, with the intent to build its own High Speed Transit Lines. There was a succession of directors in the following years. In an odd twist of fate, the director when the Frankford El finally opened was William S. Twining, the engineer who had built PRT’s Subway-El line in the century’s first decade. Various proposals were put forth, and one was recommended on July 24, 1913 – an extension of the PRT line from Arch Street (where it turned down to Delaware Avenue), approximately six miles northeast to Bridge Street in Frankford. This built-up area had been the start of the first horsecar line on January 21, 1858, the Frankford and Southwark Passenger Railway Company, known as the Fifth & Sixth Streets Line.



A Fifth & Sixth Street horsecar. Boscia collection



A crowded Frankford car – why the El was needed. Boscia collection

By mid-1915, after approvals by Philadelphia City Councils and the Public Service Commission, the first of a series of contracts were let to the McClintic-Marshall Company. The line was to be built in sections, and not all by the same company.



(Above and below) City Meets PRT, Front and Arch Streets. October 21, 1921 (above) and October 18, 1922 (below). Existing Market Street El is on the right, new Frankford El on the left. City of Philadelphia photos, Boscia collection



The first section, over Front Street, ran from Callowhill Street to south of Girard Avenue. Field erection began on April 17, 1916, and was completed and final payment made on October 14, 1916. Original estimate for the completion of the entire 6.39 mile line was three years. However, it actually took over seven years, due to World War I, and then protracted negotiations for an agreement with PRT for the operation and equipment of the line.

Would the City operate the new line, or would PRT? The latter rightly insisted that any agreement had to take into account the loss of revenue on its adjacent surface streetcar lines. Further complicating the issue was the question of who would run the Bustleton surface trolley line the City was also constructing.

In March of 1921 the City had a tentative draft of an agreement for PRT to temporarily operate the two lines, thinking it acceptable to PRT. A longer term operation was pending a valuation of the PRT property in its efforts to secure a reasonable and permanent rate of fare. In April 1922, Mayor J. Hampton Moore sent a revised agreement to Councils and PRT's Thomas E. Mitten. The major sticking points had been the rental charge PRT had to pay, and better delineation of what equipment the City and PRT would provide. Further negotiations followed, and on May 12, 1922, a final agreement by all parties for a five-year renewable lease.

On August 15, 1922, a four-car train made an inspection trip from Bridge Street to Torresdale Avenue. In October, special invitations and passes were sent to select citizens for the Inaugural Day rides. On Saturday, November 4, 1922, the Inaugural trains were run, and the next day, after nine years of planning, construction, and haggling, the Frankford El finally opened to the public, along with the Bustleton streetcar line. The City produced a 51-page souvenir booklet "Giving a Brief Account of the Construction, Equipment, and Operation Agreement" in both hard and soft covers.



The first Frankford car at the Brill plant, September 23, 1921. City of Philadelphia photo, Boscia collection

Opening the line occasioned a week-long celebration in Frankford, from November 3-11. A special Committee, with Thomas Creighton as President, was established to organize the events. It had 13 sub-committees ranging from Finance to Historical to Publicity. While the El opening was a cornerstone, the week was really a celebration of Frankford. It had been a separate borough until its incorporation into the City of Philadelphia stemming from the Consolidation Act of 1854.

The activities began on Friday evening, November 3, in the Frankford Library with a lecture on the History of Frankford by Mr. George H. Pattison. There was a Historic Pageant on the (Frankford) Avenue Saturday afternoon. Groups of costumed figures represented different eras in the story of Old Frankford Road. Mayor J. Hampton Moore and other dignitaries opened the ceremonies and viewed the parade.



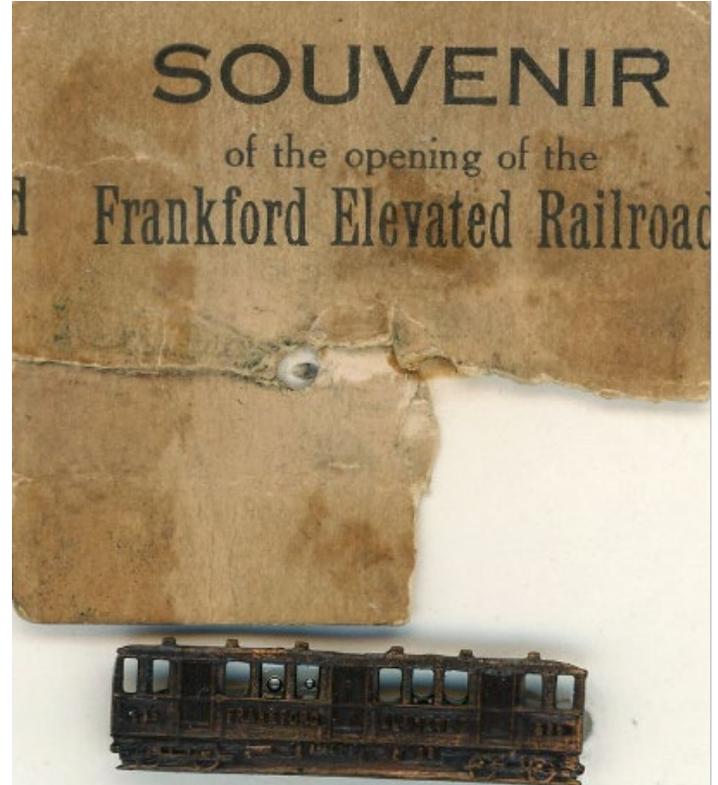
Frankford El medal. Boscia collection

At 3:30 PM, at Bridge and Bustleton, the ceremony transferring the Elevated Road from the City, represented by Mayor Moore, to the Philadelphia Rapid Transit Company, lessee and operator, represented by Thomas E. Mitten, took place. The Mayor then pressed a button to turn on power to start the running of the trains. Lucky pass holders were given an El car pin souvenir, and crowded aboard for the trip to downtown. The evening ended with a costume dance.

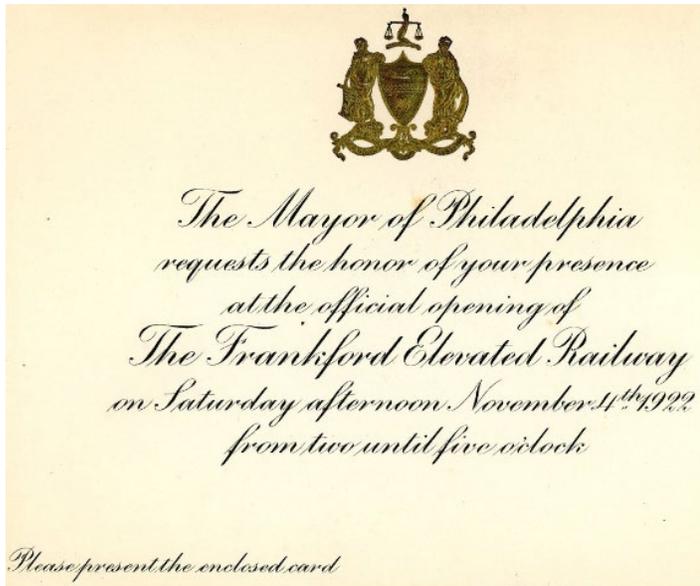
The rest of the week was taken up with more parades, including a three hundred entry Baby Parade, lectures, street dancing, dedications, patriotic and religious events, and the crowning of the Most Popular Lady in Frankford. There was a week-long exhibit of automobiles. The Frankford Camera

Club staged an exhibition of photographs in the Free Library.

The committee published a 104-page Souvenir Booklet and program, titled "Frankford, Direction of a Greater Philadelphia." Besides ads from local businesses, there were sections on Frankford Transit and Transportation over the years, and a really interesting History of the Dummy Cars, replete with reminiscences from men involved in operating it. The booklet was illustrated with images of a dummy car, horsecar, streetcar, and the new El car, all of which served the good citizens of this town.



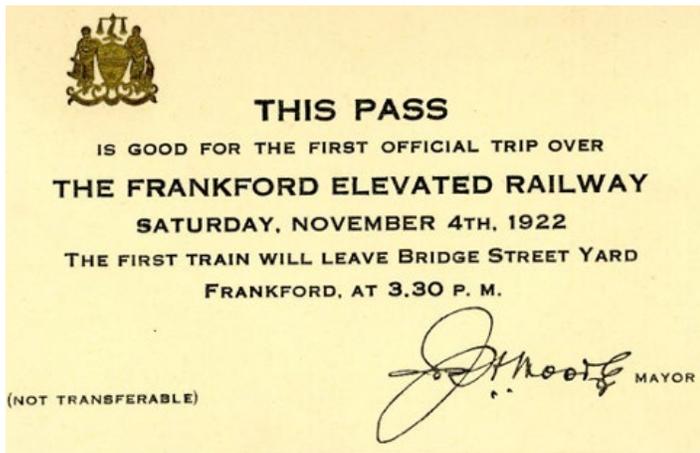
Opening day souvenir. Boscia collection



Frankford El opening invitation. Boscia collection



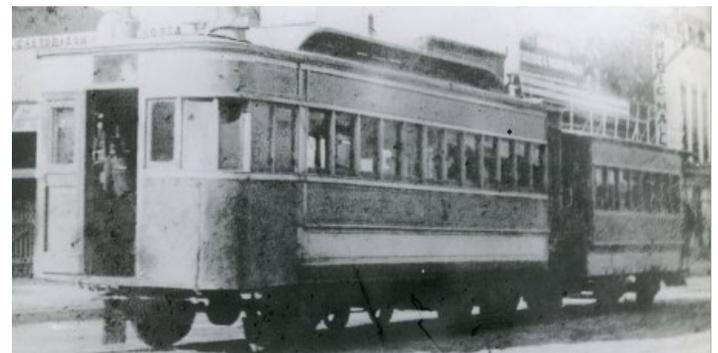
Train on the new line over Kensington Avenue, looking towards Frankford. Torresdale Avenue station in the distance. Boscia collection



Frankford El opening ride pass. Boscia collection

The week was a fitting kickoff to the El service that 100 years later, and with third generation trains and rebuilt structure and stations, still provides such an essential service.

SEPTA will celebrate the 100th anniversary of the Frankford El at 2:30 PM on Thursday, November 10 in the Great Hall at the Frankford Transportation Center. The public is welcome.



Frankford steam dummy and trailer. Boscia collection

Book Review

By Paul Grether

BART: The Dramatic History of the Bay Area Rapid Transit System by Michael C. Healy, published in 2016 by Heydey, softcover, 363 pages, illustrated with index.

This volume is a comprehensive history of the Bay Area Rapid Transit District. Michael Healy had an insider view of the development of the pioneering BART system as its longtime chief spokesperson for 32 years until retiring in 2005.

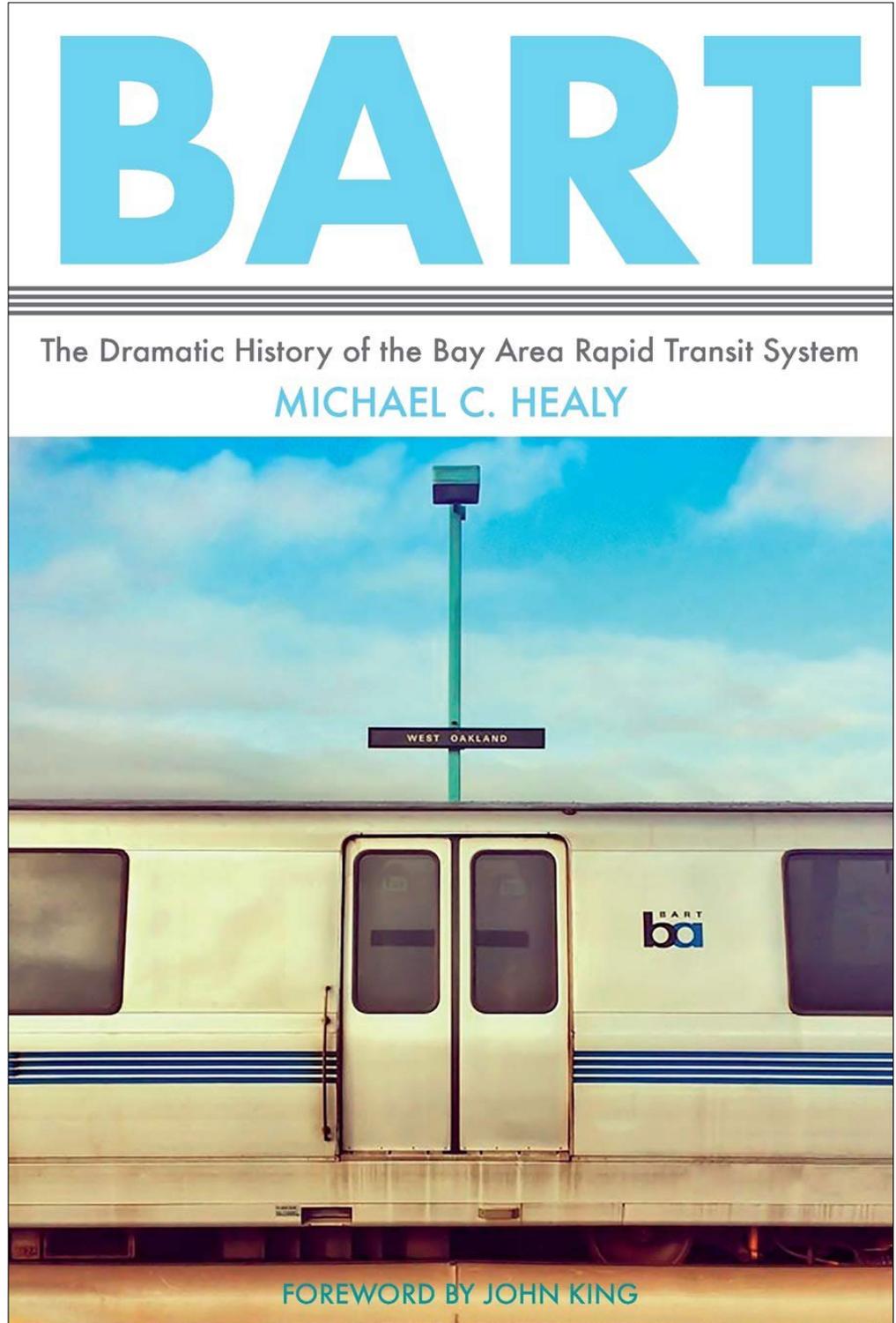
The BART system represented the future of transit in the United States. After dismantling most of the legacy rail transit systems in US cities followed by major post-war road and highway investment with suburbanization, urban problems developed. Traffic, job and business losses in downtowns and other concerns. BART was a modernist system that matured in a post-modern world. It attracted international attention and had many detractors and unlikely supporters.

The BART system was never a certainty. It suffered from various political and technical setbacks during the planning, design, construction and eventual operations (and continued growth). The cutting-edge, non-standard technology and engineering of the BART system is criticized by many as “a bridge too far” and valuable lessons were learned for subsequent systems such as WMATA, MARTA and others.

The book approaches the BART history from a broad context. It is not a “railfan” publication, rather a comprehensive history of the agency. It includes the historical context, the various people involved (internal and external) and the influence of technology on the development of BART.

Those interested in the twentieth century resurgence of rail transit in the United States, the role of the federal government in transit, San Francisco, and/or the BART system itself

will find this book a must-read. The chronological chapter breakdown and the author’s story-telling style makes for a captivating read. There are many “behind the scenes” anecdotes that will keep the reader’s interest until the end.



Travels with Jack May

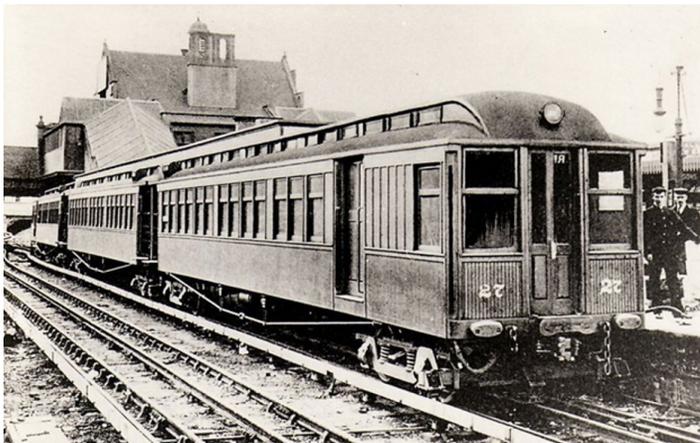
Britain and the Baltics – Part IX

By Jack May (Photographs by the author)

Author’s note: Before starting to describe my exploits on the Isle of Man, I want to mention two messages I received, from Russ Jackson and Nigel Eames, about the electric MU cars that originated service through the Mersey Tunnel, over which I rode on the previous day. Nigel wrote that these cars, built in 1903, were based on similar equipment built for electric lines in the U.S., specifically the Market Street subway-elevated in Philadelphia. He stated that they operated until 1956, and described them as “matchboard sided EMUs, built in Birkenhead by George F. Milnes, but unmistakably American in appearance.” He further indicated that the cars had clerestories with some of the trailers originally having open gates at their ends, which were enclosed later.

Russ stated that the railway to “the peninsula was the first line in the U.K. to use true EMU cars, with equipment by Westinghouse based on what they had designed for U.S. service to compete with the Sprague/G.E. equipment developed for the South Side ‘L’ in Chicago. All previous U.K. multiple-car electric trains, such as those for the Liverpool Overhead Railway, were motor-trailer sets with all motors fed from the manual controller in the head cab, the power lines running thru the trailer cars to reach motors elsewhere in the train, making them unit trains of fixed length.”

Here’s a photo of these fine looking EMUs from the internet. <http://www.emus.co.uk/gallery.htm>:



Mersey Railway EMU 27 (George F. Milnes & Co, 1903). J. Peden photo via Suburban Electric Railway Association

Friday, August 19

I overslept a little bit in the morning and had to rush my Continental breakfast (which was rather spartan) in order to meet Richard at 8:30 AM as we planned (he stayed at a different hotel). We wanted to make sure we’d photograph the first horse tram trip of the day, which was scheduled for 9:00. I didn’t finish until 8:35, but I could see the entrance

hall from my chair and did not notice Richard about. I then sat for a few minutes on a couch in the reception area, while I tried calling him, but my phone had no service and he didn’t walk by. I should have known that would happen, because the hotel’s website had indicated that they had no wi-fi, but free access would be available to customers at their sister hostelry, the Trevelyan, but that was quite a distance away. Oh well I thought, maybe I’ll run into him during the day.



Many of the buildings facing the horse tramway have traditionally been bed & breakfasts, but their number seem to be declining as the public seems to desire more updated accommodations and amenities. My hotel, the Penta, has been upgraded, but still needs a great deal more work, such as wi-fi.

As I left the hotel (I had my work to do) I saw someone walking toward Derby Castle in the distance and I ran a little bit and then yelled out “Richard.” It was him. He had gone to my hotel (I guess I was too intent on my breakfast to notice him), hung around for a little while waiting for me, and when I didn’t appear at 8:30 asked the receptionist to call me, and was told they never heard of me, nobody with my name was checked in! He then went outside, where he scouted the area. Anyway, all’s well that ends well.

We had a great deal to accomplish in this single day, so we walked briskly toward Derby Castle, although I took off a little time to take some photos of the Promenade.

We arrived at the joint horse and electric tram terminal about 8:50 and were struck by how quiet it was. We knew we already missed the departure of the first Manx Electric Railway tram of the day, which was scheduled for 8:40, but we had not planned to ride that trip. We took a few photos and peeked into the carhouse, and finally, at about 8:58, suddenly a driver came out of nowhere and led a horse toward the toastrack cars that had been stored outside, for

the 9 o'clock departure. (Why are these open cars called toastracks? Because their open sides and transverse benches resembles a toast rack.)



No. 43, an open bench (toastrack) trailer, was built by the United Electric Car Company in 1907, in the days when most of its factory output were electric trams. United was a successor to G. F. Milnes and later was acquired by Dick, Kerr. Of course all of the horsecar line's rolling stock consists of 4-wheeled trailers, the motive power not being equipped with wheels.



No. 29 is one of two enclosed horse trams built by G. F. Milnes in 1892. The "saloon" tram is not the only closed car on the Douglas Bay Horse Tramway's roster of 13 trailers, as there is one more (from 1913), as well as an 1883 unit that was turned into a double-decker (No. 18).

This was my third trip to the Isle of Man, with the others being in 1960 and 1990, and so I had ridden the horsecars before. But before continuing the narrative, a little bit about the Isle of Man. The small island lies in the Irish Sea between Britain and Ireland, about 60 air miles from Belfast and 70 from Blackpool. Its size is about 221 square miles, making it smaller than even the tiniest state in the U.S. With a population of about 85,000, it ranks with small American cities, such as Duluth, Minnesota and suburban areas like Clifton, New Jersey. Douglas, the capital, has only 28,000 people. Like

the islands of Jersey and Guernsey, it is somewhat autonomous, a self-governing crown dependency, with its own legislature and currency. The Manx pound is interchangeable with the British pound (but I steered away from it, as I was told it is difficult to use off the island, I was able to use credit cards for all purchases). Of course the island is famous as the home of Manx cats, which have no tails (I didn't see any on this trip). One would think its main industries would include tourism, but no, they are insurance, banking and on-line gambling. The World Bank ranks it the fifth richest nation per capita, so you can imagine how prosperous the place is.

To quote the Lonely Planet guidebook:

What you'll find here is beautiful scenery in the lush valleys, barren hills and rugged coastlines. In 2016 UNESCO designated the Isle of Man a Biosphere Reserve (one of five in the U.K.) marking it out as one of the most beautiful spots in Britain to enjoy nature. That bucolic charm is shattered during the world-famous summer season of Tourist Trophy (TT) motorbike racing, which attracts around 50,000 punters and bike freaks...



No. 44 is a sister of 43 (above left), but is shown after its motor power, Doug, having already been fed and groomed, was escorted from the barn (literally), ready to earn his keep.

The town tries to maintain a charming, Victorian demeanor, but that gets more difficult as time goes on. On our last trip in 1990, Clare and I felt we were taken back to our youth, especially when we saw advertisements for tea dances and church socials. As a tourist venue, both then and now, it is the home of a number of quaint rail operations, and as such, attracts many railfans each year to its regular service and special events. The four major ones are the Douglas Bay Horse Tramway, the Manx Electric Railway, the Snaefell Mountain Railway and the Isle of Man Steam Railway. I would ride all four on this rushed day, under weather conditions consisting of intervals of sun, clouds and rain.

The Douglas Bay Horse Tramway was the most important attraction for me to ride and photograph (see https://en.wikipedia.org/wiki/Douglas_Bay_Horse_Tramway) as the line is in some degree of danger. With tourism declining as an important contributor to the island's GDP, there are

many who believe the horse railway is both a drain on the economy and source of traffic congestion. The double-track line, which dates back to 1876, is located in the center of the Promenade, a seafront road which separates the beaches from hotels and restaurants. The 3-foot gauge line runs for about 1.6 miles from the ferry terminal (boats run to Liverpool and Heysham in England, and Belfast and Dublin in Ireland) to Derby Castle, where connection is made with the Manx Electric Railway. At the present time it appears that after the 2018 season the line will be relocated to the Promenade walkway for its entire length from Derby Castle to the Sea Terminal, and reduced to single track operation with passing sidings, and there are even some who are pressing to cut it back at the War Memorial, only about two-thirds of the way. Things could change after the 2018 season, so stay tuned. Needless to say it is unique.



Steve powered the tramway's first departure of the day (9:00), and is about to complete his round trip at Derby Castle at 9:35. Note that trailer 42, built by G. F. Milnes in 1904, is not equipped with a roof, one of two such cars fully open to the elements.

The line runs from mid-April to the beginning of November, generally from 9 AM to 5:30 or 6:00 PM, with service operating about every 15 or 20 minutes, depending on the season. Running time is 15 minutes and generally cars and horses lay over at the terminals for 5 or 10 minutes.

The kiosk at Derby Castle was now occupied and while we attempted to buy day tickets, the 9:00 horsecar left, with nobody aboard. I hadn't realized that we could have purchased our £18 one-day Explorer from the tram's conductor. This ticket would allow us full access to all government rail services on the island (there is also a £6 day ticket for just the horsecars). But our mistake allowed us to photograph the 9:20 departure and 9:35 arrival of the horse-drawn equipment during our wait.

We decided to postpone riding the line until later, after returning from our electric traction activities, so instead we rode Manx Electric's second trip of the day, at 9:40. Thus the remaining views of the horsecar line on this page were taken during the afternoon.

The Isle of Man will continue in Part X of this report.



William was at the point for the 3:00 trip that Richard and I rode after returning from Ramsey on time at 2:55. Fortunately it was not difficult to make the transfer.



A view from our car of Mark propelling trailer 43, as we headed down the Promenade to the Sea Terminal.



William was led around tram 42 at the Sea Terminal while its seats were being reversed. The consist is shown ready for departure, with the conductor already selling and inspecting tickets from his traditional position on the running board.