The Bulletin

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The Bulletin

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This Month's Cover Photo:
M-7 7361 (Bombardier Transportation, 2/2005) leads #1701 from Huntington to Penn Station at Merillon Avenue station, Garden City on 10/25/2018. Jeffrey Erlitz photograph

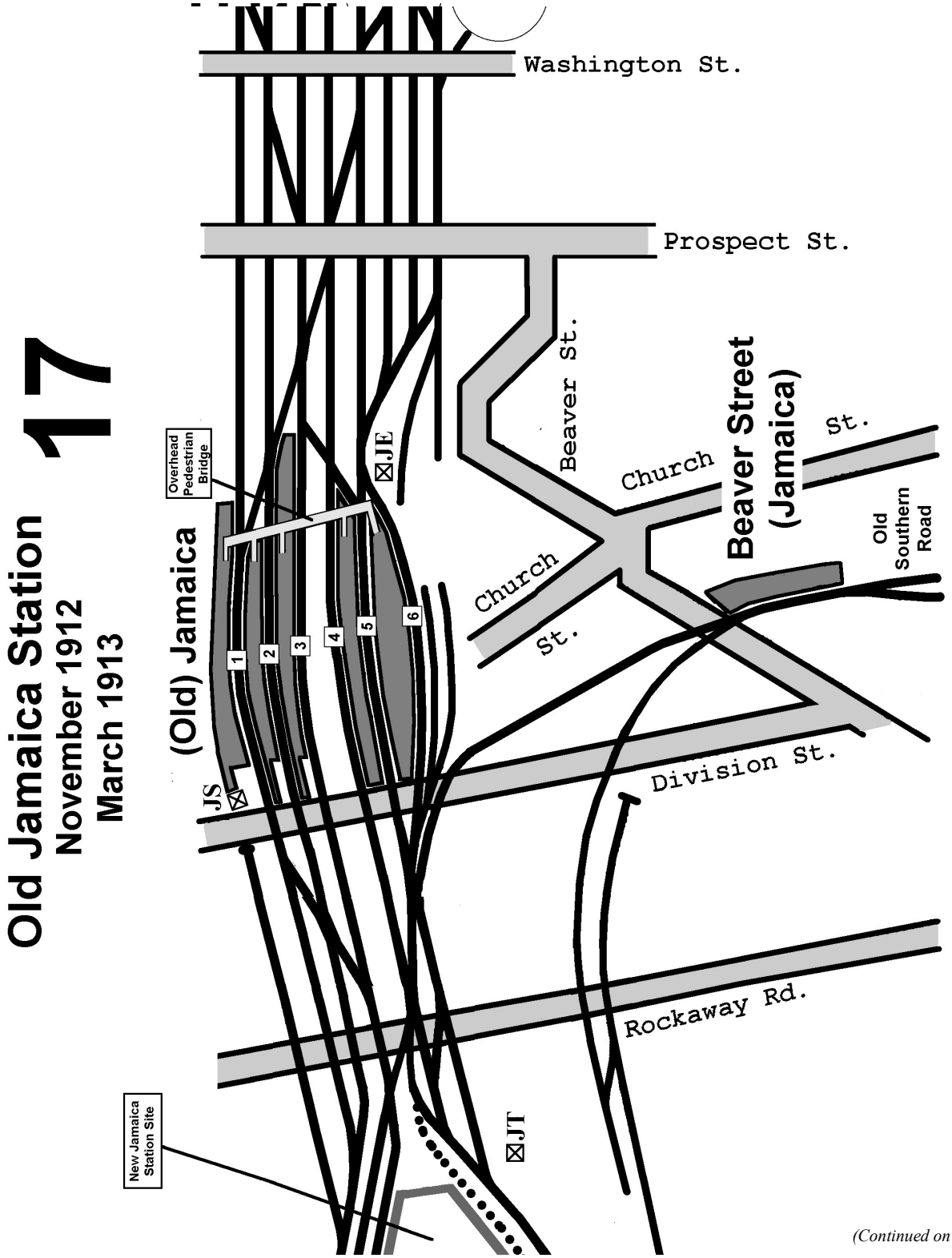
MTA TO BE RESTRUCTURED

New York State Governor Andrew Cuomo and New York City Mayor Bill de Blasio issued a "Ten Point" plan to restructure and refocus the Metropolitan Transportation Authority (MTA) as well as provide new sources of funding for urgently needed repairs to its transit system. The centerpiece of the enhanced revenue stream to the MTA is Congestion Pricing for all vehicular traffic south of 61st Street in Manhattan (excepting through traffic on the FDR Drive until the vehicle exits and enters any street in Manhattan south of 61st Street, which prevents double-charging vehicles bound for Brooklyn via the Hugh Carey (Brooklyn-Battery) Tunnel). Automated cashless tolling at all cordon points in Manhattan would be operated by MTA Bridges & Tunnels, recognizing its established expertise in operating such a system for its bridges and tunnels. These additional monies collected would be placed into a purposed "lockbox" where the funds would exclusively go toward improving the signals, track, power, structures, stations, and trains. Fare increases would be held to 2% per year through cost control and improved management. An independent audit of the MTA's finances would be conducted to clearly identify and quantify its assets and liabilities, all to be completed by late 2020. Other highlights include: the administrative departments within the MTA's various agencies would be combined to eliminate duplicative functions; i.e., the LIRR and MNR's Legal, Procurement, Finance, Human Resources, Engineering, Capital Construction (etc.) Departments would be merged with duplicative functions combined. The restructuring would also place emphasis on outside recruitment from other parts of the nation as well as the private sector to bring in new and fresh ideas and to bring change to the established culture that is viewed as being entrenched at the MTA. MTA Board member terms would be limited to the duration of the tenure of the elected officials who appointed them in an attempt to prevent Board members from becoming "too entrenched and stale." The issue of fare evasion is to be dealt with in a preventative/deterrent mentality by decriminalizing fare evasion but discouraging it through station fare control area re-design and increased enforcement treating fare evasion as a civil penalty. The ongoing Subway Action Plan would be expedited to completion and capital improvements administered by the MTA as "design-build" only, leaving the actual investigative and engineering functions to the private sector to examine all feasible aspects to reduce cost, accelerate the pace of work, and utilize the latest and most reliable technology. One example of this is the use of Ultra Wide-Band communication as part of Communication-Based Train Control (CBTC), which is being installed at a very slow pace.

THE GENESIS OF DASHING DAN — A NEW JAMAICA AND THE MAIN LINE COMPLETE

by George Chiasson

(Continued from March, 2019 issue)



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The Genesis of Dashing Dan

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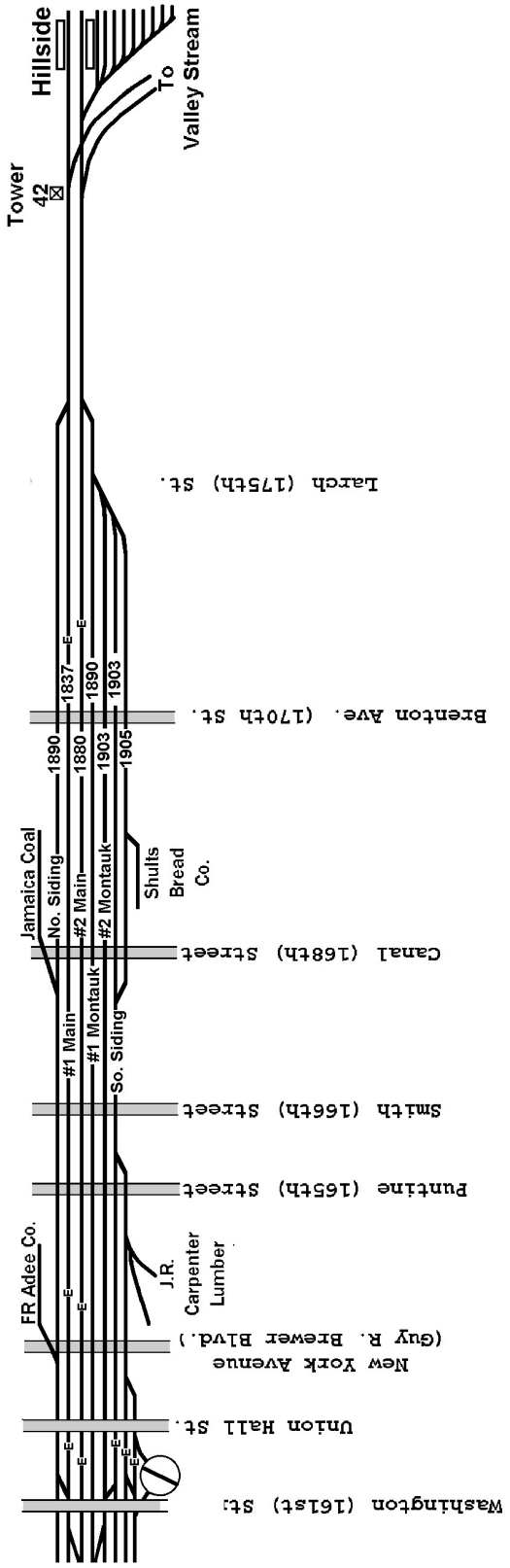
19

Old Jamaica-East
August 1912
November 1912
March 1913



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PATCO INAUGURATION 1969
by J. William Vigrass

This article originally appeared in the March, 2019 issue of **Cinders***, published by the Philadelphia chapter of the National Railway Historical Society.*

The fiftieth anniversary of PATCO's inauguration deserves a first person's report, something that I can provide. I began my employment August 5, 1968 as PATCO No. 0048, Supervisor of Traffic and Planning in charge of fare collection and stations. I took part in planning for operations, in particular, the nation's first unattended self-service fare collection system. PATCO's initial staff came from a variety of sources, some railroad, some from other transit systems, some from military and in one case from police, and me from transportation research. Experience was combined to create a new ***PATCO Book of Rules*** as well as a thick binder full of examples of problems and how to approach and solve them. Safety of passengers and employees was emphasized.

The first step was to shut down the Camden-Bridge Line operated by SEPTA on December 28, 1968. All 26 Bridge cars were brought to Camden by SEPTA and forwarded to Lindenwold by PATCO staff. I rode one such train and was able to motor it for part of the way. This allowed the signal contractor to begin to remove the subway-type signals and replace them with railroad-type cab signals with speed control.

PATCO decided to initiate service as soon as practicable between Lindenwold and Camden to provide real experience for Train Attendants (as they were initially called).

Enough cars had been accepted to allow a 12-minute headway with two-car trains between Kirkwood Station and Camden-City Hall Station. The line had been known during planning and construction as the Kirkwood Line because its terminal is on the site of the former Pennsylvania Reading Seashore Lines station of that name. It was not until the Mayor of Lindenwold Borough contacted DRPA and pointed out that Kirkwood was within Lindenwold Borough that the name was changed to Lindenwold Station and the line itself became the Lindenwold Line.

PATCO management decided to open on a Saturday as it would be less busy than a weekday and would be followed by a Sunday of even less riding. This would allow fewer problems and more time to solve any that did appear. Therefore on Saturday January 4, 1969, PATCO began operation at 6 AM, start of a weekday schedule between Kirkwood Station and Camden City Hall Station. PATCO and a few DRPA officials were on hand along with some local press, local residents eager to experience this new mode of travel, and some railfans anxious to ride a "first" trip. Superintendent of Transportation Robert S. Korach's young daughter Marcia used a huge key to open the door of the first train. This was pictured in local papers. The first train reportedly left on time to begin what was a test and training operation carrying paying passengers. The 6 AM to 10 PM schedule allowed the signal contractor a full eight-hour shift, 10 PM to 6 AM, to install and check out the new system. Operation was under manual control with speed limited to 50 mph.

Fare collection was makeshift, using borrowed SEPTA portable fareboxes to collect 40 cents cash per ride. Nik-o-lok Corporation installed changemakers, which were loaded and serviced by Brinks. PATCO hired Kelly Labor Division persons to be Station Attendants. A retired army mess sergeant provided competent supervision for Kelly. It worked.

The cab signal system was not yet accepted, so a manual block system was used with Operations Supervisors on several station platforms acting as Block Operators. This is an early example of PATCO using some railroad practices along with rapid transit and, in a few cases, light rail practices with its single-0car operation at times of light traffic. PATCO is unique. This has allowed PATCO to be more efficient than most of its contemporaries.

PATCO fare collection persons and maintainers gained experience as Cubic Western Data installed its automatic fare collection self-service system. Use of SEPTA fareboxes ended, but Kelly people in their red vests were retained to help new riders use the system. This practice continues from time to time to this day.

The cab signal system became operational but was used only in an advisory way at first, with manual block still enforced. It became used as intended with Philadelphia service.

Later in January PATCO began to operate six-car trains through to 16th Street but carried passengers only as far as Camden. This was to provide Train Attendants experience handling trains under manual control on the bridge's various grades and curves.

In due course enough cars had been accepted to consider opening through interstate service to Philadelphia. Saturday, February 15 was selected. PATCO Equipment Department staff, consultants to DRPA, car builder Budd Company, and suppliers GE (propulsion) and WABCO (brakes) all worked diligently to make enough cars available to initiate service.

Therefore, prior to 6AM February 15, 1969, a small group of PATCO and DRPA officials, PATCO staff, local press, and others with an interest in the event gathered on the platform at Lindenwold. Promptly at 6 AM the first train was dispatched on its way to Philadelphia, where it arrived just 22½ minutes later. Haddonfield to Ashland (3.29 miles) was covered in three minutes flat, the first mile-a-minute transit service in the U.S. Keep in mind that top speed then was 75 mph and there was no Woodcrest Station.

The first business day was Monday, February 17,

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A LOOK AT THE LONG ISLAND RAIL ROAD'S WHITESTONE BRANCH
by Jeffrey Erlitz

Abandoned 87 years ago, on February 19, 1932, the LIRR's Whitestone Branch is now one of the more obscure operations of that railroad's system. What follows is a pictorial look at this little 4.75-mile-long electrified branch. All of the images were taken a few weeks after the line had been abandoned but everything was still in place, and they were all taken by photographer Percy Loomis Sperr (1890-1964), courtesy of The New York Public Library Digital Collections. Percy Loomis Sperr (P.L. Sperr) was an early 20th century New York City photographer. He is most widely known for his street photography of New York City that was done under contract for the New York Public Library from the early 1920s until the early 1940s.

East of Whitestone Junction in Corona, where the Whitestone Branch diverged from the North Side (today's Port Washington) Branch. View looking north from Roosevelt Avenue, 9/30/1935.

West of Flushing-Bridge Street station, Flushing Creek is the border between Corona and Flushing. This is the Bridge Street Drawbridge, now in its permanently open position on 3/12/1932. View north towards the Northern Boulevard drawbridge.

View northeast from south of the Flushing-Bridge Street station, this is the King Road grade crossing. This little two-block street still exists between Northern and College Point Boulevards. 3/12/1932

View north from a little east (railroad direction) of the Flushing-Bridge Street station. The tracks to the right lead to the Flushing-Bridge Street team yard, for freight cars. The manual block signal for clearance to College Point is overhead. 3/3/1932

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A Look at the LIRR's Whitestone Branch

(Continued from page 5)

View north at the College Point station, 3/3/1932. The entire branch was single-track with passing sidings here at College Point and at Flushing-Bridge Street and Whitestone.

Looking northeast at the College Point station from the street side of the imposing brick building, 127th Street and 18th Avenue, 3/3/1932. This building was opened 8/14/1869 and demolished 9/19/1934.

Looking north from just off the end of the platform at the College Point station, we see the next manual block signal, which gave clearance to the end of the line at Whitestone Landing; 3/13/1932.

View southeast of the Malba station, which is actually located in College Point, 3/3/1932. Note how rural the area was even in 1932. The dirt road here is 11th Avenue and today's 143rd Place would cross the track just on the other side of the station building.

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A Look at the LIRR's Whitestone Branch

(Continued from page 6)

A little east of the Malba station was the Malba Drive undergrade bridge. Built in 1908, this was one of the very few concrete structures on the branch; 3/3/1932.

Looking northwest at the Whitestone station, 3/5/1932. This street (15th Avenue at the time) is now the eastbound service road of the Cross Island Parkway. The parkway, in a depressed cut here, is on the railroad right-of-way.

Looking east from east of the Whitestone station, we see the 150th Place and, beyond it in the distance, the Cross Island Boulevard (today's Clintonville Street) bridges. The 150th Place bridge may be from 1869 when the Flushing & North Side Railroad built the line. The Cross Island Boulevard bridge, like the Malba Drive bridge above, was built in 1908 and is the only other concrete bridge. 3/5/1932

View northwest of the Whitestone Landing station, 3/5/1932.

View northwest beyond the passenger station at Whitestone Landing, at the water's edge. The building on the left side is the former LIRR machine shop where the railroad's fleet of tugboats were maintained. Between there and the freight house at the center of this view are the MU lay-up tracks and team tracks for freight deliveries. 3/5/1932

Commuter and Transit Notes

No. 363

by Ronald Yee and Alexander Ivanoff

METROPOLITAN TRANSPORTATION AUTHORITY

The MTA Board approved new fares and tolls for all MTA agencies, bringing an overall 4% increase, or $336 million, in revenue to the cash-strapped organization. The MTA has sought to have its fare and toll increases match the national rate of inflation. This 4% increase is slightly below the average 2% annual inflation rate of the past two years. On April 21, the base fare for subway, local bus, paratransit, and the Staten Island Railway will remain at $2.75. However, the 5% bonus discount for adding over $5.50 in value to a *MetroCard* will be eliminated. The 30-day unlimited ride *MetroCard* will increase by 5% to $127 and the 7-day unlimited ride *MetroCard* will increase by 3.1% to $33. Express bus fares will increase to $6.75 with the 7-day *Express Bus Plus MetroCard* being raised to $62. On the LIRR and Metro-North Railroad, fare increases will be capped at 3.85%. While the monthly tickets will not increase by more than $15, monthly tickets valued at $460 or greater will not see any increases. Weekly tickets will not increase by more than $5.75. One-way ticket prices will increase an average of 4%. However, as commuter rail fares are charged in increments of 25 cents, some short-distance local fares are impacted more greatly percentage-wise by even a 25-cent increase. If a fare hike results in an increase of 6% or more, the incremental fare increase is capped at 50 cents. New bridge and tunnel tolls will take effect on March 31, 2019 and be $6.12 for customers using New York Customer Service Center-issued E-ZPass tags and $9.50 for all others. Staten Island resident tolls for the Verrazzano Bridge will be $7.26 for up to two trips per month and $6.88 for those making more than three trips per month. (MTA press release, February 27)

The MTA announced that construction of station enhancements at the Long Island Rail Road's Merillon Avenue station in Garden City has begun as part of the LIRR Expansion Project. The platforms at the station will be extended to accommodate 12-car trains from the current 10-car limit. Two new elevators from the Nassau Boulevard sidewalk will also be installed, making the station fully ADA accessible for the first time. The rebuilt station will include improved pedestrian access, new stairs, ramps, railings, and canopies, new digital displays, improved lighting, new platform furnishings including benches, shelters, and signage, cameras for improved security, and free Wi-Fi and USB charging stations. The station improvements will also include repaving of the north parking lot, tree planting, and landscaping throughout the station area, along with new bike racks and art installations. The new station at Merillon Avenue, which was originally built in 1912, will be completed in 2020.

While the western sections of the platforms are closed, passengers detraining at Merillon Avenue will use the first six cars of the train. The demolition of western sections of platforms will be followed by their rebuilding beginning in the Spring. This process will be repeated for the eastern sections of the platforms beginning in the Fall. The station is scheduled to be fully reopened to the public following installation of the elevators, by late Spring 2020. (MTA press release via Al Holtz, March 22)

MTA LONG ISLAND RAIL ROAD

At around 7:20 PM on Tuesday, February 26, an automobile was driven around the lowered crossing gates at the School Street grade crossing east of the Westbury station on the LIRR's Main Line in an attempt to escape a hit-and-run vehicular accident on a nearby road. Unfortunately for the driver and his two passengers, the car was struck by not one but two trains, almost an impossible feat! Eastbound New York-to-Hicksville local train #1260, led by M-7 7496 (Bombardier Transportation, 8/2005), was accelerating out of its scheduled stop at the Westbury station when it hit the vehicle and spun it around and to the left, right into the path of a westbound train that was approaching at close to 80 mph. The front two cars of the that train, Ronkonkoma-to-New York express #2065 with M-7 7425 (Bombardier Transportation, 4/2005) leading, derailed, with the lead pair sliding along around 2 feet to the right of the track until it slammed into the westbound platform of the Westbury station. About 200 feet of the east end of that platform was demolished. Fortunately, the Engineer was able to vacate the operating cab and avoid serious injury. All train service was suspended until the start of the morning peak period on Wednesday, February 27, when eastbound Track 2 was reopened to train traffic. Limited service using single-track operations between Nassau 3 and Divide 1 Interlockings was operated with significant delays until Thursday morning, February 28, when westbound Track 1 was returned to service. The platform probably will not be repaired, as both platforms are scheduled to be completely replaced under the Main Line Third Track project. The westbound platform is now limited to 10-car trains, not a seriously significant reduction. *(Editor's Note by Ronald Yee: This incident is reminiscent of a grade crossing collision a number of years ago involving a car that was hit by two Metrolink commuter trains, the train being operated in the push mode derailing its cab coach and taking the train off the tracks and into a standing freight train, resulting in multiple fatalities.)* (Long Island News 12, February 26-28)

NJ TRANSIT

NJ Transit announced that it plans to restore train service on Friday, May 24 to the Atlantic City Line linking Philadelphia and South Central New Jersey with Atlantic City as well as the Princeton Shuttle, also known as "The Dinky," linking downtown Princeton with the

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Commuter and Transit Notes

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Princeton Junction station on the Northeast Corridor. Rail service on both lines were suspended in mid-2018 as a result of equipment shortages caused by a high number of locomotives and cab cars being out of service for the installation of Positive Train Control (PTC) equipment. This was required to meet the FRA-mandated deadline to qualify for receiving a waiver to continue rail operations while the PTC work continues to completion by December 31, 2020. (NJ Transit press release, March 5)

AMTRAK

Joseph H. Boardman, former Amtrak President and CEO and Federal Railroad Administrator, passed away on March 7 from complications of a stroke while vacationing with his family in Florida. He was 70.

Boardman was the longest-serving Commissioner of the New York State Department of Transportation, from July, 1997 until resigning to head the FRA in 2005. He was the second-longest serving head of Amtrak, after W. Graham Claytor, Jr. in the 1980s, serving from 2008 to 2016.

A lifelong resident of New York State, Boardman grew up on a farm in Oneida County, serving in Vietnam before earning a Bachelor's Degree in Agriculture Economics from Cornell University and a Master's Degree in Management Science from Binghamton University. During his time in the transportation field, Boardman served as the general manager for the bus systems in Oneida County (now part of CENTRO) and BC Transit in Broome County. Boardman was chosen in 1995 by Governor George Pataki to serve as Commissioner for NYSDOT before serving as FRA Administrator and finally Amtrak President and CEO.

Boardman leaves behind his wife, three children, four grandchildren, and five of his seven siblings, along with a legacy for, in his own words, "putting butts in seats." *(Editor's Note from Alexander Ivanoff: I had the privilege twice of meeting Joe Boardman. While both times were awkward engagements (when meeting celebrities one chokes up, and he was a celebrity to me), Joe brought a passion to the industry few have had before, and few have had since. My paternal uncle knew Boardman from transportation circles, Boardman as NYSDOT Commissioner and my uncle as the head of a civil engineering firm. While rail advocates did not necessarily agree with every decision Boardman made, we admired him for the passion he brought to his work.)* (***Railway Age***, March 7; ***New York Times***, March 11)

OTHER TRANSIT SYSTEMS

WASHINGTON, D.C. AREA

WMATA has been performing tests beginning in late February to determine if it can restore the automated door opening feature that is designed into, but has not been used in decades on, its Metrorail cars. If the testing and calibration efforts underway can assure safe and reliable operation, it is hoped that the door opening functions can become fully automated. Once on-board sensors determine a train is properly platformed, they will command the doors to open on the proper side. Currently, Train Operators must go through a time-consuming series of safety-related checks and verifications prior to opening the doors. Automating this function should save several seconds at each station stop, reducing station dwell time and shortening current point-to-point travel times. The Train Operator will continue to oversee and actuate the door close function. (***Progressive Railroading***, March 5)

DURHAM, NORTH CAROLINA

North Carolina's Research Triangle Regional Public Transportation Authority (GoTriangle) is considering the future of the Durham-Orange LRT project after Duke University announced it would not sign a cooperative agreement needed for the light rail project to proceed, citing interference with its medical facilities.

Duke University listed a number of reasons for its objection to the line, including the risk of electromagnetic interference (EMI), vibration, potential disruption to power and other utilities, and the liability it would be required to bear. It said it was not possible to complete the extensive and detailed due diligence needed before the deadlines imposed by the federal and state governments that was required to satisfy its legal, ethical, and fiduciary responsibilities.

Also raising concerns was the North Carolina Railroad, the state-owned line operated by Norfolk Southern, citing what appeared to be clearance issues.

GoTriangle had chosen a joint venture of Gannett Fleming and WSP as construction management consultant for the project in April, 2018. The 17.5-mile line would connect North Carolina Central University in Durham with UNC Hospitals in Chapel Hill, serving 18 stations – nine with park-and-ride facilities – and run on a dedicated alignment. Service would operate at 10-minute headways in the peak and every 20 minutes at other times. (***International Railway Journal***, March 8)

WISCONSIN

Wisconsin Governor Tony Evers has proposed $45 million in his state budget to expand Amtrak service between Milwaukee and Chicago on the railroad's *Hiawatha* route. The improvements are to cost approximately $195 million, including federal monies.

The state funds would be used to match federal grants to complete necessary improvements that are needed before service could be increased from the current seven round trips daily to 10 round trips daily, Wisconsin Public Radio (WPR) reported in the beginning of March.

In February, Wisconsin was awarded a $5 million federal grant under the Consolidated Rail Infrastructure and Safety Improvements (CRISI) program to build a second platform serving Amtrak riders at the Milwaukee Mitchell International Airport.

Improvements at the airport are among eight projects that need to be completed in order to increase the Milwaukee-Chicago Amtrak trips, according to the WPR report, citing Wisconsin Department of Transportation

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Secretary Craig Thompson.

The *Hiawatha* served 844,396 riders last year, up 1.8 percent from 2017's ridership level, according to Amtrak. (***Progressive Railroading***, March 12)

CHICAGO, ILLINOIS

Metra has awarded a $70.9 million contract to Progress Rail for 15 remanufactured and repurposed diesel-electric locomotives to modernize its aging fleet. The contract includes options for up to 27 additional units, which will be purchased if funding becomes available. The 15 SD-70MACs will join 24 F-59PHIs coming from California.

The program involves rebuilding six-axle AC-traction Electro-Motive Diesel (EMD) SD-70MAC freight locomotives, over a thousand of which were built by EMD between 1993 and 2004. Metra says all components will be refurbished, upgraded or replaced, and the locomotives will be modified for passenger operation. The remanufactured units will be designated SD-70MACH.

Modernization of the locomotive fleet will also reduce greenhouse gas emissions, as the SD-70MACH will comply with U.S. Environmental Protection Agency (EPA) Tier 3 emissions standards. Outside of Alaska Railroad's SD-70Ms with HEP generators, these will be the only six-axle passenger locomotives in use in the United States. (***Railway Age***, March 1

SEATTLE, WASHINGTON

The Seattle Transit Tunnel became exclusively Sound Transit Rail on March 23. 800 King County buses were rerouted onto the already crowded streets above. The current bus-only lane on 5th Avenue has been extended to increase its throughput capacity and a new bus-only lane was designated on 6th Avenue for the same purpose. A new fare collection option is being offered on 3rd Avenue (the busiest bus transit corridor in the nation) and on Westlake Avenue through South Lake Union to speed up the boarding process by permitting passengers to board through any door. Cash fares and customers not availing themselves of this option will continue to board at the front door and utilize the farebox next to the driver. (Associated Press, March 5)

TORONTO, ONTARIO, CANADA

Work on Toronto's 12-mile (19-kilometer) Eglinton Crosstown LRT project, the city's largest, is heading toward the finish line. The line is scheduled to open in September, 2021.

The alignment is a mixture of tunnel and surface center reservation. The route extends from Eglinton Avenue and Weston Road, in West Toronto, to Eglinton Avenue and Kennedy Road, in East Toronto. At the latter location, the LRT will interface with the existing TTC (Toronto Transit Commission) Bloor-Danforth Subway, for which Kennedy is the eastern terminal station. The LRT station will be underground at this location.

The Maintenance and Storage Facility is situated on 42 acres of former Kodak Canada property, adjacent to the Mount Dennis terminal station. This station is unique (for Toronto) in that it was constructed into the side of a hill.

Work has begun on the sidewalk entrance structures at Mount Dennis, Keelesdale, and Caledonia stations. Mount Dennis will be the first to be completed, this summer. A former Kodak building is being repurposed as an entrance.

Track has been laid in the Mount Dennis station, between the Caledonia and Fairbank (Dufferin) stations, and Caledonia to Avenue stations. Track installation is essentially complete in the yard and shop area.

Six of the 76-unit Bombardier Flexity Freedom LRV order were scheduled for delivery by February, 2019. Deliveries will resume in May and will continue until all cars have arrived by 2021. Service requirements on the Crosstown require 44 LRVs; the balance will presumably be distributed to other Metrolinx LRT projects.

Operational testing in the yard begins this year, and revenue service between Mount Dennis and Caledonia stations (about 1.5 miles) in 2021.

The Crosstown LRT, upon completion, will bring much -improved transit to one of Toronto's busiest and most important east-west arteries, Eglinton Avenue. Extensions from both end terminals are currently in the discussion stage. (***Railway Age***, March 5)

LONDON, ENGLAND

The first section of the £1.6 billion project to install Thales Sectrac ATO on London Underground's Sub-Surface Lines (SSL) network went live at 2 PM GMT on March 17 on the Hammersmith-Latimer Road section of the Hammersmith & City Line, which includes Hammersmith Depot.

The 4LM project involves installing Seltrac ATO on the four lines which make up the SSL network: the three others are the Circle, District and Metropolitan Lines. The project involves resignaling 192 track miles, almost 25 miles of which are underground, five complex junctions, four depots, and 10 train stabling areas. London Underground is also building 46 signaling equipment rooms across the network. A new control center was completed last year at Hammersmith which will eventually replace 11 signal towers, one of which dates back to 1926.

The SSL network includes joint operation with Network Rail on three sections of line, and with the Jubilee and Piccadilly Lines. The project also involves integrating three different Thales Seltrac systems. Equipping a train with the technology takes upwards of a month.

The first section to be completed is called Phase 0.5 and there are 14 more phases to complete the project. Phases 1-5 cover the Circle Line, sections of which are also used by the other three lines. This will be completed in 2020, paving the way for the first increase in train frequency on the SSL network to 30 trains per hour during peak periods in Central London and to Barking. Train frequency will be stepped up again on these sections in 2022 to 32 trains per hour. The entire network will be fully resignaled by 2023, providing a one-third increase in capacity on the SSL network.

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The Thales contract is worth £760 million while London Underground is investing a further £800 million in signaling-related works. (***International Railway Journal***, March 20)

Russia

A non-binding memorandum of understanding to plan a high-speed railway between Chelyabinsk and Yekaterinburg was signed by the Russian Direct Investment Fund sovereign wealth fund, Siemens Mobility, and the Economic Partnership Ural High-Speed Rail on February 15, on the sidelines of the Munich Security Conference 2019.

The proposed 220-kilometer double-track line would be suitable for speeds of 300 kilometers per hour. Four main stations would be located at Balandino and Koltsovo Airports, Snezhinsk, and Sysert, and there would be 10 intermediate stations, four traction substations, a depot, and a control center.

The project is being promoted by EP UHSR, which was established in March, 2016 by the Chelyabinsk region, the Sverdlovsk region's Development Corporation of Middle Ural, RWM Capital Investment Group, Chelyabinsk Pipe-Rolling Plant, Russian Copper Company, and Magnitogorsk Iron & Steel Works.

The cost is put at more than 300 billion rubles, with implementation planned through a public-private partnership concession agreement. The aim is to begin construction in 2021 for commissioning in 2025.

EP UHSR Chief Executive Sergey Brevnov said the partnership agreement with RDIF and Siemens represented "a significant strengthening of the status and capabilities" of the project.

The proposal for the line has already been approved by Prime Minister Dmitry Medvedev on the recommendation of the Governors of the Chelyabinsk and Sverdlovsk regions, and Brevnov said he expected it to be included in the national infrastructure plan running to 2024. (***Railway Gazette***, February 18)

Istanbul, Turkey

Durmazlar unveiled the first tram that it is supplying for the future route T5 in Istanbul on March 11. According to the manufacturer, the styling is intended to evoke waves.

The Bursa-based manufacturer signed a contract in January, 2018 for the supply of 30 trams. These would run without catenary using Alstom's APS ground-level power supply technology. This uses an embedded third rail to supply power to trams.

Due to open in June, 2020, the 14-stop 10-kilometer line along the southern edge of the Golden Horn from Eminonu to Alibeykoy Cep Otogari is being built by Dogus Insaat. Work started in March, 2017. (***Metro Report International***, March 12)

President Recep Tayyip Erdogan officially opened the Marmaray suburban rail corridor across Istanbul on March 12, 15 years after construction began. Construction was repeatedly delayed by various factors including disputes over the cost of construction, the discovery of archaeological remains, and problems with road crossings.

The Marmaray corridor runs for 77 kilometers (~48 miles) with 43 stations. The suburban services are operated using Hyundai Rotem Class E32000 electric multiple-units ordered in 2008. These run at a maximum speed of 100 kilometers per hour (62 mph) with a commercial speed of 45 kilometers per hour (28 mph), with 2-10-minute headways and an end-to-end journey time of 1 hour 10 minutes. The suburban services are expected to carry up to 75,000 passengers per hour or around 1.7 million passengers per day.

With the opening of the corridor, high-speed trains from Ankara will no longer terminate at Pendik but will use Marmaray's third track to call at Gebze, Pendik, Maltepe, Bostanci, and Sogutlucesme on the Asian side and Bakirkoy and Halkali on the European side. The third track could also be used by freight trains.

Work on the Marmaray link began in 2004 with the construction of the immersed tube tunnel under the Bosporus Straight. (***Metro Report International***, March 13)

Eskisehir Mayor Yilmaz Buyukersen inaugurated an extension of the city's meter-gauge tram network on March 10 at a ceremony at the former eastern terminus of Acelya.

The three-kilometer (about two-mile) eastern extension to Sehir Hastanesi adds four stops. A further extension from Sehir Hastanesi to Sultandere is planned.

The latest extension brings the length of the network to 48 route-kilometers (~30 route-miles). Further extensions are planned, which would take the network to 60 kilometers (37 miles) once they are completed. (***Metro Report International***, March 13)

India

India's fastest train broke down on its first trip, a day after it was inaugurated by Prime Minister Modi. The Vande Bharat Express was returning to the capital Delhi from the city of Varanasi after its first run when brakes in a car reportedly jammed.

Indian media quoted a railway spokesperson as saying the train may have struck cattle on the line. The train reached a speed of 180 kilometers per hour (110 mph) during trials.

Soon after the brakes failed, the drivers noticed smoke in the last four coaches and power was lost in all compartments.

Those on board, mostly railway officials and journalists, had to take another train to get back to Delhi.

Despite the railway ministry's suggestion that the train may have hit a cow, NDTV reported that there were no signs of damage on the front of the train after the incident.

The new train service start its commercial run on February 17. It is expected to reduce the travel time between Delhi and Varanasi by six hours. *(Sarcastic Editor's Note from Sasha Ivanoff: Sounds like the Indians took cues from British Rail on how to do high-speed rail. The In-*

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NEW YORK CITY SUBWAY CAR UPDATE

176 of the 188 4-car R-179s were on NYCT property as of March 15. After a short delay in the latter half of January, deliveries were resumed with the arrival of cars 3206-9 by the 30th. R-179s 3210-21 were then shipped to 207th Street Yard during February of 2019, followed by 3222-9 as of March 21. If the current schedule of one unit delivery per week is maintained, it is expected that all remaining 4-car units should be on hand by the middle of April, after which (ostensibly) the 120 remaining as 5-car units will begin to appear.

Of the R-179s which have been accepted, all of those assigned to the J and Z (3050-69, 3074-3149) more or less consistently continued to appear after the reported technical "hiccup" encountered on January 10-11. Meanwhile, those used on the C (then 3150-81) did not return until January 21, with one 8-car train of R-160s and numerous Phase I R-32s picking up the slack, supported by the usual handful of R-46 trains appropriated from the A. Undaunted by this unexpected turn of events, the "return" of R-160s from 207th Street to East New York was completed through the following three weeks, with cars 8609-12, 8621-4, 9947-50 and 9963-6 back on the JZ and M by January 14; 9971-4 on January 25; 8613-6 on February 1; and finally 8625-8, 8645-8, and 9967-70 on February 6, after the very last run on the C was made in the afternoon rush with 8645-8 and 9967-70 doing the honors.

Meanwhile, as the fifth R-179 train to enter C service, 3182-9 were at last released into the fleet on January 29, to be followed by 3190-7 as the sixth on February 6; 3198-3205 as the seventh on February 26; and 3206-13 as the eighth on March 13. The 5-car "pilot" train (3010-9) was also cleared to initiate its 30-day revenue service test on the A starting February 10. After weeks of mileage accumulation, seven days a week at most times of day on both the branches to Ozone Park-Lefferts Blvd and Far Rockaway-Mott Av, it was ready to complete this final testing phase by March 15. As this Update is completed a week later, the 10-car train is undergoing software modifications, and it will be added to the large contingent of 410 existing cars assigned to Pitkin Shop when this process is completed. Overall, there were a total of 170 of the 318 R-179s accepted for passenger service as of March 22.

Otherwise, after all of the R-160s had returned, the overall fleet at East New York ballooned to an amazing 730 cars strong, which had the dual effect of noticeably reducing the use of R-143s and Morrison-Knudsen-overhauled R-42s to fill schedules on the J and Z. For the first time since 1969 there were some weekdays in February when zero R-42s were used, but in general at least one consist was either lined up for service or actually carrying rush hour passengers since March 4. Nevertheless, all 50 of these 50-year-old subway cars remain active through mid-March, with at least two road-ready consists exported to Pitkin Yard for temporary storage at any one time to relieve the yarding crunch at East New York. That new habit was started on January 17 and has become a weekly routine in the time since.

A local February 13 news story (in ***AM New York***) quietly revealed that the MTA had scrubbed its plan to beef up G service in anticipation of the now-canceled Canarsie Tunnel shutdown, a move which also indefinitely forestalled the associated proposal to extend its consists from four 75-foot (R-68/68A) cars to eight 60-footers. The reasons cited were budgetary in nature, though it was equally unclear at the time if a similar initiative to expand train lengths on the C from eight- to 10-car 60-footers (or eight 75-foot R-46s) was being similarly expunged. If ongoing consists are any indication, the C continued to exhibit its usual handful of R-46 trains (anywhere from one to four) every day of the week through March 22.

Final Notes: The lone R-62 train that had been assigned to 240th Street (1) since February, 2017 (1306-10 with 1431-4, plus 1438) was swapped to the 3 in exchange for cars 1411-5 and 1591-5 on or about March 4, 2019. On February 19, member Bill Zucker discovered a mixed R-68/68A consist roaming on the B: N-2802-3-1-0/5048-7-5-6-S. Also according to Bill: The "Cuomo" modified R-160s at Jamaica now usually run in mixed consists — one modified 5-car unit coupled with a non-modified link, although solid (10-car) consists may still be seen. Another peculiarity is R-160 "B" car 9245, which is now back in an "unmodified" state by itself in the middle of unit 9243-7. As a reminder, unit 9568-72, which had been modified in December, 2017, has been reverted to its original, factory-configured state since at least August, 2018. Usually on the E, the "Cuomo" R-160s have also been seen more often on the F in 2019 and even on the R, just like any other Jamaica-assigned R-160 equipment. One such R consist was rerouted down the Brighton Line as a Q to Coney Island during a recent evening rush hour period.

Commuter and Transit Notes

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terCity APT broke down on its second run, and continued to break down afterwards to the point the impractical trainsets were withdrawn. Hopefully the story from India has a happier ending.) (BBC News, February 16)

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

Palermo, the capital of Sicily, finally opened its new tramway system on December 30, 2015. This desire to ride and photograph it was the principal reason for our visit to this city. Clare had previously spent a day exploring the area, as it was a stop on our "Eurocruise" in 2013. The port city is ancient, dating from Phoenician roots in the 8th century B.C. Over the last 2,900 years it became the main economic driver of the island and now houses a population of almost 700,000 (with 1.3 million in the metropolitan area). This is more than double any other Sicilian city (Catania is next) and thus Palermo is the center of the island's tourism and financial activities, as well as housing its largest airport. On the negative side, Palermo is said to be where the Italian Mafia was founded, and the city is still known for corruption and high unemployment. We would be spending two days here, one for me to ride and photograph the tramway and the other for additional sightseeing and exploring the city's rich and colorful history by visiting many museums and other places of interest.

Palermo's tramway consists of four standard-gauge lines whose unduplicated length is about 11 miles. It is operated with 17 Bombardier-built five-section Flexity Outlook 100-percent low-floor cars (functionally equivalent to Toronto's new streetcars). The rolling stock was delivered as early as 2011, but controversies and inertia prevented the system's inauguration for almost four years. It opened as a full-fledged four-line network however, as opposed to the more common single line that after being successful gets expanded with extensions and additional routes. It is also unusual in that one line, Route 1, is physically separated from the other three, so there are two operating carhouses performing a certain amount of duplicate activities (see http://www.urbanrail.net/eu/it/pal/palermo.htm). My recollection is that circumstances in Barcelona and Dublin are similar — all three cities have plans to connect their divided routes, but such work will involve severe disruption as congested city centers lay between the isolated segments. (*Editor's Note: work to rectify this predicament in Dublin has been completed, and the two systems are now connected.)* Thus the light rail revolution, that began some 40 years ago, continues to move forward.

FRIDAY, APRIL 8

After an excellent breakfast Clare and I went our separate ways. Palermo's tramway and bus systems have the same fares and tickets are interchangeable, but I did not know that at the time, so we bought single-ride tickets at a tobacconist along the bus route to the railway station. After the short ride I went directly to the tramway terminal, and tried out the ticket vending machines on the platform. But they only issued single-ride and weekly/monthly tickets. However, I soon found the transit company's kiosk at the station's principal bus stop, and was told that day tickets are valid on both the tramway and bus system. After purchasing one, I returned to Route 1's double-track stub-end station and climbed aboard one of AMAT's bright white streetcars, and even remembered to validate the ticket. I was soon inspected and the ticket I bought at the bus office was approved, much to my relief. The cars seemed to operate every 10 minutes.

All of the line's trackage is embedded in pavement, but separated from motor traffic. The exclusive reservation is located entirely in the center of streets and is surrounded by decorative wrought iron fencing (which interferes with photo taking from street locations other than intersections and station platforms). The Flexities move along briskly past strings of apartment buildings on both sides of the center reservation, with traffic signal preemption/priority seeming to be the rule (although conspicuously missing at some busier intersections). Carhouse leads are located between the last two stops beside a partly-completed shopping mall. All in all, except for an interesting bridge over the Oreto River, the route can be best portrayed as nondescript.

With the weather being a mix of clouds and sun I took photos whenever the conditions were favorable. I also hurried, as the forecast for Saturday was rain, and I wanted to cover the entire system in one day. As you will see below, that turned out to be impossible.

After returning to Stazione Centrale, I boarded a Route 102 bus for Notarbartollo, the terminal of tramway Routes 2, 3, and 4. I could have ridden Palermo's "Metro" between these two points, but I wanted to get there today (more about that later). Many of Palermo's downtown streets are equipped with exclusive bus lanes and traffic signal preemption, so despite a number of stops with lots of on and offs, it was a quick ride, taking less than 20 minutes.

The tramway terminal at Notarbartolo consists of two tracks with the area between them divided into two platforms at slightly different levels, with a handful of steps connecting them. Both platforms have countdown clocks, which were displaying a message in Italian that seemed to indicate that tram Route 4 was not running due to an *"incidente,"* which put a dent *("dente")* in my plan. There is no tail track at the station, and the crossover between the two stub-ended tracks is about two blocks from the terminal. A tram was sitting on one of the tracks with its destination displays (both front and side) alternating between "Tram Palermo" and "BOMBARDIER." (The same was the case when cars were laying over on tram Route 1). Finally, an Operator

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Three Islands of Italy

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boarded, and both the front and side displays changed to "2 Borgo Nuovo," the car's route and destination, while the countdown clock started alternating with the news about Route 4 and the departure time of Route 2, which was in about two minutes. I suspect that until the Operator presses some button to indicate his route, the computer that controls the countdown clocks has no way to identify the specific car.

Anyway, Routes 2 and 3 were each running about every 20 minutes. After leaving the terminal, the 2 and 3 travel together for nine stations, so in practice there was a 10-minute frequency over the trunk line along Via Notarbartolo, which becomes Via Leonardo da Vinci, a street containing mid-rise apartment buildings and retail stores. Route 4 turns off da Vinci after the first three stops. The carhouse and shop for this part of the network is located on Route 2 right after its junction with Route 3. For photography, the most attractive locations on Routes 2 and 3 are located along their outer ends, as after they split the tracks approach the tall mountains encircling Palermo.

After taking a number of photos, not made easy by the iron fences, I decided to ride the "Metro" back to Centrale. Notarbartolo is a way station on the metro, which Trenitalia operates with regional-type electric MU cars, similar to those that we saw in other areas of Sicily. Service runs about every half hour and the run to Centrale has four intermediate stops with a scheduled running time of 18 minutes. Thus it should have been a reasonably quick ride, but the 16:39 train reached the railroad terminal at 17:15, taking 36 minutes, double the allotted time. It crawled all the way and spent an inordinate amount of time at each stop, even though only one or two passengers boarded or alighted. I do not know if that is typical, but maybe performance is a major reason for the poor ridership I observed.

I got back to the pedestrian zone quickly and found Clare already in our room. I should mention that at every B&B we patronized, we would be given keys to both the front doors of the building and the establishment itself, as well as to our room. Our hosts, Antonella and Mauro offered us drinks, and we asked about restaurants. They recommended a number of places, and the one we chose turned out to be wonderful, and of course, we were probably the only tourists in the dining room.

SATURDAY, APRIL 9

It was dark and gloomy when we awoke, but not raining (yet). After an excellent breakfast with our eggs cooked to order, we checked out, but left our luggage. Since there was no precipitation at the moment I persuaded Clare to accompany me back to Notarbartolo to see if the 4 was running. It was. The line runs on single one-way track along both sides of a busy limited access road similar to the Long Island Expressway, with underpasses at major intersections and ramps to and from the service roads (that carry the tram tracks). The tracks are fenced in except where the on and off ramps cross them. Fourteen stops line the highway (seven on each side) with some having nearby pedestrian overpasses. The platforms are mostly on the right side of the tracks, but there are exceptions, forcing riders to cross a couple of lanes of traffic and the tracks to reach the streetcars.

As we were riding back to Notarbartolo it started to drizzle, and by the time we had gotten back to the hotel's neighborhood it was pouring. We purchased a flimsy umbrella from a vendor who appeared out of nowhere, and then found a hop-on, hop-off bus, in which we made a full round trip, using earphones to hear the English commentary. By then the rain had slowed down to a drizzle. We selected places we wanted to investigate further, and visited a couple of churches and the Palazzo dei Normanni (Norman Palace). Parts of the Palace date back to the 9th century, although the 11th century Byzantine Capella Palatina (Palatine Chapel) is the highlight, full of spectacular mosaics (sides and ceilings). Upon arriving back at the B&B the sun had come out. While Clare rested in the lounge I went back to Route 1 for a few additional quick photos.

A couple of views of Palermo landmarks near our B&B can be seen below.

Our ferry to Cagliari, which runs only on Saturdays, was due to leave at 19:30, so Antonella and Mauro had our taxi to the port arrive at 18:00. We got to dockside for the Tirrenia *Dimonios* very quickly and rolled our carry-ons up the gangplank and then rode an escalator to a large lobby, where we presented our e-ticket at a well-staffed counter. We were handed the key to our cabin and took an elevator up to the correct floor. The procedure was very laid back and do-it-yourself, with no visible security. In fact there was not even a lifeboat drill. There was an adequate amount of space in our outside room, which was equipped with two lowers and two uppers, as well as a decent-sized bathroom with toilet, cabinet, sink and shower. Very spartan, but expertly utilitarian.

We got back on deck in time for the departure, which was at 19:31 (30). I took a few photos of the shoreline and other vessels near the port as the sun was sinking. The *Dimonios* is one of about 12 passenger vessels owned by the Tirrenia shipping company, which was founded in 1936. The organization is based in the Mediterranean and provides both freight and passenger service between Sardinia and the Italian mainland and Sicily. The *Dimonios* was built in 2002 and has 120 cabins and a capacity of 350 vehicles. Our explorations included a visit to a very busy bar lounge and a shop, observing a kiddie play area along the way.

We were quite tired, and fell fast asleep by 21:00.

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Car 08 awaits its departure time at the Stazione Centrale terminal of Palermo's Route 1. A center platform serves both tracks. The railroad station is in the background.

The construction of a new arched bridge over the Oreto River for Corso dei Mille was part of the project to build Route 1 of Palermo's new tramway. This is a view looking eastward showing an inbound car.

Looking west along Viale Piazza Armerina at car 09, as it leaves the San Paolo terminal of Route 2. This is the closest the tramway gets to the mountains that surround Palermo on its west and north sides.

Another view of Route 2 with the mountains in the background. The leads to the carhouse and shops are shown in this view of a westbound car along Via Castellana, which has but three more stops before its terminal.

Car 10 approaches the inbound platform of the Michelangelo stop on Route 3. Station platforms are generally offset in Palermo, allowing the center reservation to be as narrow as possible (gotta leave as much room for autos as possible). This is the only intermediate station between Route 3's terminal and its junction with Route 2.

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Left: Looking northward at an outbound Route 4 car a few moments before the skies opened. The road is officially Viale della Regione Siciliana Nord Ovest (Avenue of the Northwest Sicilian Region), but is better known as highway route E90.

Notarbartolo on the surface and below street level. The rainy left view shows the terminal of tram Routes 2, 3, and 4. Note the short stairway between the platforms for the two cars. The right photo shows a Trenitalia regional eMU en route to Stazione Centrale stopping at the inbound platform of the rail station. It is early spring and green weeds already abound.

Palermo's Teatro Massimo Vittorio Emanuele. Opened in 1897, it is Europe's largest opera house and is renowned for its excellent acoustics. Standing there I could imagine a baritone singing the lovely aria, "Sto per fare un'offerta che non può rifiutare."*

Translates to: "I'll make him an offer he can't refuse" (a quote from a famous American movie).

Construction of the church of Sant'Ignacio All'Ovivella was started in 1598 and the edifice was opened to the public in 1732. It has two bell towers and is adjacent to Palermo's archeology museum.

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Around New York's Transit System

NYC Transit's Save Safe Seconds Program Update

Additional speed improvements have been made on various subway lines since the first list of these locations was published in the February, 2019 ***Bulletin***. As before, the only adjustments made have been to unenforced speed restrictions. These are locations where there is a speed limit sign without enforcement by the signal system. Shown below are the additional locations of speed restrictions that have been modified:

DATE	LOCATION	TRACK	FROM (MPH)	TO (MPH)
1/31/19	n/o Grand Central-42 St 4 5 6	3	10	15
"	"	4	10	20
2/12/19	n/o Grand Central-42 St 4 5 6	3	15	20[1]
"	"	4	20	15[1]
2/14/19	s/o 18 Av F	B1	15	20
"	"	B2	15	25
2/26/19	n/o Times Sq-42 St N Q R W	A2	25	Removed
"	s/o 57 St-7 Av N Q R W	A1	16	35
"	n/o Bay Ridge-95 St R	F1	10[2]	D15
"	"	F2	10[2]	D15
"	s/o Atlantic Av-Barclays Ctr D N R	F1	15	25
"	n/o Atlantic Av-Barclays Ctr D N R	F2	15	25
2/28/19	n/o W 4 St-Wash Sq A C E	A3	25	30
"	s/o Jay St-MetroTech A C	A3	20	27
"	n/o Utica Av A C	A1	25	45
"	s/o 125 St A B C D	A2	25	30
"	"	A3	25	30
"	"	A4	25	30
3/3/19	s/o Grand Army Plaza 2 3 4 5	1	20	30
"	"	2	25	35
"	s/o Borough Hall 4 5	3	19	Removed
"	s/o Franklin Av 2 3 4 5	1	15	20
"	n/o Nevins St 4 5	3	10	20
"	n/o Crown Hts-Utica Av 2 3 4 5	1	20	30
"	n/o 59 St-Columbus Circle 1 2	1	26	Removed
"	s/o 59 St-Columbus Circle 1 2	1	26	Removed
"	s/o Marble Hill-225 St 1	1	20	30
"	"	M	20	30
"	"	2	20	30

Notes:
1. Revision of the January 31 installation
2. At this location, there previously had been no speed restriction signs in place. Where there are no speed restriction signs posted, diverging moves over switches are restricted to 10 mph so this is an implied increase from 10 to 15 mph for the diverging moves

In addition to the above speed changes, three more signals with one-shot grade timing (lunar white aspect) had countdown clock aspects added to them. This is part of the pilot project mentioned in last month's ***Bulletin*** that will inform Train Operators when a one-shot grade time signal will clear, by counting down the seconds until the signal clears. The aim is to ensure optimal performance and confidence of signal clearing:

DATE	LOCATION	SIGNAL	TRACK
2/1-2/19	Eastern Pkwy-Brooklyn Museum 2 3	2131/E	3
2/15-16/19	Grand Army Plaza 2 3	1971/E	3
3/8-9/19	n/o Times Sq-42 St 1 2 3	64/V (XA198)	1

Astoria Boulevard Station Closes for Rebuilding

Beginning at 10 PM Sunday, March 17 and continuing for approximately nine months, the Astoria Blvd N W station was closed 24/7 to enable work crews to install four new elevators. Two will link the street level to the mezzanine and two others will connect the mezzanine to the two island platforms above. The mezzanine will undergo a total rebuilding, getting reconfigured fare control areas to fit in with the new elevators as well as being structurally enhanced to better withstand impacts from passing trucks on the streets below that are too high to fit under the elevated structure, despite the numerous warning signs. To further reduce the potential for over-height trucks striking the structure, the roadway pavement at street level will also be lowered to provide additional clearance height for the "L." The station itself will receive new stairways, canopies, and lighting and have the deteriorated sections of its platforms replaced. For the duration of the project, customers are advised to utilize the 30 Av N W station or the Astoria-Ditmars Blvd N W terminus of the line. *(Editor's Note by Ronald Yee: this will be a major inconvenience to anyone connecting to and from the M60 Select Bus Service route linking 125th Street in Manhattan with LaGuardia Airport.)* On select weekends, to facilitate vital trackwork and replacement, train service on this line will be replaced with free shuttle bus service between Queensboro Plaza N W 7 and Astoria-Ditmars Blvd.

PATCO Inauguration 1969

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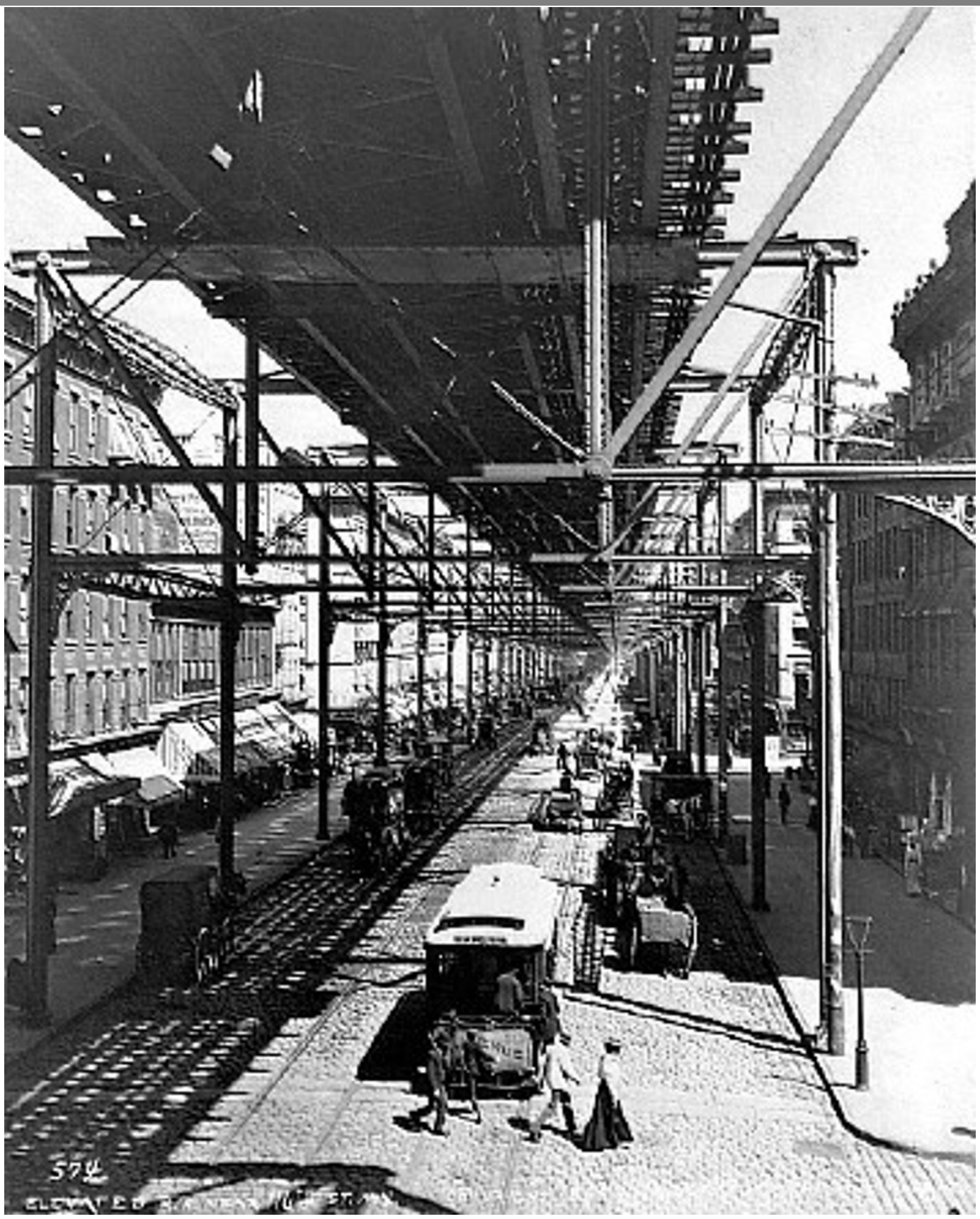
when about 18,000 rides were handled. PATCO was off to a good start. Ridership rose to over 26,000 by mid-year, surpassing SEPTA's Paoli Main Line Local at the time. By its third year ridership leveled off at about 40,000. PATCO had become a successful part of its region.



Eighth & Ninth Avenues Railway Company, W. 116th Street under the Ninth Avenue Elevated, c. 1898. Jeffrey Erlitz collection