The Bulletin

Electric Railroaders' Association, Incorporated

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The Bulletin

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MANHATTAN THIRD AVENUE "L" SERVICE ENDED 60 YEARS AGO

At 6:04 PM May 12, 1955, the last elevated train to run in Manhattan departed from Chatham Square. Service was discontinued on 8.50 miles of the Third Avenue "L" between Chatham Square and 149th Street, but trains continued running on 5.78 miles of the elevated between 149th Street and Gun Hill Road.

Manhattan's east side riders had been enjoying rapid transit as far back as anyone could remember. Steam locomotive-hauled trains started running from South Ferry to Grand Central on August 26, 1878. Service was extended in stages on Third Avenue until trains finally reached Bronx Park on May 21, 1902. Service was sped up when the line was electrified. The first electric train departed from 129th Street at 7:19 AM March 24, 1902 and the last steam engine ran on August 24, 1902.

New York's population was increasing rapidly. To furnish better service, the Interborough Rapid Transit Company decided to make the express track continuous on the Second, Third, and Ninth Avenue elevated lines. A Public Service Commission certificate dated March 19, 1913 gave the company permission to proceed with the work. In addition to building a continuous express track and the necessary express stations, the work involved rebuilding the Chatham Square station, double-decking the City Hall station, and replacing the single-deck Harlem River bridge with a double-deck bridge. The Manhattan Elevated Improvement was an engineering feat with which no other engineering job in this country could be compared. Most of the work was performed on city streets, often congested. During the period of construction from 1913 to 1918, traffic on all the elevated lines was operated with little change in regular train schedules. IRT started operating extended rush hour service on July 8, 1917 and all-day express service in November, 1917. This new express service resulted in an increase of nearly 14 million passengers from 1916 to 1917. Second Avenue trains were rerouted via the Bergen Avenue cutoff on July 1, 1917, eliminating congestion on the grade crossing north of 149th Street. The final expansion took place when service was extended to White Plains Road on October 4, 1920.

During the next two decades, riding declined slightly, but service was frequent. About a year before Unification, the Board of Transportation made passenger traffic checks to determine the fate of the Second Avenue "L." A letter from the IND Trainmaster to the IND Superintendent dated December 18, 1939 revealed that the Third Avenue "L" north of 67th Street could accommodate the Second Avenue passengers, but the Third Avenue "L" south of 59th Street could not accommodate the Queens passengers. If the entire Second Avenue "L" were demolished, the letter recommended increasing IRT service between Flushing and Times Square and BMT service between Flushing and Queens Plaza. But service could not be increased because of a car shortage.

At Unification, June 12, 1940, the Second Avenue "L" was abandoned north of 59th Street, but was retained south of there. Rush hour Freeman Street expresses were rerouted from Second Avenue to Third Avenue.

Freeman Street trains operating on a 12-minute headway were turned on Chatham Square's upper level between South Ferry

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NEXT TRIP: CONEY ISLAND SHOP TOUR — SATURDAY, JUNE 13

RAILS UNDER THE RIVER REVISITED — THE HUDSON & MANHATTAN
by George Chiasson

H&M AND THE HASKIN TUBE—PENNSY'S DOWNTOWN PARTNER

While the valiant efforts of former Colonel DeWitt Clinton Haskin have been well-documented elsewhere, suffice it to state here that he was the farsighted originator of a halting, abortive 1874 tunneling project to join New York and New Jersey that bore his name until it was ultimately completed more than three decades later. After taking a preliminary interest in the moribund Haskin project during late 1901 as a civil cause (and probably as an investment as well), William G. McAdoo (1863-1941) and his associates founded the New York & New Jersey Railroad on February 6, 1902 as a means of resurrecting, improving, and completing the partially-built tunnel under the Hudson. From its beginnings, the company's quest was to provide rail-based transit connections between the score of railway terminals on both sides of the big river, such that a continued reliance on traditional railway ferry boats would be reduced to a secondary option in short order. Granted, these connections as built weren't complete in their scope, as the H&M system completely missed two important terminals on the New Jersey side (the West Shore's Weehawken and Central of New Jersey's Communipaw) and did not possess an adequate franchise within New York City. Like the fate of Penn Station, efforts to finish the Haskin Tube were fortuitously timed to coincide with the progressive administration of New York Mayor Seth Low, whose Board of Rapid Transit Railroad Commissioners was able to advance the project more or less on its own merits, as opposed to that body's formerly illicit graces under which any attempt at municipal beneficence was customarily skewered with malevolence from the minions of Tammany Hall. As such, its franchise was summarily approved to extend the tunnels, when completed, under the Lower West Side of Manhattan as far as Christopher Street. These rights were subsequently endorsed by the city's Board of Aldermen that December, but only as far as Greenwich Street and with a good bit more political intrigue involved. Their proceedings were conducted part and parcel with the franchise debate regarding the Pennsylvania Railroad's New York Terminal, and while both gained mutual approval there were some municipal encumbrances attached.

Undaunted, McAdoo took advantage of the political alliance this forged to build a business relationship with officers of the Pennsylvania Railroad, and met with President Cassatt in early 1903 to propose that his company construct an entirely different set of tunnels, similar to the Haskin Tubes, which would extend under the river from the existing Exchange Place terminal to the nearest point in Lower Manhattan. Based on little more than a handshake at first (with a formal agreement executed later), McAdoo then incorporated the Hudson & Manhattan Railroad on March 20 to tend to the creation of this second set of tunnels, though his company's right to construct them wasn't formalized by the New York State Board of Railroad Commissioners until May 11, 1904. After work actually began on the "south" set of under-river crossings in early 1906, things proceeded with relative ease as compared to the long, unforgiving history of the original "Haskin" tube upriver that took 34 years to complete. It is also worthy of note that their construction proceeded concurrent with those of the Pennsylvania Railroad on either side of Manhattan and IRT's first subaqueous tunnels to Brooklyn. Meanwhile, given the geography surrounding its newer project, H&M's Lower Manhattan "Terminal" was to be sited near the intersection of Cortlandt and Greenwich Streets, directly across the river from Exchange Place, in what then was a congested, aging community of randomly mixed residential and commercial use, situated at the doorstep to what had developed into the world's preeminent financial district.

There H&M would erect its grandiose "Hudson Terminal," a pair of Renaissance-style, 19-story office "towers." This was a relative term at that time, given the rapid pace at which New York's "skyline" was then evolving, with every successive building seemingly taller than its predecessor. The new rapid transit terminal was integrated into the very sub-structure of these twin buildings in such a way that they provided not only a worthy destination of themselves, but also a desirable gateway for routine commuting between the employment centers of New York and the outlying precincts to which its legions of human beings gravitated on a daily basis. The presumption was that many of these commuters would utilize H&M to reach their railroad terminals across the Hudson as an integral part of their balanced, suburban lifestyle. In a vein similar to that of Penn Station, the Hudson Terminal towers were a prized architectural undertaking ultimately garnered by the firm of Clinton and Russell, which designed scores of Manhattan edifices, perhaps most notably the late Astor Hotel, and were specifically designed by J. Hollis Wells (1863-1926), who was touted upon his death as a "born builder." They were then built by hallmark contractor George A. Fuller, who also fabricated the Pennsylvania Station terminal depot. As H&M and the Pennsylvania further bonded during the project's earliest phase, the railroad agreed to make its existing alignment available for the novitiate rapid transit line, and H&M then designed its station on the New Jersey side of the south tubes to be built as an extension of the sub-basement directly under the Pennsy's then-rather substantial terminal at Exchange Place. To tie the two sets of under-

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Rails Under the River Revisited

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water tubes together as a cohesive system, H&M had previously garnered rights, through a subsidiary called the Hoboken & Manhattan Railroad, to tunnel southward under Washington Street in Jersey City from its intersection with the original Haskin alignment in Hoboken (which then was still being installed in the name of the New York & New Jersey Railroad) to the Pennsylvania's survey on (Pennsylvania) Railroad Avenue, currently known as Christopher Columbus Drive, in Jersey City. Its northerly convergence was actually situated beneath roughly-hewn, waterside industrial lands about midway between the existing Erie (Pavonia) terminal and the Lackawanna's facility at Hoboken, where a new terminal building was then under construction. As built this connecting tunnel in turn clung to a subterranean "shelf" of bedrock that in part formed the "base" of the mighty Palisades, being positioned along the New Jersey waterfront approximately 1,300 to 1,500 feet inside the pier line, but was close enough to the Hudson River's bed that it was engineered in the same manner as an underwater passage.

H&M AND HOBOKEN TERMINAL

It could be said that the present Hoboken Terminal of NJ Transit and the former Hudson & Manhattan, née PATH, terminus at Hoboken were bred together, though they were not birthed at precisely the same time. For its first half-century of operation, the railroad once known as the Delaware, Lackawanna & Western and its predecessors had established a relatively modest terminal in Hoboken, but to better meet its emerging traffic needs, in particular as well-patronized suburban services were spreading swiftly throughout northern New Jersey, the "Lackawanna" undertook the construction of a larger "New York" terminal, including expanded waterside docking facilities, on the New Jersey side of the Hudson starting in 1902. This was about the same time that William McAdoo was ready to resume restorative construction of the former "Haskin" tunnel under the Hudson, and the new company immediately chose to amalgamate as much of its survey as possible with the Lackawanna's alignment. This "choice" was actually more of a dictation, as the Lackawanna utilized the existing Bergen Tunnel, as opened by the former Morris & Essex Railroad in 1877, to reach the Hoboken facility as a direct means of getting under the Palisades. As part of its newest Hoboken Terminal construction, the Lackawanna also duplicated the original bore to create the latter-day pair of "Bergen Tunnels," with the replacement passenger terminal being placed in service on February 25, 1907 and the newer tunnel beneath the Palisades following suit the next year. As a result the original "tube" and its newer companion bore somewhat unequally beneath the Hudson River in their final form, between Morton Street in Manhattan and the present 18th Street in Hoboken, which was immediately south of the Lackawanna's terminal alignment.

With DL&W's assured, connecting patronage base providing an easy economic justification for the developing New York & New Jersey Railroad, it seemed a relatively simple matter for the railroad to tuck a depot of its own beneath the Lackawanna's site plan, adjoined to the northerly side of the railway terminal at the very end of Observer Highway. This was to be accomplished by excavating a "U"-shaped appendage to the westerly end of the Haskin tubes that would curve beneath the Lackawanna's storage yard, while also gaining sufficient distance under Hoboken from their shaft work to a grade-separated connecting "wye" with the tunnel to Exchange Place, as well as a rise under the Lackawanna's terminal leads to a convenient elevation beneath the northeast corner of its new passenger station. While DL&W warily assented to this proposal in the beginning, its leadership reversed course less than a year later and ultimately sued for monetary damages from the new rapid transit company, based on the unfair competitive advantage that it would hold by possessing a set of through tracks to Manhattan. As awkwardly based as this (successful) court action was, it ultimately delayed the start of construction on the rapid transit terminal until the spring of 1906, by which time H&M was concurrently hard at work on the so-called "downtown" tubes that were to unite the Pennsylvania's Exchange Place terminal in Jersey City with an underground station at Cortlandt Street in Lower Manhattan.

On another level, as each of McAdoo's concerns were nursing their respective sets of under-river tubes, tunnels, and associated termini to the construction stage in 1904, the New York & New Jersey was concurrently pursuing rights from New York City authorities to extend the Haskin alignment northward, so as to gain a deeper penetration into the blossoming Midtown district. From its authorized railhead at Greenwich and Morton Streets, the company proposed a tunnel extension under Christopher Street to the heart of Greenwich Village, then passage through a more conventional subway under Sixth Avenue as far as W. 33rd Street. Approvals for this idea proved to be hard-won, as both it and the proposed connecting tunnels between Hoboken and Exchange Place on the Jersey City side were opposed by traction magnates of the Metropolitan Street Railway and Public Service Corporation on the basis of potentially unfair competition. When these issues were ultimately addressed through financial considerations by the end of 1905 (which may or may not have been expedited through McAdoo's various railroad company connections) a picture of the initial Hudson River rapid transit system emerged. Functionally, the "Uptown" segment of the new rapid transit system would serve as a "local" line on the Manhattan side of the river with its nearby passage of Penn Station being treated more as an incidental connection than an essential convergence. The traffic gathered through this Midtown subway would then flow to and from the various New Jersey railway termini using the Haskin Tubes, while that gathered by the system's "Downtown" component at Hudson Terminal would similarly travel through the "south" tubes link-

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Manhattan Third Avenue "L" Service Ended 60 Years Ago

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125th Street, looking north.
Bernard Linder collection

129th Street.
Bernard Linder collection

129th Street, showing car 1603A.
Bernard Linder collection

143rd Street looking north.
Bernard Linder collection

149th Street looking south, August 5, 1972.
Larry Linder photographs

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Manhattan Third Avenue "L" Service Ended 60 Years Ago

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149th Street looking south, August 5, 1972.
Larry Linder photograph

175th Street looking south.
Bernard Linder collection

Tremont Avenue.
Bernard Linder collection

183rd Street looking north, August 18, 1969.
Larry Linder photograph

South of 204th Street looking north, August 5, 1972.
Larry Linder photograph

Looking west toward 210th Street.
Bernard Linder collection

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Manhattan Third Avenue "L" Service Ended 60 Years Ago

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locals operating on a 6-minute headway. To avoid delaying the locals, a Motor Instructor boarded the rear car of a southbound express at Canal Street and operated it back there while the Motorman walked through the train. At Canal Street, he took over the controls and the Motor Instructor crossed to the southbound platform where he waited for the next express.

Ten years later, service was curtailed because riding was declining, the cars were old, and the elevated structure was in poor condition. Effective July 13, 1950, shuttles were operated between Canal Street and South Ferry every day during midnights, weekday evenings, Saturday afternoon, and all day Sunday. Trains were turned at or south of Gun Hill Road at all times and operated to 241st Street only during rush hours. On December 22, 1950, service was discontinued on 1.22 miles of the elevated between South Ferry and Chatham Square. To provide alternative transportation, free transfers were issued to buses at Chatham Square. There was no elevated service north of Gun Hill Road and substitute rush hour service was provided by extending alternate Seventh Avenue expresses from 180th Street to 241st Street. On March 14, 1952, service south of 149th Street was discontinued weekdays after 7 PM and all day Saturday and Sunday. On December 31, 1953, service was discontinued on 0.30 miles of the elevated between City Hall and Chatham Square.

To accommodate the displaced elevated passengers, new rush hour subway schedules went into effect on January 14, 1955, four months before elevated trains ceased running in Manhattan. Rush hour Lexington Avenue-White Plains Road service was increased and several gap trains in the Jackson Avenue middle were available if there was an AM rush hour delay at 149th Street-Third Avenue. Unfortunately, rush hour service was reduced on the other Bronx expresses.

The last elevated train in Manhattan departed from Chatham Square at 6:04 PM May 12, 1955 and service was discontinued on 8.50 miles of elevated between Chatham Square and 149th Street. After service was discontinued, the southbound subway platform at 149th Street-Third Avenue was occasionally filled to capacity in the AM rush and the passengers had to wait in the passageway until the platform was cleared. The Lexington Avenue Subway is still the most crowded and the Second Avenue buses are the busiest. The Second Avenue Subway was originally planned in 1929 and the long-delayed opening may occur late in 2016.

Rails Under the River Revisited

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ing Manhattan's vibrant Financial District with Exchange Place and the same array of railheads in reciprocal fashion. Further, in what is best described as a fit of genius for that time, the points where these three elements would intersect were separately engineered as a sophisticated system of grade-separated tunnels forming "wyes." This innovation, which had seen limited use in other U.S. venues to date, would preclude at-grade rail crossings and enable the individual distribution routes to be operationally streamlined for efficiency. As construction of the new system reached an advanced state in December, 1906, the New York & New Jersey, Hoboken & Manhattan, and Hudson & Manhattan companies were formally merged under the latter name, which shortened to its "H&M" acronym defined an operational heritage that the system is well-remembered for a century later.

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Around New York's Transit System

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over five years, but it is $15 billion short — the largest funding gap ever and a striking sign of the difference between what the system needs and what MTA can afford.

Mr. Cuomo has called the plan "bloated" and has not addressed the funding gap, instead publicly drawing attention to other infrastructure projects, including a new Tappan Zee Bridge and his proposal for an AirTrain to La Guardia Airport. But MTA's Chairman, Thomas F. Prendergast, has argued that the measures outlined in the capital plan are essential, such as replacing aging cars and tracks, modernizing the signal system so more trains can run, and beginning the next phase of the Second Avenue Subway.

For most riders, their only regular connection to the agency's budget is the money they load onto their *MetroCard*s. While some believe MTA makes a profit by charging more than the ride costs, the system is, in fact, heavily subsidized, with fares making up about 40 percent of its operating revenue. Experts have called for a more sustainable source of funding; one proposal, by MoveNY, would establish tolls for drivers on the East River bridges in Manhattan, an idea that was rejected in Albany in 2008.

The most recent MTA statistics reveal that train delays increased in 2014, and new figures for January and February will probably reflect worsening delays.

One metric called "wait assessment" — essentially whether trains arrive at platforms on time — decreased by 1.5 percent across the system in 2014 compared with 2013, and long gaps in time between trains rose to 6.4 percent, from 3.9 percent. Officials attributed the delays over the last year to several factors: an increase in track work, much of it in response to Hurricane Sandy; more aggressive track inspections; and safety slowdowns through work areas.

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Commuter and Transit Notes

No. 318

by Ronald Yee and Alexander Ivanoff

NJ Transit

A "leak" in the upcoming fare increase was made by the ***Wall Street Journal*** the week of April 13. Commuters could be hit with an NJ Transit fare increase that might reach 9 percent in fiscal year 2016, based on budget documents for the coming year.

NJ Transit's budget documents said revenue from fares would increase by 8.8 percent, from the $928.6 million earned in fiscal year 2015 to $1.01 billion in 2016, according to an Office of Legislative Services review of NJ Transit's financials. However, total NJ Transit ridership only grew by two percent between January, 2014 and January, 2015 to 270 million passenger trips, according to the last agency ridership report. That is the highest ridership since fiscal year 2009.

So far, the agency has not announced a fare increase package or commented on the ***Wall Street Journal*** report.

Other factors that could force an increase include the Passenger Rail Investment and Improvement Act of 2008. PRIIA will affect the rent that NJ Transit pays to Amtrak to run 450 trains a day on the Northeast Corridor and for using the ancient Hudson River Tunnels and Penn Station in New York.

While the exact amount is being negotiated and would take effect in October, Hakim told a State Senate budget panel that PRIIA could add $20 million to the $80 million "rent" that NJ Transit pays currently.

The agency has a $60 million budget gap to close, which has been cut in half from $120 million. That is not counting possible revenue from a fare increase and additional savings from service reductions. Executive Director Hakim said a fare increase is a last resort and pledges that if fares are hiked, commuters will not be hit with the 22 percent increase as they were in 2010.

NJ Transit has made some cost-cutting measures, such as not filling vacant positions where possible. Others are a little more oblique, such as "locking in fuel contracts" and "maximizing contracts and service options."

NJ Transit officials said they cannot offer details on other cost-cutting measures until after the fiscal year 2016 budget is drafted. Commuters are almost universally opposed to a fare increase for the same service, adopting the hashtag #nofareincrease on Twitter. (NBC New York, April 15 and NJ Advance Media, April 15)

Other Transit Systems

Boston, Massachusetts

Keolis Commuter Service restored full weekday MBTA commuter rail service on March 30, with the number of seats available to passengers returning to pre-storm levels. The commuter rail system had been operating on a limited schedule for a month after a series of record-setting winter storms dropped more than 100 inches of snow on the Boston area, causing damage to railroad infrastructure and the locomotive fleet.

In the wake of the storms, 23 of the 65 locomotives needed to run regular weekday service were disabled when their traction motors were damaged by snow and ice. In just three weeks, a total of 67 traction motors failed. By comparison, about 20 traction motors would be expected to fail during an entire "normal" winter. Weekend schedules remained at full service throughout the recovery.

To add insult to injury, MBTA is fining Keolis $1.6 million in penalties, which will be either reduced or eliminated because of a clause in the contract that allows for "acts of God." (***Trains*** Magazine via Al Holtz, March 27)

Pittsburgh, Pennsylvania

Pittsburgh area planners are on board with a proposal for Amtrak to add more trips to its *Pennsylvanian* passenger service.

Lawrence County Commissioner Steve Craig recently wrote a letter to the Acting Secretary of the Pennsylvania Department of Transportation on behalf of the Southwestern Pennsylvania Commission, expressing support for increased passenger rail service from Pittsburgh to Philadelphia and New York City.

The 10-county regional planning agency, of which Lawrence County is a member, met on March 30 and discussed the need for added passenger train service in the state. About 30 commission members voted to send Craig's letter to Acting Secretary Leslie S. Richards.

Lawrence County residents who ride Amtrak typically would board it in Pittsburgh.

According to Craig, the *Pennsylvanian*, which travels daily between Pittsburgh and New York City, is an economical ride.

The Commission is asking the state to approve two more trips per day on that route. Currently, there is only one trip per day.

Increasing the service from one to three trains daily would provide increased access for many travelers to Pittsburgh and points west, and from the east to Harrisburg and points east along the *Pennsylvanian*, Craig wrote.

"In addition, increasing efficient, multimodal options for travelers has a positive impact on decreasing highway congestion and improving air quality in the Southwestern Pennsylvania region across the Commonwealth," the letter states. (***New Castle News***, April 2)

Washington, D.C. area

The Washington Metropolitan Area Transportation Authority (WMATA) system's first 7000-series metro train from Kawasaki Rail Car USA will enter passenger service April 14, on the Blue Line. The order is a first for WMATA as Metro's fleet has primarily consisted of cars built by American and European manufacturers. The

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new cars are not backwards compatible with the existing fleet, a first for WMATA.

WMATA said that the introduction of the new train will be the most significant milestone to date for a project that has spanned nearly five years from approval and funding, through design and engineering, to testing and certification.

The first train in regular passenger service with eight 7000-series cars will depart from Franconia-Springfield shortly after 7 AM on April 14. The Blue Line serves five of WMATA's six jurisdictions: Fairfax County, the City of Alexandria, Arlington County, the District of Columbia, and Prince George's County.

The stainless steel-bodied 7000-series cars feature new technologies "that are generations ahead of WMATA's current railcars," all of which were designed to be "backward-compatible" with WMATA's oldest cars, the 1000-series, WMATA said. For example, WMATA's current railcars use analog technology for onboard public address announcements, whereas the P.A. systems on 7000-series cars will be entirely digital and feature "clear, automated announcements."

The second 7000-series train is already undergoing testing and is expected to quickly follow the first train into passenger service.

WMATA has ordered 528 of the new railcars, enough to replace all 1000- and 4000-series cars and expand the size of the fleet by 128 cars. Options to purchase an additional 220 cars can be exercised if funding is committed by midyear. Funding jurisdictions have all indicated that they are inclined to support purchasing the additional 220 cars.

Safety is at the forefront in the design of the 7000-series cars, which are built with CEM (crash energy management) to meet improved crashworthiness standards to absorb maximum energy in the event of a collision in addition to common safety features found on most heavy rail equipment found through the United States. Earlier WMATA cars have been criticized for their lack of crashworthiness, one serious incident being on the Red Line back in June of 2009, when two trains collided, with one telescoping.

Unlike earlier railcar series that can be mixed and matched within a single train, the 7000-series cars will operate only with other 7000-series cars, and all of the new trains will all be eight cars in length. The cars will also be in a quad-unit configuration, meaning that the cars will operate in four-car sets, allowing the accommodation of 40 more passengers per eight-car train than in older models because of fewer Operator compartments. See the back page of this issue for a review, including a photo. (***Railway Age***, March 31)

FLORIDA

South Florida Regional Transportation Authority/Tri-Rail's new Miami International Airport Station (MIA) was set to open April 5, 2015, as part of the Miami Intermodal Center (MIC).

Tri-Rail says passengers will have "a seamless and immediate connection to the airport via a short ride on the MIA Mover" (people-mover).

Tri-Rail's schedules were to be slightly adjusted to include the additional stop, which will return to being the southernmost station on the 72-mile rail corridor. However, arrival times for the remaining stations are to remain the same as in the previous Tri-Rail schedule.

MIC is designed to accommodate several transportation connections. Tri-Rail joins Miami-Dade Transit's Metrorail rapid transit system and Metrobus service, which already have access to the facility, along with the Rental Car Center and taxi service. Amtrak will move into the facility once platform improvements are made. (***Railway Age***, April 2)

OHIO

At stake is whether RTA in Dayton, Ohio can reduce dependence on diesel buses and replace the underperforming, rusting ETI trolleys that have plagued the publicly-funded transit system for 17 years.

The existing ETI trolleys are nearing the end of their 18-year anticipated lifespan and must be replaced, The NexGen electric trolley prototypes being tested would enable RTA to run a trolley to the end of its line, drop the poles, and run on battery power to nearly any point RTA serves in Montgomery County and part of western Greene County.

A second NexGen being tested uses a diesel engine and a generator rather than a battery to power the trolley off-wire, and is the first of its kind to be used for off-wire operation in the U.S., according to John Andreas, Vice President of Business Development for the NexGen prime contractor, Vossloh Kiepe Inc. of Germany.

RTA is also the first to use the battery version of the NexGen trolley for extended off-wire operation.

Replacing the existing trolleys comes with a high price tag. RTA — one of just five U.S. transit systems still using electric trolley buses — has budgeted $43 million to buy 41 more of the dual-mode trolleys by 2019 if the prototypes being tested pass muster and federal funding can be obtained to cover most of that cost.

The trolleys — which will cost about $1 million — are more than twice as expensive as conventional low-emission diesel buses and about 40 percent more costly than hybrid diesel/electric buses.

Dual-mode trolleys are more common in Europe, but the Vossloh battery systems used there, as well as those purchased by Seattle and San Francisco, are designed as backup sources that allow the trolley to go at most a few miles to avoid construction and obstacles and at a speed of less than 25 miles per hour.

The NexGen battery can power a fully loaded trolley at full speed for up to 20 miles off-wire by RTA estimates. Vossloh Kiepe states its design is good for only 15 miles, and that depends on how many people are on the bus and the amount of power being used for heating and air conditioning.

RTA officials disagree with the "guinea pig" designa-

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tion for the NexGen trolley's lithium titanate oxide (LTO) battery, calling LTO a "proven technology (that) has been used in transit for over four years and has a solid record of performance." The technology allows for batteries to charge faster and is also more environmentally-friendly than traditional batteries. However, the LTO is so new it was not even included in the original bid specifications for the NexGen.

The tortured path of the ETI trolleys offers clear lessons about the expensive consequences of missteps and bad decisions.

Fifty-seven trolleys were purchased for $550,000 each from a now-defunct company called Electric Trolley Incorporated (ETI), the lone bidder. ETI was a private joint venture between Skoda, a Czech Republic company, and defense contractor AAI Corporation of Hunt Valley, Maryland. RTA Executive Director Mark Donaghy said he has been told that RTA's bid specifications at the time mandated "proven" — which he said guaranteed old — technology, making the ETI buses outdated from the start. An eleventh-hour redesign of the bus is blamed for serious structural problems that later developed.

During the testing period of three prototype trolleys, people complained about the location of the handicapped ramp toward the back of the bus, said Gary Robinson, RTA Project and Infrastructure Manager. A decision was made to redesign the trolley to make it wider to better accommodate wheelchairs in the aisle and to move the heavy wheelchair ramp to the front door. The redesign was compromised and the ramp was too heavy for the front of the bus. To make matters worse, the frames were damaged by salty moisture during shipment from the Czech Republic, leading to the corrosion now plaguing the trolleys. Testing was inadequate.

Electrical problems came first. Then a broken cross-road bracket weld was found on one bus and cracks in the same part on 39 others, along with cracked rear main frames on 13 buses. The National Highway Traffic Safety Administration warned that the bus could "catastrophically fail," and in 2001 ETI recalled the buses and fixed them under warranty. Only seven of the 57 buses purchased from ETI were not defective.

San Francisco, ETI's only other customer, also had defective trolleys. By 2004, the company was out of business.

Over the years the ETI trolleys have continued to cause problems. The wheelchair ramps frequently break. The trolleys were supposed to be dual-mode, with enough battery power to detour around obstacles, but that has proven to work only intermittently. Also, RTA agreed to exclusively buy parts from ETI, which initially drove up the costs. Then, after the company dissolved, RTA had trouble finding parts. A 2010 RTA study found the ETI trolleys were more expensive per mile for both labor and parts than the diesel buses. The diesel bus also traveled 65 percent more miles between mechanical failures than the ETI trolleys.

The decision on whether to buy the NexGen trolleys will not come until late this year.

After agreeing last June to purchase the four prototypes at $1.4 million each, RTA has an option to buy up to 75 more over five years at a cost of about $1 million each, plus 3 percent annual inflationary increases built into the contract.

If RTA bought all 75 the total cost with inflationary increases would be $91.2 million, which Donaghy said would be the largest capital expenditure in RTA history. By comparison a standard diesel bus costs $440,000 and a hybrid diesel/electric bus costs $600,000.

But trolley advocates say cost is not the only factor to consider when weighing trolleys versus diesel buses. The trolleys' lack of carbon emissions and low noise levels make them ideal for an urban environment, the 2010 RTA study noted. The prototypes being tested also are designed to last longer than diesel buses. And the city has strong ties to the trolleys, and advocates in the area have fought successfully in the past to keep them.

Some also make financial arguments for keeping the trolleys, including the infrastructure for the 124-mile system, already in place and valued at $96 million.

Having trolleys also makes available federal money that the transit system would not otherwise get. Known as "fixed guideway" funding and targeting transit systems with rail or trolley lines, the money can be used for all transit operations, not just the trolleys. Last year RTA received $17 million in fixed guideway funding.

So far RTA tests show the battery trolleys performing better than the diesel/generator ones, but adjustments are improving the performance of the latter, said Bill Ingram, chief maintenance officer for RTA. Donaghy emphasized that RTA is under no obligation to buy any more of the NexGens and argued that it is too soon in the testing period — which began in December, 2014 — to determine if more trolleys should be purchased or which version is preferred.

The debate over trolleys has played out in other cities. While Edmonton discontinued its system, King County Metro in Seattle has continued purchasing trolley buses. However, the keys to the future of trolley buses in the United States may lie with Dayton. (***Dayton Daily News*** via John Pappas, April 3)

Texas

Dallas's first "modern streetcar" has arrived from Brookville, Pennsylvania.

"When the Dallas-Oak Cliff Streetcar opens for business on April 13, it will be operating a brand new, first-of-its-kind vehicle carrying passengers from downtown Dallas to north Oak Cliff," says Dallas Area Rapid Transit (DART) spokesman Morgan Lyons. "The vehicle, which was designed and built by Brookville Equipment Corporation, will be the first streetcar in the United States that utilizes wireless traction power. This means the vehicle will be powered by catenary on surface streets, but operate with an on-board ESS (Energy Stor-

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Commuter and Transit Notes

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age System) as it crosses the historic, 101-year-old Houston Street Viaduct."

The ESS, as described by Brookville, is a special feature of its partial-low-floor Liberty Modern Streetcar built for DART. It is a redundant lithium ion battery system charged through the overhead catenary system (OCS) that provides power while the vehicle is crossing the one-mile Houston Street Viaduct. An integrated battery management system (BMS) monitors the current charge state of the ESS "to ensure successful runs on the line," says Brookville. "The battery ESS is ideal for longer off-wire runs, due to its ability to store high power loads and its low discharge rate."

The project is a partnership of DART, the City of Dallas, the Federal Transit Administration, and the North Central Texas Council of Governments. The streetcar starter line runs 1.6 miles from Dallas Union Station to Oak Cliff.

Other than testing and operator training along the new corridor, the vehicle (and its twin, scheduled to arrive shortly) was to make its next appearance on April 9 as part of DART's participation in APTA's Stand Up 4 Transportation Day, which focuses on national transportation infrastructure advocacy. (***Railway Age***, March 23)

New Mexico

Amtrak was supposed to finalize the continuation of its New Mexico route of the *Southwest Chief* passenger train when Amtrak spokesman Marc Magliari told the ***Santa Fe New Mexican*** in March that the Southwest Chief will continue to make stops in New Mexico towns of Raton, Las Vegas, Lamy and Albuquerque.

The *Southwest Chief* travels between Chicago and Los Angeles, but part of the current route was in jeopardy because of questions about maintenance and upgrades of track. Due to track downgrades, BNSF offered to have the *Chief* be routed via Amarillo, Texas.

Colorado and Kansas moved aggressively last year to secure a federal grant and to allocate money for repairs on their sections of the *Southwest Chief* tracks. Colorado's effort was rooted in strong bipartisan legislative and Pueblo County leadership.

New Mexico's hold on its section of the route was much more tenuous. Governor Susana Martinez in 2014 authorized $150,000 for a study of the *Southwest Chief*'s costs and benefits. Martinez was less willing than governors in Colorado and Kansas to commit to the project because she said Amtrak historically was the beneficiary of federal subsidies. Because of the New Mexico Rail Runner, the commuter train between Santa Fe and Belen, New Mexico via Albuquerque, changing the *Chief*'s routing would have proven difficult for that service as well.

While the January 1 deadline has been dropped, funding is still shaky as $1.5 million in funding amendments were stripped from the Colorado House's state budget proposal and another funding bill was put on indefinite hold, forcing rail advocates to push legislators to find other funding sources. Last year, Colorado was part of a successful bid for a $12.5 million federal transportation grant.

(***The Pueblo Chieftain***, March 29 and KRCC-FM, April 9, 16, and 17)

Pacific Northwest

The Oregon Department of Transportation may not have enough money next year to continue providing Amtrak rail service between Portland and Eugene, according to budget discussions in the Oregon Capitol. Governor John Kitzhaber had set aside $10.4 million to keep the "Cascades" route operating, even as the federal government phases out its funding for routes shorter than 750 miles. Kitzhaber resigned in February due to a criminal investigation.

However, the Legislature's proposed budget includes just $5 million for passenger rail.

ODOT Assistant Director Travis Brouwer said it would very likely not be enough to keep the *Cascades* route operating, and it was a "distinct possibility" it would have to close.

The *Cascades* route runs from Eugene to British Columbia, and it includes two daily round trips between Eugene and Portland and between Seattle and Vancouver, B.C., and four daily round trips between Portland and Seattle.

The federal Passenger Rail Investment and Improvement Act of 2008 required states to eventually take on full responsibility for shorter routes, like *Cascades*, while the U.S. government continues to pay for longer ones.

Oregon must begin paying for the *Cascades* in the 2015-17 biennium, and it needs $28.1 million to cover the cost of Oregon train service, according to ODOT's budget report.

More than half of that is covered. About $6.6 million will come from Oregon's custom license plate fees. Another $4.1 million will come from the state Transportation Operating Fund, which is unclaimed refunds for gas taxes assessed on off-road vehicles. Finally, one-time federal funds will cover $6.9 million, for a total of $17.6 million. The $10.4 million allotted in Kitzhaber's budget would bring the total to $28 million, and that is what ODOT is asking for.

Without that money, the state does not believe it can keep the trains running.

ODOT Government Relations Manager Leah Craft wrote an email on Thursday to Amanda Hess, chief adviser to Senator Chip Shields, that outlined what would happen if ODOT does not receive $10 million.

"ODOT would need to give Amtrak 90-day notice to stop service but this would not occur until the 2015 session has been completed. Should the Legislature adjourn without funding passenger rail, ODOT would proceed with stopping service but not until that point," Craft wrote.

Already, advocates of train travel are concerned.

The Association of Oregon Rail and Transit Advocates is using its website to encourage enthusiasts to contact

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Commuter and Transit Notes

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the Legislature and push for full funding. It has also put out fliers in train stations, including Salem.

"In 2014 Oregon purchased two wonderful new Talgo trains so our state could meet the growing public demand for passenger rail. Now the service is threatened, and those new trains would go on the auction block," the website says. "Tell your lawmakers in Salem: 'Don't let it happen.'"

Brouwer said an end to the *Cascades* route would likely be permanent. (***The Leaf-Chronicle*** via the ***Statesman Journal***, March 30)

Los Angeles, California

A University of Southern California film student was hospitalized in "grave" condition after the car he was riding in was crushed by a Metro train near the school's campus on March 28, officials said. Nine people aboard the commuter train were also taken to hospitals after the crash, including the Train Operator. The collision was reported just before 11 AM near the intersection of Exposition Boulevard and Vermont Avenue, officials with the Los Angeles Fire Department said. About 100 passengers were on the train at the time of the wreck.

Investigators say the 31-year-old driver, who has not been identified, may have made an "improper turn" to his left, crossed the tracks and collided with the train, said Sgt. Michael Verlich of the Los Angeles County Sheriff's Department. The car became wedged between the train and a pole, causing the train to come off the tracks and trapping the driver inside the mangled vehicle.

In all, 21 people received medical attention, LAFD Assistant Chief Don Frazeur said. The driver, who is also a military veteran, was taken to the hospital in "grave" condition after being rescued from the crumpled Hyundai Sonata

The Train Operator, identified as Kenneth Goss, was recovering at home with his family after being treated at the hospital for injuries that were described as "serious." He has worked for Metro for 29 years, said Metro spokesman Jose Ubaldo.

Eight others were taken to the hospital to be treated for minor injuries. Several others were treated at the scene.

LAFD officials initially said two cars had been involved in the crash with the train, but later changed that number to one.

The crash interrupted additional Metro train service for a crowd of 80,000 at the Mexico vs. Ecuador soccer match at the Los Angeles Memorial Coliseum. (NBC Miami via NBC4 Los Angeles, March 29)

Toronto, Ontario, Canada

The Toronto Transit Commission has awarded Bechtel Canada Company a contract worth "up to $80 million" for project management of the Spadina subway extension to York, it announced on April 13. The contract is good until the end of March, 2018.

The 8.6-kilometer (5.3-mile) extension of Line 1 is due for completion by the end of 2017. It will run north from Downsview beyond the city's boundary to Vaughan Metropolitan Centre in York. Six stations are under construction, including an interchange with GO Transit commuter rail services at Downsview Park.

The Toronto City Council recently authorized C$90 million for the project, with a further C$60 million allocated by the Regional Municipality of York. In addition, TTC and BAI Canada are following MTA in New York by installing advertising-supported free WiFi service at all subway stations in the "downtown U" and at Bay and Spadina. The remaining stations are to be covered over the next two years. (***Railway Gazette***, April 15)

Germany

Siemens has officially been awarded a €1.7 billion (US$1.86 billion) contract by Germany's Rhine-Ruhr Transport Authority (VRR) to supply 82 Desiro High Capacity (HC) EMUs for the Rhine-Ruhr Express (RRX) network and maintain the fleet for 32 years.

VRR announced the order on February 10 and was awaiting approval from the tendering authorities—VRR, Rhineland Local Transport (NVR), Westphalia-Lippe Local Transport (NVR), North Rhineland Palatinate Regional Rail Transport (ZSPNV-Nord), and North Hessen Transport (NVV). Delivery of the trains will begin in 2018 and the fleet will enter service in time for the start of the RRX concession in December, 2018.

Siemens says this is its largest German regional rail transport order and the company will build a maintenance facility in Dortmund-Erving to service up to four trains simultaneously. Up to 100 specialists will work at the facility, which will encompass a vehicle hall, specialized workshops, an outside washing station, and storage facilities for 10 trains.

The Desiro HC trains combine single-level cab cars with bilevel intermediate vehicles. According to Siemens, a 105-meter-long (345-foot-long) four-car Desiro HC set with two bilevel cars will seat up to 420 passengers.

The five-line RRX network will introduce a consistently high-quality fast regional rail service to Germany's most densely populated region, with trains running at 15-minute intervals on the core Dortmund-Cologne Line at a maximum speed of 160 kph (100 mph). According to the tender, 71 trains will be required to operate the full timetable with the remaining sets covering maintenance.

VRR says the transport authorities decided to procure rolling stock directly, rather than through the operating concessionaire, because this will result in lower life-cycle costs and a standardized fleet. DB Regio opposed this structure and launched a legal challenge against VRR, which was rejected by a court in Münster in October, 2014. (***Railway Age***, March 26)

Japan

Central Japan Railway Company (JR Central) set a new maglev world speed record on April 16, when a manned seven-car L0 series train reached 590 kilometers per hour on the company's test track between

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Around New York's Transit System

(Continued from page 6)

An MTA spokesperson attributed the recent uptick in delays this year to snow and low temperatures that caused rails to break and ice over, but transit advocates say the subway should be able to handle Northeast winters.

"Our subway system should not be this fragile," said John Raskin, executive director of Riders Alliance. "People should be able to rely on effective mass transit even if there is snow."

Traditionally, the riders' advocacy groups have been in conflict with MTA. In a rare sign of cooperation, the advocacy groups are pushing for MTA's capital program to be fully funded.

Even when there is money for improvements, the ensuing disruptions only feed rider frustration. On 7, where a more advanced signal system is being installed to allow more trains to run, a City Council member from Queens, Jimmy Van Bramer, criticized recent delays and track work that shut down service on weekends, including this month on the day of St. Pat's for All parade in Sunnyside.

The authority should install the signal system, known as communications-based train control, on a more aggressive schedule, said Charles Brecher, the Consulting Research Director at the Citizens Budget Commission, a business-financed fiscal watchdog group.

Mr. Brecher has called for measures not limited to Communications-Based Train Control (CBTC) and to improve service and shore up the authority's finances, including higher subsidies for the agency from drivers' tolls and fees. MoveNY organizers say their plan, which also lowers tolls on some other bridges, would fully finance the capital program. *(Editor's Note by Sasha Ivanoff: It should be mentioned that MTA's formation in 1968 was based on using Triborough Bridge and Tunnel Authority (TBTA) surpluses to fund the New York City Transit Authority. Also, one of the editors of the* **Bulletin** *attended the MoveNY debut last year.)*

7 Extension Delayed Again

Subway riders who have been waiting for a new 7 station on the far west side of Manhattan for years will have to wait at least a little longer.

The opening of the station, once planned for the end of 2013, is now likely to be pushed back until July, officials said on March 20 at an MTA Board meeting. Already delayed by the complexities of the station's custom-made diagonal elevator, officials say their biggest remaining obstacle is to finish testing of the communications system and fire alarm.

Most of the construction work for the station, at 34th Street-11th Avenue, is done, the Vice President for MTA Capital Construction Company, Anthony D'Amico, said as he showed Board members glossy new images of the station's lobby with a colorful mosaic overhead.

But riders still cannot use the station well over a year after Mayor Michael Bloomberg took a ceremonial first ride to it shortly before leaving office. The latest delay comes as MTA lobbies state and city officials for more money to pay for its five-year capital plan.

Repeated delays on major projects like the 7 extension hurt MTA's credibility, said Gene Russianoff, the staff lawyer for the Straphangers Campaign, a rider advocacy group.

In November, the gleaming Fulton Center opened in Lower Manhattan, years late and over budget. The first phase of the perpetually delayed Second Avenue Subway is scheduled to open at the end of 2016, and the East Side Access project, which would bring the Long Island Rail Road to Grand Central Terminal, is supposed to arrive in 2022.

The 7 extension will take the line farther west from its current end point, at Times Square. The $2.4 billion project was approved by the Bloomberg Administration as part of the Hudson Yards development, and construction began in 2007.

Officials had said the new station would open in the second quarter of this year, but on Monday conceded it would probably occur in the third quarter. They are still working to complete "integrated testing" of ventilation fans, third-rail power, a public address system, and elevators and escalators, among other components, Mr. D'Amico said.

Carmen Bianco, the President of New York City Transit, addressed the complaints at the meeting, saying he understood that service is "not where we need it to be and not necessarily meeting customers' expectations."

Mr. Bianco attributed recent problems to increased ridership and a particularly "brutal" winter. He told the Board he would update it in the next month or two on plans to address service problems.

Lo-Vs Run for New York Yankees Opening Day

Despite all the doom and gloom, sports and electric traction crossed paths on April 6 when NYC Transit brought out a four-car set of Lo-Vs for the season opener at Yankee Stadium, a game which the Bronx Bombers lost to the Toronto Blue Jays 6-1. The crosstown New York Mets defeated the Washington Nationals 3-1 in Washington, D.C. ***Sports Illustrated*** incorrectly noted that the cars were restored for the game. The cars have been part of the museum fleet for years. ERA member Bill Erland was in one of the photos featured on the ***Sports Illustrated*** website. MTA noted that "The Lo-Vs were named for a newly-developed control that didn't rely directly on the 625 volts d.c. produced by the third rail to operate. The control used a stepped-down voltage relayed from a series of batteries, fed from the third rail. The 'new technology' set up simplified control wiring and significantly reduced the possibility of accidental electrocution to train operators when they coupled the cars in the yards." (***Sports Illustrated*** via the ***New York Post***, April 6; ***New York Post***, April 6 and MTA press release, April 3)

TRACTION TOUR TO SOUTHERN EUROPE
by Jack May
(Photographs by the author)
(Continued from April, 2015 issue)

Last month's issue contained the narrative of my visit to Naples. One question raised in correspondence about this segment of my report dealt with the direction traversed by the three car lines. One would think that Route 4, which runs along the Mediterranean, would operate from north to south, as that is the predominant direction of the western coast of Italy. But in the Naples area the coast turns west-east for a relatively short distance, as reflected by the bottom of the upside-down "T" I used to describe the route pattern.

Here are some photos of the heritage streetcar operation from Sunday, April 28.

As indicated in the narrative in last month's issue, I luckily was able to board "Peter Witt" 1029 and found it to be carrying many local traction fans. The regularly scheduled car was running to the eastern terminal of Line 2 at San Giovanni a Teduccio when I boarded it, and then headed back.

On our return to Emiciclo Poggioreale loop I saw we were way ahead of a regular car at Piazza Nazionale, where Lines 1 and 2 run through the center of an elongated traffic circle. I somehow persuaded 1029's operator to open his doors for a quick photo stop and some of the other fans appreciatively followed me out. They are shown reboarding after completing their photos.

Heritage "Peter Witt" 1029 pulled onto a siding for photographs at the Emiciclo Poggioreale loop, which also allowed its follower on Route 2, a low-floor Sirio car, to pass it and make a quick turn.

The Italian railfans did not mind photographing the star of the day's activities with their colleagues congregating alongside.

A side view of the classic 1935-built Neapolitan streetcar.

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Traction Tour to Southern Europe

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After having passed an orange streetcar, I withdrew from 1029 along Via Nuova Poggioreale. The operator kindly waited while I took a photo of the heritage car before continuing his journey down Route 2.

Later in the afternoon I was able to take a photo of the heritage car along Via Nuova Poggioreale while it was being followed closely by a modern Sirio LRV.

Views of both sides of No. 971, the orange car. The first view was taken along Via Nuova Poggioreale, where I quickly boarded it a few seconds after I snapped the photo, while the second is on the short section of private right-of-way parallel to the Mediterranean, where I bade my farewell.

Our cruise aboard the *Eurodam* came to an end on Monday, April 29. It was a very enjoyable experience, despite the glitches of not being able to visit Tunis and the lateness at some ports. The food was excellent, and we enjoyed the company of other travelers at dinner and at other events. It was an excellent way to get around from one interesting port to another. But without these visits, we would have been bored by a large number of "fun days at sea." I suspect that when future cruises with interesting ports are offered by Holland America or a similar carrier, we would consider doing this again.

Since we were due to arrive at Civitavecchia at 7:00 we awoke early and had our last breakfast on the boat at 6:30. We signed up for "Expedited Disembarkation," which meant we would be among the first off, but would have to handle our own luggage (one roll-on each). Clare's flight back to the U.S. was scheduled to leave Fiumincino at 12:05 and we figured it would take about an hour and a half (plus or minus 10 minutes) to make the trip from the railway station at Civitavecchia to the airport, so we wanted to get to the train by 9 AM. As it happened we were off the vessel at 7:20 and reached the end of the pier by bus by 7:35. However, instead of taking a taxi to the railroad station, we, and various others from the bus, were approached by touts for van services running directly to the airport. While it would be cheaper to take the train, it would also mean transferring at the Trastavere station (and who knew if there were escalators or elevators there to help us change platforms), so we opted for a direct ride for 25 Euros.

Thus we arrived at the airport well before 9:00. It was easy to check Clare in for her Lufthansa flight (trip

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Traction Tour to Southern Europe

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would involve a transfer at Munich) and we said goodbye as she entered the Security area. As it happened Clare's flights operated on time and our son picked her up at Newark Airport later in the day.

Instead of making the 10:58 local train for the 48-minute ride to Rome's Tiburtina station, where I would board my *Italo* high-speed train to Venice-Mestre, I was able to catch the 9:43, which got me there at 10:45 (10:31). With almost three hours before my departure, I decided to ride some more trams, and stowed by bag in the station's left luggage office. This turned out to be a major mistake.

I rode Metro line B for two stations to Policlinico, and then transferred to the tramway to ride for about 10 stops to the Borghese Gardens neighborhood, where I took a number of photos of cars on the 3 and 19 lines. These views were included in segment 11 of this report, which covered my visit to Rome on the day we boarded the cruise. I was quite successful, as the weather was beautiful and service was frequent.

I got back to Tiburtina at 13:00, well before the scheduled 13:25 departure of my HSR train. However, the left luggage area was locked up tight. There were other folks clamoring for their bags as well as me, but there was little anyone could do. The attendant finally came back at 13:30, but I missed my train. He couldn't care less.

I rushed to the *Italo* ticket office, where I was told that my ticket was not refundable, and that I had missed the last train of the day to Venice. The agent told me I could not use my ticket on the competing Trenitalia service (which runs over the same tracks and is much more frequent), but she said she would get me on *Italo*'s next train (en route to Milan and Turin), which would take me as far as Bologna, and I'd be on my own after that. She reissued the ticket for a 13:55 departure, and I had to hurry to make it up to the platform in time.

The train was quite nice, but my coach seat (car 7 seat 54) was facing backwards, on the aisle instead of next to a window, and at the vestibule to boot. But I was happy to be on my way. My coach had two-and-two reclining seats, with vending machines for food and drink located just beyond my place. The car's annunciator indicated that we were travelling at 280 kph (175 mph) for most of the way. At one point we hit 300 kph (186.4 mph), which is the fastest I have ever travelled by rail. The train looked like it might have been sold out, as I did not see any vacant seats in my car or the adjacent ones. One of the other indications in the informational display is the outside temperature, which hit 31 degrees Celsius (88 degrees Fahrenheit) at Florence, but dropped down to 24 degrees C (75 degrees F) by Bologna, where I alit. If not for the trauma of not being able to get my bag in a timely manner I would have enjoyed the trip, and probably would have spent some time exploring the train. But for the most part I just sat back and closed my eyes.

I purchased a ticket for the next departure to Venice-Mestre from a machine for EUR 10.35 and rode a crowded 16:20 double-deck local to my destination, arriving on time at 18:10, which was three and a half hours later than originally planned. I easily found the nearby Hotel Cris, which seemed to be staffed exclusively by attractive young women. My original plan had been to spend the hours before dusk exploring the Trans-Lohr rubber-tired guided tramway, and then sightsee in Venice itself the following morning. As a result of the left luggage incident, I gave up Venice as I still wanted to photograph the tramway (and I've visited the lovely canals and ancient structures before). Thus that's how I would spend the following morning, Tuesday, April 30. The ladies recommended an excellent restaurant for my dinner, and after my first meal since breakfast, I took a quick round-trip on the tramway.

Mestre, the arm of Venice on Italy's mainland, has a population of about 175,000. Its tramway is 4 miles long and has 19 stops (see http://www.urbanrail.net/eu/it/venezia/venezia-mestre.htm). It opened in 2010 and a one-way journey takes 24 minutes. The 20 four-section low-floor rubber-tired cars on the property look like LRVs and collect current from overhead wires using pantographs. I had ridden the first installation of this technology in Cleremont-Ferrand, France (home of Michelin Tires) 4 years earlier, and found no appreciable difference in this newer installation. The cars are guided by a single rail, which is also used to return the electric current, but because rubber tires are used, the right-of-way is always paved. Cars can operate in mixed traffic or separated from motor vehicles, with the latter being the Mestre's general modus operandi. Weekday headways are every 10 minutes.

I should make mention to the purists among you that despite the use of rubber tires I consider the line a tramway rather than a trolleybus installation. I do not recommend it, as I find the quality of the ride inferior to standard light rail, being somewhat noisier and bumpier, as well as having occasional vibrations. Probably because of the technology, seating in the cars is somewhat limited, and a 1-and-1 layout is utilized.

Further, I am not convinced there are any savings in capital and operational costs as many of the proponents of rubber-tired transport claim. Nevertheless, I rationalize my interest in these lines as being akin to my pleasure in exploring the rubber-tired metro systems in Montreal, Mexico City and other locations around the globe. In summary, I have concluded that these systems are somewhat inferior to steel-wheeled installations, but way better than buses.

It was drizzling when I arose in the following morning. The beautiful skies I had experienced for most of the previous two weeks were gone, and the weather for the last two days of my trip would be mostly overcast, but with occasional short periods of sun. But don't assume there will be only two more segments to this report. In these two days, April 30 and May 1, I would cover local traction systems in 5 different cities.

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Traction Tour to Southern Europe

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After breakfast, I walked over to the tramway and rode it again, stopping mainly in the downtown section of town for photos in dim light. I also observed the construction of an underpass at the mainline railway, which will allow the line to be extended to neighborhoods on the other side of the tracks. I finished my "work" at about 10:15, checked out of the hotel, picked up my bag, and rolled it down to the railway station, where I bought a ticket to Bergamo and continued my rail journey.

The inner terminal of the rubber-tired tramway is where Via Cappuccina ends at the Trenitalia tracks. The sidewalk is extended to allow step-free access to the railcar. Although marked Stazione F.S., the stop is a good two blocks from the station.

As the line approaches the center of town, it enters a pedestrian/transit precinct, although you would not know it from this photo...

...or this one.

This scene and the next were taken at the main square in Mestre...

...Automobile traffic is routed counterclockwise around a small park in the center, but the tramway runs in both directions along one side of the circle.

The Via Cappuccina alignment will tunnel under the railroad tracks in the near future, allowing for a major extension of the rubber-tired tramway southward. The narrow width of the underpass probably makes it look like it will be open only to transit.

(Continued next issue)

FROM MY VANTAGE POINT: THE TOWER PUZZLE
by Michael Ditkoff

Vantage Point: a position or place that allows one a wide or favorable overall view of a scene or situation.

I visited the South Norwalk Tower Museum last June. The museum is the former South Norwalk, Connecticut interlocking tower that controlled the signals and switches on the New Haven Line between South Norwalk station to the west and the east side of the CP 241 Bridge, formerly called Walk Movable Bridge. (This is the malfunctioning bridge that sometimes does not close and disrupts rail operations.) CP 240 is within station limits.

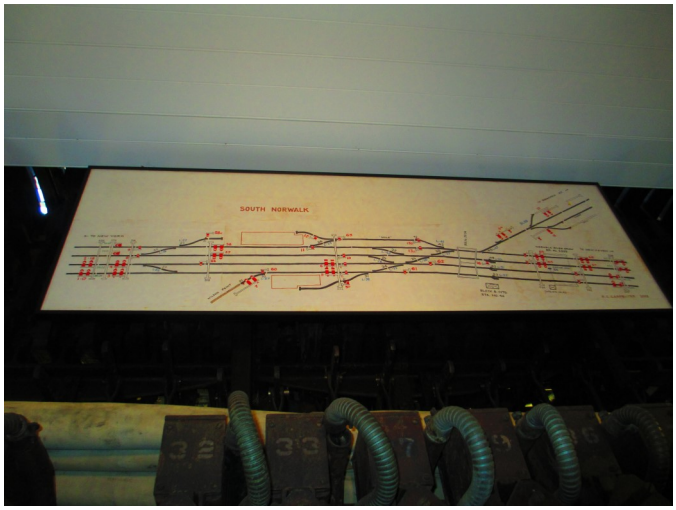
The schematic diagram at the bottom of the page illustrates the switches, signals, and interlocking levers. The South Norwalk tower is the oldest tower I visited. In the Rockaway Parkway article in the January, 2015 issue, switches and signals were interlocked when the signal lever was moved and remained interlocked until the train cleared the signal and the signal lever restored to neutral position. This tower operates differently. Pulling the signal lever does not interlock the signal with the associated switch. South Norwalk Tower has a third lever called the interlocking lever. After the route has been set and signal lever pulled, the interlocking lever has to be pulled to interlock the signal and switch. The numbering scheme is also different from other towers. The levers are numbered in numerical sequence without regard if the lever is a signal, switch, or interlocking lever and if the number is even or odd.

See photo on left, below. For best viewing, look at the photo at http://www.nyrre.org/Gallery/index.php/Vantage-Point/2015-Articles/The-Tower-Puzzle/1, which shows the schematic diagram in color.

The levers are coded based on the schematic diagram. The signals are red, so the red levers control the signals. The switches are black, so the black levers control the switches. The interlocking levers are blue, so the blue levers are the interlocking levers. The signal levers are grouped together and not intermingled with the associated switches. However, the switch levers are intermingled with their associated interlocking lever. Switches and interlocking levers are numbered consecutively. A photo of the levers is on the right, below.

The red and black levers are in the neutral position and the blue levers have been pulled. Each lever has a release that has to be pulled before the lever can be moved. For best viewing, look at the color photo at http://www.nyrre.org/Gallery/index.php/Vantage-Point/2015-Articles/The-Tower-Puzzle/3. There is an electrical panel against the wall.

Michael Ditkoff (trip@nyrre.org) writes the Vantage Point column in the New York Railroad Enthusiasts' **Bulletin** *newsletter. NYRRE's website is www.nyrre.org. This article originally appeared in the March, 2015 NYRRE* **Bulletin**.



Commuter and Transit Notes

(Continued from page 11)

Uenohara and Fuefuki in Yamanashi Prefecture.

The train sustained 590km/h for 19 seconds to surpass the record of 581km/h set on the Yamanashi Test Track in December, 2003.

The new record may not stand for long as JR Central said it would attempt to break the 600km/h barrier later in April.

Earlier the week of April 13, JR Central completed a record 4064km of test runs in a single day, beating the previous record of 2876km set in 2003.

Last December JR Central officially launched construction on the Yen 5.5 trillion ($US 46.5bn) Chuo maglev line, which will link Tokyo and Nagoya starting in 2027. Trains will travel at a maximum speed of over 500km/h on the line with a journey time of just 40 minutes, an hour faster than the current best timings on the Tokaido Shinkansen. (***International Railway Journal***, April 17)

Around New York's Transit System

New York City Subway Had a Bad Winter

According to *The New York Times* (March 20), widespread problems across the subway system over the winter and early spring left weary commuters waiting on crowded platforms, stranded inside stalled cars, and scrambling to find alternate routes.

But transit experts and advocates say conditions will not improve unless MTA invests heavily in upgrading and expanding the system's infrastructure — the tracks, the trains, and the tunnels that power the city's daily transit miracle, except when they do not.

MTA officials acknowledge that delays have grown and point to a 110-year-old system that is working to accommodate a record six million riders a day. Ridership has reached levels not seen since the Third Avenue "L" was in service, as the agency does more with less.

On one particular evening in March, F was slow through Queens, 5 was held up in Lower Manhattan, and L was disrupted by a train with mechanical problems in Brooklyn. Riders are not suffering in silence. In late March, scores of them gathered for a rally in Queens to protest service collected is collecting hundreds of subway "horror" stories to send to Governor Andrew M. Cuomo and the State Legislature.

On March 22, the base fare rose to $2.75, from $2.50, the latest in what the Authority has said will be regular — and necessary — increases.

Transit advocates say that while they understand the angst over another fare increase, they are focused on securing money from state and city officials for the MTA's capital plan, which includes many of the very upgrades that would bring meaningful improvement to commutes. The plan proposes $32 billion in spending

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WMATA'S NEW KAWASAKI CARS DEBUT
by Paul Gawkowski

In a ceremony at the Reagan/National Airport station, the Washington Metropolitan Area Transit Authority (WMATA) introduced its new 7000-series Kawasaki cars on Monday, April 13, 2015. An eight-car train, 7001-8, of the new stainless steel cars was on display at the station for the 1 PM ceremony, which included speeches by several officials, including Virginia Governor Terry McCauliffe, WMATA Board Chairman Mort Downey, and representatives from the Japanese Embassy and the Kawasaki Corporation. Attendees included elected officials, transit and handicapped advocacy group representatives, reporters, and TV news crews, including one from a Japanese TV station.

Paul Gawkowski photograph.

According to WMATA officials, the new cars, the first of an $886 million, 528-car order, will eventually replace WMATA's oldest 1000-series cars. However, initially they will be used to expand service on WMATA's new Silver Line.

The 7000-series cars, which were assembled at Kawasaki's plant in Lincoln, Nebraska, are the first new cars that cannot be run in trains with older WMATA cars. Thus, several technological advances were possible because they did not have to be compatible with older cars. The-eight car train was scheduled to enter regular service on the Blue Line on Tuesday, April 14.

Following the brief speeches, all attendees, including your reporter and his wife, were invited on a brief inaugural trip from the Reagan/National Airport station to Rosslyn and back.

While the new 75-foot cars lack the 1970s panache of the older cars (earth tones, soft cushioned seats, and carpeting), they have a bright, clean look with cushioned blue seats, more leg room in the transverse seats, non-skid flooring, large windows, and electronic route signage. In terms of passenger comfort, the seating layout of the 7000s is far superior to the hard, all-longitudinal seats in NYCT's newest Subdivision "B" cars.

On the trip to Rosslyn, the ride quality of the new cars was very good and the noise level was low. During the trip, your reporter and his wife were interviewed by the Japanese TV crew. We both gave the Kawasaki cars a thumbs-up and said that cars like these were needed on new systems around the United States. I also noted that 7001, the car we were riding in, was vastly superior to the 125cc Kawasaki motorcycle I rode when I was in the Army in Thailand in 1969-70.

No doubt, on some TV Station in Tokyo, Denise and I are media sensations.