The Bulletin

Electric Railroaders' Association, Incorporated

Vol. 57, No. 6 June, 2014

The Bulletin

Published by the Electric Railroaders' Association, Incorporated, PO Box 3323, New York, New York 10163-3323.

For general inquiries, contact us at bulletin@erausa.org. ERA's website is www.erausa.org.

Editorial Staff:
Editor-in-Chief: Bernard Linder
Tri-State News and Commuter Rail Editor: Ronald Yee
North American and World News Editor: Alexander Ivanoff
Contributing Editor: Jeffrey Erlitz

Production Manager: David Ross

INCREASED SERVICE FOR 1939 WORLD'S FAIR

As soon as the Fair opened, IRT and BMT made major service changes that helped transport the additional riders.

The following service was operated during this period:

In 1939, before the Fair opened, IRT trains operated between Main Street and Times Square while BMT trains provided service between Main Street and Queens Plaza with trains making local stops. Second Avenue Elevated trains from Willets Point Boulevard operated to the following destinations:

	TIME OPERATED		
Manhattan Terminal	**Weekdays**	**Saturday**	**Sunday**
South Ferry	Rush Hour	AM Rush	—
City Hall	Midday	Morning Afternoon	—
57th Street-Second Avenue	Evening	Evening	Morning Afternoon Evening

There was no Second Avenue Elevated service leaving Willets Point Boulevard from 12:35 AM to 4:30 AM. Trains made local stops in Queens and express stops in Manhattan, southbound from the start of the AM rush to about noon and northbound from about noon until the end of the evening rush on weekdays. Saturday expresses operated about the same time as weekdays.

When the Fair opened, Second Avenue service was revised to avoid congestion at Willets Point Boulevard. Starting April 24, 1939, several Second Avenue "L" trains were put-in and laid up at 111th Street-Corona. At the end of the morning rush, three trains from Queens were turned at South Ferry and were laid up at 129th Street-Second Avenue. They were put in service for the evening rush, operated to South Ferry, and returned to 111th Street-Corona or Willets Point. When the Second Avenue "L" north of 59th Street was closed at Unification, June 12, 1940, these three trains were laid up near 57th Street during midday.

Express service on the Flushing Line started April 24, 1939 with IRT and BMT trains running alternate expresses and locals. When the Fair was closed, expresses ran towards Manhattan from the beginning of the AM rush until about 11 AM and towards Flushing from about 11 AM until after the PM rush on weekdays and Saturday. When the Fair was open, additional express service was operated towards Manhattan Saturday and Sunday evening and towards Flushing Sunday morning and afternoon in 1940 and probably 1939.

The following Second Avenue "L" weekday and Saturday headways were not changed when the Fair opened (no service 12:35 AM-4:30 AM leaving Willets Point):

WEEKDAYS		SATURDAY		SUNDAY		
AM Rush	4, 5	**AM Rush**	6		**Fair Closed**	**Fair Open**
Midday	15	**Morning**	12	**Morning**	14	14, 10
PM Rush	5	**Afternoon**	12, 14	**Afternoon**	14	10
Evening	15	**Evening**	16	**Evening**	14, 20	10

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NEXT TRIP: DELAWARE & ULSTER/TROLLEY MUSEUM, SATURDAY, AUGUST 2

TOWARD UNDERGROUND (AND UNDERWATER) ROLLING STOCK: THE ALL-STEEL REVOLUTION
by George Chiasson
(Continued from May, 2014 issue)

The Long Island Rail Road's version of the all-steel "Gibbs" car, numbered 1000-1133 and known under its rolling stock classification system as MP-41 (the number in reference to internal cabin length), represented a valiant, hasty, and successful effort to provide equipment for its initial round of electrified lines. This was made possible by the design's easy adaptation to both the Interborough and LIRR operating environments, especially due to their miniaturized proportions when compared to standard railway equipment of the day. As produced by ACF, the 134 MP-41s were exact copies of the 300 motors built for IRT during the preceding year. They had dimensions virtually identical to the steel prototype (the only variations being a tighter wheel base and the loss of half an inch in height to exactly 12 feet) but incorporated several important design modifications, all of which emerged from the Altoona (3342) project. Most notable was the vast difference in the cars' structural makeup, wherein the skeleton structural members (underfloor and car body walls) were composed of pieces of steel that were individually shaped or preassembled for their particular location and function, then riveted together. This in tum reduced the cars' overall weight measurably, though with the necessary control group and traction motors factored back in, they still tipped the scales at 82,000 pounds. To further reduce its mass, the car body was constructed in a more traditional manner than the prototype had been, being framed vertically into just eight sections (with seven equidistant steel sheath plates), instead of the former 16. Each was denoted by a riveted 6-inch divider up to the bottom of the window line and also separated horizontally by a common sill member (generally referred to as the "belt") that traveled externally along the length of the cabin. The sash itself was grouped in an off-set 3+2+2+2+2+3 configuration, all topped by a traditional, albeit slim, letterboard and a clerestory-type railroad roof, outfitted with hinged ventilator panels. To further assist in overall weight reduction, the steel cars' roofs contained aluminum flashing beneath a canvas skin and aluminum attachments, which were also the first applications of their kind. Like the IRT version, each LIRR car had rotating marker light fixtures at the sloped end of the clerestory, but the MP-41s also sported a large headlamp above the storm door. A steel-ribbed "pilot" that was attached to the carbody protected the leading truck frame beneath each end, including the traction motors and undercar area, from loose debris, while a rapid transit-style "Van Dorn" (link and pin) coupler was utilized. Transition from the passenger cabin to the enclosed vestibules was formed by two sliding doors (while the prototype originally had only a wide opening and no doors), which effectively isolated the operating cab from the cars' interior. The vestibule itself was slightly broader than on the prototype and the end doors about three inches wider, being punctuated on the MP-41 variation by step traps of about 2'10" in width that allowed for station stops at both high and low platforms, and had extendable step plates to close platforming gaps.

The interior arrangement of the MP-41s (and IRT motors as built) was similar to that found in Manhattan elevated cars, with a ribbed wooden floor supporting longitudinal (bench-style) cane seating in each of the forward quarters, plus 2-by-2 transverse seats in the middle between the sixth and ninth side sash. The MP-41s were also the only LIRR MUs to have hanging leather hand straps (as opposed to standee holds on the transverse seat frames), which even further belied their rapid transit heritage. Once deliveries began on April 13, 1905, the MP-41s were shipped as bodies to the so-called "Springfield Sheds," located between Jamaica and Springfield Junction along the still-largely-idle "Old Southern Road." There they were equipped with two "Westinghouse 113" 210-hp motors mounted on the #1 end "power" truck, with that at the #2 end being a non-powered trailer. In addition they employed an "AB" multiple-unit control group from Westinghouse (which was shipped to Queens separate from the ACF-constructed bodies). This system was quite innovative for its time, with acceleration automatically achieved through an innovative series of interlocks on each “unit switch,” which in turn was governed by a multi-position upright (elevator-style) controller that presented a great contrast to the horizontal “coffee grinder” swing of the control handle on its IRT sister. The control group itself was powered by a bank of batteries that were charged by voltage developed through a resistor in the return side of the air compressor circuit, a far less hazardous arrangement than the IRT version, which required 650 volts of “line current” to operate the “semi-automatic” General Electric Type M control group. This characteristic later earned the subway cars a nickname of “Hi-V,” with their proclivity toward dangerous “grounding and gapping” being reflected in the care with which they were handled. Such a design variation can be attributed to the inherent requirement that IRT’s all-steel cars be operationally as well as mechanically interchangeable with its Composite fleet. The MP-41s’ upright “Master

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Toward Underground (and Underwater) Rolling Stock

(Continued from page 2)

Controller" had 7 positions arranged in a vertical arc with "off," or "coast," at the top. A 30-degree downward movement to the right, into the first "notch," set the controller at "switching," which engaged the motors in series with all resistance in the circuit and enabled a slow, steady speed (accompanied by the potential of electrical overload in the resistance circuit) and was used solely as a transitional step. The second notch (at 60 degrees) was "series," which allowed the unit switches to cut out the resistance, leaving the motors in series across the 650-volt line, at which point they gradually generated additional velocity. The third (and completely horizontal) position allowed the unit switches to advance beyond full series and transitioned the motors into "parallel," where some resistance was reinserted and then cut out again in equal steps until the car reached a full or "balancing" speed of about 60 mph. Downward movement of the controller to the left passed through three identical positions, but generated movement in the reverse direction.

By May 1 there were 13 complete MP-41s on hand and live testing was in progress. Later that month (as of May 22) 38 of the steel motors were operational, and in a supreme fit of irony relative to 2014 (when the same practice is sometimes performed with the R188s), each new car's shakedown run took place on the long, straight trestles of the Rockaway Beach Division (now known as "The Flats") between Ramblersville and the Beach Channel drawbridge. As described above, for many years from the time they were introduced to service on July 26, 1905, the MP-41s ran in groups of three to seven cars with wooden "T-39" trailer coaches, depending on the schedule requirement. After the wooden trailers were forced out of service in late 1914 they were run in separate consists of up to 8 cars for the remainder of their service careers, but their use was restricted to the LIRR's "Rapid Transit" lines (Atlantic and Rockaway Beach Divisions, for example), Specials, and lighter suburban branches (Long Beach, Hempstead), even to specific runs, owing to their limited seating capacity of just 56. From their beginning as well, the MP-41s were mated at times with one of five wooden electric baggage motors (class MB-45, numbered 1200-1204 with no passenger seating) that were built by the Wason Car Company and lasted into the 1930s. As their time wound down after about 1933, the MP-41s earned two nicknames among LIRR's corps of "Motormen:" that of "Jeep" owed mostly to their less imposing presentation and ease of control as compared to the much stockier MP-54s, while the other of "Dive Bomber" humorously referred to the snapping motions required to power the cars up and down, as well as busily apply or release the brakes, which to the many naval aviation veterans among the railroad's employees were reminiscent of their namesake functions before and during World War II. In a heavily modified state, the final two Long Island Rail Road renditions of the famed "Gibbs Car" (1100 and 1101) were last seen on the Mitchel Field Shuttle in 1950, just a few years before it was discontinued. By contrast, the last of their IRT contemporaries survived as late as 1958, when they were replaced by new rolling stock. *(Continued on page 4)*

Around New York's Transit System

(Continued from page 16)

To improve service on the Broadway Line during the overnight hours between midnight and 6 AM, starting in December Ⓠ will operate as a local from Prince Street to 49th Street, supplementing Ⓝ service to reduce station waiting times. (***NY1***, April 23)

SUBDIVISION "B" CAR ASSIGNMENTS

CARS REQUIRED MAY 18, 2014

LINE	AM RUSH	PM RUSH	LINE	AM RUSH	PM RUSH
Ⓐ	304 R-46	304 R-46	Ⓛ	160 R-143, 32 R-160A	152 R-143, 24 R-160A
Ⓑ	64 R-68, 136 R-68A	56 R-68, 128 R-68A	Ⓜ	184 R-160A	160 R-160A
Ⓒ	72 R-32, 72 R-160A	64 R-32, 72 R-160A	Ⓝ	240 R-160B	220 R-160B
Ⓓ	240 R-68	224 R-68	Ⓠ	20 R-160A, 210 R-160B	20 R-160A, 200 R-160B
Ⓔ	240 R-160A, 20 R-160B	240 R-160A, 20 R-160B	Ⓡ (North)	170 R-160A	160 R-160A
Ⓕ	264 R-46, 110 R-160A	256 R-46, 100 R-160A	Ⓡ (South)	110 R-160B	110 R-160B
Ⓖ	40 R-68, 12 R-68A	32 R-68, 8 R-68A	Ⓢ (Franklin Avenue)	16 R-46	16 R-46
Ⓙ/Ⓩ	80 R-32, 40 R-42, 40 R-160A	80 R-32, 32 R-42, 40 R-160A	Ⓢ (Rockaway)	4 R-68	4 R-68

No change in Subdivision "A" car assignments since the assignments published in the March, 2014 issue.

Toward Underground (and Underwater) Rolling Stock

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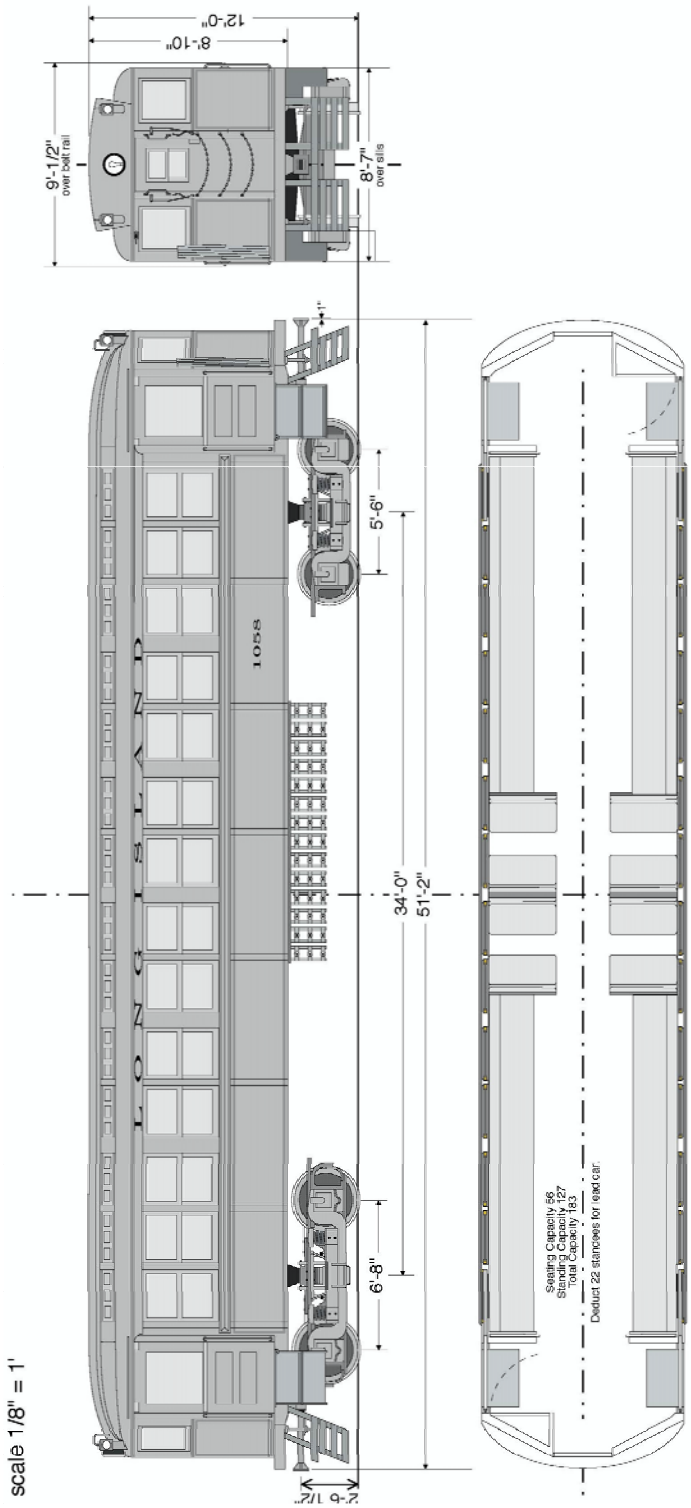

Capacity figured at 18" per seated passenger and 1.5 sq. feet per standing passenger Maximum Load figured at 140 pounds per passenger.

When operating as first car in train, deduct 22 passengers (3080 lb) since the first vestibule was closed to passengers.

Typical Load
per Street Railway Journal

16000 lbs
114 Pass.

No. of Cars	134
Date Built	1905-1906
Builder	American Car & Foundry
Trucks	Baldwin MCB
Motors	2 West. 113
Control	West. AB
Brakes	WABCo. AMRE
Weights	
Trucks	
Motors	
Body	
Total Light	82138
Max Load	25620
Total Loaded	107758

When the IRT began service in 1904, its initial fleet of cars, known as "Composites", were constructed using a mix of steel and wood. Those early cars were neither fireproof nor collision resistant, while the carbuilding industry remained disinclined to offer an appropriate, improved design. With corporate cooperation from the Pennsylvania Railroad, civil engineer George Gibbs was brought in to design the needed all-steel car body which would be both visually and operationally compatible with the Composites.

Concurrently, the Long Island Rail Road was in was in the process of rebuilding and electrifying its Atlantic and Rockaway Beach Divisions, making it logical that the newly created vehicle be used in both the I. R. T. and L. I. R. R. company environments. After an early prototype was tested and exacting specifications were developed, the American Car and Foundry Co. was awarded production contracts for 300 steel I. R. T. motors and 134 similar multiple unit cars for the L. I. R. R. The latter cars were essentially identical, the only variations being closer truck centers and the loss of a half inch in height. The L. I. R. R. version had a completely different propulsion system, step traps to accomodate low-platform loading, body-mounted pilots ahead of the trucks and large headlights mounted above the storm doors. Designated MP-41 by the Long Island Rail Road, this group of 134 cars represented a valiant, hasty and successful attempt to provide rolling stock for its initial round of electrified lines.

Long Island Rail Road Co.
Passenger Cars 1000-1133, Class MP-41
A. C. F. — Built 1905-06
(Shown as Delivered)

G. P. O'Regan - 1/31/2014

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Toward Underground (and Underwater) Rolling Stock

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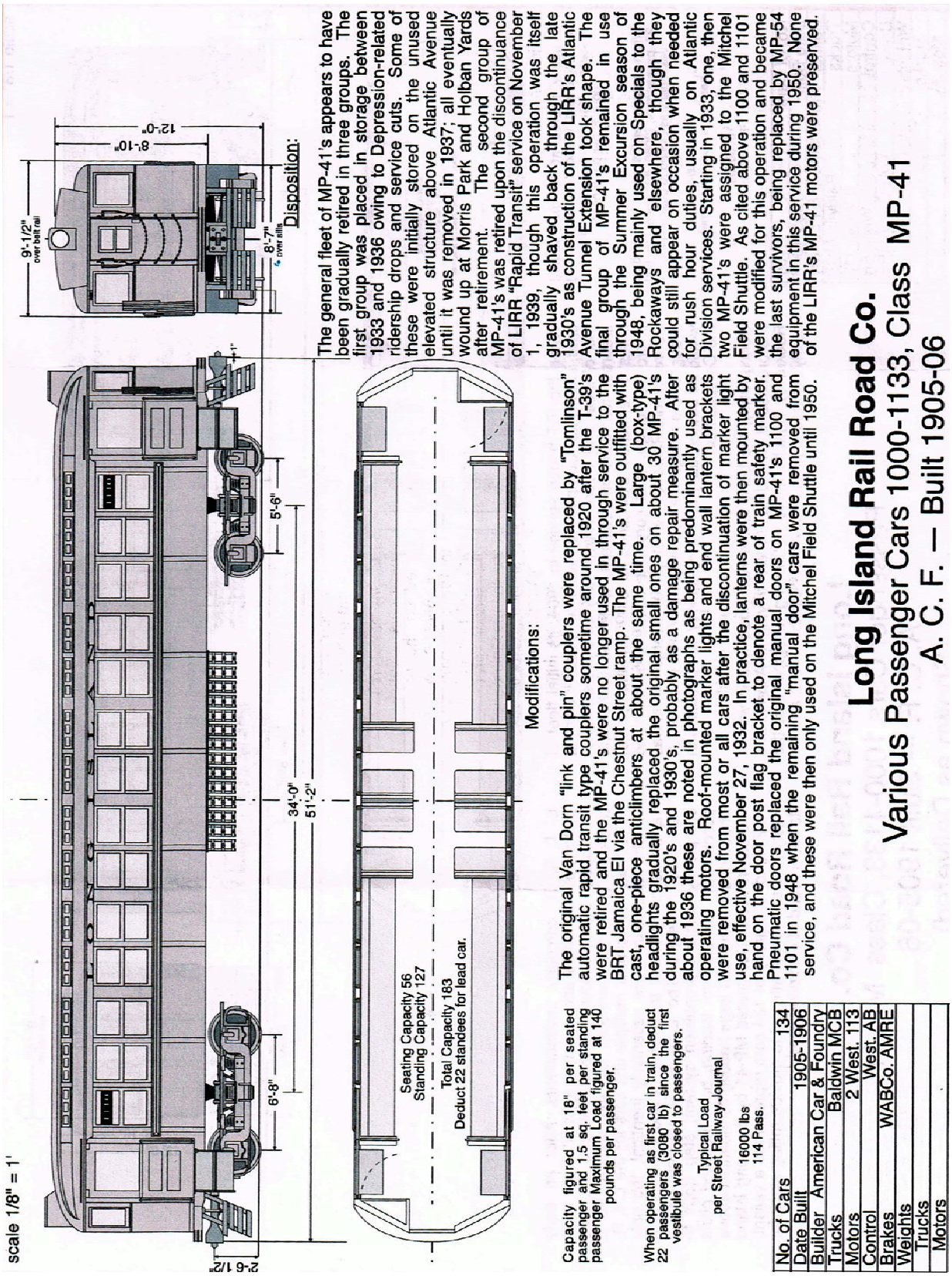

Commuter and Transit Notes

No. 307

by Ronald Yee and Alexander Ivanoff

METROPOLITAN TRANSPORTATION AUTHORITY

The MTA Board has approved a contract with Masabi as the contractor that will provide mobile ticketing to both of MTA's railroads. Instead of paper tickets purchased from ticket agents or ticket vending machines, customers will be able to purchase tickets online and use an app on their smartphones to display a digitally-secure image of a valid ticket to the Conductor. (***Stamford Advocate***, April 28)

MTA amended its contract with a joint venture of Bombardier Transportation and Siemens Rail Automation by adding $11.3 million to a $428.5 million contract awarded last November to install Positive Train Control (PTC) for LIRR and Metro-North. 836 LIRR and 747 MNR railcars will be retrofitted with PTC by April, 2017. (***Metro***, April 30)

MTA METRO-NORTH RAILROAD

United States Senator Richard Blumenthal (Democrat, Connecticut) nearly became a fatality statistic at the Metro-North train station in Milford, Connecticut during a press conference there, ironically about safety on the railroad. While making a speech, Blumenthal stood on the edge of the platform with his back to the tracks. He and others in his entourage failed to notice an approaching Amtrak train that was about to pass through the station at high speed. The engineer blew his whistle as required, but the Senator had no time to move away. The train passed his left shoulder with just over a foot to spare and the wind currents generated by the passing train pushed him back. (***New York Daily News***, April 19)

Work was started on April 19 at the Mount Vernon East electrical substation to repair and upgrade its systems to handle the regenerative braking capabilities of the new M-8 EMU cars. Four old transformers will be replaced by two new ones offering increased power capacity as well as redundancy. The improvement in reliability will come from two other substations at Rye and Harrison, all becoming capable of supporting one another in the event of another major transformer failure similar to the one in September, 2013 that crippled the entire New Haven line for almost two weeks. In the event of another such failure, it would take two hours to "tie-in" adjacent substations to restore service, albeit with delays. (Al Holtz, April 21)

NTSB has released some of its findings from its ongoing investigation of the fatal wreck of December 1, 2013 at Spuyten Duyvil. The Engineer at the throttle has been diagnosed with a severe case of obstructive sleep apnea, a condition that has been known to cause afflicted persons to fall asleep, or in the case of the Engineer's testimony, "zone out" while performing their normal activities. The press release also mentions some other relatively minor medical issues but focuses on the sleep disorder as a possible causative factor. Other train service employees were also interviewed by NTSB and reported that all-too-frequent schedule changes were the norm at the railroad. (***New York Post***, April 8)

In response to a safety directive from NTSB, Metro-North and the union representing its locomotive Engineers announced that it would begin the process of testing all Engineers for sleep pattern disorders such as sleep apnea. While the exact details and methodologies have yet to be worked out, such a program may be expanded to cover all safety-sensitive employees. (***New York Post***, April 23)

Of the 70 passengers injured in a May 17 derailment and subsequent collision east of Fairfield, Connecticut, and 70 injuries and four deaths from the December 1, 2013 wreck, MTA is aware of 87 potential lawsuits. Two passengers injured in the December 1 wreck are seeking compensation of $10 million and $100 million respectively. (***Lohud.com***, March 29; ***New York Daily News***, April 8; ***Fox News***, April 9)

Federal investigators have documented over 7,100 defects during inspections of Metro-North conducted over the past 10 years. The defects ranged from track and rail defects to missing on-board safety equipment. A Metro-North spokesman responded that all reported defects had been addressed and corrected as they were reported and that the railroad, in general, had a better record than found at other railroads. However, inspection in 2013 detected five times the number of issues per 100 miles of track when compared with other commuter railroads. (***New York Daily News***, April 6)

Last call for the Cosmopolitans? On May 5, WPIX-11 News reported that the four remaining M-2 bar cars, the last commuter bar cars in the nation excluding LIRR's premium *Hamptons Reserve Service*, would be taken out of service by the end of the week. Bar cars were equipped on LIRR and Harlem and Hudson Lines trains until the late 1970s/early 1980s, when they were converted to regular coaches. While Connecticut DOT has been discussing the possibility of reintroducing bar cars in the future, fiscal constraints might make that impossible. However, the platform carts are not being phased out. With increased ridership squeezing room on trains, additional coaches are a necessity. But the bar cars themselves make money, a throwback to the early 1970s, when MTA did a promo video for the system which covered LIRR's bar cars. The narrator of the movie noted, "besides, they've been the only money maker for years." Gross bar revenue in 2013 was $357,000, according to Connecticut DOT. Revenue from the bar

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carts, found on station platforms and not being phased out, was $6,733,000. (***PIX 11 News***, May 5)

(Editor's Note by Sasha Ivanoff: I believe that a temporary bar car setup could be achieved by removing a few seats and allowing the carts to be wheeled onto the trains. I could not find sources indicating what trains would run with staffed bar cars on Friday the 9th.)

MTA LONG ISLAND RAIL ROAD

The Long Island Rail Road celebrated its 180th birthday April 24, maintaining its hold on the title of the nation's oldest railroad name, still operating under its original charter since 1834. (***Newsday***, April 25)

The second Presidential Emergency Board (PEB), #425, convened April 25 to resolve an ongoing labor dispute between MTA-LIRR and its employees represented by labor unions. The first PEB made recommendations calling for 17% wage increases over six years with no work rule changes. With the unions ready to sign but MTA balking at the terms, negotiations have resumed in an attempt to head off a strike that could begin as early as July 19. The second PEB is expected to release its non-binding recommendations by May 20. (***Newsday***, April 21; ***Long Island Press***, April 23)

Construction engineers may have underestimated problems with the geology of the area in and around various sites on the Queens side of the LIRR East Side Access tunneling project as several sinkholes have formed. This has caused at least a two-week delay in work. Over 100 years ago, when Sunnyside Yard was being constructed, there were numerous difficulties along its north side stemming from the soft ground and high water tables from the nearby Dutch Kills estuary. (***Newsday***, April 29)

On Wednesday, April 30, LIRR President Helena Williams was abruptly let go by MTA Chairman Tom Prendergast, who simultaneously announced that Patrick Nowakowski would succeed her. His most recent position was with Metrorail in Washington, D.C., where he oversaw the construction of the Silver Line that will eventually reach Dulles Airport. Nowakowski's career began in 1975 as a civil engineer with a predecessor of Conrail. He joined SEPTA in 1981, amassing 27 years of experience in the engineering and infrastructure functions of that operation before heading for Washington. Although the MTA Chairman lavished praise on Williams' many accomplishments during her seven years as President of LIRR, no reason was given for her sudden firing from the railroad. (MTA, April 30)

LIRR's East Side Access project, once projected to cost $4.3 billion, has ballooned to a high of $10.8 billion with a completion date some time between September, 2021 and as late as September, 2023. MTA Chairman Tom Prendergast has directed the agency to provide a more realistic and achievable completion date. When completed, the East Side Access project is expected to save up to 40 minutes commuting time for as many as 160,000 LIRR commuters. (***Newsday***, March 24)

NJ TRANSIT

Since Hurricane Sandy, ridership on the North Jersey Coast Line has fallen by 12.9%. This line was heavily damaged by the hurricane, and only recently has service returned to pre-storm schedules. In the interim, former rail commuters found other means of reaching Manhattan and have decided to stay with their new-found choices. Patronage of the Sea-Streak Ferry to lower Manhattan and alternative bus services on NJT's bus routes covering Southern Middlesex, Monmouth, and Ocean Counties has grown. However, total ridership numbers from these counties have not returned to pre-Sandy levels, as many people have relocated out of the area, some to towns farther inland, and are served only by buses while others have left the area altogether. (***Asbury Park Press***, April 1)

Since the Princeton Rail Shuttle known as "The Dinky" was cut back last year to a temporary facility 1,200 feet from the station it had used for decades, ridership has fallen by 10.4%, concurrent with ridership increases on a shuttle bus operation that duplicates the rail service to Princeton Junction on the Northeast Corridor. This summer, the temporary station currently in use will be replaced by a permanent station 460 feet east of the old station building, which will be converted into a café and restaurant as a part of an arts community in Downtown Princeton. (***Daily Princetonian***, April 8)

AMTRAK

Amtrak has requested an appropriation of $1.62 billion for fiscal year 2015, a 16.5% increase over 2014. This request was presented with a more detailed itemization of the request with individual line items separating revenue, expense, and capital expenditure budgets for the Northeast Corridor, state-supported and long-distance train categories, and a "corporate development" business unit including real estate revenues and other investments. Its goal is to make Amtrak's request more transparent for Congressional review, with the goal of securing a strong multi-year federal commitment that will permit the undertaking of long-term and urgently needed capital improvements that cannot be efficiently achieved with the current year-to-year budget uncertainties. This type of funding would benefit not just the Northeast Corridor. It would begin to reverse infrastructure decay, replacing century-old bridges and tunnels and adding capacity while also encompassing long-distance services. One example of this is the current negotiation Amtrak is involved in with individual states for dedicated funding to allow the *Southwest Chief* to remain on its original ATSF *Super Chie*f routing. (Al Holtz, March 17)

Within the framework of its 20-year planning process, Amtrak has launched a study to expand the *Downeaster*

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service funded by a $600,000 FRA grant to potentially open up a new and yet untapped market of potential riders in the Lewiston-Auburn area and/or Augusta, Maine. A routing via Worcester would connect the *Downeaster* directly with New York City, although 86% of current ridership goes to Boston. There is also talk of adding a sixth round trip to the *Downeaster* to close a gap in service without having to add another set of equipment. (***Press Herald***, March 20)

Connecticut announced that it will be seeking proposals from companies to operate its New Haven-Hartford-Springfield passenger train services that will ultimately provide 30 minute headways during peak times and hourly during the off-peaks. Amtrak would continue to be responsible for its existing services on this branch line, which will host 110 mph trains. (Al Holtz, April 2)

Transportation officials in Quebec and New England are exploring the possibility of restoring passenger train service from St. Albans, Vermont, northward to Montreal, Quebec, a route covered by Amtrak's *Montrealer* until 1995 (***Greenfield Recorder***, March 31)

The State of Illinois will spend $223 million to restore intercity passenger service between Chicago and Rockford, Illinois, which will be operated by Amtrak over Metra's Milwaukee District West Line and Union Pacific's Belvedere Subdivision with a connection track to be built west of Metra's Elgin station. This yet-to-be-named train is expected to return passenger train service to Rockford in 2015 with track upgrades to support 59 mph operations with further improvements to be completed in 2016 to permit 79 mph operations, with a second round trip added to the schedule. The last time Rockford was served by Amtrak was with the Chicago-Dubuque *Blackhawk*, which was abandoned after Illinois withdrew its funding. This train will pass (but will not stop in) the town of Union, the site of the Illinois Railway Museum adjacent to the former Illinois Central line. Illinois will continue negotiations with the Canadian National Railroad to extend this service to Dubuque with stops at Galena and Freeport. (Al Holtz, April 11)

INDUSTRY

To accommodate additional testing space needs for testing new LRVs for the Houston Metro, CAF USA will build a 12,800-square-foot addition to its plant in Elmira Heights, New York. This is the third expansion of this plant to support the construction of the light rail cars for Houston. This facility is also building single-level railcars for Amtrak as well as streetcars for Kansas City and Cincinnati and employs 600 people. (Al Holtz, March 25)

A bidding war has erupted between Siemens and General Electric for Alstom, the French transportation company. Siemens entered the race to acquire Alstom by issuing an offer to rival the $13 billion bid made the week of April 19 by General Electric for the French company's power turbines and grid equipment. Alstom CEO Patrick Kron on May 6 rejected suggestions from the French government that Alstom acquire General Electric's freight transport business in a renegotiation of General Electric's proposed €12.4 billion (about $17 billion) takeover of Alstom's energy business approved prior by the Board of Directors. More information on the General Electric/Siemens/Alstom triangle will be provided in the July ***Bulletin***, as the story is still developing. (***International Railway Journal***, April 24, 28, and 30 and May 7)

OTHER TRANSIT SYSTEMS

BOSTON, MASSACHUSETTS

On April 16, the first of 40 new HSP-46 4,650 HP locomotives ordered by MBTA operated on Train #213, departing from North Station to Haverhill at 10:30 AM. (Al Holtz, April 16)

VIRGINIA BEACH, VIRGINIA

After a few years of deliberation, Virginia Beach Mayor William Sessoms and Virginia State Transportation Secretary Aubrey Layne have agreed to develop plans for a light rail link between Virginia Beach and the neighboring city of Norfolk. The $290 million project will involve extending The Tide, Norfolk's existing 7.5-mile light rail line, beyond its current eastern terminus at Fort Norfolk/Medical Center, which is situated close to the jurisdictional border between the two cities. Under the agreement, funding for the project will be split equally between the state government and Virginia Beach. The city will also dismiss three proposals for public-private partnerships that were previously under review and put the project out to competitive tender. Virginia Beach has repeatedly rejected light rail as an option for developing transit links over the last few years, favoring a maglev project, which the state government has refused to support. Norfolk opened its light rail line in August, 2011. (***International Railway Journal***, May 8)

ORLANDO, FLORIDA

ERA member Dennis Zaccardi reported on the May 1 opening of the SunRail commuter line in Orlando. "The midday trains were so crowded that they had to leave people at the station and they seemed to running only one train. My friend and I arrived mid-afternoon at the Sand Lake Road station. We just missed a train, so we had to wait two and a half hours for the next train, which was running 30 minutes late." According to Dennis, the crowding was the only bad part of the new line. ***Railway Gazette*** reported on the same day that the SunRail commuter rail route serving Orlando was officially opened the day before on April 30, with two weeks of free travel starting the following day. The 30-mile first phase from DeBary to Sand Lake Road in Orange County serves 12 stations. Construction began in January, 2012 and included double-tracking the line, which

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the state bought from CSX in November, 2011, resignaling, and construction of an operations control center. The federal government is contributing 50% of the $357.2 million construction cost through a $178.6 million grant. The remainder is shared equally between the state and local authorities. MotivePower has supplied seven diesel locomotives, with Bombardier supplying a fleet of 20 double-deck coaches and having been awarded a $195 million contract last year to operate and maintain the service. Service runs every two hours off-peak, and every 30 minutes during peak hours. In addition to single tickets, rechargeable *SunCard* smart cards will be available for weekly, monthly, and annual season tickets. The second phase would extend the service north to Deland and south to Poinciana, bringing the line to 60 miles and adding five stations. Construction on Phase 2 begins later this year. (***International Railway Journal***, May 1; ***Railway Gazette***, May 1; Dennis Zaccardi)

INDIANA

Indiana DOT has issued an RFP (request for proposals) to determine the feasibility of contracting out the operation of the *Hoosier State* train between Indianapolis and Chicago (currently operated by Amtrak with state subsidy support) to achieve some cost savings and improvements. Among the improvements being sought are additional train frequency, shorter and more reliable travel times, improved on-board amenities such as Wi-Fi, and enhanced food services. Iowa Pacific may be a possible bidder. (Al Holtz, March 28)

(Editor's Note by Sasha Ivanoff: Currently, the Hoosier State *serves as Amtrak's "hospital train" between its main shop at Beech Grove and Chicago. Contracting out the operation of this train would have impacts on Amtrak's ability to move its equipment to and from Beech Grove.)*

CHICAGO, ILLINOIS

In the latest chapter in the battle against graffiti, CTA will now pursue civil lawsuits against individuals (and, if underage, their parents), for damages stemming from vandalism. By holding individuals as well as families liable for restitution, it is hoped that this will be a major deterrent. Damage claim lawsuits filed in civil courts provide CTA with many more options to recoup financial expenses than pursuing charges within the criminal court system. CTA has recently installed a large number of cameras in its systems, both at stations and facilities as well as aboard all railcars in an attempt to record, document, and identify vandals as well as other criminal elements. (***Metro***, April 24)

DALLAS-FORT WORTH, TEXAS

Dallas Area Rapid Transit (DART) operated its first test run on the 5-mile Orange Line light rail extension to Dallas-Fort Worth International Airport on April 16. DART says that the test run between the Belt Line station and the airport evaluated vehicle dynamics, electrification, lineside clearances, and signaling operation. Full commercial services are due to start August 18 on the extension, which will bring the total length of the Dallas light rail network to 90 miles. (***International Railway Journal***, April 17)

SAN FRANCISCO AREA, CALIFORNIA

San Francisco's Bay Area Rapid Transit District has awarded sole bidder Stadler Rail a $58 million contract to supply eight diesel multiple-units for the East Contra Costa BART extension commuter rail project. Announcing the order on April 25, Stadler said the GTW 2/6 units would be manufactured at its Bussnang plant in Switzerland. These will be based on 37 DMUs it has previously supplied to the United States: 20 for NJ Transit; six for Capital Metro in Austin, Texas; and 11 for Denton County Transportation Authority in Texas. The DMUs will meet EPA Tier 4 emissions regulations. eBART was approved in December, 2007, as a quicker and more affordable alternative to extending BART into eastern Contra Costa County. It involves the construction of nearly 10 miles of dedicated line from BART's Pittsburg/Bay Point terminus to a new station in Antioch, running along the median of State Route 4. eBART will be built to standard gauge rather than the 5'6" gauge used on BART, and will not be electrified. The line will be for the exclusive use of the commuter services, and is not subject to regulation by FRA. (***Railway Gazette***, April 25)

SAN DIEGO, CALIFORNIA

Municipal authorities in San Diego and the neighboring city of Tijuana, Mexico have revived plans for a light rail line spanning the United States-Mexico border. The issue has become a top priority for the San Diego Regional Chamber of Commerce, despite the international complexities. There are also complications involving the use of the infrastructure by freight trains. In December, 2012, MTS leased a portion of the route to short line Pacific Imperial Railroad, which could make separation of freight and light rail operations a necessity to comply with FRA safety requirements. Business leaders and political officials in both countries are actively urging the establishment of cross-border light rail services. MTS began operating its light rail South Line (now the Blue Line), the United States' first modern light rail line, in July, 1981. The line links the city center with San Ysidro, just short of the border. (***International Railway Journal***, April 14)

QUEBEC CITY, QUEBEC, CANADA

By October, 2014, VIA will complete upgrades to 26 business-class cars. Improvements include new ergonomic seats with lumbar support, improved under-seat clearances to permit passengers more legroom, armrests, side trays with a cup holder, upgraded and more efficient HVAC and lighting systems with an electric outlet for every seat, and free Wi-Fi. These refurbished cars will be assigned to the Quebec City-to-Windsor

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corridor and business-class lounges at stations along the route will be upgraded as well. (Al Holtz, April 10)

ONTARIO, CANADA

Is true high-speed rail coming to Canada? In the province of Ontario, Minister for Transport and Infrastructure Glen Murray says the provincial government plans to develop a 120-mile-long high-speed service between Toronto, Waterloo, Kitchener, and London, a component of the Moving Ontario Forward program, with a four-year environmental impact assessment and design studies for the project expected to begin this autumn. The high-speed service will share existing infrastructure with passenger and freight traffic to Kitchener from where a new "dead straight" double-track passenger railway will be built to London across open countryside with less than 100 homes expected to be affected by construction. The existing line will require electrifying as well as upgrades from Toronto to Pearson International Airport and Georgetown, and while it will be mixed traffic, the corridor has sufficient right-of-way to offer three tracks throughout with some four-, five-, and six-track sections envisaged. The electrification would benefit GO Transit, which has been looking at the possibility of electrifying some of its commuter rail service. In addition to high speed, FCP has also been advising the provincial government on upgrades of GO Transit commuter network. which is being funded under the $15 billion allocated towards transit and transport for the Greater Toronto and Hamilton Area (GTHA) outlined in the 10-year plan. Among the improvements is electrifying the network and track-doubling to offer improvements in journey times. A new 15-minute, all-day service will also be introduced across the network utilizing a new fleet of 65 four-car double-deck low-level loading EMUs to complement the 45 12-car diesel locomotive-hauled trains, which are used solely for peak-time services and limited services during the day. Currently, the only electrified heavy rail operations of any sort in Canada is the Deux-Montagnes AMT commuter line. One of the reasons for such a project is constant congestion on Ontario Highway 401, which is the province's megahighway. Highway 401 is the busiest road in North America. If successful, the Toronto-London line could be a catalyst to further high-speed rail projects in Canada, with an eastern extension to Ottawa and Montreal one potential future project. With GTHA cited as having some of the worst traffic congestion in North America, the program is intended to complement rather than replace GTHA public transport authority Metrolinx's $50 billion 25-year Big Move transport investment program for new metro, light rail, and airport express projects, and reflects continuing momentum in the region to invest in its public transport infrastructure. However, there is some opposition to the project. (***International Railway Journal***, May 2; ***CTV News***, April 30)

VANCOUVER, BRITISH COLUMBIA, CANADA

VIA has denied initial reports of an agreement having been reached that would restore passenger rail services on Vancouver Island, a two-to-three-hour ferry ride west of Vancouver. The Island Corridor Foundation, which owns the track, had previously announced that passenger rail service would return the Victoria-Nanaimo corridor, formerly known as the Esquimalt and Nanaimo Railway and now called the Southern Railway of Vancouver Island, prematurely raising hopes of a revival among rail advocates who saw passenger service there cease in 2011. British Columbia Province would provide $20 million for the funding of track improvements to the line once an agreement is reached. (***CBS***, April 2)

BASEBALL, COMMUTER RAIL, AND RAIL TRANSIT

Commuter rail and rail transit serve baseball fans all across the nation. Here in New York, Citi Field, home of the Mets, is served by ❼ as well as LIRR, and Yankee Stadium is served by the ❹ Ⓑ Ⓓ as well as Metro-North. Philadelphia Phillies fans have dedicated sports express trains to the Pattison station on the Broad Street Subway. The Chicago Cubs' Wrigley Field is served by CTA's Red Line at the Addison station and the White Sox's U.S. Cellular Field is served by both the Red Line's Sox station and the 35th Street Bronzeville-IIT Green Line station of CTA as well as the commuter rail line at the 35th Street-Lou Jones station on the Metra Rock Island Beverly Branch to Joliet. In the San Francisco Bay area, Giants fans headed to AT&T Park have the option of taking CalTrain to the 4th & Townsend terminal or the MUNI Metro T Line. The Oakland A's Coliseum can be reached via the Coliseum stop on BART as well as CalTrans' Capitol Corridor. Farther south, Los Angeles' Anaheim Angels are served by Amtrak and Metrolink while the Dodgers have a dedicated Dodgers Bus express to the east portal at Los Angeles Union Station that connects to Amtrak, Metrolink, and Los Angeles Metro and Subway. San Diego's Padres games at Petco Park are served by the Orange, Blue, and Green lines at the 12th & Imperial, Park (12th) & Market, and Gas Lamp Quarter stations. The trolley offers connections at the Santa Fe Depot to Coaster and Amtrak. Seattle Mariners fans can ride Sounder commuter rail and Sound Transit light rail to Safeco Field. Commuter trains provide access to the Boston Red Sox's Fenway Park at the newly opened Yawkey station on the MBCR Framingham/Worcester lines, the Baltimore Orioles are served by MARC's Camden Yards station, and Minnesota's Northstar line stops at the Twins' Target Field. St Louis Metrolink has a station adjacent to the Cardinals' Busch Stadium and Colorado Rockies fans can reach Denver's Coors Field located next to Union Station using the C, E, and W routes of The Ride light rail and, in the future, the commuter rail line. North of the border, the Toronto Blue Jays' Rogers

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Commuter and Transit Notes

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Centre is near the Union Station hub and is served by TTC's Yonge/University subway line, Spadina light rail, and GO Transit. (Al Holtz, March 31)

(Editor's Note by Ron Yee: Minor league baseball is also served by rail transit, The New York Mets' Brooklyn Cyclones play within sight of the Coney Island terminal complex of NYCT and the Staten Island Yankees play just a short stroll from the St. George terminal of the Staten Island Railway. Farther afield, the Bridgeport Bluefish play in a stadium just west of Metro-North's Bridgeport station.)

SPAIN

Spain's infrastructure manager Adif has awarded a €410 million (about $562.4 million) contract to Alstom to install ERTMS Level 2 signaling on about 193 miles of high-speed line in northern Spain and to maintain the equipment for 20 years. The system will be installed on two new lines: Valladolid-Venta de Baños-León and Venta de Baños-Burgos. The contract covers signaling, fixed telecommunications, GSM-R communications, Automatic Train Protection, Centralized Traffic Control, safety equipment, on-board equipment, and infrastructure for mobile phone operators. Construction of the Venta de Baños-Burgos line was suspended last year due to funding problems, but work resumed towards the end of the year. The suspension of work means that the line is unlikely to open in 2015 as originally planned. (***International Railway Journal***, April 23)

LODZ, POLAND

Lodz's Road and Transport Division has selected Mosty Infrastruktura to undertake Phase 2 of the east-west tram line modernization and expansion project. The 239 million zloty (about $78.3 million) contract covers the replacement of 6km of double-track tram line from ul Kilinskiego to the terminating loop at ul Augustow, and the construction of 5km of double track to Olechow district. The project is 80% financed from EU funds from the 2007-13 budget, and so must be finished by the end of 2015. (***Railway Gazette***, May 6)

ADDIS ABABA, ETHIOPIA

China Railway Engineering Corporation has started work to electrify the 34.3km two-line light rail network under construction in the Ethiopian capital, Addis Ababa. The east-west line is 17.4km long and runs from Ayat to Torhailoch, while the 16.9km north-south line links Minelik Square with Kality. The two lines share a 2.7km common section between Meskel Square and Lideta. Construction started in 2012 and is now 60% complete. On the equipment end, CNR, China, is supplying a fleet of 41 70% low-floor LRVs to Addis Ababa. The first vehicles are due to arrive by the end of the year to allow three months of test running to start in January, 2015. The lines will have a capacity of 15,000 passengers/hour/direction. (***International Railway Journal***, April 22)

KONYA, TURKEY

Konya has ordered 12 trams capable of catenary-free operation from Skoda Transportation as a follow-on order for the 60 ForCity Classic 28T trams currently being delivered. They are to be delivered next year, and bring the total order value for 72 trams to 3.4 billion Czech Republic koruna (about $169.8 million). Following certification in January, a prototype Catfree tram has been on test at Skoda's Plzen factory since February. Roof-mounted nano-lithium-titanium batteries enable catenary-free operation for up to two miles, and are recharged through the pantograph. The trams for Konya are to be used on a new line, which will have a 1.8km section without overhead wires. The first 28T from the original order entered passenger service in February. (***Railway Gazette***, May 6)

DOHA, QATAR

Qatar Railways (QR) has awarded the Greek-led ALYSJ consortium a €3.2 billion (about $4.4 billion) contract for design and construction of the 32km underground Gold Line, one of four lines under development in the first phase of Doha's 354km metro network. The east-west line runs from Doha Airport south to Al Rayyan and will have 13 underground stations. The construction phase will utilize six tunnel boring machines simultaneously, and the contract includes the fitting out of stations. The project is expected to be completed by August, 2018. The contract award follows the appointment on April 12 of a Systra-Parsons joint venture in a €234 million (about $321 million) management and works supervision contract for Phase 1 of the metro undertaking. (***International Railway Journal***, April 29)

AUCKLAND, NEW ZEALAND

Auckland Transport's first electric trains began revenue operation on April 28, when operating concessionaire Trandev Auckland switched its half-hourly Southern Line service between Britomart and Onehunga from DMUs to EMUs. The electrification was formally launched by Auckland Mayor Len Brown on April 27 with a ceremony at Britomart attended by Transport Minister Gerry Brownlee and Auckland Transport Chairman Dr. Lester Levy. Around 5,000 local residents sampled a limited commemorative shuttle between Britomart and Newmarket. Auckland Transport says 12 of the 57 three-car EMUs being built by CAF have now been delivered to New Zealand, of which seven are available for service; the remainder are due by the end of next year. As more units are commissioned, Eastern Line services to Manukau are expected to go electric in August, followed by Southern Line services to Pakekura in December, and finally the Western Line to Swanson in mid-2015. The EMUs are initially running to the same timings as the DMUs and diesel locomotive-hauled trainsets that they are replacing, until a timetable change in September starts to exploit their superior performance. (***Railway Gazette***, April 28)

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Commuter and Transit Notes

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NEW SOUTH WALES, AUSTRALIA

Plans to order around 65 trainsets totaling 520 cars for NSW TrainLink Intercity services (Australia) between Sydney and the Central Coast, Newcastle, the Blue Mountains and Illawarra were announced by New South Wales Premier Mike Baird and Minister for Transport Gladys Berejiklian on May 8. The government is to begin industry briefings this month with a view to identifying "a train already available to the market." The estimated $2.8 billion Australia (about $2.6 billion) cost of the order would be funded by the state government. In a new approach, the Ministry for Transport would go with an off-the-shelf approach towards procuring new equipment, meaning that new equipment would be in service quicker, paraphrasing what Berejiklian noted in her address. All 65 trainsets are expected to be in service by 2024. The current Oscar rolling stock fleet would be reallocated to Sydney suburban services. (***Railway Gazette***, May 8)

Increased Service for 1939 World's Fair

(Continued from page 1)

Times Square-Main Street 1938 headways:

WEEKDAYS		SATURDAY		SUNDAY
Midnight	20	**AM Rush**	N/A	N/A
AM Rush	8	**Noon**	8	
Midday	10	**Afternoon**	12	
PM Rush	8	**Evening**	12	
Evening	12			

Times Square-Main Street incomplete table, weekdays effective April 24, 1939:

	EXPRESS	LOCAL
AM Rush	9, 6	9, 6
Midday	12	12
PM Rush	6	6
Evening	—	8, 10

When the World's Fair cars were placed in service, maximum length of trains was reduced from 10 to 8 cars.

WOODEN CAR ASSIGNMENT

On February 20, 1940, the following cars were assigned to Second Avenue Queens service:

CAR NUMBERS	TYPE	TOTAL
5, 12, 13	Gate Trailer	3
294-367	Gate Trailer	13
395, 448, 496	Gate Motor	3
518-767	Gate Trailer	18
800-1101	Gate Motor	104
1660-71	MUDC Motor	10
1707-50	MUDC Trailer	18
1753-1809	MUDC Motor	34
		203

When BMT started operating trains to Corona and Astoria, gate motors and trailers were transferred to Queens. We do not have a complete assignment, but we know that most trailers in the 1-25 series and 1284-99 and 1400-53 motors were assigned to Queens in 1928.

Ten years later, the company decided to rebuild the Queens fleet and convert it to MU door control. Gates were removed, front platforms were enclosed, and doors were installed.

Most of the 1200s and 1400-53, a total of 116 cars, were rebuilt. Cars were arranged in permanently coupled units with one trailer in each unit. Renumbered cars 1600-29 were 3-car units and 1630-42 were 2-car units.

On November 2, 1938, a clearance test was performed with cars 1600A-B-C operating on the Flushing and Astoria Lines. The first "Q" train was placed in service on January 3, 1939. Reconstruction proceeded slowly until all cars were in service by 1941.

TRACTION TOUR TO SOUTHERN EUROPE
by Jack May
(Photographs by the author)
(Continued from May, 2014 issue)

After finishing our coverage of the 25, we boarded the 11:05 ferry for Cacilhas, the port section of Almada, where we would begin riding and photographing the Metro Sul do Tejo's light rail system. There are a number of ferry services to points on the south side of the Tagus (Tejo) from the Cais do Sodre terminal, as well as from other points on Lisbon's waterfront. Our route ran every 15 minutes and took 10 minutes for the crossing. We found the tram station very easily after reaching land.

Three light rail lines with overlapping services are operated, so it is possible to travel from most stations to most others without changing cars. See http://www.urbanrail.net/eu/pt/lisboa/almada.htm for a map. Phil Craig, Jon Boyer, and I visited the system in the spring of 2008, less than a year after it opened. But at that time the line connecting Cacilhas with the center of the system was not yet open; service began later in that year. This branch, carrying Routes 1 and 3, travels through what is probably the commercial center of town; in 2008 we found the route to be a steep uphill walk. In addition to ferries, the city, which has a population of about 170,000, is also served by Fertagus, a suburban railroad service from Lisbon that crosses the Tejo on an impressive suspension bridge (that is shared with motor traffic). The privatized electric MU operation has two stations in Almada: Pragal, also served by light rail Routes 2 and 3, and Correiros, served by Routes 1 and 2.

It was still overcast when we arrived, so we decided to ride first and photograph later, as we saw blue sky in the distance. Instead of being able to add the fare to our existing tickets, we had to buy new ones for this operation (the smart card cost a half-Euro), just like we had to do for the suburban train to Sintra. Oddly enough, we were able to add our ferry fares to our original tickets, and then later we were able to add the fare for the Fertagus train ride back to Lisbon. The light rail system does not offer day tickets, but each ride is good for an hour, which was respected every time we tapped after boarding a car. In other words, if we added two fares to the ticket at 11:20, the system did not deduct the second fare until we tapped after 12:20. Service on each route was operating every 15 minutes (thus a 7.5-minute frequency on each of the three legs), but we noted from the timetable that headways are cut to every 5 or 10 minutes on each service during the AM and PM rush hours, as well as from noon to 14:00. Thus, at times during our visit, there was a steady stream of LRVs.

The entire system is on private right-of-way, served by 24 modern double-ended Siemens Combino 100 percent low-floor cars. They are clean on the inside and outside, but since my previous visit, a great deal of graffiti has appeared on the sides of the modern high-rise apartment houses that make up the residential areas of what appears to be a lower middle-class section.

We first rode Route 3 from Cacilhas to Univeridade. By then the sun was coming out, so after a couple of photo stops we rode back on the 3 to get photos in the commercial area. Then we took the 1 to Correiros, stopping over at Cova de Piedade to ride the leg of the junction used by the 2. The junction of the three branches is a triangle with each leg several blocks long, out of view of each other. The day had turned partly cloudy with both bright and gloomy periods. We enjoyed riding, as the cars moved along smoothly and quickly, with short station dwell times. Ridership was reasonably good — seated loads with the occasional standee. The stations are equipped with annunciators that appeared to be controlled by pre-programmed schedules, rather than reacting to real time information. Our tickets were inspected twice during the three hours we rode.

We returned to Lisbon on the 15:14 Fertagus train, riding it to the Sete Rios station (a little over 15 minutes), where we transferred to the Blue Line Metro, which took us to Baixa Chiado (7 stops), a short distance from our hotel. The double-deck EMUs are fast, but are limited to ponderous speeds while bridging the Tejo. However, the view from the high bridge was excellent and the slow operation provided lots of opportunities for photos (but then the ferry is also relatively slow and has very interesting views). We recovered our luggage at the hotel and walked back to the Metro, where we continued on the Blue Line for two stops to Santa Apolonia.

We arrived at the stub-end railway terminal at 16:45 and were able to board our "Pendolino" train immediately. We had purchased first class e-tickets, which indicated the car and seat numbers we were to occupy. Our tilting train departed at the advertised 17:00. Seating in first class was 2-and-1, with rows in half of the cars facing backwards. Fortunately our pair of seats faced forward, and almost as soon as we left the Oriente station (17:09), where many of the passengers boarded, we were served complimentary juice, soda, coffee, or tea from a trolley. Snacks and beer were available for pur-

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Traction Tour to Southern Europe

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chase. Displays at the ends of the cars indicated our speed, which hit 225 kph (140 mph) in many places. Our 6-car consist included 4 Turista-class coaches with 2-and-2 seating, the last with a bar section, followed by 2 first class cars (Conforte). We operated on time throughout the journey. Both first class and coach were well patronized. In a corresponding fashion to the start of our journey, most of the passengers detrained at the Devesas station in Porto's suburban community of Gaia at 19:22 (19:38), just short of our early arrival at Campanha at 19:30 (19:44). I suspect there is a large park-and-ride lot at Devesas, and also a bit of make-up time in the schedule.

We both purchased our own smart cards for a nominal sum and added two-day passes for three zones, valid for 48 hours from their first usage. We rode in a Eurotram on the trunk line for 4 stations to Trindade and then changed to north-south Line D for one stop to our hotel. Emerging from the subway station, we saw our hotel across the street. The desk clerk had our reservation and we were ensconced in our (very small) room by 20:20. Despite the morning cloudiness and drizzle in Lisbon, we had an excellent and fruitful day.

Tuesday morning dawned bright and sunny, and this pair of bright-eyed and bushytailed railfans were ready to start our two days in Porto by taking on both the Metro do Porto and the three heritage streetcar lines. Our plans were to spend all of this day on the light rail system, while we would cover the deck-roof trams on the following morning, leaving the next afternoon for catching up on anything we did not do earlier. In addition, due to a great deal of correspondence with a local railfan, we were going to meet Luis Manuel Almeida for breakfast on Wednesday and he would be our guide to the streetcar lines. We confirmed this by telephone the previous evening.

I have accomplished a great deal of travelling in my lifetime and sampled a large number of light rail/tramway systems, but I must admit that in terms of demonstrating the functionality and excellence of the light rail mode, I would have to put the Metro do Porto in the top group of my worldwide list. And that is based on both its characteristics and the joy of riding and photographing it. Yes, there are other modern systems that are highly notable for their ambiance and operations, like those in Basel, Vienna, Melbourne, The Hague, Prague, and even Sheffield, just to name a few, but Porto sticks out in my mind for the variety of its infrastructure, its excellent frequencies, its speed, and its general setting; there is very little to criticize. If part of the definition of light rail includes its flexibility to operate in all sorts of surroundings, such as in underground tunnels, on railroad rights-of-way, in pedestrian zones, on elevated structures, in the center of arterial roads, along the side of streets, and in the pavement of any kind of roadway sharing space with other traffic, Porto fills the bill.

I have been to that city four times; the first two, in 1968 and 1988, were during the era when the standard-gauge street tramway was in major decline. Then I came back again in 2008 and now in 2013, and observed the major changes that had been made in the face of the city. Part of the old tramway system has now been preserved into a three-line heritage operation, and a high-quality light rail system has burgeoned. The first part of Metro do Porto was opened in 2002, with a fleet of Adtranz Eurotrams, painted in a lovely yellow and grey-black livery. This type of LRV was designed for Strasbourg, France, where the mayor wanted a modernistic-looking car to excite the public and gain acceptance for light rail in an era when trams were still controversial in that country (now there are over 20 systems, and more are abuilding). Porto's fleet of these 100 percent low-floor cars, with their wide doors and aisles, and large amounts of glass, eventually grew to 72 units. As the system expanded further, the need for additional equipment increased, but Bombardier, successor to Adtranz, withdrew these cars from its catalogue. But that worked out in a positive manner, as the further order of 30 Bombardier LRVs specified higher speeds, specifically 62.5 mph (100 kph), compared with the 50 mph (80 kph) of the Eurotrams. To accomplish this, Flexity Swift cars were acquired (similar to those in Stockholm and Minneapolis) with high-floor sections at either end.

This was especially handy, as two of the lines are quite lengthy, with stations located relatively far apart. One even sports express service. The system is now almost 50 miles long, with about ten percent underground. Much of the network follows the rights-of-way of a former narrow-gauge railroad system that terminated at Trindade, an old-fashioned railroad station near downtown Porto. Now Trindade is at the heart of the system, its central transfer point, served by all the lines.

During the conversion to a standard-gauge electrified traction system, much care was made in modifying the infrastructure, integrating it into neighborhoods of previously built-up areas formerly served by the narrow-gauge rail lines. Instead of cuts and fills, or elevated and underground sections through towns, the lines have been placed at grade level, in the street or at their sides, with simple stations surrounded by commercial development. In fact, to serve some villages, the lines now diverge from their original course to enter central areas. All in all, Metro do Porto presents a good example of how to convert a railroad to rail transit. The main trunk line has three underground sections west of Trindade, with five stops in tunnel, including one at the city's main railroad station, Campanha, which is not downtown. The north-south line, which is entirely new, has 8 underground stations. It is served by Line D, whose ini-

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Traction Tour to Southern Europe

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As mentioned in the previous installment, route 25 climbs and descends some hills. It serves a residential area and has a modicum of local ridership before it gets to the city center. How would you like to commute to work on these single truckers every day?

A photo of the Oriente railroad station in Lisbon, which we rode into on our return from Sintra. Calatrava's roof does have a panache, and to me is reminiscent of the interior of the old Penn Station in New York City.

Two Siemens Combinos waiting for their departure times at the Cacilhas terminal of Sul do Tejo routes 1 and 3, Yes, the car on the right is smiling for the camera.

The southwest side of the junction. A route 2 car from Corrieros is shown joining the tracks of the 3 from the Cacilhas ferry station. Note the graffiti on the wall.

An LRV approaches the Almada station, while one headed for the ferry terminal is about to pass.

Routes 1 and 2 join just west of the Cova da Piedade station of the Sul de Tejo system, on a section of grassed-in track.

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Around New York's Transit System

Ⓕ Derailment in Queens

At 10:24 AM on Friday, May 2, 2014, the middle six cars of a southbound R-46 Ⓕ train derailed outside the 65th Street station. The derailment, which was apparently caused by a broken rail, caused a suspension of service on the Queens Boulevard Line between Forest Hills-71st Avenue and Queens Plaza/21st Street-Queensbridge for several hours. Local service was resumed in both directions for the evening rush, but all service was suspended again from 10 PM until about 7 AM Monday, May 4 while repairs were made, with buses providing shuttle service. All Ⓔ and Ⓕ train service then operated local, with Ⓡ trains terminating at 57th Street-Seventh Avenue and Ⓠ trains extended to Astoria. MTA Chairman Thomas F. Prendergast promised a full investigation, and it was soon revealed that the rail that apparently broke under the train was manufactured in November, 2013 and installed in March, 2014; metallurgical tests were to be done on the rail.

Of the approximately 1,000 people on the train, 19 were injured, four of them seriously.

Service on all four tracks resumed around 5 AM Monday, May 5. (***secondavenuesagas.com***, May 2; ***New York Daily News***, May 3; MTA press releases, May 3 and May 4)

Tentative Labor Settlement

On April 17, 2014, NYC Transit and MaBSTOA entered into a tentative labor settlement with Transport Workers Union Local 100. This settlement, which must be approved by the union members and the MTA Board, provides for the following wage increases and benefits:

EFFECTIVE DATE	WAGE INCREASE
January 16, 2012	1.0%
January 16, 2013	1.0%
January 16, 2014	2.0%
January 16, 2015	2.0%
January 16, 2016	2.0%

Employees would also be required to contribute, on a pre-tax basis, 2.0% of their gross wages on forty hours per week toward health and other benefits. Employees living outside of New York City would receive Metro-North or Long Island Rail Road commutation passes. The agreement also includes improved optical and dental benefits.

NYC Transit will, for the first time, utilize an inclined elevator, or inclinator, at the 34th Street-Hudson Yards station slated to open late 2014. Consisting of an individual glass-enclosed cabin that will accommodate up to 15 people, the inclinator will transport customers along a 170-foot track set at an angle of 27 degrees to the deep-level station. Costing less to construct than a vertical elevator because they entail less excavation, inclined elevators are already employed on the Washington Metro and DART, and on the Eiffel Tower. (***New York Daily News***, April 28)

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Traction Tour to Southern Europe

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tial section dates from 2005 (it appears the lines were lettered in the order of their construction). It contains the most spectacular part of the system, operating across the upper level of the Dom Luis I bridge over the Douro River, on a structure that dates from 1886. Engineered by a partner of Gustav Eiffel, in past years the bi-level iron structure carried streetcars and trolleybuses. Now its upper level caters to pedestrians, bicycles and light rail vehicles, while motor traffic is carried below. http://www.urbanrail.net/eu/pt/porto/porto.htm is a link for a good map. As a result of the varied infrastructure (and the sunny weather), Phil and I took lots of photos, so many that I have divided coverage of the light rail system into several sections, and there also will be one more for Porto's heritage streetcar operation.

(Continued next issue)

CORRECTION

Member David Klepper sent us the following comments about our April, 2014 article describing the method of fare collection at the IND World's Fair station.

"I do not remember an extra nickel to leave or ten cents to enter the IND at the 1939-40 World's Fair, and definitely not during Summer, 1940. They may have instituted this practice and then found very few riders, since a nickel was all that was required on the BMT and IRT, and for ten cents you had the far faster LIRR service (advertised as ten minutes, took twelve, still quite fast). I am certain of this, since I did use the service."

Your Editor-in-Chief checked his records, which revealed that he rode the GG to the World's Fair on August 14, 1939. He remembers paying an additional nickel to leave the station.