

RAILWORKS® TODAY

*A monthly newsletter for employees of
RailWorks Corporation and its subsidiaries*

NYCT VHF Project Hits the Right Frequency

L.K. Comstock & Co. is wrapping up the close-out process on the VHF (very high frequency) Radio project to replace the obsolete radio communication system on the New York City Transit (NYCT) subway system. The \$43-million project puts NYCT in compliance with a Federal Communications Commission (FCC) requirement to switch over to a new narrowband transmission system.

Working as a subcontractor to Nokia (formally Alcatel-Lucent USA), L.K. Comstock crews replaced legacy wideband equipment and installed new VHF radio base station equipment configured at 112 locations across four boroughs in New York City. The new equipment operates in narrowband mode to meet the FCC mandate.

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As part of the VHF project to switch over to new, narrowband radio communications technology on the New York City subway system, L.K. Comstock & Co. installed VHF radio cabinets (VRC) like this one in communications rooms across the city.

NYCT VHF Project Hits the Right Frequency *from page 1*

Project Manager Jim Lane shared these insights into the new technology and how L.K. Comstock executed the project.

What are the advantages of the new narrowband radio technology?

NYCT dispatchers and train operators use the radio system to coordinate train movements across all types of terrain on the subway system. The FCC issued the mandate because the wideband transmission is highly congested, and there often is not enough radio air space available for licensees to expand their existing systems or implement new ones. The new narrowband technology not only frees up air space for other users but also gives NYCT a better radio system with clearer, more reliable transmissions and greater functionality and security.



Jim Lane
Project Manager
L.K. Comstock

What work did L.K. Comstock perform?

L.K. Comstock installed new mechanical equipment at the Rail Control Center and backup Command Center in Manhattan as well as VHF base stations and power supply cabinets in communications rooms at 26 outdoor locations and 86 below-ground locations across Manhattan, Brooklyn, Queens and the Bronx. We also installed the radio antenna and ancillary items, such as the power and communications lines and telephone cables that feed into the cabinets and facilitate transmission into radio waves.

We considered this a challenging project because each of the 112 locations was unique, whether it was underground, in a tunnel or on an elevated structure. There was no cookie-cutter approach because of the variety of environments. We generated, coordinated and got approval of more than 2,500 drawings of communications rooms affecting many NYCT user group departments — power, telephone, HVAC, communication, radio and stations.

We faced certain logistical challenges to figure out how to physically fit all of the new equipment in the communications rooms. This includes moving a bulky 800-pound valve remote control (VRC) cabinet with sensitive technology — along with the associated Benning power plant, and batteries — to the project site and fitting them inside each of the communications rooms.

We carefully planned and executed each installation using cranes for above-ground installations and a stair-climber for the below-ground installations. About 15 percent of the installations required use of a NYCT work train under general orders to shut down that section of the track to deliver the new equipment and take out the old equipment.

When will the new technology be operational?

It is already in use. All of the new narrowband technology was installed by June 30, 2016, just in time to meet the FCC deadline. After the new equipment was installed at strategic locations, we had to perform cutovers almost every weekend to satisfy a compressed schedule. This was the most challenging portion of the project: testing the new equipment and bringing it on line. It required extensive coordination, along with planning, logistics and paperwork to document our progress.

What's occurred on the project since you met the FCC deadline?

Since installing all of the new technology, we've been busy performing ancillary change orders, completing the punch list and closing out all aspects of the project. Removing all of the obsolete equipment has been very labor-intensive.

We've had a strong team that has worked closely together to complete the work. We were fortunate to have John Sehn as our project leader until he retired in 2016 and then I took the lead. Our engineering team endured and overcame an arduous process from the outset to close out. Under the direct leadership of Communications Engineer Rick Bolduc, our engineers Ashley Ryan and Vincent Garafolo have both developed into two extremely knowledgeable and vital parts of the team and made this project a success.

VHF Radio Project Leadership

Jim Lane, Project Manager
John Sehn, Project Manager
Mike Ryan, General Foreman
Lee Impastato, General Foreman
Peter O'Malley, General Foreman
Rick Bolduc, Communications Engineer
Vincent Garafolo, Engineer
Ashley Ryan, Engineer



Current members of the VHF project leadership team at the staging/warehousing area adjacent to L.K. Comstock's field office in the Bronx, NY: Communications Engineer Rick Bolduc, Engineers Vincent Garafolo and Ashley Ryan, Project Manager Jim Lane, and General Foreman Peter O'Malley. Project leaders not pictured: Project Manager John Sehn (retired), and General Foremen Mike Ryan and Lee Impastato.

RailWorks Values In Action: Committed to Project Execution

HSQ Instrumental in San Francisco's Presidio Parkway

From the time they came onto the project in 2010 to the current work of completing change orders, an HSQ Technology team has had a significant role in replacing an aging, elevated and "seismically deficient" section of San Francisco roadway with a modern and more quake-resistant tunnel-highway-viaduct combination.



During two lengthy phases to replace the 1.6-mile section of Highway 101 known as Doyle Drive, HSQ brought to bear its hallmark expertise in industrial automation, in particular its experience designing and installing supervisory control and data acquisition (SCADA) systems and the communication networks that integrate with them. HSQ Technology's contribution to Presidio Parkway will enable monitoring and operational control of the four new vehicle tunnels at the heart of the thoroughfare between the city of San Francisco and the Golden Gate Bridge. There are three lanes in the northbound tunnels, while the two southbound tunnels have four lanes.

HSQ provided installation, startup, field testing, system integration testing and training associated with a range of new equipment they installed to monitor and control this vital section of roadway. The scope included but was not limited to closed-circuit television cameras linked to a sophisticated system for detecting tunnel incidents like slow, stopped or wrong-way vehicles, pedestrians, debris and fog or other causes of loss of visibility; carbon monoxide monitoring systems; tunnel lighting and other electrical systems; ventilation; a hydrant system; storm water drainage control; and the telephone systems (everyday and emergency).

Project Manager Peter Waenink says the Presidio Parkway work was not unlike other tunnel-based Bay Area jobs HSQ has performed in the past. The team pulled from experience such as work completed years ago for a State of California Department of Transportation (Caltrans) project at the Caldecott Tunnel as well as for the underwater tunnels that connect Oakland and Alameda.

Peter notes that HSQ has been a steady force during project execution. "I think HSQ was instrumental in keeping the project moving forward," he says, "by participating in project meetings, working closely with the design engineers, carefully coordinating with third-party vendors and working with the commissioning team and the fire marshal during the startup to bring the project to successful completion."

Besides Peter, others involved included field engineer Pete Schieck, support engineers Walter Bosh and Gary Waters and network engineer Yiyang Sun. The project is a public-private partnership, or P3. HSQ Technology was a subcontractor to the design-build joint venture Flatiron West and Kiewit Infrastructure West.



In San Francisco, HSQ Technology Project Manager Peter Waenink, second from far right, discusses emergency call boxes and associated wiring inside one of two new northbound Presidio Parkway tunnels. The Presidio Parkway project replaced an aging roadway with four tunnels, highways and viaducts in and near the historical Presidio national park district.

HSQ anticipates finalizing its Presidio Parkway job by the end of the year. Other nearby work includes transit projects in the Bay Area Rapid Transit (BART) district, where HSQ is performing related SCADA, communications and security systems work. Two of the larger projects are the 10-mile Berryessa Extension (the first phase of a 16-mile extension) between Fremont and San José's Berryessa district, and the East Contra Costa BART extension (eBART).

Calendar Notes

Industry Events

Jan. 10-13, 2018	National Railroad Construction (NRC) and Maintenance Association & REMSA Conference	Los Angeles, CA
March 7, 2018	Railroad Day on Capitol Hill	Washington, D.C.

RAILWORKSMART RAILWORKSAFE

Changes Point Toward Prevention

The Safety department has been instituting a number of positive changes. We asked each regional Health, Safety and Environmental (HSE) manager in Track operations to address one recent revised approach and shed some light on what RailWorks hopes to achieve.

New Safety Recognition Program

In October, RailWorks instituted its new safety recognition program that rewards employees for spotting safety issues and taking appropriate action to correct and prevent them.

“We are constantly looking for ways to make our approach towards safety, as a company, more proactive,” says Mike Lane of Track Central. “The new Safety Recognition Program is a big step in that direction. The entire program is based on employees actively looking for potential hazards and taking action to prevent them from becoming incidents and/or injuries.”



Mike Lane
Regional HSE Manager

The recognition program is designed to encourage field employees to proactively identify and reports good-catches. Previously, crew members would have reported their observations to supervisors for formal entry into RailWorks’ tracking system. Now, these employees can participate more directly by completing a new Safety Observation Form.

Regional or local safety committees review and rate all submitted observation forms. Mike stresses that rather than the volume of reports, it’s the quality of observations, interventions and good catches that will be the determining factor for recognition. (The program details are in the Employee Safety Recognition Program policy document available in the Safety team site on SharePoint.)

“Ultimately, prevention is the goal,” Mike emphasizes. “Taking action before a near miss, before an incident, before an injury, and recognizing that activity is the approach we need everyone to take.”

New Safety Observation Form

Hand-in-hand with the new recognition program is the new Safety Observation Form, which Mark Blankemeyer of Track West says will be a key tool for employees to document what they see.

“With this one-page form that is located on SharePoint and on a mobile app, employees can easily make an observation and document what they observed and any corrective actions that were taken to miti-

gate issues. The new form also enables employees to report good catches and to identify an individual or crew that is conducting work safely or taking safety to a new level by going above and beyond the norm.”

Mark says the new form will allow safety leaders to track and identify trends that will assist the department in identifying not only the lagging indicators that confirm patterns but also the leading indicators that predict future events.



Mark Blankemeyer
Regional HSE Manager

Revised Reports and Processes

Besides implementing new reporting tools, the Safety group is refining existing tools. Steve Moore of Track East says that tweaking the 24-hour Incident and Investigation reports “will provide a clearer view of what’s occurring so we can follow up more effectively.” In particular, Steve notes that:

- The “Hazard identification” and “Injury Types” have been expanded to provide more options, and the information in these sections will more accurately reveal trending.
- “Near Miss” reporting has been added to the 24-hour report as an incident type to allow better tracking of these events.
- The Investigation Report (IVR) now allows for “Cause Analysis” to assist in getting to the root cause of incidents.
- The “Corrective Actions” and “Preventative Actions” sections now allow for task assignment. This change will help ensure the right people follow up on the completion of these actions.

“We wanted to improve the quality of information obtained and the process for sharing it throughout the organization,” he notes. “These reports now allow for follow-up accountability from local management based on the severity level assigned to an incident.”



Steve Moore
Regional HSE Manager

News Across the Line

New York Transit

L.K. Comstock & Co. has won two new underground substation projects designed to increase power capacity on the New York City Transit Authority's (NYCT) Canarsie line. Once completed, the new substations will enable NYCT to increase the volume of trains serving this busy subway line. **John Sommer** serves as the project executive for both projects.

Harrison Place is a 39-month project valued at \$39.6 million at Harrison Place and Flushing Avenue, in the Bushwick neighborhood in the northern part of Brooklyn, N.Y. Under the leadership of Project Manager **Caitlin Grant**, NY Transit crews will build a 5,000 square-foot underground substation structure and install the associated electrical equipment.

The 39-month Maspeth Avenue project, in the Williamsburg neighborhood of Brooklyn, involves designing and building a 5,000-square-foot underground substation structure and installing associated electrical equipment, including two circuit breaker houses. Led by Project Manager **Renee Mahoney**, this project is valued at \$34.7 million.

RailWorks Track Services

RailWorks is constructing the track for the southern-most station for the new All Aboard Florida express train service that will launch in the coming months between Miami and Orlando. Crews are constructing 8,200 feet of direct fixation track comprised of three tracks and two turnouts that expand into five tracks in the station located in downtown Miami.

Jobsite conditions make this work particularly challenging. All of the track is being constructed on an aerial structure about 50 feet off the ground. In all, about 700 people are working in a five-block area constructing the track, station, parking garage and adjoining office and residential towers. The following team members are leading this project: Project Executive **Roger Boggess**, Project Manager **Loren Gallo** and Project Engineer **Matt Siggeman**.

This new inter-city express train service will transport passengers at speeds between 79 and 125 miles per hour —similar to Acela Express that serves the Northeastern United States. Trains will transport passengers between Miami, Fort Lauderdale, West Palm Beach and Orlando in three hours, less than the four-hour trip by automobile.



At Westshore Terminals, PNR RailWorks Trackman Inderjit Manhas removes coal from under conveyors to prepare grade for a contractor to pave.

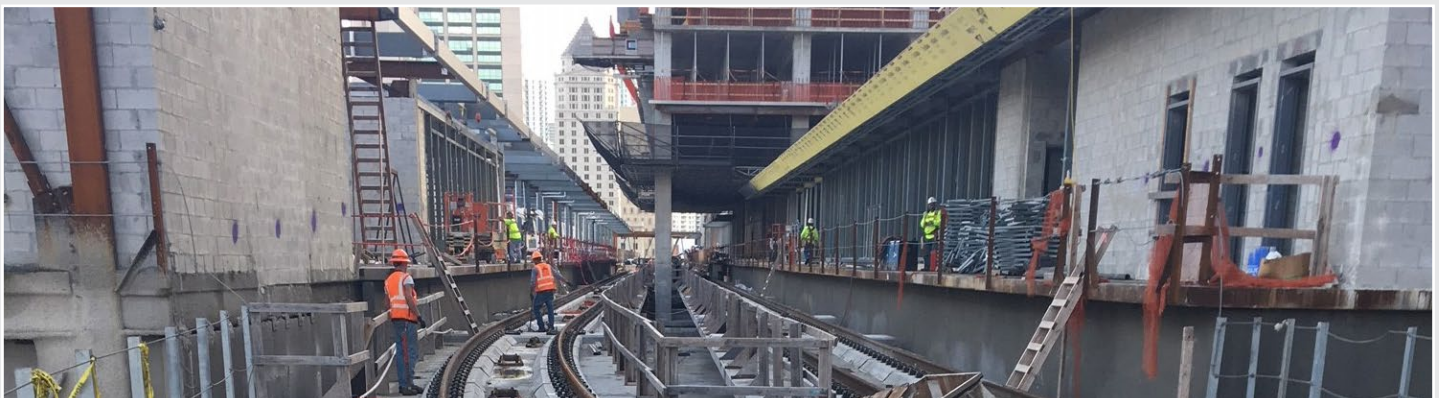
PNR RailWorks

In October, PNR RailWorks finished the third of four phases of a project to replace track at Westshore Terminals, part of Roberts Bank Super Port in Delta, BC. Westshore Terminals is in the midst of a five-year revitalization program that includes replacing three stacker-reclaimers used to stockpile and reclaim coal in the storage yard. (In 2015-2016, PNR RailWorks rebuilt track at one of those stacker-reclaimer units and now is doing the same at another unit being replaced.)

During the recent Phase 3 work, PNR RailWorks dismantled about 1,850 linear feet of track with timber ties, removed built-up coal from the area below the coal conveyors, excavated the area where rails had been removed, and placed lock blocks to build containment for new track. Some of the work was completed during a partial shutdown and some during a six-day shutdown, at which time the team also constructed 900 feet of loop track. Despite a work window for the loop track that was reduced from an original 96 hours to 72 hours, two PNR RailWorks crews completed the work on time.

On both projects, **Floridor Oprea** was project manager and **Rob Fenelon**, superintendent. On the stacker-reclaimer track project, **Ed Rego** and **Parm Gill** served as foremen. For the loop track construction, foremen were **John Lima** and **Nathan Webber**.

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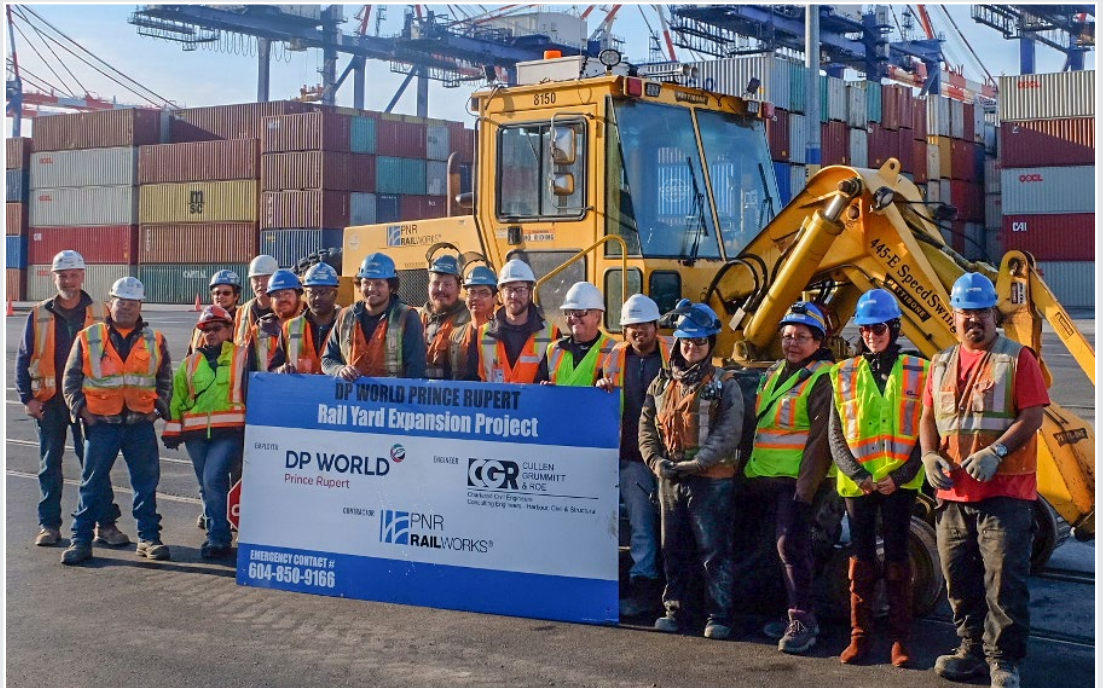
RailWorks laborers installed rail clips for the direct fixation track at the All Board Florida train station in Downtown Miami.

News Across the Line from page 5

PNR RailWorks was the prime contractor for a recently completed design-build project to expand DP World's rail yard at its container port in Prince Rupert, BC. PNR RailWorks installed more than a mile of new track while the container facility was fully operational. Subcontractors installed 29 catch basins and a mile of drainage, and paved all new track construction and crossing areas.

Despite extreme weather conditions and difficulties working within a 24-hour port facility, PNR RailWorks completed the time- and weather-sensitive project safely and on schedule. The rail yard expansion concludes Phase 2 of DP World's multi-phase expansion.

This PNR RailWorks team is celebrating completion of track work at the DP World container port in Prince Rupert, BC. From left: Surveyor Brent Mowat, Foreman Joe Lima, Flagperson Mary Stroomer, Operator Wayne Douglas, Superintendent Dave Pearce, Trackmen Christian Goudreau, Harjit Trakhar, and Douglas Schroeder; Operator Kyle Ridsdale, Trackman Devon Lincoln, Project Manager Luke Dorn; HSE coordinator Roger Gendreau; Field Engineer Harshith Vijaya, Flagpersons Sarah Wesley and Karla Mather; and Trackman Cody Wesley. Not pictured: Tamper Operator Ray Kehler and Trackman Mike Lima.



Underpaying Prevailing Wages Results in \$2.5 Million Forfeiture, Suspension

A Brooklyn, NY, construction company, admitted to underpaying its workers and, as part of a plea deal, agreed to forfeit \$2.5 million. MSR Electrical Construction Company and its owner pleaded guilty to grand larceny and violating the state's prevailing wage laws in connection with multiple public works projects. On these projects, MSR was supposed to pay its workers \$54 per hour plus benefits, but the workers were only paid between \$13.50 and \$25 per hour with no overtime or benefits. As a result, in addition to the \$2.5 million forfeiture, MSR's owner will be sentenced to five years' probation, and MSR will be banned from working on any public works project as a contractor for five years.



on public projects the applicable prevailing wages and fringe benefits or overtime can be severe, including civil and criminal penalties, restitution and suspension or debarment from working on government contracts. RailWorks will not tolerate any such failure and requires that employees working on prevailing wage projects are paid the correct prevailing wage and fringe benefit rates, as well as overtime premiums where applicable.

Compliance is a fundamental business standard at RailWorks. Watch for more "Compliance Matters" examples in *RailWorks Today*. Employees can address any questions or comments to RailWorks' Vice President, Assistant General Counsel and Chief

The lesson from this story: The failure to pay employees working

Compliance Officer, Christopher K. Smith.