

RAILWORKS® TODAY

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

Right on Target with DART



In Dallas, TX, a Dallas Area Rapid Transit Blue Line train pulls into the new station at the University of North Texas at Dallas. L.K. Comstock National Transit served as the systems contractor for the new Blue Line extension, which began passenger service in October.

On its most recent light rail project for the Dallas Area Rapid Transit (DART) authority, RailWorks subsidiary L.K. Comstock National Transit drew on its lessons learned from previous jobs to overcome a compressed schedule and an unrelenting heat wave on the way to a successful outcome.

L.K. Comstock served as the systems contractor for the 2.76-mile southward extension of DART's Blue Line, from its existing Ledbetter Station in the South Oak Cliff neighborhood to the new UNT Dallas (University of North Texas at Dallas) Station. The project involved furnishing and installing two traction power substations and the corresponding DC feeder system, the overhead catenary system, the signal system with a cab signaling system, and a communication system with voice, data and video communication between the control center, stations, substations and other facilities on the right-of-way.

During the project, DART came up with a goal of moving the revenue service start date up two months, from December to

October. L.K. Comstock agreed to the ambitious target, provided the predecessor activities would be advanced as well. However, L.K. Comstock came up against an unexpected delay in receiving access to work areas. "When we agreed to acceleration, we were supposed to have access to all areas in May 2016," says Project Manager Zafar Arif. "But we didn't get access until June."

To pick up time, L.K. Comstock relied on its experience managing logistics and production. The challenges were familiar ones, encountered on nearly every project. And L.K. Comstock had built a relationship with DART over years of working together. (See the sidebar on page 2.)

Construction Manager Clark Chance arranged for additional equipment and crews who worked under a compressed schedule. "We brought in all kinds of resources and started working 16-hour days, seven days a week," Clark notes. But working in the Dallas heat that averaged 95 to 97 degrees daily throughout July and August

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called for another adjustment to the workers' schedule.

"After a week or so in the daytime heat, we thought it better to start in the evening and go into the early morning hours. It was cooler at night, and we had light plants to make sure everything was visible," he says. "Virtually the whole project was built at night."

Some other factors emerged that allowed L.K. Comstock to pick up additional speed on the \$21.4 million project. Besides cooler temperatures at night, "There were no other contractors out on the site at night," notes Clark. "That made it easier for us to get up and down the rails and allowed us to have full access to everything."

And when it came time for inspections, an unconventional approach saved time. Typically, the contractors run their tests first, followed by the transit authority. However, it was apparent that to maintain the accelerated schedule, both L.K. Comstock and DART would inspect and test simultaneously.

"In every project, there are issues that need to be ironed out prior to our handing the system over to the authority," Clark explains. "Sometimes the issues are not apparent during the contractor's testing, but show up during the authority's integration testing, which means the contractor has to come back and resolve the issue. What made this project unique was the fact both contractor and authority integration teams were testing at the same time, which significantly shortened the testing schedule for both parties." DART has said it intends to employ this approach on future rail projects.

In addition to adjusting for schedule changes and the weather, L.K. Comstock also found that due to experience with DART, it could anticipate the best ways to fulfill some details on DART's wish list."

"While working on previous DART projects, we found there had been certain things that different departments wanted to see. It's

mainly aesthetics, like the way wires are run and dressed the way DART likes, or making sure the section insulators for the OCS are able to be adjusted easily instead of messing with several parts. Knowing what the owner will be looking for in advance saved us time and money."

Ultimately, L.K. Comstock drew on its past DART experience to beat the heat, squeeze the schedule and turn over the project in time for the October 24 start of revenue service.



During a cutover in July, L.K. Comstock workers completed the interface of the newly installed overhead catenary system on the Dallas Area Rapid Transit agency's new Blue Line extension with the existing Blue Line.

Project Leadership Team

Zafar Arif, Project Manager

Clark Chance, Construction Manager

Ricky Waynes, QA-QC/ Safety Manager

Allen Palmer, Signal Construction Engineer

Jeremy Walton, Signal Engineer

Bryan Giron, Field Engineer

RailWorks Has Extensive History on DART Projects

RailWorks companies and Dallas Area Rapid Transit (DART) have joined forces multiple times over the past several years. Our light rail projects and their completion years:

2003 – Northeast North-Central Extension. L.K. Comstock performed the systems work on the 25-mile extension to what was then a 44-mile light rail system serving Dallas, Garland, Richardson and Plano, TX.

2010 – Green Line Expansion. This \$1.8 billion project created a new, 28-mile light rail line in the northwest and southeast Dallas metro area. L.K. Comstock performed the systems work on a 13.65-mile portion of the northwest corridor that connects downtown Dallas with Dallas Medical/Market Center, Love Field Airport and the cities of Farmers Branch and Carrollton.

2012 – Blue Line Expansion. DART's \$188 million Blue Line expansion added 4.5 miles to the light rail line to link the downtowns of Garland and Rowlett. RailWorks companies L.K. Comstock and RailWorks Track Systems worked together to complete both the track and systems work on the project.

2016 – Blue Line Expansion. This \$21.4 million, 2.7-mile extension expands DART service southward to the campus of the University of North Texas at Dallas. L.K. Comstock completed the systems portion of the project which makes DART, at 93 miles, the largest light rail system in the United States.

RAILWORKSMART RAILWORKSAFE

Staying Safe in Winter Weather

Old Man Winter has begun his visits to some areas of the United States and Canada, and depending on where you're working, you have by now encountered cold and snow. It's high time to gear up, because according to the Farmers' Almanac, winter will blast all the usual suspects over the coming weeks.



Brad Belcourt
Area HSE Manager
Prairie Region

For reminders about safety and preparedness during winter weather, who better to turn to than our northernmost employees? Most of us in Canada and the U.S. will remember to dress warmly and stay dry to avoid frostbite and hypothermia, or to modify our driving habits in wet or icy conditions. But for some more distinct safety practices to keep top of mind in the winter, take note of these contributions from personnel in the PNR RailWorks Prairie and Pacific regions.

Exposure to the Cold

The Prairie Region explained how all our Canadian regions stay safe in the cold. Their routine practice is to provide employees with specialized personal protective equipment for winter work that includes lined winter gloves/mitts; insulated hard hat liners, balaclavas or toques; and clip-on ice cleats for boots. Employees receive instruction on how to dress appropriately in at least three separate layers, the first two being wool or synthetic material. The third and final layer should be wind- and water-rated outerwear. Dressing in layers, as well as covering the face and neck, will help prevent cold stress.

Employees learn to work in pairs so that workers can watch for signs of cold stress, acclimatize to the cold weather and know thresholds for working in winter temperatures. See the accompanying chart of threshold limit values (TLVs) signaling the times for employee breaks to warm up during extreme conditions. (In addition, employees take extended long breaks at the four-hour mark.)

Threshold Limit Values Work/Warm-up Schedule for Four-Hour Shift

Sunny Sky Air Temperature		No noticeable wind		Wind 8 km/h (5 mph)		Wind 16 km/h (10 mph)		Wind 24 km/h (15 mph)		Wind 32 km/h (20 mph)	
Celsius*	Fahrenheit*	Max. work period	Number of breaks**	Max. work period	Number of breaks**	Max. work period	Number of breaks**	Max. work period	Number of breaks**	Max. work period	Number of breaks**
-26 to -28	-15 to -19	120 minutes	1	120 minutes	1	75 minutes	2	55 minutes	3	40 minutes	4
-29 to -31	-20 to -24	120 minutes	1	75 minutes	2	55 minutes	3	40 minutes	4	30 minutes	5
-32 to -34	-25 to -29	75 minutes	2	55 minutes	3	40 minutes	4	30 minutes	5	Non-emergency work should stop	
-35 to -37	-30 to -34	55 minutes	3	40 minutes	4	30 minutes	5	Non-emergency work should stop			
-38 to -39	-35 to -39	40 minutes	4	30 minutes	5	Non-emergency work should stop					
-40 to -42	-40 to -44	30 minutes	5	Non-emergency work should stop							
-43 and below	-45 and below	Non-emergency work should stop									

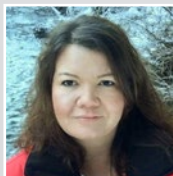
* All temperatures are approximate.

** Number of breaks: This includes a normal break after two hours and the number of additional warm-up breaks needed.

Source: Government of Saskatchewan, Occupational Health and Safety Division

Wintertime Track Inspection

The Pacific Region reminds us to be aware that snow and ice buildup can occur between the rail and tie plates and can cause derailments. Curves, particularly high-degree curves, appear more susceptible. Rail that was laid hot can "chord in" as the weather gets colder, causing improper rail seating and affecting the rail-tie interface. Snow and ice can accumulate to the point that the rail eventually disengages from gauge-side spikes.



Helen Aherne
Area HSE Manager
Pacific Region

It is hard to detect this issue when there is any degree of snow accumulation over the rail ties. It's smart to walk the curve, checking both the high and low rail. Wide gauge and canting are signals to check for ice buildup. Other signs to look for include break-away ice or a change in the running band location due to the canting rail; ice chunks that have fallen from rail cars due to rough track; battered or corrugated rail; and similar irregularities.

RailWorks Values In Action: **Employee Focus, Integrity**

Grateful Employees Lead to a Better RailWorks

RailWorks is a great company and a leader in the markets we serve. But like most other companies, we probably aren't as great when it comes to expressing thanks on the job.

According to a survey conducted by the John Templeton Foundation, people are less likely to feel or express gratitude at work more than anyplace else. Here are some findings among those surveyed:

- Most say their job is among the last things for which they are grateful.
- Most reported that that hearing “thank you” at work made them feel good and motivated.
- Almost all respondents reported that saying “thank you” to co-workers “makes me feel happier and more fulfilled.” But on a given day, only 10 percent acted on that impulse.
- About 60 percent said they “either never express gratitude at work or do so perhaps once a year.”

Even though expressing gratitude on the job fosters many positive outcomes, we just don't do it, or we don't do it very often. During this season of Thanksgiving, let's change that by expressing thanks to others across the company. Be a leader and let it start with you.

Take the Thanksgiving Challenge

1. Express your thanks in person or send it in a text or email.
2. Reach out to employees who help you stay safe or do your job better.
3. Send an expression of appreciation to someone you admire on the job.
4. Target employees who seldom get recognition or thanks. You know who they are.
5. Managers, set a good example. Say “thank you” in both public and private settings in a clear and consistent manner.
6. Don't leave out customers, our jobsite partners and your family members, who support you in your job. We're all in this together. Let them know they are appreciated.

It only takes a minute to make RailWorks a better place to work. Stop, and do it now, and together let's put a wave of gratitude in motion across RailWorks.



RailWorks Thanks

We can do it. We can propel that wave of gratitude across the company, starting with writing and sending some emails. Put “RailWorks Thanks” in the subject line of your messages of thanks or appreciation. Let's make our thanks a trending topic on Outlook.

GIVING GIFTS ISN'T ALWAYS GOOD

In December 2015, ADCO Electrical Corp. and two of its officials, pleaded guilty to bribery charges related to improper payments and gifts provided to Citibank's Director of Construction in exchange for the award of contracts by Citibank. These gifts included cash payments as well as paying for several lavish, weekend hunting trips for the Director of Construction. As part the plea deal, ADCO and its officials will be sentenced at a later date to three-years of conditional discharge, forfeiture of \$500,000 and a period of oversight by the Manhattan District Attorney's Office.

A reminder from RailWorks' Standards of Conduct: Employees may extend gifts or entertainment to any potential customer only if they meet specific conditions, one of which is that the gift isn't offered in exchange for gain or action, or with the intent to influence the decision of the receiving party. Please review the Standards of Conduct for the other conditions surrounding gifts and entertainment to any customer or third party.

Watch for more “Compliance Matters” examples in *RailWorks Today* illustrating why compliance is a priority for RailWorks. Employees can address any questions or comments to RailWorks' Assistant General Counsel and Chief Compliance Officer Christopher K. Smith.



News Across the Line

PNR RailWorks

PNR RailWorks crews working on the Union Station Rail Corridor (USRC) re-signalization project switched from overnight to daytime shifts during Canada's Thanksgiving holiday weekend in October. Signalmen worked west toward Union Station to install troughing into an excavated trench. They have been working in the East Zone of the Union Station corridor since May. Toward the end of 2016, troughing installation will be almost completed in the East zone. The West zone will follow.

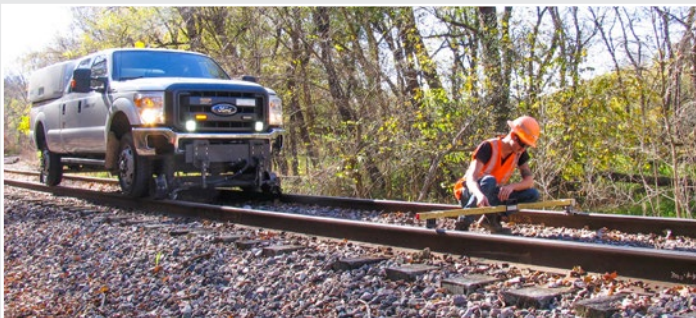


Working west toward Union Station in the shadow of the CN Tower in Toronto, ON, PNR RailWorks signalmen installed troughing into an excavated trench.

Project Manager **Juan Estrada** leads this six-year project, which includes replacing all signals, track circuits and cables on the USRC, installing all new solid state interlockings and control equipment that is housed in 10 signal houses supplied by Alstom and wired by PNR RailWorks, and installing 10 power houses supplied by PNR RailWorks. The division also is installing a supervisory control and data acquisition (SCADA) system and local control panels, equipment cases, signal bridges, cable routing and ducting.

RailWorks Maintenance of Way

RailWorks Maintenance of Way track geometry operators have covered thousands of miles of track this year on Class I and short line railroads. Through hi-rail vehicles equipped with SolidTrack technology, these operators provide a proactive tool that creates a detailed profile of track conditions. Data is recorded in high resolution showing all urgent and warning defects in real time, measuring the full spectrum of track geometry. Director of Technical Services **Jason Deaton** leads this group with support from Account Marketing Manager **Mark Sanders** and Lead Geometry Operator **Kyle Miller**.

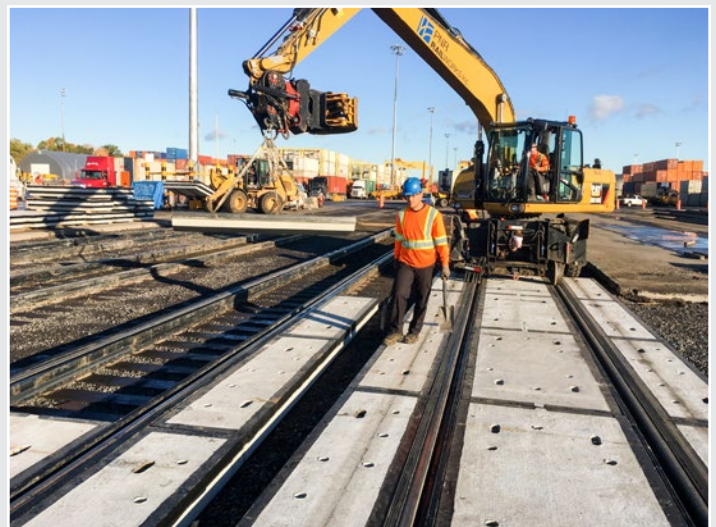
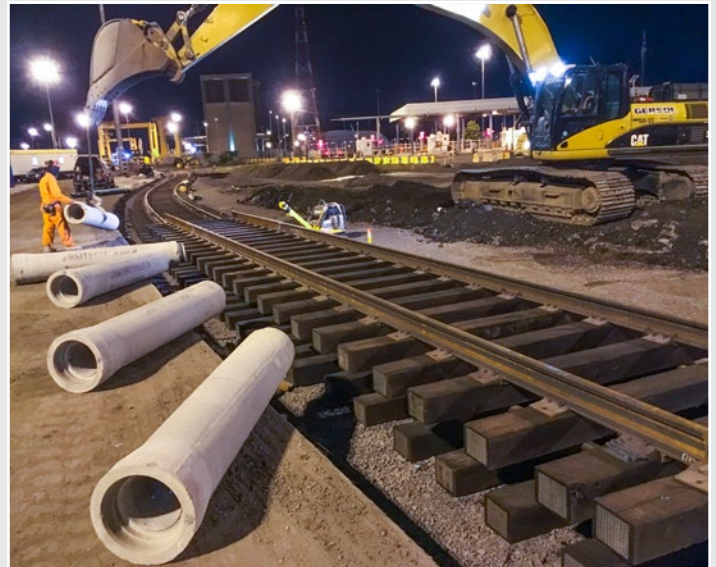


Operator Ray Hooper positions a level on BNSF track near Red Oak, IA, to check cross-level irregularities flagged in his track geometry system.

PNR RailWorks Quebec

PNR RailWorks Quebec completed a track rehabilitation project in early November at the Montreal Gateway Terminal, a significant operator handling close to half of the container traffic at the Port of Montreal. Crews under the leadership of Project Manager **Salim Ouazzani** performed the work over weekend windows held every two weeks during September and October.

In addition to constructing a new lead and all related track work, PNR RailWorks Quebec also was responsible for the site excavation and replacing the underground aqueduct, sewers, electrical utilities and compacting the fill. This work was particularly grueling because crews and subcontractors were working with old and unreliable infrastructure diagrams and discovered unexpected piping and wiring. Work wrapped up with final paving at the project site, just before winter weather hits that region.



PNR RailWorks Quebec crews constructed 1,410 feet of track at the Montreal Gateway Terminal, including rebuilding a lead with five turnouts and installing concrete panel crossing surfaces.