SHORT LINE RAILROADS MAKE BIG MOVES WITH DIGITAL COMMUNICATIONS

MOTOROLA SOLUTIONS

Short Line Rail Operators Watco Transportation Services and TNW Corporation Keep Worker Safety and Productivity on Track with Seamless Communications

Short line railroad organizations are at a communications crossroads — preparing for future digital radio communications standards while addressing critical communications needs today. In reality, many short line railroads still use communication devices built for wideband analog communications and are hindered by limited range, poor battery life and spotty coverage.

The Association of American Railroads (AAR) is recommending that railroads migrate to ultra-narrowband technology before the FCC requires it, spurring organizations to evaluate current technology and make investments to future-proof their infrastructure.

In addition, the Federal Railroad Administration's (FRA) ban on the use of all personal electronic devices by railroad employees while operating trains and in other settings, has created a need for industry-optimized devices that can provide dependable communications from multiple teams among the railroads.

Many short line railroad operators rely on MOTOTRBO™ digital radios to enable them to continue utilizing analog channels for interoperable rail communications, while taking advantage of digital features for intercompany communications such as rail hub operations, on-site communications and maintenance crews. Two such operators include Watco Transportation Services (WTS) and TNW Corporation.

With years of in-depth rail industry expertise, they identified a need for updated radio communications that would enhance safety and productivity for the railroads across North America.

WTS is the largest privately owned short line operator in the U.S. with a growing inventory of 37 railroads. The WTS network covers more 5,100 miles of track and ships more than half a million carloads annually, transporting commodities such as agricultural and food products, lumber and forest products, paper and paper goods, chemicals, plastics and energy products.

TNW Corporation is a Dallas-based owner-operator of short line railroads which has been in operation for more than 30 years. Three of its companies include Texas Gonzales Northern Railway (TXGN), Texas North Western Railway (TXNW) and Texas Rock Crusher Railway (TXR).

TXGN provides rail transport, storage and operations for companies in Texas' central heartland. TXGN owns and/or manages 13 miles of main track and approximately 50 miles of storage and loop track. The railway interchanges with the Union Pacific Railroad and handles several thousand rail cars carrying energy-related products, grain and animal feed meals, clay/bentonite and raw and finished heavy metal products.

TXNW serves the rail transport, storage, operations and logistics needs of leading companies in the Texas Panhandle. TXNW interchanges with the Burlington Northern Santa Fe Railroad (BNSF) and provides railcar storage, service, transport and transload services to national, regional and local clients. Texas Rock Crusher Railway (TXR) serves the rail transport, storage and operations needs of companies in the Pecan Valley, which lies in the central heartland of Texas. TXR operates more than 13 miles of owned and customer-leased track in their Brownwood, TX location.

WATCO COMPANIES

TNW Corporation

CUSTOMER PROFILE:

INDUSTRY

Transportation and Logistics

SOLUTIONS

- MOTOTRBO XPR 5000e Series Mobile Two-way Radios
- MOTOTRBO XPR 7000e Series Portable Two-way Radios

BENEFITS

- Transition from analog to digital with ease and at own pace
- Hear and be heard in noisy rail yard environments
- Safeguard staff with instant connectivity and expanded range
- Create interoperability across operators, maintenance and dispatch
- Communicate seamlessly with Class I railroads
- Lean on ultra-reliable equipment and durable performance in rugged environments

CHALLENGES

Spotty Signal and Poor Voice Quality Created Safety Risk

When working on the front lines conducting maintenance and moving rail cars to prepare for transport, poor communications can be a serious safety concern — putting employees' lives at risk. The organizations were using two-way radios, but the coverage was spotty and voice quality wasn't crystal clear, making effective communications between groups a major challenge.

"When hooking up rail cars, employees need to know exactly how far to push to connect them, which requires seamless coordination between ground crews. We needed to find new, ultra-reliable equipment that would take productivity, efficiency and safety to the next level." – Steve Coomes, Vice President of Operations, Watco Transportation Services

Interoperability and Coverage Didn't Go the Extra Mile

Watco, in particular, has purchased or leased tracks to move freight along Class I lines. Therefore, it is imperative that Watco operators and employees are able to communicate with Class I personnel to interchange rail cars, requiring two-way radio interoperability between short line and Class I channels.

In addition to coordinating with Class I railroads, Watco also requires reliable communications support among dispatch centers for productive and safe train car flow, as well as among track maintenance crews to notify and be notified of train movements and right-of-way. The assortment of two-way radios from a variety of vendors didn't provide the coverage the short line employees needed to coordinate activities across multiple sites.

"We were always trying to fix communications, which was distracting from our tasks at hand. Our primary motivation to invest in new communication devices was to benefit from coverage over longer distances and more power to keep employees connected from anywhere." – Jason Gill, Vice President of Operations at TNW Corporation

"We have urgent communication needs now and did not want to wait for the looming FCC transition deadline to narrowband to make the shift to digital. We want to have technology in place to help us operate more safely and efficiently, which means a need for both analog and digital today."

– Steve Coomes, Vice President of Operations, Watco Transportation Services

Mountains of Broken Equipment Disrupted Operations

Watco and the short lines under TNW Corporation were also frustrated with ongoing radio repairs and breakages, as well as poor battery life that would require constant replacement batteries and replacement parts.

"It was a huge challenge to have an assortment of radios — some would break and others weren't interoperable," said Jason Gill, Vice President of Operations with TNW. "We wanted one provider we could trust to deliver reliable coverage and equipment quality so we could be consistent across all of our operations."

When radios would break, employees had to call in crews and wait for replacement radios — disrupting operations.

"We have had so many different two-way radio brands that have come and gone — we've tried them all. As a result, we had mountains of obsolete, dysfunctional radios with no interchangeability and decided enough was enough."

– Steve Coomes, Vice President of Operations, Watco Transportation Services

SOLUTION

Watco, TXGN and TXNW turned to MOTOTRBO™ digital two-way radios to address a range of communications challenges. Not only do MOTOTRBO digital features deliver twice the number of talk-paths on the current channels, improved clarity of the radio signal, greater coverage and longer battery life, but the short line organizations could also switch to analog channels to coordinate with Class I railroads. Many short line railroad operators rely on MOTOTRBO digital radios to be able to continue utilizing analog channels for interoperable rail communications, while leveraging digital features for intercompany communications such as rail hub operations, on-site communications and maintenance crews.

> *"There is not one aspect of rail operations that doesn't require always-available communications. With support for trunking as well as legacy analog technology, Motorola Solutions gives us complete connectivity as our business continues to grow."* — *Jason Gill, Vice President of Operations at TNW Corporation*

With MOTOTRBO next-generation two-way radios in place, businesses have the flexibility to upgrade to digital at their own pace, while taking advantage of improved and more efficient communications, today.

BENEFITS

Coordinated Communications Improve Safety

With MOTOTRBO trunking capabilities, the organizations have a wider calling range and higher talkgroup capacity. For example, employees are using the two-way radios to talk directly to another line worker for immediate direct communications, as well as in a yard situation with many workgroups and teams operating independently.

"We swap over to different channels many times a day," said Coomes. "When entering a railroad yard, operators can switch to their channel to announce approach and can also use the radios to notify first responders, if necessary."

TXR is primarily using MOTOTRBO to help crew members coordinate with each other, between a mobile radio mounted in the locomotive and ongoing communications between crew members in a service support vehicle and crew members on the ground.

"We had the opportunity to send team members to another property — from West Virginia to Kansas — when there was a surge in business. We know regardless of where our employees are staffed they know how to use the radios on-site so now there are no gaps in operations or safety procedures." *– Steve Coomes, Vice President of Operations, Watco Transportation Services*

Trusted Connectivity and Coverage

With MOTOTRBO digital two-way radios in place, the companies have a newfound confidence in their equipment and know they can rely on the radios to stay safe and well-connected.

"In the past, we had have piles of old antennas, batteries and chargers that all went with different radios," said Coomes. "Different brands come and go and we used about every one. But, now with Motorola Solutions, we have one company we can trust."

Having equipment that delivers on its promise of reliable performance has improved worker morale, eliminating past frustrations that came with broken radios, poor voice quality and spotty coverage.

"Before MOTOTRBO, at times, we had to stand on the back of the locomotive and hold our radios in the air to get coverage," said Jason Gill, Vice President of Operations at TNW Corporation. "Now, that's a thing of the past and we get great reception wherever we are working."

Unparalleled Battery Life

"We used to have to call in crews regularly to swap out batteries," said Coomes. "With Motorola Solutions, our battery life has tripled from months to years of life — other vendors can't match that."

The organizations credit MOTOTRBO multi-pack battery charger combination and interchangeability for the difference. Employees simply put one radio into the charger and take one that's charged and ready to go, an ease-of-use feature that they didn't find with other brands.

Seamless Path for Digital Migration

Having MOTOTRBO digital capable two-way radios in place, provides short line organizations with the ability to continue to use analog technology while moving to digital as needs progress.

"We are primarily using analog but with MOTOTRBO, we are digital ready," said Gill. "We have the breathing room to use the radios in analog mode on our current system and then upgrade to digital at our own pace."

The Motorola Solutions digital TDMA radios are 6.25 kHz equivalent — providing the added assurance of compliant operations to potential future FCC ultra-narrowbanding requirements.

Extended Range of Communication

MOTOTRBO delivers loud, clear audio across long-distance ranges — a must-have for short line operations. With noise cancellation technology and improved clarity, two-way radios deliver make workplace communications clearly intelligible and receivers dramatically boosts range allowing communications to reach further than ever.

"Gone are the days of having to stand on the back of a locomotive to get coverage," said Gill. "Now, in yards that hold 50-75 cars, we have reliable coverage, as well as across long distances."

"It's critical to have clear communications that last the length of an entire shift," said Watco. "We cannot be efficient and safe without clear radios — there's just no way around it."

– Steve Coomes, Vice President of Operations, Watco Transportation Services

Keep Operations on Track with Team Communications

In the 2017 Motorola Solutions Transportation and Logistics Communications Survey, respondents from the rail sector said that 68% of their teams are carrying two devices to communicate and 25% are using as many as three devices. 90% of respondents said being able to seamlessly connect all their workers' various communication devices is of importance to their business — further proving the need for unified communications that meet the unique needs of businesses operating in this industry.

With MOTOTRBO, short line railroad organizations can take advantage of Motorola Solutions Team Communications to make that happen. Allow workers to communicate instantly and securely via push-to-talk (PTT) between two-way radios, smartphones, computers, landlines and other devices. Augment PTT communications with a rich data application ecosystem for additional context and intelligence and enable workers to leverage GPS location tracking, job site status updates and other business-critical data applications.

Learn more on how to boost efficiency, safety and customer service with unified team communications.

Visit **www.MotorolaSolutions.com/Rail** and learn how to unify communications for rail teams across locations, devices and networks with added intelligence.

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