Enhancing RWIC's Role in an Effective Roadway Worker Safety Program with an Electronic Safety Overlay System

WHITE PAPER

Without a doubt, the Roadway-Worker-in-Charge (RWIC) plays a crucial role in the protection of a railroad work crew. When it comes to safety on the track, the buck stops with him or her. Period.

However, the reality is that the RWIC faces a wide array of safety challenges while on the track. They have many responsibilities, and they can't be in many places at the same time.

To ensure the safety of their crew, the RWIC needs help to do his job. The best help they can get is from an electronic worker protection system which creates a protection zone for their roadway crew. Fortunately, Miller Ingenuity has developed a system that does just that. Miller Ingenuity's ZoneGuard provides an electronic safety overlay that grants the RWIC piece of mind that his roadway crew is safe.

This white paper discusses the safety challenges that RWICs face while out on the tracks and demonstrates that an electronic overlay system is the best way to provide support to the RWIC while enhancing safety.

Safety Challenges Faced by the RWIC

The protection of roadway crews is vital. And, it is promoted through the establishment of, and strict adherence to, rules and procedures as part of an effective roadway crew safety program. Understanding the safety rules and procedures is one thing. Carrying out activities that protect the safety of workers on a daily basis is quite another.

Here are just some of the safety challenges the RWIC must deal with every day.

Remembering Track Bulletins – Protecting workers by issuing track bulletins is a fundamental element of a roadway crew safety program. Unfortunately, this system isn't foolproof. Since track bulletins and track authorities are usually verbally communicated and typically handwritten by the RWIC, the expected protection zone may not accurately correlate between the field and the dispatch office.

This is a recipe for potential disaster. The work crew are completely reliant on this communication to be accurate, but like all manually-based systems, human error can creep in. Even though this manual protection works as intended almost all the time, mistakes are still possible, and the results of mistakes can be tragic.

Holding Productive Safety Briefings – Roadway crew safety programs must include procedures for conducting and participating in a safety briefing before beginning work and when work conditions change. All workers, without exception, must attend these briefings. The absence of just one worker threatens the safety of all workers. Consequently, the RWIC is responsible for making sure that all workers are present and accounted for.

Additionally, there is always the lingering concern that one or more workers will fail to understand what is discussed in the safety briefing and/or will not adhere to what was discussed in the briefing. Even though the RWIC has properly performed his task of leading the safety briefing, just one non-compliant worker can jeopardize on-track safety for the entire crew.

Approach Board & Red Board Adherence – An effective safety program requires the RWIC to be responsible for establishing on-track protection for all members of the crew. This responsibility includes setting up, and moving as necessary, the approach boards and red boards.

The concern here is that the train crew may not see the approach or red boards or adhere to them due to inattentiveness. If this happens, particularly in situations where the topography of the track does not permit a clear line of sight, there is a significant chance that the RWIC won't be able to clear the track in time to protect everyone in his crew. It's also possible the work crew is working right up to the red board and if the train is not prepared to stop, catastrophe can result.

Watchmen Vigilance – There are times when the only protection for the crew is the vigilance of the watchmen. This means that the RWIC will always be concerned about whether watchmen are properly positioned and attentive at all times.

Practically speaking, the work of watchmen can be monotonous. They have one task. Staring down a stretch of track, watching for a train. This can result in the type of fatigue that may cause watchmen to lose focus and become less effective at their job.

The placement and attentiveness of watchmen is especially important when the topography of the track makes establishing and maintaining a clear line of site difficult for the watchmen and the RWIC. This is the case when there is a curve in the track. Additional watchmen are necessary under this circumstance. Still, a brief lapse in attention can be disastrous.

Trains Gaming the System – Even when all the safety procedures are being followed by the workers on the track, the RWIC must keep in mind that trains may try to game the system. Because a train operator may prefer to keep the train moving, they may communicate incorrect information about their position on the track to the RWIC. This may allow the train crew to keep its schedule, but it's frustrating to the RWIC since he must clear the work crew early and lose valuable track time. This results in not only a loss in productivity but also a loss of confidence between work crews and train crews. This loss of confidence can result in an unsafe safety culture, with the potential for conflict and unsafe behaviors.

An Electronic Safety Overlay Supports the RWIC and Enhances Safety

To be most effective, an electronic safety overlay must be a system that leverages modern technology advances. Capable of functioning day or night, and in all weather conditions, the system is the RWIC's cornerstone of safety.

One component of the overlay system is the train detection module. Set up by the RWIC or member of their work crew at each end of the protected track and before work commences, each module's primary function is to notify the work crew if an approaching train crosses into protected track space.

Because train detection modules constantly scan the track for approaching trains, the train crews' adherence to the approach board and stop board are no longer life threatening since the RWIC and his work crew will still be alerted when a train has crossed into protected zone. The train detection module also serves as a backup to the train watchman whose attentiveness may falter as the work day progresses. And, it is now impossible for trains to game the system. That's because as soon as a train approaches, a train detection module placed by the approach board will alert the RWIC of its presence.

Additionally, even if the RWIC or approaching trains don't accurately correlate the track authority limits on the track bulletin between the dispatch office and the field, the roadway

crew won't be in danger. The safety overlay still does its job of alerting the RWIC and crew when a train crosses into the protected zone.

Another component of the overlay system is the wearable warning module. Worn by the RWIC and every member of the work crew, the modules primary capability is alerting workers of an approaching train. This function is particularly helpful when it comes to the lone worker. Instead of relying on others for his safety, he is alerted to danger directly by the overlay system.

The wearable warning modules also assist the RWIC in a unique way. Because they are handed out when the workday begins and can only be connected into the system when authorized by the RWIC wearable, the RWIC will always know whether all their workers are in attendance at the safety briefing.

The third component of the overlay system is the train warning module. The RWIC places multiple modules that are spaced out along the protected track to create a network of wirelessly connected train detection and worker wearable warning modules. This is the part of the system that makes communication between the modules and the roadway workers possible.

With an electronic safety overlay system in place, the RWIC and safety/operations managers have real-time safety information that is generated directly from the job site—not from third party sources. When danger approaches, the system virtually eliminates the RWIC's concern that the people whose safety they are responsible for have all successfully cleared the track.

Help Your RWIC Do Their Job with Miller Ingenuity's ZoneGuard

Miller Ingenuity's ZoneGuard is a patent-pending, electronic safety overlay system that is designed to add an additional layer of safety when protecting roadway crews. Engineered to meet the FRA recommendation to adopt the use of electronic protection to augment primary RWP rules as well as the California Public Utilities Commission mandate (General Order No. 175-A), ZoneGuard provides the RWIC with the easy-to-use technology needed to keep crews safe.

To learn more about how to protect your roadway crews with an electronic safety overlay system, or to schedule a meeting with a representative to discuss implementation, visit MillerIngenuity.com/ZoneGuard-Saves-Lives.