

How Queensland Rail Improved Track Safety and Communication with Sensear

Client: Dorrien Designs for Queensland Rail
Industry: Transportation

Overview

Railway maintenance is a high-noise, high-risk operation where communication breakdowns can lead to serious safety issues. Traditional hearing protection often made things worse—blocking vital environmental sounds and requiring workers to remove PPE to talk.



That's why Queensland Rail turned to **Sensear's SENS® Technology**, enabling crystal-clear communication, OSHA-level hearing protection, and full situational awareness—all in one solution.

The Challenge

Queensland Rail crews operate in complex, loud environments with moving equipment, limited visibility, and constant risk. Maintenance teams need to stay in sync while remaining protected from hazardous sound exposure.

- **Extremely Loud Conditions:** Load boxes and track machines exceed 105 dB(A) continuously.
- **Constant Communication Needs:** Teams must relay real-time updates about machine adjustments, shutdowns, and alignment changes.
- **Situational Awareness is Critical:** Spotters and operators rely on sound cues to detect potential hazards before visual confirmation.
- **Outdated PPE:** Traditional hearing protection created a safety tradeoff—protect hearing, or maintain awareness.

As rail operations expanded and equipment became more complex and mobile, Queensland Rail needed a communication system that could keep teams protected, aware, and reliably connected in the noisiest working conditions.



The Solution

Sensear provided a range of devices (SM1XSR, SP1X, and SM1) customized for different roles—from forklift operators to line maintenance engineers. Using SENS® Technology, workers could talk via radio, Bluetooth® wireless technology, or short-range connections—while safely hearing their surroundings and keeping volume capped at 82 dB(A).

What Made the Difference:

- **Full Situational Awareness** while using Two-way radios or Bluetooth® devices
- **Clear Face-To-Face Conversation** without removing PPE
- **FM Short-Range Communication**—ideal for 1:1 comms within 50 meters
- **Rugged, Over-Ear Design** built for harsh field conditions
- **Future-Ready** planning for IS headset deployment in hazardous zones

The Results

The impact of Sensear's solutions across Queensland Rail was significant:

- **Fewer Communication Errors:** Spotters and operators stayed connected without relying on hand signals or yelling.
- **Increased Safety:** Workers remained aware of environmental cues from moving machines and warning systems.
- **Cultural Shift:** Initial resistance gave way to strong adoption once workers realized they could “go home and still hear the nightly news.”
- **Local Investment:** Queensland Rail appreciated that the solution was developed and delivered within Australia.

Looking Ahead

As railway operations grow more complex and mobile, Sensear's high-noise communication solutions are becoming essential equipment. From fabrication shops to track maintenance zones, crews now work with greater clarity, protection, and confidence.

Conclusion

From noisy fabrication shops to moving maintenance carriages—

Sensear makes it possible.

Sensear is redefining railway safety with smart communication, hearing protection, and full awareness in every role.

“Sensear has changed our workplace in many ways—and all for the right reasons.”

— Nick Wheatley,
Track Maintenance
Consultant, Dorrien
Designs for Queensland
Rail

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