



Ergonomic Technologies Corp.

Ergonomic Risk Assessment & Workplace Injury Prevention Solutions

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Railroad Industry

Profiting Through Ergonomics

Railroad operations involve some of the most physically demanding and safety-critical work in any industry. ETC helps passenger and freight rail organizations identify ergonomic risk across operations, maintenance, and crew environments, delivering solutions that protect workers, reduce injury costs, and improve operational performance.

OVERVIEW

The railroad industry presents a distinctive ergonomic profile, combining heavy manual labor, whole-body vibration, sustained awkward postures, and the physical demands of operating and maintaining complex equipment across variable outdoor environments. Injury rates in rail operations remain elevated across maintenance-of-way, mechanical, and operations workgroups, with back injuries, upper extremity disorders, and slip/trip/fall incidents among the most frequent and costly.

ETC brings deep expertise in rail-specific ergonomic risk, from cab design and operator interface to track maintenance, passenger car servicing, and yard operations. Our assessments and programs are built around the real demands of the work, delivering practical solutions that fit the operational realities of rail environments.

RISK FACTORS

Operations & Cab Environment

- Sustained whole-body vibration (WBV) during locomotive operation is a primary contributor to lower back disorders in engineers and conductors
- Prolonged static sitting postures in cabs with limited adjustability
- Reaching and twisting to access controls, switches, and displays
- Awkward neck and shoulder postures from monitoring signals, track, and instrument panels
- Fatigue from extended shifts and irregular scheduling patterns

Maintenance of Way & Mechanical

- Heavy manual materials handling: track components, rail, ties, and ballast involve extreme loading demands
- Sustained awkward postures: kneeling, crouching, and reaching in confined undercar and trackside environments
- Repetitive tool use: tamping, spiking, and fastening tasks with high-force, high-repetition demands
- Hand/arm vibration from power tools used in track and equipment maintenance
- Slip, trip, and fall hazards: ballast, ties, elevated platforms, and weather-affected surfaces
- Lifting and carrying in confined spaces: limited clearance under cars and in maintenance pits

Passenger Service & Station Operations

- Passenger assistance: manual handling of luggage, wheelchairs, and boarding assistance devices
- Repetitive fare collection and ticketing tasks: repetitive upper extremity demand
- Platform exposure: outdoor environmental hazards including temperature extremes and precipitation
- Awkward entry and exit postures when boarding and alighting rolling stock

BENEFITS OF ERGONOMICS

- Significant reduction in musculoskeletal injuries across operations, maintenance, and service workgroups
 - Lower workers' compensation costs and reduced lost workday incidents
 - Improved cab and operator interface design (seat specification, control layout, and vibration isolation)
 - Reduced whole-body vibration exposure through equipment and seating modifications
 - Safer track and equipment maintenance procedures ergonomic tool selection and work method improvements
 - Manual materials handling aids and mechanical assists specified for rail-specific tasks
 - Ergonomically designed personal protective equipment that protects without restricting necessary movement
 - Functional capacity assessments supporting hiring, placement, and return-to-work decisions
 - Improved employee health, morale, and retention across a physically demanding workforce
 - Documented ergonomics program demonstrating regulatory compliance and organizational commitment to worker safety
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SERVICES OFFERED

- Risk Assessment, Solutions & Program Management
- Education & Training
 - Ergonomics awareness training for managers and supervisors
 - Ergonomics training for engineers
 - Ergonomics training for safety, health, and medical personnel
 - Employee ergonomics awareness training
 - Customized training programs for rail-specific roles and environments
- Product, Tool & Equipment Assessment
- Ergonomic Specifications
- Functional Capacity Assessments

TRUSTED BY LEADING RAIL ORGANIZATIONS

ETC has partnered with major passenger and freight rail operators to deliver ergonomic programs that protect crews, maintenance workers, and operations staff:

Long Island Railroad
Metro North Railroad

Montana Rail
New Jersey Transit

Contact ETC to Discuss How Your Business Can Profit Through Ergonomics

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