CSX Rail Safety Guide for Customers

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Go to **Business Development - csx.com** for additional customer information.

Desired Benefits

1. Align expectations for maintenance of facilities, track and signals at CSX-served locations and/or sites.
2. Identify opportunities to reduce accidents reported at industry-served locations through common standards, inspections and maintenance intervals.
3. Share CSX information on accident risk and vulnerability due to conditions at private sidetracks and facilities.
4. Leverage information about accident prevention to improve service, reduce costs and out of service time associated with accident recovery and repair.

Safety and Operations Overview

Operate safely with CSX through emphasis on three elements of safe operations.

Rail Infrastructure

Rail Infrastructure refers to rail, fasteners, ties, ballast, switches, derails, wheel stops and other appliances and maintenance necessary to facilitate and service an industrial sidetrack. Effective rail infrastructure operations and maintenance will include the recommended practices below.

Common Issues:

- Wide gage
- Broken rail
- Broken switch point

Common Causes:

- Improperly adjusted switch
- Gage widening due to defective gage rods or insufficient fasteners and crossties
- Muddy conditions contribute to degradation of track

Prevention:

- Ensure switches have tension when latching handle to keeper
- Utilize ties instead of gage rods
- Undercut muddy locations

Rail Infrastructure (cont.)

- Customers should have their track inspected regularly by a qualified inspector.
- Routine maintenance grinding of track by qualified individuals to stop deformation due to use and friction will also extend the life of switch. *Industries connected to CSX-owned track should have their track inspected by a CSX representative after work on the track has been completed.*
- During regular inspections, ensure switches have tension when latching the handle to the keeper. Tension is required to keep the latch and switch points married.
- When handling switches, check the switch point and notify CSX if there is unusual chipping, damage, or a gap observed between the switch point and stock rail. This prevents the opportunity for wheel climb derailments.
- When handling switches, always check the switch point and notify CSX if there is a gap observed between the switch point and stock rail. Check it, line it, check it.
- Ties are recommended for long term, as gage rods should not be used as a permanent solution.
- When evaluating maintenance and repair alternatives, consider the best corrective actions versus most expedient.
- Work with CSX and the industry track maintenance contractors to develop long-term maintenance and capital investment plans.
- Crib mud or undercut muddy locations.

An example of muddy conditions that can contribute to degradation of track

Rail Assets

Rail Assets refers to industry personnel, facilities, equipment and tools used to work on or about railcars and perform securement (application of hand brakes), position switches, place derails and removal of dock plates, hoses and other loading/unloading components prior to service. The recommended practices include:

- Railcar inspections before and after loading to identify potential safety issues associated with loading fixtures, weight capacity and structural integrity.
- Ensure railcar loading is completed per the designed load plan.
- Plan for blocking and bracing the load to industry standard to prevent load shift.
- Notify CSX of any damages to assets or infrastructure during normal operations to schedule a serviceability inspection.
- Restricted clearance hazards must be protected with warning signs and communicated to CSX prior to servicing an industrial side track.

Common Issues:

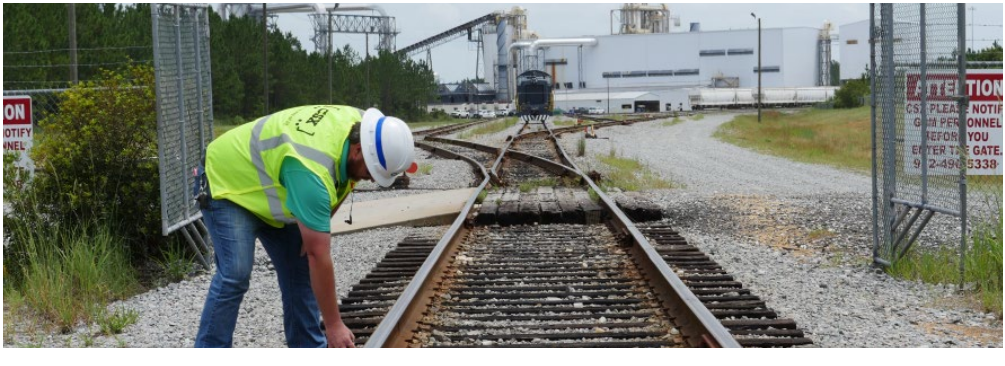
- Railcar mechanical defects
- Damaged doors, hoses, pipes or safety appliances
- Loading processes and procedures
- Contaminated wheels

Common Causes:

- Mechanical defects associated with normal operations
- Materials not secured or loaded properly
- Flour, canola oil, cornstarch and similar substances clog wheels

Prevention:

- Inspect a car before and after loading
- Notify CSX of damages to equipment



An inspection of the track before a car is being loaded

Rail Operations

The third area for consideration is Rail Operations. The recommended practices include railcar preventive and corrective maintenance, safe movement procedures, proper loading, securing doors, hatches and outlets and reporting damage.

- If using a contractor for track inspection or repair on track connected to CSX-owned track, notify CSX of all completed track repairs to schedule a review of the repairs prior to track use.
- When moving railcars, pay attention to switch positions to eliminate potential of run-through switches.
- The primary safety considerations when railcars are moving are:
  - Check the route and ensure it is clear.
  - Check the switch points and align them correctly for the intended movement.
  - Protect the shoving movement.
  - Ensure railcars are not fouling other tracks.
  - Plan the stopping movement.
  - Properly apply hand brakes when movement is complete.
- Ensure grass, weeds, and debris are not graded or moved into the track area.
- Avoid debris or excess material cleanouts near tracks.
- Monitor materials being unloaded near tracks to ensure they aren't inadvertently blocked during the unloading process.
- Maintain constant awareness and vigilance of your surroundings to ensure movements are safe and there is time to respond if conditions change.
- Spillage/wheel contamination can sometimes occur when loading consumer products. Spillage can reduce braking effectiveness along the rail route and during train switching operations.
- Contamination to railcar wheels caused by spillage must be cleaned prior to being released for movement to CSX.
- Notify CSX of damage when discovered.

Rail Operations (cont.)

Common Issues:

- Snow, ice and mud on track
- Interference with operations and track damage by non-railroad employees

Common Causes:

- Outside debris causes wheel to climb up and out of the rail
- Unintentional damage to the rail by industry representative

Prevention:

- Notify CSX of damage when discovered
- Ensure debris does not collect on or near track

An example of debris near the tracks

Proactively Anticipate and Prepare for Seasonal Considerations

The Winter Plan

- Conduct regular winter inspection of rail siding.
- Keep all switches clear of snow and ensure correct drainage.
- Remove accumulation of snow and ice on and around the tracks and in the flange-ways that may contribute to or cause train derailments.
- Pay particular attention to flange-ways of tracks which run through private or public roads.
- When clearing snow accumulation around the track, ensure the snow is moved 12 feet from track.
- During severe snowstorm conditions, if your facility is closed or cannot be serviced by CSX, call your CSX Customer Solutions team.
- Notify CSX once your conditions are cleared and your facility safe to serve.
- The specific responsibility for snow removal is defined in your private sidetrack agreement. In general, the customer is responsible for snow removal up to the main track switch.

Remove accumulation of snow and ice on and around tracks

Proactively Anticipate and Prepare for Seasonal Considerations

The Spring Plan

- Inspect tracks, switches and signals to ensure winter weather has not damaged or degraded safe performance.
- The track repair contractor should schedule routine repairs and maintenance.
- Planned, proactive and preventive maintenance reduces the potential for derailments and injuries.

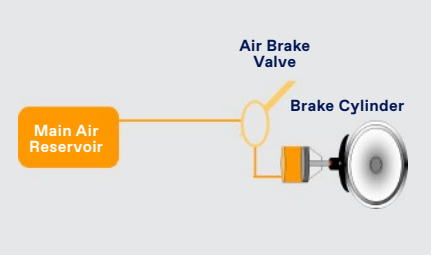
Inspect tracks, switches and signals

General Information for CSX Customers on Railcars

Railcar Braking Systems

Freight cars have two braking systems.

1. Air brake system uses compressed air as the means to control railcar movement and should not be relied upon when a locomotive is not attached.
2. Hand brake systems are used to keep the railcar immobile when parked.



An air brake system

Railcar Dynamics

- The frame or body of a railcar sits on two center plates, one on top of each truck assembly, which contains the axles and wheels. This surface is lubricated and allows the truck to rotate beneath the body and permits rail equipment to turn without excessive force on the gauge between the rails. Neither the car body nor the wheels are fastened to the trucks. Each component sits in place, primarily by weight.
- CSX personnel must be called to inspect any car that has been lifted or severely impacted on the railcar's trucks to ensure it is correctly seated on the center plate and bearings. Railcars should not be lifted by a shipper.

Track/Railcar Dynamics – How One Impacts the Other

- Customer loading practices play a critical role in rail safety.
- A properly balanced and secured load directly affects how the car performs in train service.
- Customers are required to follow the loading rules that have been established for the type of lading and railcar they are using.
- AAR Circulars, Best Practice Specific instructions and car loading requirements are contained in AAR Circulars, Best Practice and General Information Series. The safety of your load and our operations rely on adhering to these procedures. The link is: https://aar.com/standards/.

Railcar Loading/Load Balance and Securement

- Each freight car regardless of size, type or design, must be properly loaded within the specifications of the car. Any load in excess of the specified weight or any load improperly positioned or secured on the car increases the risk of causing a derailment.
- Each freight car is supported by two truck assemblies, one at each end of the car. By design, each car has a limited amount of side-to-side movement to allow for even distribution of wheel to rail contact regardless of track geometry.
- It is imperative that all loads are properly positioned and secured to allow for the mechanics of the car to safely function as intended.
- Any load improperly positioned or secured can force the car to become unbalanced when it is moved within a train. Combined with track dynamics, this could cause a derailment.
- Prior to releasing a car after loading or unloading, customers must ensure the load is properly blocked and secured and that all loose material is removed from the car deck. Any banding, chains, or cables must be removed or secured.

General Information for CSX Customers on Railcars

Railcar Doors

Operating Railcar Doors

- The rail industry has dedicated considerable attention to safety issues around the operation of plug type and bottom gate doors on railcars.
- The AAR publishes loading instructions and safety advisories related to the safe opening and use of railcar doors. Rail doors are very heavy and if operated improperly can cause serious injury. If you open or close railcar doors, be sure to review the AAR Circular and Best Practices.

Safe Opening and Use of Plug Doors

- Prior to operating any rail door, inspect it thoroughly to ensure the door hinges are secure in the track, top, and bottom, before opening. If operated improperly or not properly inspected prior to use, the gear mechanism on plug doors can cause the handle to spin suddenly and violently, result in a possible injury. Plug doors must be securely closed whenever the car is being moved.
- A shifted load that is impinging against a door may cause the door to suddenly move outwards when released. Lading may fall out when opening doors of any type.

Closed Covered Hopper Cars — Bottom Gates

- Prior to operating bottom gates, inspect to ensure the gate locks (except those equipped with self-locking locks) are released prior to opening gate. This will ensure the gate shaft and opening mechanisms are not bent and/or damaged.
- The gate opening device must be well into the capstan prior to opening gate to prevent damage to the capstan such as rounding of the square drive socket.
- After unloading the hoppers, an inspection must be made to ensure the gate is securely closed and properly locked. An open gate can fall between the rails while in transit and result in damage to property or a derailment. When loading hoppers ensure the gates are securely closed and locked to prevent any product spillage.
- Environmental issues are also a concern should product spill from defective bottom gates on hopper cars.
- Spills on concrete can also lead to potential walking hazards causing slips and trips if not protected.
- Take extra care when filling hopper cars to avoid spillage of product on the top of cars.
- Inspect top and side sills and sweep away any excess product.
- Ensure all hopper gates are closed.

General Information for CSX Customers on Railcars

Closing Doors

CSX is concerned about your employees' safety. When railcar doors are left open or unsecured, railway safety is impacted.

- All doors should be closed and secured prior to releasing cars. This includes bottom doors and top hatch covers. Cars with plug doors left open cannot be moved by train crews.
- Contact CSX for specific instructions anytime you receive a car type you are not familiar with.
- Blue Signal Protection is required to protect employees required to perform maintenance on railcars in the sidetrack or on a customer facility.
- CSX Blue Flags are only to be removed by an authorized CSX employee.

An example of doors that have been left open

Clearance Requirements, Track Maintenance and Inspection

Railway Clearance

The term "railway clearances" refers to the distance from the track to the nearest obstruction. Vertical clearances are measured parallel to the plane of the top of rails. Lateral clearances are measured from the track center and at right angles to the plane of the top of rails.

Safe Clearance Distances

No temporary structure, material or equipment shall be permitted closer than 12 feet to the nearest rail without prior approval in writing from CSX.

Restricted Clearances

Clearance restrictions are developed to protect the safety of people and equipment when moving railcars. Shippers must comply with two clearance envelopes in their operation:

Clearance envelopes pertaining to spurs and industrial track.

In general, all equipment or obstructions of any kind must be kept a minimum of 12 feet away from the nearest rail of any industrial track. This includes temporary piles of stock, refuse containers, parked vehicles or other equipment, buildings or obstructions. CSX must be notified immediately for any of the following situations:

- When any emergency situation causes an obstruction within the 12 feet clearance envelope laterally, and 22 feet vertically.
- If any alterations are made to track-side loading platforms or change of location to loading ramps, unloading augers and other equipment.
- If there are any holes, trenches and other ground obstructions, CSX will ensure that the information is passed on to the affected personnel.

Clearance Requirements, Track Maintenance and Inspection

Restricted Clearances (cont.)

Roadbed and Track Structure

- The track and supporting roadbed plays a major role in preventing derailments. The roadbed is designed to support the weight of the car while keeping the tracks evenly spaced apart and running in a straight line.
- The track structure is carefully engineered around curves to "bank" the outside rail and counter the lateral forces. This maintains an even weight distribution to both rails. ***(Figure 1)***
- The wheels of a railcar are flanged to prevent the railcar from sliding off the rail.
- An improperly balanced load causes the wheel on the heavier side to push inwards and may force the flange on the lighter side up and over the rail.
- The relationship between lateral and vertical forces determines whether the wheels:
  1. Stay inside the rail;
  2. Climb up over the rail, or;
  3. Push (spread) the rail out of gauge. ***(Figure 2)***
- The track structure is carefully engineered to handle the regular forces of railcar weight and movement.
- Improperly loaded or overweight cars place excessive stress on the equipment and the track that may cause damage and possible derailment.
- The turnout is a key area in the track structure where many train accidents occur. The turnout should be inspected regularly, with a special emphasis on the moving panel or switch point area.
- The switch points should be checked for proper fit and also for cracks and/or broken switch points. The switch points should also be kept free of any objects that would not allow the switch points to fit properly when the route is lined.

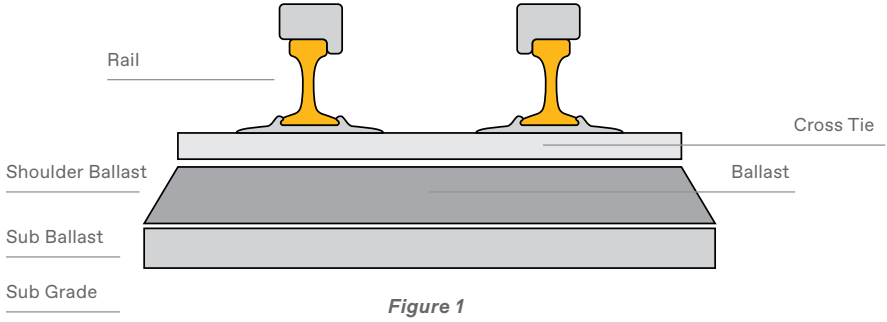


Figure 1

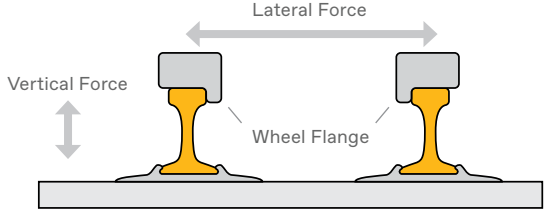


Figure 2

Load Limits

- Shippers are required to observe the load limit stenciled on the car and to ensure that the gross weight of car and lading does not exceed the maximum weight capacity for the route to be traveled.
- CSX can assist with information on maximum weight capacities for your intended route.

Railway Equipment Considerations

Hand Brakes

- Railcars should only be moved by qualified personnel with proven knowledge of how to safely move, control speed, stop and secure rail equipment.
- Railcars should NEVER be moved while hand brakes are fully applied. A hand brake can apply sufficient force against the wheels of a railcar so that the wheels do not turn when the car is pushed or pulled. This results in a wheel skidding along the rail. Skidding a wheel as little as 6 inches can cause small cracks on the tread of the wheel. These small cracks lead to shelling, where little pieces of the tread fall out, and to cracking deeper into the structure of the wheel. This structural damage can go undetected until the wheel, under the weight and stress of train operations, suddenly breaks apart.
- It is very dangerous to leave hand brakes partially applied. If this condition is not corrected before railcars are moved, excessive heating could damage the wheel.

Factors to Consider Prior to Releasing a Hand Brake

- Has a Job Briefing taken place or does it need to be updated?
- Are personnel working on or around the equipment?
- Will the railcar start to roll if the hand brake is released?
- Are there dock plates, loading chutes, hoses or other attachments connected to any of the cars?
- Is the route clear?
- Are there any hoses, cables or extension cords across the rails or any other obstruction?
- Can the cars be safely moved, stopped and hand brakes reapplied?
- Are the operators familiar with safe methods of car movement?
- Are there derails in the vicinity?

Before Moving Railcars:

- Ensure all hand brakes have been released to prevent skidding wheels.
- Ensure all personnel are clear of moving equipment.

Railway Equipment Considerations

Derails - Function and Operation

- CSX derails are railroad safety devices and will only be operated by CSX personnel.
- The derail is a device designed to stop free rolling, uncontrolled railway cars and equipment by properly derailing the car removing the wheel from the rail. While this is damaging to wheels and the track, derails are installed to protect people and operations from unattended railcar movements.
- Derails on industry tracks must be properly maintained and painted yellow to be highly visible.
- CSX derails are critical safety devices that must never be operated by the customer. If a derail is found at the customer's facility not in the derailing position and no CSX train crew nearby, call the CSX Public Safety Coordination Center Hotline immediately (800) 232-0144.

Car Movement

- CSX has developed safe work procedures to govern the major activities associated with switching railcars.
- These processes are based on the CSX Operating Rules and CSX general operating instructions. These procedures relate to the use of on-track equipment and locomotives.
- The movement of railcars by other approved mechanical methods, (e.g., trackmobile, cables, winches, pulleys, etc.) requires the development of safe work procedures specific to each operation. Customers are encouraged to develop, document and train their employees in safe car movement.

Car Movement by Customers

- Any freight car that is to be moved by the customer must be done in a safe manner by qualified personnel to prevent personal injuries or damage to the car or equipment used.

Using a Hand-Operated Car Mover

- Conduct a Job Briefing.
- Ensure the track is clear of obstructions for the distance the car is to be moved.
- Advise everyone in the area of the intended movement.
- Discuss the intended move with all personnel involved. (See Job Briefing).
- If a hand-operated car mover is used, be aware and fully understand how it operates.
- Release the car's hand brake.
- Have someone remain at the hand brake to apply it when required.
- After the car has been moved to the desired location, fully apply the hand brake.

Using a Trackmobile

- Conduct a Job Briefing.
- Ensure the track is clear of obstructions for the distance of the car to be moved.
- Advise everyone in the area of the intended movement.
- Job briefing must cover the intended move with all personnel involved.
- Couple or connect the trackmobile to the car to be moved.
- Release the hand brake.

Railway Equipment Considerations

Moving Railcars - Key Requirements

The railway industry is governed by a complete set of operating rules and procedures. Here are a few key requirements to keep in mind when developing procedures for safe railcar movements at your facility.

- Conduct a Job Briefing.
- Hand brakes must not be released until it is clearly identified how the movement will be controlled and stopped.
- Procedures must ensure that no car can be moved while people are working in or around that equipment. These procedures should also include the requirement to walk around and inspect for the removal of all dock plates, loading/unloading equipment, connecting hoses, cables or obstructions of any kind.
- Procedures must clearly indicate the method of controlling and signaling that will be used during car movement activities.
- Before coupling to any car, the couplers must be observed to ensure they line up.
- Before moving or leaving a string of cars, it must be confirmed they are all coupled together.
- Someone must always be in a position to observe the leading end of the movement and relay signals to the equipment operator.
- Railcars must never be moved that will foul CSX main track, sidings or other tracks.
- All railcars must be left at least 100 feet from a derail.
- Cars must not be moved with the brakes fully applied or wheels skidding.
- Do not lift railcars in any way.
- Do not push or pull on the car by the handrail, ladder or any other part of the car not designed for that purpose.
- Always leave cars with sufficient hand brakes applied.
- Always pull on cars with hand brakes applied to ensure the brakes are working properly.
- Equipment (i.e., trackmobiles) must not operate within 25 feet of the nearest rail of any CSX main track or siding without the presence of a CSX flag person.

Clearance Requirements, Track Maintenance and Inspections

Railway Clearances

- The term “railway clearances” refers to the distance from the track to the nearest obstruction.
- Vertical clearances are measured parallel to the plane of the top of rails.
- Lateral clearances are measured from the track center and at right angles to the plane of the top of rails.

Safe Clearance Distances

- No temporary structure, material or equipment shall be permitted closer than 12 feet to the nearest rail without prior approval in writing from CSX.
- Any requests should be made to your CSX representative.

Restricted Clearances

- Clearance restrictions have been developed to protect the safety of people and equipment when moving railcars.
- Shippers must comply with two clearance envelopes in their operation:
  - Those pertaining to spurs and industrial track.
  - Those pertaining to main tracks and sidings.

Spurs and Industrial Track

- In general, all equipment or obstructions of any kind must be kept a minimum of 12 feet away from the nearest rail on any industrial track.
- This includes temporary piles of stock, refuse containers, parked vehicles or other equipment, buildings or obstructions. CSX must be notified immediately for any of the following situations:
  - When any emergency situation causes an obstruction within the 12 feet clearance envelope laterally, and 22 feet vertically.
  - If any alterations are made to track-side loading platforms or change of location to loading ramps, unloading augers and other equipment.
- If there are any holes, trenches and other ground obstructions, CSX will ensure that the information is passed on to the affected personnel.

Main Track and Sidings

- Machinery and equipment cannot be operated within 25 feet of a CSX main track or siding without CSX authority and protection. This applies to all manner of equipment, including snow-clearing equipment. Contact CSX in advance to arrange protection.
- Shippers and their contractors must keep in mind the requirement for clear sight lines at railway crossings. Snow piles, materials, equipment or other obstructions must not be left where they can affect the ability to see approaching train traffic, at public or private railroad crossings.

Customer Infrastructure

- Customers must obtain approval from CSX for any addition, removal, or relocation of their sidetrack.
- Customers should contact CSX at least 30 days in advance when construction activities occur on the Railroad's property or when personnel or equipment will be within 25' of the nearest railroad-owned track to determine if a Railway Flagperson is required.

Track Maintenance and Inspection Requirements

- There are federal regulations and detailed CSX specifications and procedures pertaining to the maintenance and inspection of track structure.
- Customers should inspect their track regularly for signs of defects and notify CSX immediately of any changes, damage or problems.
- CSX has the right, but no obligation, to inspect industry-owned tracks and may require repairs if the tracks are deemed unsafe for operation.

General Safety Policies When On or About Tracks

Industry Training Available

- CSX recommends the use of industry approved training from RWT (Roadway Worker Training). They can be contacted at: www.railpros.com.

Personal Protective Equipment

- Railway equipment and operations can be dangerous if proper safety rules are not followed. Safe working practices must be adhered to at all times.

There are several important safety concerns that you must be aware of prior to conducting any work on or in close proximity to rail equipment or track in your facility. Below are suggestions to be included in your facility's safety policy.

Crossing Tracks

- When crossing railway tracks,watch for movement in both directions prior to crossing.
- Do not stand or walk between the rails of any track.
- Never stand on a rail while crossing tracks.
- Watch for pinch points at switch locations.
- When walking around the end of a car or locomotive, keep at least 25 feet of clearance from the equipment to protect yourself from sudden movement.
- To cross tracks, look both ways, and if the tracks are clear, walk single file at a right angle to them.

Crossing Over Standing Equipment

- In some cases, you may have to cross over cars. The best precaution is to walk around. However, if you have to walk over or apply or release a hand brake, use extreme caution, and consider the following:
  - Always use safety appliances such as ladders, handholds and crossover platforms when crossing equipment.
  - Never cross over moving cars.
  - Never cross under a car or cross over equipment while putting your feet on moveable components such as couplers, sliding sills or uncoupling levers.
  - While crossing over equipment always maintain a "three point contact" with the equipment and safety appliances.

General Safety Policies When On or About Tracks

Train Movements and Working Near Tracks

- Be alert and know the plan for train movement.
- Expect the movement of trains, engines, cars, or other equipment at any time, on any track, and in either direction, even cars on sidings that appear to be stationary or in storage.
- Stay at least 25 feet away from the ends of stationary cars when crossing the track, and never climb on, under or between cars.
- Never rely on others to protect you from train or car movement.
- Look out for yourself!
- Do not stand on the track in front of an approaching engine, car or other equipment.
- Be aware of the location of structures or obstructions where clearances are close.
- Never stand or walk on railway tracks, either between the rails or on the ends of ties, unless absolutely necessary.
- Stay clear of tracks whenever possible. Trains can approach with little or no warning. You may not be able to hear them due to atmospheric conditions, terrain, noisy work equipment, or passing trains in multiple track territory.

Protection of Railway Traffic and Property

- Signs, signals and flags necessary for the safe operation of the railway shall not be obstructed, removed, relocated, or altered in any way without proper written authorization.
- Blue flag protection on tracks signifies railway mechanical employees are on, under or between rolling equipment. Blue flags are important safety devices and must not be touched or obstructed.

Load Engineering and Design Services (LEADS)

- CSX assistance is available to help customers design loading patterns to protect freight and maximize railcar capacity.
- Assistance is available on a wide range of other areas to include:
  - Opening and closing box car doors.
  - How to report mechanical defects.
  - Load adjustment and transfer assistance.
- Refer to the link below for LEADS information: https://www.csx.com/index.cfm/customers/value-added-services/load-engineering-and-design/

Questions?

Contact your CSX representative or
the Customer Solutions team at 1-877-ShipCSX.