Union Pacific Rules

Safety Rules

Effective June 1, 2017
Includes Updates as of February 15, 2019
PB-20369

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These rules become effective at 0900, Thursday, June 1, 2017. At that time, all previous rules and instructions that are inconsistent with these rules become void.

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STATEMENT: Statement of Safety Policy

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It is Union Pacific Railroad's policy to conduct its business in a manner that addresses the safety of employees, contractors, customers and the communities we serve. Union Pacific will strive to prevent all incidents, accidents, injuries and occupational illnesses through the active participation of all stakeholders. The company is committed to continuous efforts to identify and manage safety risks associated with its activities.

Accordingly, Union Pacific's policy is to:

- Encourage and support:
  - Employee engagement in workplace safety;
  - A Total Safety Culture;
  - Care for employees;
- Maintain infrastructure and equipment, establish documented safety management systems, provide training and conduct operations in a manner aimed at safeguarding people and property;
- Communicate with employees, contractors, communities and customers with respect to their roles and responsibilities surrounding rail safety.
- Comply with all applicable laws, regulations, rules and instructions.
- Respond quickly, effectively, and with care to emergencies, accidents, or incidents in cooperation with authorized government agencies;
- Undertake appropriate reviews and evaluations of its operations to measure progress, foster compliance with this policy and continually improve.

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May 2, 2016

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70.0: GENERAL SAFETY INSTRUCTIONS

Chapter Introduction

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70.1: Safety Responsibilities

70.1 *Ref. Rule(s)* *1.1* *1.1.1* *1.1.2*	**Safety Responsibilities** Employees are empowered to work safely and must: • Be responsible for personal safety and accountable for their behavior. • Correct or protect any unsafe condition or practice and report to proper authority. • Maintain situational awareness. • Work within the limits of physical capabilities. Excessive force must not be used to accomplish tasks.

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70.2: Reserved

70.2	Reserved

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70.3: Job Briefing

70.3
 	
Ref. SRM Section R
	Job Briefing
	
	A. Job Briefing Requirement
	
	Job briefing must be conducted:
	
	• With all individuals involved in the task before work begins.
	• If work plan or work group changes.
	
	B. Conduct Job Briefing
	
	Job briefing must:
	
	• Consider existing and potential hazards that might be involved as a result of:
	  • Weather.
	  • Scope of work.
	  • Tools and equipment.
	• Identify PPE requirements.
	• Assign responsibility.
	• Explain group / individual assignments, while considering abilities and experience.
	• Be aware of work groups and equipment in work area.
	• Identify job location.
	• Verify understanding of instructions and assignments.
	
	For complex jobs:
	
	• Brief only a portion of the job.
	• Conduct additional briefing(s) as the job progresses.
	
	Complete and sign the job briefing document when applicable.

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70.4: Reserved

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70.5: Reserved

70.5	**Reserved**

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70.6: Lifting and Moving Material

70.6	**Lifting and Moving Material** Before lifting or moving: 1. Check the load for size, weight, stability, and grip. 2. Make sure the pathway to be used is clear of obstructions, debris or other conditions which may cause loss of footing. 3. Inspect the area where material will be placed, preferably at waist height and without reaching. 4. Choose the proper lifting technique (e.g., squat, semi-stoop, or balanced one-hand lift). Each person is responsible for determining their lifting limitations. Obtain additional help or mechanical assist device(s) to lift or handle heavy or awkward objects. While lifting, observe the following principles: • Ensure secure footing and a good grip on the materials. • Keep the object close to your body. • Keep your upper body erect. • Lift smoothly—do not use jerky motions. • Do not lift and twist at the same time.

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70.6.1: Lifting with Two or More Employees

70.6.1	**Lifting with Two or More Employees** Conduct a job briefing before lifting to define: • Responsibilities. • Techniques for the type of lift being performed. • Which individual (positioned at either end) will give commands for all movements (lifting, walking, lowering, or throwing). When possible, avoid walking backward or sideways.

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70.7: Protection of Body Parts

70.7 *Ref. Rule(s)* *70.5* *81.15* *81.20*	**Protection of Body Parts** Do not place hands, fingers, feet, legs or any part of your body in a position where they might be struck, caught, pinched or crushed. When opening or closing door or hatch: • Visually inspect for obstructions before operating. • Use handle or grab iron only. • Keep body parts clear of sides and edges and observe while operating. • Do not use feet. • Use caution as wind or slack action may cause doors or hatches to slam shut.

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January 7, 2019

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70.8: Safety Around Machines and Equipment

70.8 *Ref. SRM Section H*	**Safety Around Machines and Equipment** When tools, equipment or machinery becomes jammed or obstructed in any manner, it must be stopped and lockout / tagout procedures followed. Do not enter areas where you could be caught in the operation of machinery or equipment.

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70.9: Reserved

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70.10: Cabinets

70.10	**Cabinets** The contents of cabinets must be arranged and distributed so as to not make the cabinet top heavy. Drawers on cabinets, desks, tool boxes, etc., must be closed when not in use. Do not open more than one drawer at one time.

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70.11: Office Equipment and Furniture

70.11	**Office Equipment and Furniture** A. Paper Cutters • Exercise caution while operating paper cutters, trimmers and power paper punches. • Keep fingers clear of cutting blades and make sure blade guards are in position. • Paper cutter blades must be left in the closed position and secured after use. B. Defects Report sharp edges, splinters or defective parts on office furniture or equipment for repair. If unsafe, appropriate action must be taken to protect the hazard. C. Cords Permanent installations of equipment with cords (telephone, electrical, computer, etc.) in walking areas must be encased. Action must be taken to protect temporary installations. D. Chairs, Benches, Tables and Desks • Do not stand on chairs, benches. • Unsafe chairs or benches must not be used. • Chairs must not be repaired or altered in any way except by an authorized repair service. • While seated in a chair, all chair legs must remain in contact with the floor. • Do not sit or stand on tables or desks.

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70.12: Protruding Objects

70.12	**Protruding Objects**

	Remove or flatten protruding objects (nails, screws, banding, etc.) prior to handling materials or performing duties.

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70.13: Energizing Machinery

70.13	**Energizing Machinery** Inspect affected areas and ensure it is safe before turning on electricity, gas, steam, fuel oil, air, water or putting any machinery in operation.

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70.14: Damaged or Defective Machinery

70.14	**Damaged or Defective Machinery** Warning signs / tags must be placed: • At locations where there are exposed energized circuits. • On damaged or defective machinery. • On switches, valves, or other apparatus. Only authorized personnel may remove signs / tags when safe conditions are restored. Do not operate machines, switches, valves, or other apparatus with attached warning signs, tags, or banners.

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70.15: Compressed Air / Gas

70.15	**Compressed Air / Gas** Compressed air or gas must not be used: • To blow dust or dirt from the body or clothing. • For general cleanup in place of a broom, vacuum, sweeper, etc.

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70.16: Reserved

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70.17: Rail Under Tension

70.17	**Rail Under Tension** Close observation must be made to determine whether rail is too tight to safely perform work: • At point where there has been a derailment. • In periods of extreme temperature. • At location where rail is kinked or damaged. • Before beginning to renew rail or to remove part of fastenings from one or more rails.

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70.18: Fusees

70.18	**Fusees** A. Fusee Storage Fusees must be stored: • In metal containers inside motor vehicles and other designated equipment. • In flagging kits or racks in engines and cabooses. • In the original shipping container in a storage cabinet. • Away from high temperatures, fire or open flame. B. Fusee Use Fusees must be used for signaling or flagging purposes only. When using fusees, use caution to avoid injuries caused from burns. When lighting fusees: 1. Hold the end to be lighted down and away from your body. 2. Strike away from the body. Extinguish the fusee after giving hand signals. Do not place fusees: • Where they may cause a fire. • At locations where they may become wet. • Where they can be obtained by unauthorized persons. • On open bridge decks, trestles, or approaches when lit. • Near flammable or combustible material. Fusees showing evidence of having been soaked in water, oil, etc., or otherwise damaged, must not be used and must be disposed of properly. Misuse or horseplay involving fusees is strictly prohibited.

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70.19: Air Contaminants

70.19 *Ref. SRM Sections E, G, I*	**Air Contaminants** Take precautions to reduce exposure when working around gases, fumes, mists, vapors, or dusts emitted by equipment, vehicles or work processes. Do not enter a suspected or confirmed contaminated area without following prescribed procedures and using required personal protective equipment.

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70.20: Internal Combustion Engines

70.20 *Ref. Rule(s) SRM Section G*	**Internal Combustion Engines** Avoid excessive exposure to exhaust fumes from internal combustion engines. Such engines must not be allowed to run unless adequate ventilation exists. Do not expose fresh air intake systems to internal combustion engine exhaust.

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January 7, 2019

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70.21: Spills

70.21 *Ref. RMCC 888-877-7267*	**Spills** Avoid contact with spilled materials, or commodities at accident sites until the materials have been identified and safe handling procedures determined.

Ref. Rule(s) *8620 Section 8*	If safe to do so, take steps to stop the leak or contain the spillage of oil, hazardous, or environmentally sensitive materials spilled from any source. It is the responsibility of the employee who discovers this spill to immediately notify **RMCC** and the appropriate authority advising: • The location of the spill. • Material and amount spilled. • Distance to nearest public waters. • Any other information that may be pertinent. If a fire or vapor cloud is visible from an unknown source or one known to be toxic, move yourself and others uphill and upwind to a distance of at least one half mile, further if deemed advisable, and contact RMCC. Assist Emergency Response personnel and do not enter the area until advised the area is safe.

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December 29, 2017

System Special Instructions

Effective Date: June 1, 2018

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70.22: Skin Protection

70.22	**Skin Protection** Do not: • Clean any part of your body with combustible fluids or solvents. • Wear clothing contaminated with combustible fluids, solvents or oils.

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70.23: Hazard Communication Standard

70.23 *Ref. SRM Section I* *29 CFR 1910.1200*	**Hazard Communication Standard** The Hazard Communication Standard (HCS), also known as Right to Know (RTK) was developed by the Occupational Safety and Health Administration (OSHA). It was designed to benefit employees and it is the responsibility of all employees to know and comply with provisions of the HCS. Before handling containers or using chemical substances, employees must: • Be aware of the contents and any hazardous conditions that may exist. • Take all necessary precautions to ensure the safety of themselves and others. • Wear approved protective equipment when required. • Be aware of preventative measures associated with the chemicals they are using to avoid accidents and injury. Only chemicals, paints, compounds or other products approved by Union Pacific will be used.

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70.24: Drums and Containers

70.24 *Ref. Environmental Mgt. Group. Laws, Policies, and Procedures Web page: Drum Storage, Reuse and Disposal*	**Drums and Containers** Label all drums, totes, tanks and containers to show current contents. When opening drums that have been exposed to heat from the sun or other sources, use proper protective equipment, stand in the clear and open slowly until pressure is released. Do not pour contents of drums or barrels on the ground or in drains. Be certain all contents are disposed of properly. If any doubt should arise as to proper disposal of drum or barrel contents, contact your supervisor. Drums must be kept closed, except for immediate use. Drums with bung holes that are recessed or level with the barrel rim must be positioned to the side with the barrel tipped at least one inch to prevent moisture from entering barrel.

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70.25: Working with Refrigeration Systems

70.25	**Working with Refrigeration Systems** Only qualified employees shall service or repair refrigeration systems and must follow manufacturer's instructions.

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71.0: PERSONAL PROTECTIVE EQUIPMENT

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71.1: General Guidelines

71.1 *Ref. SRM Section A*	**General Guidelines** Personal Protective Equipment (PPE) used on duty must: • Be approved by the Safety Department. • Only be used as intended. • Be used where conditions of the job require and in accordance with rules, instructions, or directions from supervisor. • Not be altered or used if altered. Anyone entering designated areas or working near others wearing PPE must also wear the required PPE. Keep all PPE issued to you in good condition, properly fitted, and replace as required to maintain intended protection.

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71.2: Hearing Protection

71.2 *Ref. SRM Section D* *Ref. Rule(s) 71.1* *29 CFR 1910.95* *29 CFR 1926.52*	**Hearing Protection** Wear approved hearing protection when required. In some cases, wearing dual protection is required, which consists of ear plugs and muffs.

49 CFR 227 *49 CFR 229*	

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71.2.1: Service, Repair and Mechanical Facilities

71.2.1	**Service, Repair and Mechanical Facilities** Hearing protection is required when working in or around: • Designated service, repair, or mechanical facilities. • Areas where load testing, sand blasting or grit blasting equipment is in operation. Hearing protection is not required when: • In designated low noise areas, identified by Safety Department. • In offices with doors and windows closed.

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July 2, 2013

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71.2.2: Locomotives

71.2.2	**Locomotives** Employees must wear hearing protection anytime they are within a radius of 150 feet of a locomotive. However, hearing protection is not required for employees who are inside the cab with the cab doors and windows closed.

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71.2.3: Near Retarders

71.2.3	**Near Retarders** Hearing protection is required within 150 feet of master or group retarders during humping and trimming operations. Dual hearing protection (ear plugs and muffs) is required within 10 feet of these operations. When near operating retarders: • Engine windows and doors must be closed when passing through operating retarders. All occupants must be inside the locomotive cab. • Do not ride a car through operating retarders. **Exception:** Hearing protection is not required when riding through or working around Dowty or Inert retarders, unless protection is needed for other purposes.

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71.2.4: Roadway or Work Equipment

71.2.4	**Roadway or Work Equipment** Hearing protection is required within 150 feet of operating roadway or work equipment.

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71.2.5: Jet Blowers or Pile Drivers

71.2.5	**Jet Blowers or Pile Drivers** Hearing protection is required within 150 feet of operating jet blowers or pile drivers.

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71.2.6: Other Equipment and Tools

71.2.6
 	
Ref. SRM Section D
	Other Equipment and Tools
	
	Hearing protection is required when operating or within 15 feet of any of the following equipment or tools in operation:
	
	• Welding or cutting equipment (oxy-fuel, gas, or electric).
	• Abrasive wheel grinder or sander (pedestal, bench, or portable).
	• Air lance or nozzle (for blowing compressed air).
	• Chain saw.
	• Nail gun (air or powder-actuated).
	• Power saw, planer, router, or joiner.
	• Equipment or tools powered by:
	  ○ Air.
	  ○ Combustion engine.
	  ○ Electricity.
	  ○ Hydraulic.
	  ○ Pneumatic.
	  ○ Steam.

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71.2.7: Intermodal Ramps

71.2.7	**Intermodal Ramps** Employees must wear hearing protection anytime they are within a radius of 25 feet of operating lift or transfer equipment. Hearing protection is not required for employees who are inside the cab with the cab doors and windows closed.

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71.3: Gloves

71.3 *Ref. SRM Section A*	**Gloves** Hand protection is provided and employees are required to use appropriate hand protection when hands are exposed to hazards such as: • Skin absorption of harmful substances. • Cuts, lacerations or abrasions. • Punctures. • Chemicals. • Thermal burns. • Harmful temperature extremes. • Operating battery knife switch.

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July 2, 2013

System Special Instructions

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71.4: Hard Hats

71.4 *Ref. SRM Section A*	**Hard Hats** Hard hats must be worn at the following facilities and work sites: • Locomotive. • Car. • Engineering. • Intermodal. • In other designated hard hat areas as specified by department head. Hard hats are not required in: • Office areas and lunch rooms. • Vehicles or equipment that provide overhead protection against falling objects. • Areas exempted with documentation by the appropriate department head. Hard hats must not be altered or worn: • Over baseball or similar type caps. • With liners that interfere with fit and function of the hard hat. • Backwards, unless attachments being used are designed for such use and suspension is reversed. Bump caps will not be used to fulfill hard hat requirements. **Exceptions:** 1. A track welder, wearing a Powered Air Purifying Respirator (PAPR), will not be required to wear a hard hat when working in areas where there is no potential for injury to the head from falling objects. 2. Intermodal personnel are not required to wear hardhats when: • Mechanical personnel are working under intermodal equipment. • Hostlers are on equipment adjusting air lines. • Personnel are going to and from personal vehicle parking areas. **3.** Transportation employees are not required to wear hardhats when: • Moving locomotives to or from locomotive service areas, • Spotting cars within car or maintenance of way repair facilities. • Switching cars within intermodal ramps

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May 2, 2016

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71.5: Eye Protection

71.5 *Ref.SRM Section A, B*	**Eye Protection** While on duty or on company property, wear company approved, spectacle-type glasses that cover the entire eye (no half glasses). Eye protection is not required in: • Office areas and lunch rooms. • Enclosed vehicles (including locomotives). • Walking to or from on duty point. • Areas specifically designated by the department head. The wearing of dark lenses under insufficient lighting conditions is prohibited, except when engaged in an operation requiring dark lenses.

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January 7, 2019

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71.5.1: Areas that Require Eye Protection

71.5.1 *Ref. SRM Section A*	**Areas that Require Eye Protection** **Safety Glasses.** Wear spectacle-type, safety glasses with side shields when on duty at: • Designated service, repair, or mechanical facility. • Maintenance-of-way work sites, shops, and facilities. Employees requiring corrective lenses must wear either company-approved prescription safety glasses or coverall-type safety goggles. Specific work activities may require additional eye protection. Go to the Safety Department web site "Safety Resource Manual, Personal Protective Equipment Policy (Assessment of Personal Protective Equipment), Section A", for application of this rule to other specific tasks.

	Other Glasses. Train, engine, yard and all other personnel on duty must wear company approved safety glasses or FDA-approved prescription eyewear.

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71.5.2: Contact Lenses

71.5.2	**Contact Lenses** Do not wear contact lenses when working in areas where wind, dust, and other foreign matter constitute a hazard or when chemicals may cause a splash, mist, or vapor hazard. When safety glasses are required, employees who wear contact lenses must have a pair of corrective glasses available while on duty.

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71.5.3: Reserved

71.5.3	**Reserved**

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71.6: Proper Attire

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	Proper Attire Wear clothing that allows you to perform your duties safely and efficiently. Clothing must not: • Interfere with vision, hearing and free use of hands and/or feet. • Block peripheral vision. When hooded sweatshirts and/or coats or similar type clothing are worn, they must be secured around the face to prevent the blocking of peripheral vision. • Be torn, baggy, ragged, loose, or worn so that it could snag easily or catch on cars, engines, tools, machinery or other equipment but must allow freedom of movement. This includes neckties or similar clothing. When working outside, employees must wear: • Pants that cover the legs. • Shirts with at least quarter-length sleeves that cover the back, shoulders, chest, abdomen and provide protection from sun, insects, abrasions or scratches. Jewelry that may affect one's safe performance of their duties must not be worn. Hair, including beards, must be worn in a manner to permit safe performance of duties.

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July 2, 2013

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71.6.1: Highly Visible Outer Wear

71.6.1	**Highly Visible Outer Wear**
	
	A. ANSI Class II/III highly visible outer wear:
	
	• Green/yellow outer wear with reflective striping must be worn by employees other than those in the Engineering Department. However:
	  • Remote control operators working as a RCO may wear an orange RCO vest.
	  • Highly visible outer wear is not required when in:
	  • Office areas and lunch rooms.
	  • Enclosed vehicles (including locomotives).
	  • Parking lots when tracks will not be fouled.
	  • Areas specifically designated by the department head.

	Note: Vests used by employees working on railroad cars and engines must be the 5-point, tear-away vests certified for use by Union Pacific.
	
	Engineering and designated mechanical employees must wear orange outer wear with reflective striping. However:
	
	• Welders must also wear required protective clothing when welding.
	• Lookouts must wear yellow/green vest with reflective striping, with "Lookout" printed on the vest.
	• Special Agents are not required to wear highly visible outer wear during:
	  • Traffic stops.
	  • Pedestrian stops.
	  • Searches.
	  • Undercover assignment or when conducting surveillance.

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June 1, 2017

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71.6.2: Highly Visible Headgear

71.6.2	**Highly Visible Headgear** During the first year of employment, TE&Y employees must wear orange headgear. Headgear is not required when in: • Office areas and lunch rooms. • Enclosed vehicles (including locomotives). • Parking lots when tracks will not be fouled. • Areas specifically designated by the department head.

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71.6.3: Jewelry

71.6.3	**Jewelry** Wearing of jewelry is prohibited for mechanical employees and contractors while on duty. Jewelry includes but is not limited to wedding bands, rings, earrings, bracelets, necklaces, wrist watches, smart watches, silicone wrist bands and fitness devices. Individuals that have gauge piercings must use non-metal plugs when at mechanical facilities.This does not apply to jewelry required for medical purposes. Visitors This rule will apply to visitors in areas where PPE is required. The employee responsible for the visitor must ensure compliance. Office Areas Mechanical employees assigned to an office area may wear jewelry that does not pose a safety risk while in the office.

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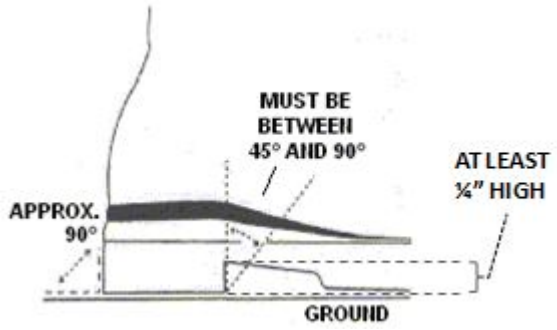
71.7: Footwear

71.7 *Ref.SRM Section A and C* *OSHA Standard 1910.136 and ANSI Z41.1, Standard Class #75, ASTM F-2412-11, ASTM F-2413-11*	**Footwear** While on duty or on company property, employees must wear footwear that meets the following requirements: • Boot height must be a minimum of 6 inches or more when measured from the floor to the topmost part. At no time should the measurement from the floor to any part of the collar be less than 4 1/2 inches. • Boots must be lace up. • Have soles that provide good traction, thick enough to withstand punctures, not excessively worn, or have loose soles or heels. • A defined heel ('Riding heels' are NOT approved) as illustrated below, the back of which is at an approximate right angle from the sole of the shoe and from the ground when standing. The front

	of the heel must not be at an angle of less than 45 degrees from the sole of the shoe to the ground. Approved snow packs are acceptable. Defined heel means a heel 1/2" deeper than the rest of the sole when new. At no time should that measurement be less than 1/4".  • Footwear as defined by OSHA Standard 1910.136, ANSI Z41.1, ASTM F-2412-11, ASTM F-2413-11 and Standard Class #75 for safety toe footwear must be worn by all employees except TE&Y. Footwear meeting requirements shown above are not required in: • Offices, lunchrooms, and similar areas. • Automobiles. • Areas specifically designated by the department head. or • Parking areas when tracks will not be fouled.

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January 1, 2017

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71.8: Visitors and Contractors

71.8 *Ref. SRM Section A, B, & C* *Ref. Operating Instruction 27*	**Visitors and Contractors** Visitors and contractors must wear the same type of PPE as those with whom they are working or as designated by department head. The individual responsible for the visitor must ensure compliance.

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71.9: Respirators

71.9 *Ref. SRM Section A, E & AC*	**Respirators** Employees required to use respiratory protection must: 1. Complete required annual training. 2. Have a medical evaluation. 3. Be fit tested. 4. Be clean shaven in the areas where the tight fitting respirator makes contact with the facial skin at time of fit test and when using tight fitting respiratory protection. Comply with the Safety Resource Manual requirements for training, evaluation, fit testing and facial hair.

Rule Updated Date

September 19, 2018

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72.0: FIRE PREVENTION

Chapter Introduction

Note: See *Safety Resource Manual, Fire Protection Policy and Guidelines, Section IV-AH.*

72.0: FIRE PREVENTION

72.0 FIRE PREVENTION *Ref. SRM* *Section AH*

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September 27, 2013

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72.1: In Case of Fire:

72.1	**In Case of Fire:** • Know how to operate fire protection equipment at your location. • Sound the alarm and summon help. • If it can be done safely, attempt to control and extinguish.

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July 2, 2013

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72.2: Fire Prevention

72.2	**Fire Prevention** Fire prevention is accomplished by: • Maintaining good housekeeping. • Not allowing the accumulation of combustible materials and debris. • Ensuring that fire doors, windows, stairways, fire escapes, passageways, and roadways are in good condition, not blocked, and free from obstruction. • Maintaining access to firefighting equipment. • Ensuring that catalytic converters, exhaust systems, and exhaust gases do not come in contact with dry grass, weeds, or flammable material. Immediately correct and/or inform a supervisor if you find or are aware of a potential fire hazard.

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72.3: Fire Protection Device Inspection

72.3 *Ref. SRM Section AH*	**Fire Protection Device Inspection** Fire protection devices and suppression systems must be inspected and maintained as required. Tampering with devices is prohibited. **A. Fire Extinguishers - Fixed Facilities**

	Annual fire extinguisher maintenance check must be performed by qualified contractor. Monthly fire extinguisher inspections must be performed to determine: • There is no evidence of physical damage. • The seal is not broken. • It is fully charged. • It is properly tagged with inspection date noted on tag. • It is properly marked. Vehicles must not be parked or material placed or stored that block fire hydrants. **B. Fire Extinguishers - Mobile Equipment** Company vehicles (except automobiles), mobile shop equipment, and ride-on-track equipment must carry a properly maintained and inspected fire extinguisher of the correct class to aid in fire suppression. **C. Suppression Systems and Alarms** Alarms, sprinkler systems, detectors, and suppression systems must also be inspected in accordance with Safety Department Guidelines.

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72.4: Reserved

72.4	**Reserved**

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72.5: Open Burning

72.5	**Open Burning** Before conducting an open burn of any kind, employee(s) must:

	• Have written approval from the superintendent level or above. • Have necessary environmental and fire permits from state and local authorities. • Comply with all fire permit provisions. • Attend the fire until it is completely extinguished. Flammable liquid must not be used to start or intensify a fire.

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January 7, 2019

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72.6: Ignition Sources

72.6 *Ref. UPRR Smoking Policy*	**Ignition Sources** Do not smoke or use open fire: • Within 50 feet of areas where flammable or combustible liquids are being handled or stored. • Near oil storage tanks. • In areas where Liquefied Petroleum Gas (LPG) powered units are being serviced or stored. • When working on or near storage batteries.

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June 1, 2017

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72.7: Liquefied Petroleum Gas (LPG)

72.7	**Liquefied Petroleum Gas (LPG)** Units powered by LPG must not be subjected to extreme heat in areas near ovens, furnaces or other sources of high temperature. Tanks containing LPG must be: • Stored in an outdoor, ventilated, sheltered area. • Properly secured. • Clearly marked "No Smoking or Open Flames."

	Fueling of LPG tanks must be done outdoors at a location at least 15 feet from storage tanks at the end opposite from the relief valve. Portable tanks must be changed outdoors, where possible, and at least 50 feet from an open flame, except on outfit cars with kitchen facilities. When placing LPG tanks on motor vehicles, the engine must be stopped. At the conclusion of work activities, valves on tanks of LPG-powered equipment must be turned off to prevent leakage and potential explosion.

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72.8: Flammable and Combustible Liquids

72.8	**Flammable and Combustible Liquids** Flammable liquids (including paints) and combustibles must be stored in approved cabinets or designated areas and in approved and properly labeled containers. Store all spray cans in a cool place away from direct sunlight, radiators, stoves and other sources of heat. Do not puncture, incinerate or store above 120 degrees Fahrenheit.

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72.9: Handling Flammable Liquids

72.9 *Ref. Rule(s) 70.25*	**Handling Flammable Liquids** Use approved containers and non-sparking tools when handling gasoline and other flammable liquids. Label all drums, totes, tanks and containers to show current contents.

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72.10: Cleaning and Polishing

72.10	**Cleaning and Polishing** Do not use gasoline for cleaning or polishing purposes. When using other flammable or combustible liquids for cleaning and polishing, use approved: • Liquids and compounds in well-ventilated areas. • Storage methods for cloths, waste or other materials used in cleaning operations. • Cleaning tanks with self-closing lids when using solvents.

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72.11: Fueling Track Cars, Roadway Machines, and Automotive Units

72.11 *Ref. Environmental Mgt. Group. Laws, Policies, and Procedures Web page: Drum Storage, Reuse and Disposal. (SPCC)* *Ref. Rule(s) 72.6*	**Fueling Track Cars, Roadway Machines, and Automotive Units** When fueling mobile equipment, other than locomotives, employees must: 1. Move equipment out of enclosed area before fueling the vehicle. (This does not apply to equipment in the shop for repair.) 2. Stop the vehicle's engine before refueling. 3. Make sure the hose nozzle on the refueling can is always touching the side of the fill opening of a tank to prevent a hazardous static electric discharge. If employees use a gasoline can, it must be equipped with a standard pouring spout. 4. Avoid spilling fuel. If fuel does spill, it must be cleaned up or allowed to dissipate before starting the engine.

74.3 *Ref. SRM Section AI*	

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72.11.1: Fueling Portable Power Equipment

72.11.1	**Fueling Portable Power Equipment** When fueling is necessary during use: • Shut down engine and allow sufficient time to cool. • Equipment must be removed from the immediate work area. • Equipment must be placed where fuels cannot spill on any hot surfaces or ignition sources. • Move fuel containers at least 20 feet from the work area before starting engine.

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72.12: Unapproved Heating or Lighting Devices

72.12	**Unapproved Heating or Lighting Devices** Obtain authorization before installing or using any unapproved cooking, heating, or lighting devices.

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72.13: Open Flame Starting

72.13	**Open Flame Starting** Do not use an open flame to warm cylinders, manifolds, carburetors, or other internal combustion engine parts before starting the engine.

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73.0: EXPLOSIVES

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73.1: Authorized Personnel

73.1	**Authorized Personnel** Only qualified and properly licensed personnel are permitted to use explosives. These persons must comply with the rules and regulations of the Bureau of Alcohol, Tobacco and Firearms (BATF) and the safety standards of the National Fire Protection Agency (NFPA). They must also observe all federal or state laws or city ordinances that cover handling, storing, and using explosives.

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73.2: Handling Explosives

73.2 *Ref. UPRR Smoking Policy* *Department of Transportation (DOT) and BATF instructions.*	**Handling Explosives** Do not: • Handle explosives near open flame, lights or fires. Use an electric flashlight or electric lantern if artificial light is necessary. • Smoke around explosives (smoking is prohibited on company property). • Allow anyone to carry matches, lighters or other flame-producing devices except the person lighting the fuse. • Drop packages or cases of explosives or handle them roughly. • Carry caps, electric primers, or other explosives in your pockets. When transporting explosives in railroad cars, trucks, automobiles, or other vehicles, use proper care and follow Department of Transportation (DOT) and BATF instructions. Except in an emergency, do not transport explosives on track cars.

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74.0: VEHICLE OPERATIONS

Chapter Introduction

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74.1: Vehicle Maintenance

74.1	**Vehicle Maintenance** The driver and/or supervisor assigned to a vehicle is responsible for: • Proper maintenance per vehicle information or leasing company specifications. • Recording and maintaining vehicle records inside the vehicle. • Ensuring the vehicle is in good working order and free of defects. • Notifying their supervisor if the vehicle becomes defective. • Ensuring repairs have been completed before the vehicle is returned to service. If in doubt the vehicle is safe to operate, it must be removed from service.

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74.2: Driver Requirements

74.2	**Driver and Passenger Responsibilities**
	
	A. Drivers are required to:
	
	• Know and observe all local, state, and federal laws and regulations governing vehicle operation.
	• Use courtesy, consideration, and common sense to prevent accidents and control situations encountered that cannot be provided for in the law.
	• Obey posted speed limits and the following maximum speed for all Company vehicles regardless of posted speed:
	  • 75 MPH for vehicles weighing less than 10,000 lbs.
	  • 65 MPH for vehicles weighing 10,000 lbs or greater.
	• Not exceed a safe and prudent speed for their vehicle when weather, traffic, road condition, vehicle load or any other prevailing condition necessitates operating at a lower speed.
	• Ensure that required emergency equipment and tools are in the vehicle.
	• Maintain good housekeeping.
	• Ensure loose items are not kept on the dash or rear window shelf.

	• Ensure tools, equipment, material, and freight are properly secured. • Ensure Gross Vehicle Weight Rating (GVWR) of vehicle is not exceeded. • Ensure headlights or running lights are on while vehicle is moving. Drivers must not drive when suffering fatigue, lack of sleep, illness, or any other physical condition which may affect alertness and ability to operate the vehicle safely. Only authorized employees may operate company vehicles. All employees who drive company vehicles are required to: • Possess a current, valid driver's license or commercial driver's license (CDL) in driver's domicile state. • Notify their supervisor and discontinue operating vehicles any time license or permit is expired, suspended, revoked or restricted. • Allow only authorized passengers in company vehicles. B. Passengers are required to be seated on approved seats and must not: • Project body parts beyond the sides or rear of the vehicle. • Be transported in truck beds. • Get on or off moving vehicles. C. Employees must not tamper with any recording or monitoring device.

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74.2.1: Qualified Drivers

74.2.1	**Qualified Drivers** Drivers of company vehicles that meet one or more of the following criteria will be required to become Department of Transportation (DOT) qualified to operate a vehicle: • Gross vehicle weight rating (GVWR) greater than 10,000 lbs or more (single truck or a combination of truck and trailer). • Designed to carry 16 or more persons, including the driver. • Placarded under the hazardous materials regulations because of its hazardous cargo. When driving a commercial motor vehicle, drivers must have in their possession a valid: • Commercial Drivers License (CDL), for vehicles with a GVWR greater than 26,000 lbs.

	• CDL with a hazardous material endorsement for any vehicle placarded under the hazardous materials regulations because of hazardous cargo. • Drivers License, for vehicles with a GVWR less than 26,000 lbs. • Copy of medical certificate card when driving a commercial motor vehicle with a GVWR greater than 10,000 lbs. • Hours of Service (HOS) Log with current day and previous seven days when driving a commercial motor vehicle with a GVWR greater than 10,000 lbs. This includes electronic HOS logs. Paper logs are required when electronic HOS is not available due to an outage. (Exception: Signal Department HOS employees). Drivers of vehicles with a GVWR greater than 10,000 lbs must be qualified by DOT and familiar with Federal Motor Carriers Safety Regulations. Federal Motor Carriers Safety Regulations requires UPRR to have on file, a completed driver's qualification file that includes: • Driver's DOT application for employment. • Copy of motor vehicle record (MVR) by each state for the past three years. • Current medical examiner's certificate card. • Certificate of road test for DOT certified drivers who do not possess a CDL. • Annual review of MVR. • Annual Violation and Review Record. Drivers of vehicles with gross vehicle weight rating (GVWR) greater than 10,000 lbs must complete and submit documentation and / or have in vehicles as required by UPRR Department of Transportation and Federal Motor Carrier Safety Regulations **(FMCSA)**. These documents include: • **HOS Logs**- Qualified drivers who drives a CMV once per month he must submit logs for each day during that month. Submission of HOS logs are required daily with Electronic HOS logs (ELD) or paper HOS logs twice monthly for trucks without an ELD tablet. • **Paper Log Book -** Per FMCSA regulations, drivers of CMV's with electronic HOS tablets are required to carry a 30 day paper log book with them whenever driving a CMV. • **Laminated ELD Visor Card -** FMCSA regulations require that every commercial truck with an electronic HOS logging device have operational instructions for law enforcement. • **DVIR (Driver Vehicle Inspection Report)** - A daily vehicle inspection report that is required to be completed by those who drive CMVs. The DVIR is located at the bottom of each log sheet. • **DOT Roadside Inspection** - Driver must submit a copy of the inspection/citation given to him by law enforcement to UPRR DOT Compliance Department within 24 hours of the inspection. Additionally, if there are violations, a copy must also be sent to the state patrol office that issued the inspection/citation within 15 days of the inspection.

	NOTE: Only a driver who is qualified and assigned to drive a commercial motor vehicle (vehicle with a gross vehicle weight greater than 10,000 lbs) is allowed to fuel the assigned commercial motor vehicle (CMV). Only in an emergency situation can a manager/supervisor who is not qualified to drive a CMV fuel a CMV.

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74.3: Cell Phone and Electronic Device Use

74.3 *Ref. Rule 2.21* *Ref. SRM* *Section AI*	**Cell Phone and Electronic Device Use** While operating a motor vehicle, cell phone use (when allowed per GCOR per 2.21) is permitted when: • A hands free device is used and voice activated dialing or speed dialing is used or • Stopped on other than a roadway. The driver may instruct passengers to turn off electronic devices to eliminate distractions while the vehicle is moving. The use of electronic devices for anything other than voice communication is prohibited while operating a motor vehicle. Do not use a cell phone or electronic device while fueling a vehicle.

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74.4: Clearing Obstructions

74.4	**Clearing Obstructions** The driver must know the vehicle and load will clear all obstructions or close clearances.

	Do not park the vehicle foul of any railroad track or the traveled portion of a roadway unless proper warning to approaching traffic is provided.

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July 2, 2013

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74.5: Seat Belts

74.5	**Seat Belts** All vehicle occupants must use seat belts, where provided. This includes: • Company vehicles. • Privately-owned vehicles used on company business. • Leased, rented or contract vehicles. • Hy-rail vehicles on and off the rail. • Operating material handling or utility type vehicles, if so equipped (i.e. forklifts, mobile cranes, mules, utility trucks, etc). • Engineering work equipment as outlined in the "Engineering Seat Belt Matrix" Seat belts must: • Be inspected prior to use. • Not be removed from vehicles to avoid use. • Be replaced immediately or the vehicle removed from service if missing or defective. Driver must not move a vehicle until assured all passengers are seated and have their seat belts fastened in proper restraining position. **Exception:** Seat belt use is not required if vehicle is not exceeding 5 mph and vehicle is used during the task of inspecting cars, coupling air hoses, changing brake shoes, or setting a hy-rail on or off the track..

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74.6: Back-Up Moves

74.6	**Back-Up Moves**
	
	On Union Pacific property work must be planned to minimize back-up moves and to avoid driving into areas requiring back-up moves. No back-up move is allowed when a forward move can safely be made.
	
	Employee(s) in the cab of a vehicle must not speak to or distract the driver until the back-up move is completed, except in case of emergency.
	Unless vehicle is equipped with an operative rear vision camera, before initiating a back-up move driver must:
	
	• Walk around the vehicle and confirm that it is safe to move.
	• Look in the direction of movement.
	• Sound horn prior to back up move if back up alarm is inoperative or unavailable.
	• Not exceed 5 MPH; conditions may require a lower speed.
	
	When rearward vision is impaired, when equipment is standing on one or more tracks adjacent to the road, or in a Union Pacific parking lot, the following applies unless vehicle is equipped with an operative rear vision camera:
	
	• When a second person is available:
	  • A job briefing must be performed prior to movement, addressing the direction of move and position of person protecting the move.
	  • The second individual, when safe to do so, must be near the rear of the vehicle to direct the movement.
	  • Driver must immediately stop if the person who is directing the movement disappears from the driver's view.
	• When a second person is not available:
	  • The driver must stop every 150 feet. After stopping, the driver must secure the vehicle and walk around the vehicle to confirm that nothing has entered the path of the rearward movement of vehicle.
	  • This will be repeated consecutively every 150 feet or until back-up move is no longer required.

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May 2, 2016

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74.6.1: Back-up Moves by Engineering Employees and Contractors in Vehicles

74.6.1	**74.6.1: Back-up Moves by Engineering Employees and Contractors in Vehicles** Work must be planned to minimize back-up moves and to avoid driving into areas requiring back-up moves. No back-up move is allowed when a forward move can safely be made. Employee(s) in the cab of a vehicle must not distract the driver with unnecessary conversation or other distractions until the back-up move is completed. Before initiating a back-up move, the driver must walk to the rear of the vehicle to confirm that it is safe to move unless a second person is directing the move as described in 2(A) below. In addition, each driver must comply with the following: 1. Sound horn frequently if back up alarm is inoperative or unavailable. 2. When safe to do so, proceed not exceeding 5 MPH and complying with either (A) or (B) below. (A) When a second person is available to direct the back-up move (i.e any other employees or contractors in the vehicle or present in the immediate vicinity): • A job briefing must be performed prior to movement, addressing the direction of move and position of person protecting the move. • The person directing the move (spotter) must be in a position to be seen by the driver and must be able to see the rear of the vehicle and the intended path. • The spotter must not walk backwards or turn his/her back to the back-up move. Instead, the spotter must bring the vehicle back to a pre-determined point and stop the move. The spotter may then reposition himself before resuming the back-up move. • Driver must immediately stop if the person who is directing the movement disappears from the driver's view. (B) When a second person is not available: • The driver must stop every 150 feet. After stopping, the driver must secure the vehicle against movement, walk to the rear of the vehicle and visually confirm that the way is clear. There are three exceptions to requirement 2(A or B) above: (1) The vehicle is equipped with an operative rear vision camera that provides sufficient visibility. (2) Short turn-around move or backing into a parking spot that requires a back-up move of 30 feet or less if there are no other persons on the ground within 150 feet and the vehicle has pulled by the area to ensure a safe move can be made.

	(3) Delivery of materials or equipment to a work site if there are no persons on the ground within 150 feet of the intended path and there is no equipment standing on an adjacent track.

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74.6.2: Back-Up Move on Rail

74.6.2 *Ref. Rule(s) 42.2.2*	**Back-Up Moves on Rail** Work must be planned to minimize back-up moves and to avoid driving into areas requiring back-up moves. No back-up move is allowed when a forward move can safely be made. When operating a hy-rail in reverse do so for as short a distance as possible, consideration should be given to turning the vehicle in the direction of movement at the nearest road crossing. Do not exceed: • 20 MPH on tangent track. • 10 MPH in curves. The driver must operate at a speed that will allow stopping in ½ the distance the track is seen to be clear. Back-up alarm should be sounding continuously. If back-up alarm times out, tap the brakes to reactivate the alarm.

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74.6.3: Back-Up Moves by Off-Track Equipment

Off-track equipment (bulldozer, backhoe, etc.) working on Union Pacific Railroad property must be equipped with an operative back-up alarm.

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May 2, 2016

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74.7: Railroad Grade Crossing

74.7	**Railroad Grade Crossing** Drivers must approach railroad crossings prepared to stop. Before crossing track(s) where visibility is impaired by railroad equipment or other obstruction that prevents a clear view of approaching trains, the driver of the vehicle must: • Stop the vehicle and verify (by either a flagman or personal observation) there will be no movement on the track(s) being crossed. or • Use alternate crossing. Vehicles designed to transport 16 or more passengers including the driver, or placarded vehicles must stop at all highway railroad crossings at grade.

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74.7.1: Yard Crossings

74.7.1	**Yard Crossings** Drivers must stop before proceeding over any crossing within a yard. This includes crossings where no stop sign is posted. Only one stop is required for multiple crossings.

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74.8: Hazardous Material

74.8 *Ref.* *"*Shipping Papers for Hazardous Materials" *Form 70056 available on web.*	**Hazardous Materials** Do not place gasoline or other hazardous materials, including oxygen and fuel gas, in a bus or passenger compartment occupied by the driver or other persons. This requirement does not apply to transporting railroad flagging kits. Do not transport gasoline or other flammables in an automobile trunk except in an emergency and then only in an approved container secured against movement. A U.S. DOT Hazardous Material Certificate of Registration must be in the possession of the responsible employee when transporting hazardous material. When transporting more than 400 pounds of a hazardous material, completed Shipping Papers for Hazardous Materials (Form 70056) is also required.

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74.9: Parked Vehicle

74.9	**Parked Vehicle** To prevent movement when vehicle motor is left running, firmly apply parking brake and place transmission in neutral (manual transmissions) or park (automatic transmissions). When left unattended: • Place manual transmissions in low gear or automatic transmissions in park. • Set parking brake. • Stop engine and remove ignition key. • Close windows and lock doors. • Take precautions to prevent movement when vehicle or trailer is parked on grade.

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74.10: Trailers

74.10	**Trailers** Before towing trailers, drivers must inspect: • Compatibility of trailer connections. • Hitches and safety chains. • Equipment or material loaded on the trailer is properly secured and verify weight limit has not been exceeded. • Tires. • Lights. • Brakes for proper operation (if equipped). • For any unusual condition.

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74.11: Working Under Vehicles and Trailers

74.11	**Working under Vehicles/Trailers** Sitting or lying under vehicles or trailers is prohibited unless making inspections or repairs. When making inspections or repairs: • Set parking brake. • Stop engine and remove ignition key. • Block wheels. • Place proper support stands before positioning yourself under a raised vehicle or trailer.

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74.12: Off Road and Yard Vehicles

74.12	**Off Road and Yard Vehicles** Only authorized drivers are permitted to operate off-road and yard vehicles. Compliance with other vehicle rules, i.e., speed, inspection, etc. also apply when operating these vehicles. When rules for operation and care are furnished by the manufacturer they must be observed. Reckless or careless driving is prohibited. Operators of vehicles must: • Maintain control at all times. • Be prepared to stop within one half their range of vision short of any person or object. • Avoid striking standing or moving equipment or being struck by moving equipment. • Maintain sufficient clearance to tracks and equipment on those tracks. (If tracks must be fouled or proper clearance cannot be maintained, movement must be protected). • Operate only in designated areas. • Cross rail only at designated crossings and road ways. Riders are not permitted on vehicles unless provided with a seat. Riding side saddle on off-road and yard vehicles is prohibited. Vehicles designed for one person must not be occupied by more than one person. Do not make adjustments or disable any speed limiting device.

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74.13: Batteries

74.13	**Batteries** Tools and other metallic objects must be kept away from the top of uncovered batteries. Maintain stored batteries in a fully charged condition.

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74.13.1: Charging Batteries

74.13.1	**Charging Batteries**
	
	When charging batteries:
	
	• Keep vent caps in place and maintained in functioning condition.
	• If necessary to bring battery liquid to the correct level, use approved water.
	• Charger must be turned off or unplugged before connecting to or disconnecting from battery.
	  ○ Hook the charger to the positive post first and the negative post last.
	  ○ When removing the charger, disconnect the negative post first and the positive post last.
	
	Precautions must be taken to prevent open flames, sparks, or electric arcs in battery charging areas or around exposed batteries. The area must be adequately ventilated.

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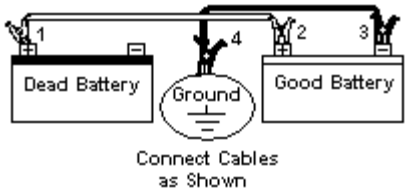
74.13.2: Jump Starting

74.13.2	**Jump Starting** To jump a vehicle battery, use the following procedure: 1. Turn off all electrical accessories in both vehicles, including Company radio. Start the engine of the booster vehicle to keep its battery from being discharged. 2. Make sure the vehicles are not touching. If possible, boost on-track machines from a non-rail source (off-track vehicle/machine, booster pack or spare battery). If this is not possible, jump start the on-track machine from another on-track machine or vehicle using two sets of jumper cables to keep sparks away from either battery. After connecting one set of jumper cables to each battery, connect the negative ends of the jumper cables together first, followed by the positive ends. After starting machine, disconnect the positive ends first, followed by the negative ends. 3. Shift both vehicles into neutral or park, and set the emergency brakes. 4. Check to be sure that both batteries are the same voltage. 5. Check to see that the fluid level is correct. If the fluid is frozen, do not attempt to start the vehicle. 6. Clamp one jumper cable to the positive (+) terminal of the dead battery (position 1 on diagram). Do not allow positive cable clamps to touch any metal other than battery terminal. Connect other end of positive (+) cable to positive (+) terminal of good battery (position 2 on diagram). 7. Connect one end of the second cable [negative (-)]^^^ to other [negative (-)]^^^ of good battery (position 3 on diagram). Make final connection on engine block of stalled engine (not to negative post) away from battery, carburetor, fuel line, any tubing or moving parts (position 4 on diagram).

	 **8.** Stand back from both vehicles. Start vehicle with good battery—then start the disabled vehicle. **9.** Remove cables in reverse order of connections beginning by first removing cable from engine block or metallic ground.

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75.0: MATERIAL HANDLING

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75.1: Material Storage

75.1	**Material Storage** When stacking or storing materials and freight: • It must be placed safely, securely and where it will not create hazardous conditions. • Store heavier, bulkier materials at a height between the shoulders and mid-thigh to minimize lifting effort from bending or reaching too high. • Place in locations where people will not step on, trip over or fall on them. • Keep out of walkways and passageways, doorways, fire lanes and truck spaces. • Keep a safe distance from the edge of pits, ledges, and platforms. • Place where it will not block access to fire extinguishers, electrical panels, emergency eye washes, showers, or exits.

	• Material stored higher than 6 feet from the ground must be palletized and should be retrieved with a forklift whenever possible. • Material stored more than waist height should be stored to avoid falling and retrieved only with an approved reaching/retrieval device. • Do not store heavy materials on top of fragile or crushable materials. • Do not overload storage racks or areas.

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75.2: Material Handling

75.2	**Material Handling** Keep material being moved under control and be prepared to stop short of obstructions or persons. Keep feet and hands clear of all pinch points. A. Loading and Unloading Materials Inspect decks or floors of trucks, trailers or railcars. If unsafe, do not move material by occupying deck or using a forklift until condition is corrected or other means employed to handle material. Ensure no one is on the ground where material is being unloaded. Do not work on the ground near others who are unloading material. B. Pallets Only use pallets in good condition. If material will be banded to the pallet, care must be exercised to apply sufficient tension to secure the load, but not to the point of breaking the bands or damaging the pallets. When stacking loaded pallets, consideration must be given to the supporting ability of the material and packaging. Stack only to the height that can be safely supported by the material on the bottom of the stack. Pallets must not be stood or stored on end. C. Transfer Plates and Loading Ramps When working with transfer plates, loading ramps, gang planks or skids: • Ensure they are strong enough for the load. • Properly place and secure devices before using.

	• Unless using a forklift, place them between a car and platform and lower by hand or slide into position. • Prevent the plate from slipping or falling and keep hands and feet clear. • Remove nails, cleats or other fastening devices and dispose of properly.

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75.3: Loading and Unloading Tractor Trailers

75.3	**Loading and Unloading Tractor Trailers** Do not load or unload a trailer while the tractor is being coupled or uncoupled or when a tractor is coupled and the engine is running, unless necessary to operate attached boom/hoisting equipment. When loading or unloading trailers observe the following: • Tractor brakes must be set and wheel chocks placed under the rear wheels to prevent movement while they are boarded with powered industrial trucks. • If present, trailer-to-dock locking devices must be used and checked to see that the lock is securely attached to the trailer before loading/unloading. • If trailer-to-dock locking devices are not present, the rear wheels of the trailer must be chocked on both sides of the trailer by placing approved wheel chocks. Make-shift chocks must not be used. • Trailers that have been spotted and the tractor disconnected must have an approved trailer stabilizing jack placed underneath the nose and directly in the center of the trailer. • If the load appears to be exceptionally heavy, has shifted to one side, or in the event there could be a possible defect with the landing gear, place a jack under both front corners of the trailer. • Trailers with tractor attached require the locking device or the rear wheels chocked and brakes set. • Visually inspect the floor of trailers prior to entry with forklift. Any defects detected must be reported to immediate supervisor. Do not exceed the capacity of the floor.

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75.4: Load Binders

75.4	**Load Binders** Only use ratchet action load binders and ensure they are in good condition prior to use. All other types of load binders are prohibited. Do not assist others in the operation of lever action load binders.

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75.5: Drums and Barrels

75.5	**Drums and Barrels** When handling drums or barrels: • Test the weight before attempting to handle. • Use approved handling equipment. • Do not use feet to roll. • Do not pull over or up-end without assistance or mechanical equipment.

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75.6: Wheel Sets

75.6	**Wheel Sets** Wear cut resistant gloves when handling wheels. Stopping movement by holding the flange or walking in front of rolling mounted wheels is prohibited.

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75.7: Forklifts

75.7	**Forklifts** Only certified employees may operate a forklift. **Inspection** Inspect forklift prior to operation. Any unusual condition must be corrected or the forklift must be removed from service. **Operation** The operator must caution others working in the vicinity and must comply with the following: • Operate at a speed that will permit stopping short of objects or persons. • Look both ways before crossing tracks and cross diagonally when possible. • Travel backwards down ramps or inclines when handling loads or when necessary for clear vision. • Block wheels and apply parking or hand brakes before loading or unloading highway vehicles or rail cars. • Travel with load as low as practical, against mast. Load must not be lifted while traveling. • Watch for impaired overhead clearance and rear end swing, avoiding sudden stops, jerks, turns and rough terrain. • Keep forklift clear of edge of loading docks, platforms and gangboards. • Do not use forklifts as a platform to raise or lower employees, except where an approved cage, secured to the forks and /or lifting carriage is provided. • Only the operator is allowed to ride a forklift. • Before getting on or off, forklift must be stopped in the clear with hand brake set and forks lowered to the floor or ground. Getting on or off a moving forklift is prohibited. **Unattended** A forklift is unattended when the operator is more than 25 feet from the machine or the operator is not in view of the machine. Before the forklift is left unattended: 1. Lower forks to ground. 2. Shut off engine. 3. Apply hand brake. **Wagon Tongue Equipment**

	A self-propelled lift truck or similar self-propelled equipment with "wagon tongue" type handle must be operated from a trailing position. Do not ride on any part of equipment of this type.

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76.0: TOOLS AND MACHINERY

- 76.5.6: Anvils / Dies / Trip Hammers

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76.1: Use of Tools and Machinery

76.1 *Ref. SRM Section A*	**Use of Tools and Machinery** Use the correct tool or equipment for the task to be accomplished in accordance with the manufacturer's operating instructions. Improvised, altered or shop made tools or equipment are prohibited unless approved through departmental procedures. The use of pipes or improvised extensions on tools, wrenches or other devices to gain leverage is prohibited. Unauthorized use of tools, equipment and machinery is prohibited. Note: Refer to PPE Matrix for specific tools found in SRM Section A.

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76.2: GENERAL

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76.2.1: Inspection of Tools and Equipment

76.2.1 *Ref. Rule(s) 1.1.4*	**Inspection of Tools and Equipment** Prior to use, tools and equipment must be inspected for conditions that might cause the tool or equipment to fail. Conditions to inspect for include, but are not limited to: • Broken, bent, frayed, deformed, cracked, loose, improperly wedged, or damaged handles (wooden handles must not be taped). • Cracks, burrs or mushrooming. • Excessive wear or cuts. • Unapproved repairs. • Missing guards or parts. • Exposure to excessive heat (as noted by difference in color, warped, etc.) that could affect the hardness or temper of the equipment or tool. • Damage from welding or cutting (as noted by cut marks, pits, gouges, etc.). • Belts, shafts, gears and other moving parts on machinery are fully enclosed and guarded. Be familiar with the manufacturers and/or the company's inspection/operating procedures and specific safety rules for the tools and equipment to be used.

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76.2.2: Safety Guards / Chip Protectors

76.2.2	**Safety Guards / Chip Protectors** Tools, machinery and equipment must not be used without required guards. Chip protectors are required on track chisels, drift pins, or similar struck tools.

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76.2.3: Tool Storage and Placement

76.2.3	**Tool Storage and Placement**
	
	A. Tool Storage
	
	Keep tools, materials, hoses, extension cords and supplies in assigned places when work has been completed.
	
	B. Tool Placement
	
	Place tools in safe, secure locations and avoid placing:
	
	• Objects where they are likely to fall or be knocked off.
	• Tools or other objects such as air hoses, EOTs, brake sticks, brooms, etc., on:
	  • Ladder rungs.
	  • Hand holds.
	  • Running boards.
	  • Steps.
	  • Uncoupling levers.
	  or
	  • Other safety appliances.
	• Sharp edged tools where they may cause injury:
	  • On benches.
	  • Under scrap paper or rags.
	  • Among tools in drawers.
	  or
	  • In tool boxes.
	• Hoses and extension cords where they create a tripping hazard.
	
	Power tools must not be:
	
	• Laid down with the motor running.
	• Placed where they may be started by mistake.
	• Left unattended with the power source connected.
	• Left on wet surfaces or in loose soil.

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76.2.4: Set Screws / Chuck Wrenches

76.2.4	**Set Screws / Chuck Wrenches** Set screws or keys in revolving spindles or shafts and chucks must be flush, countersunk or protected by a collar unless fully enclosed and guarded from exposure. Remove chuck wrenches used to tighten chucks on boring mills, lathes, or drills (including portable drills) before operating the machine.

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76.3: Hand Tools

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76.3.1: Use of Wrench

76.3.1	**Use of Wrench** Take the following precautions when using wrenches: 1. Select the proper wrench for the job. Do not use any object as a shim between the wrench jaws and the nut and bolt head, or use another object to make the wrench fit. 2. Brace your body securely to prevent injury in case the wrench slips or the wrench, bolt, nut or other object fails. 3. Place the wrench so the turn will be toward the open end of the jaws.

	4. Pull toward the body whenever possible.

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76.3.2: Swinging Tools

76.3.2	**Swinging Tools** Stay clear of the swing arc of tools. When using swinging tools, warn others to keep clear. Stand in a position that will direct the tool away from your body in the event the tool strikes a glancing blow. Do not stand on the same side as striker when holding a bar, cutter or punch. A. Hammers must be used only for their intended purpose.

Type	Intended Use
Claw	For use on soft steel, such as nails. Nails or spikes must be well started before a full blow is struck.
Ball Peen	For use on hard metal, such as a chisel.
Locomotive	For emergency use by operating employees.
Sledge	For use on hardened steel.
Rubber Mallet	For use on hard metals.
Soft Metal Hammers (i.e. Brass, Aluminum)	Cutters or other hardened steel tools have special applications to prevent damage, (i.e. striking reamers, taps, drills, copper, etc.).

B. Spike Maul

When using a spike maul, use the following procedure:

1. Inspect the tie plate area and brush away any loose material that might fly on impact.
2. When possible, set the spike from the same side of the rail you are standing on, holding the spike palm side up.
3. Strike light blows until the spike is firmly set.
4. Establish good footing, take a firm grip on the handle, keep your eyes on the spike head and spike by swinging the maul in a smooth arc at an even rhythm.

Spike mauls must only be used for setting and driving railroad spikes.

	When two employees are spiking along the same rail, each must spike on their side of the rail, and both must face the same direction. One employee spiking alone may spike over the rail. C. Hand Adze Remove nails, dirt, stones and other debris from the item to be adzed. Straddle the item, when possible, and work the adze between the legs, keeping good control to prevent glancing blows. Cut with the grain, notching and chipping out pieces if a considerable amount is to be removed. Keep the cutting edge sharp and free of chips and use special caution when cutting cross-grained lumber, knots, etc.

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76.3.3: Sharp Edged Tools

76.3.3	**Sharp Edged Tools** Use the proper tool for the job.

Tool	Intended use and/or special instruction
Wire Stripper	Used to cut wire. Hold the short end of the wire to reduce the danger of flying bits. Always cut at right angle. Cutters are dulled by rocking from side to side or bending the wire back and forth against the cutting blade.
Compound leverage	Used to cut chain, bolts or heavy gauge cutter or bolt cutters wire.
PVC / Hose Cutter	Use for cutting pvc pipe or any hoses especially oxy-acetylene hoses.
Banding cutters	Used to cut bands.
Utility Knives	Safer than hooked or pocket knives for opening cartons. They not only protect the user, but also eliminate deep cuts that could damage the carton contents.
Chisel	Mushroomed or damaged chisels must be redressed or destroyed

Note: Use of personal knives is prohibited while on duty or on company property.

	Use chemical gasket remover where possible to soften the old gasket and then use a scraper or putty knife to remove the gasket. A gasket grinder may also be used to remove old gaskets. Use a retractable blade utility knife to cut new gaskets. Use clamps to hold down both the template and the gasket material. When using sharp edged tools, the cutting edges must be directed away from the body or hands. If that is not possible, then the free hand and body should be in a position that place them clear of the blade stroke, and protective clothing should be worn. When wiping the blade, use a towel or cloth (not your own clothing) with the sharp edge turned away from the wiping hand.

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76.3.4: Drift Pin

76.3.4	**Drift Pin** Use a drift pin when necessary to align holes for the insertion of rivets, bolts or pins. Fingers must not be used to align holes. Use a hammer to strike the pin. Hit the pin with light blows until it is securely seated in the hole. Be alert when driving a drift pin or bolt to make sure no one is positioned in line with it should it fly out.

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76.3.5: Banding Tools

76.3.5	**Banding Tools** Use caution when handling banding materials and tools. When applying or cutting banding:

	• Have a firm grip on the bander. • Do not apply undue tension to the bands. • Do not stand in direct line of bands under tension. • Band cutters must be used to cut banding. • Position yourself so that you will not be struck should material fall from the stack. Bands must be cut back, secured or removed to prevent cutting or tripping hazards. Scrap banding must be placed in suitable containers for disposal or moved to a safe area.

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76.3.6: Files-

76.3.6	**Files** Files must only be cleaned by using a wire brush. They must not be used as a pry, punch, chisel or any other type of tool. Files must have wooden or plastic handles attached.

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76.3.7: Carrying Tools-

76.3.7	**Carrying Tools** Long handled tools must not be carried in such a manner that will present a hazard to yourself or others. Carrying pointed tools is prohibited unless point is protected.

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76.3.8: Bars, Levers and Tools

76.3.8	**Bars, Levers and Tools** When using bars, levers or tools: • Brace yourself. • Be alert to the bar or lever slipping or moving unexpectedly. • Place hands and feet to prevent injury. Do not: • Over exert. • Sit, stand on or straddle a bar or lever. • Use bars or levers that are broken, bent, chipped or have been welded on.

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76.3.9: Use of Claw Bars to Remove Spikes

76.3.9	**Use of Claw Bars to Remove Spikes** When using claw bars: 1. Place the claw securely under the spike head. If you are unable to get the claw under the spike head, use the pointed end of the bar and pry up the edge of the tie plate enough to permit the claw to seat completely under the spike head, or use a spike lifter. 2. With firm footing, stand beside the claw bar and position your hands below the notch in the handle to prevent striking hand on opposite rail, should the spike break or release suddenly. 3. Work the spike up with short, firm thrusts. If additional leverage is needed, use a piece of wood under the heel of the claw bar. When using the claw bar to nip tie plates, be sure the end is well underneath so it will not slip. Do not strike the handle of a claw bar with another tool.

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76.3.10: Lining Bars

76.3.10	**Lining Bars** When nipping ties or lining track, make sure the bar is placed in the ballast sufficiently to prevent it from slipping out when force is applied. Apply force smoothly and assume a firm stance to maintain balance should the bar slip. If necessary, use a piece of wood as a fulcrum to multiply your force on the tie. Do not use a lining bar to turn a rail.

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76.3.11: Rail Turners

76.3.11	**Rail Turners** The ratchet rail turner or rail forks are the only hand tools that may be used to turn rail.

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76.3.12: Use of Tie or Timber Tongs

76.3.12	**Use of Tie or Timber Tongs**

	Tongs must be set firmly with a steady force applied. When pulling, stand braced with your feet apart and with one foot behind the other. Use tie tongs when handling individual ties.

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76.3.13: Track Jack

76.3.13	**Track Jack** Track jack must be inspected before using for: • Cracked base. • Broken pawl lever. • Missing ratchet or operating lever pins. • Any debris in the ratchet mechanism. Do not strike the jack with tools to force it under a load. The jack base must be placed on an even and firm surface to prevent shifting or kicking out. The lifting surface must be placed fully under the load. No more than two people may operate the jacking lever. Only use lining bar to operate a mechanical track jack. When using lining bar: • Stand beside the bar and assume a stable position. • Pump lining bar in an even rhythm. • Do not straddle, sit or stand on the lining bar. • Keep body clear of pinch points. • Remove the lining bar when the jack is not being operated. Before tripping or lowering the jack under load, make certain all employees, tools and materials are in the clear. Jack must not be set for tripping until ready to release the load. Do not walk track jack down. Mechanical track jack must not be used by the Locomotive and Car Departments.

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76.3.14: Jacking Equipment

76.3.14	**Jacking Equipment** Only approved jacks will be used to lift cars or locomotives. When necessary to jack a locomotive, car or other heavy equipment in order to remove trucks, wheels, couplers, etc., jacks must be: • Of sufficient capacity to handle the lift. • Positioned on pads or footing sufficient to handle the lift. If blocking is used, it must be capable of handling the lift. • Level and jack head must contact the jacking point as completely as possible. • Positioned under the load at a location where there is sufficient strength to support the equipment. This includes secondary support. A five minute settling period must be observed when jacking on unpaved or uneven surfaces. Do not jack metal against metal, except when using track jacks or vehicle jacks. When mechanical, hydraulic or air jacks are used, a piece of wood or approved pad (minimum of one-half inch and a maximum of one inch thick large enough to cover the jack head), must be inserted between the jack head and the load. Do not place any part of your body under the load or in line of fire, unless equipment or load is properly secured.

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76.3.15: Securing Jacked Equipment

76.3.15	**Securing Jacked Equipment** Follow these precautions when jacking equipment: 1. Wheels must be chocked to prevent equipment movement, except where one-spot in-floor jacks are being used. 2. Do not go under or place any part of your body under equipment unless it is secured from movement and has proper secondary support in place. Secondary support shall consist of: • Stands or blocking of sufficient capacity to support the load. • In rip track or shop applications, using in-floor jacks with positive stop features will be considered the same as using secondary support; otherwise, stands or blocking must be used.

	3. To be effective, load must be lowered until a portion of it rests on the secondary support. 4. Always consider other options and methods to preclude having to place any part of your body under a jacked load or in line of applied force. When trucks are under car, use the proper tool to remove or position the center pin. **Note:** Portable jacks with locking rings (i.e. electric powered hydraulic jack) will not be used as secondary support or a jack stand.

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76.4: PORTABLE POWER TOOLS

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76.4.1: Securing Hose Connections

76.4.1	**Securing Hose Connections** Air connections must be secured and must: • Be equipped with whip checks or check valves on both ends. • Not be uncoupled without first closing the air valve and relieving line pressure, unless equipped with quick disconnect. • Not have wire in air or hydraulic couplings used in place of clip pins.

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76.4.2: Powder-Actuated Tools

76.4.2	**Powder-Actuated Tools** Only authorized employees are permitted to use powder-actuated tools (i.e., Hilti guns, nail guns, etc.) and must follow manufacturer's instructions. Assume all powder-actuated tools are loaded. Treat tools and powder cartridges with extreme caution. Powder-actuated tools must be unloaded when not in use.

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76.4.3: Chain Saw

76.4.3 *Ref. Rule(s)* *72.2* *SRM* *Section A*	**Chain Saw** Follow the manufacturer's instructions when operating chain saws. Operators must wear: • Dust goggles or face shield with safety glasses. • Gloves. • Long-sleeved shirt. • Chain saw chaps. • Hearing protection. Only qualified and properly trained personnel are permitted to use chain saws. **Standing Trees** Employees must not fell standing trees greater than 6 inches in diameter at mid chest height. If the tree is leaning, extreme care should be used when cutting and consideration should be given to having the tree cut by an outside service provider. Standing trees greater than 6 inches in diameter that need to be felled must be removed by an outside service provider. **Fallen Trees** Employees must do a thorough risk assessment of the scene where a tree is fouling any UPRR tracks or structures before using a chainsaw. This assessment must include evaluation of the position and orientation of the trunk and limbs of the fallen tree to identify any stress in the tree components due to the position and orientation (i.e. twisting or leaning against another tree or object).

	All chain saws should have a chain brake. Those saws not equipped with a chain brake must have a tip protector. Be alert for conditions which may adversely affect footing and safe operation of the saw. Avoid cutting directly overhead. Where there is a fire hazard, a fire extinguisher and shovel must be immediately available when using a chain saw.

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76.4.4: Rail Saws

76.4.4	**Rail Saws** A rail saw can be powered by gasoline, hydraulics or electricity. Rail saws are only to be used to cut rail. Do not operate a rail saw unless you have been properly trained in its safe use and follow all of the manufacturer's instructions. When operating a rail saw: • Warn others you are about to begin cutting rail. • Personnel are prohibited from standing in front of the rail saw when rail is being cut. • Required PPE must be used. • The guide support arm must be used when cutting rail (freehand cutting is prohibited). • Inspect equipment regularly to ensure it is operating safely and efficiently. Do not fuel a gasoline powered rail saw closer than 20 feet from where the rail is to be cut.

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76.5: FIXED MACHINERY / PORTABLE EQUIPMENT

76.5 FIXED MACHINERY / PORTABLE EQUIPMENT

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76.5.1: Servicing Machines

76.5.1 *Ref. SRM Section H*	**Servicing Machines** Follow manufacturer's recommendations for servicing machinery. Ensure all safety guards and/or safety devices are replaced and operable before machine is returned to service. Follow Environmental Guidelines to dispose of waste products.

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76.5.2: Unattended Machines and Equipment

76.5.2	**Unattended Machines and Equipment** Do not leave running machines or equipment unattended.

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76.5.3: Clamping Material

76.5.3	**Clamping Material** When possible, material must be firmly clamped to the machine before work is performed.

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76.5.4: Removing Chips

76.5.4	**Removing Chips** Use a brush, vacuum equipment or tools made to remove chips or shavings. Do not remove chips or shavings from a drill press, lathe, wheel true or other machine by hand.

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76.5.5: Pedestal or Bench Mounted Abrasive Grinders

76.5.5 *Ref. SRM Section A*	**Pedestal or Bench Mounted Abrasive Grinders** A. Mounting Prior to mounting abrasive wheels: • Inspect for damage and cracks. Wheels that show any evidence of cracks or other defects must not be mounted. • Spindle speed of grinder must be checked to ensure that it does not exceed the maximum operating speed marked on the wheel. Blotters must be used between flanges and abrasive wheel surface to insure uniform distribution of flange pressure. Blotters must cover the entire contact area at the wheel flanges. Flanges must be the same size and not less than one-third the wheel diameter. B. Ring Test The Ring Test depends on the damping characteristics of a wheel to alter the sound emitted when the wheel is tapped lightly. When performing a Ring Test: • Ensure wheels are dry and free from sawdust before performing the Ring Test.

	• Support the wheel through the center hole with a non-sound conducting holder such as a wooden dowel. • Using a light non-metallic tool, such as the handle of a screwdriver, tap wheel gently about 45 degrees each side of the vertical center line and about one or two inches from the outside edge. • Rotate the wheel 45 degrees and repeat. A sound and undamaged wheel will give a clear tone. If a clear tone is not heard the wheel must not be used. C. Using Grinders • Prior to doing any work with the grinder, it must be run for one minute to check for excessive vibration with operator standing to the side. If there is excessive vibration, the machine must be shut down and supervisor notified. • Only grind material for which the wheel is designed. When using grinder: • Apply force gradually and uniformly when the wheel is cold to prevent thermal shock. • Immediately report and replace broken or missing shields. • If needed, protect arms with a long sleeved shirt. Do not: • Wear gloves while grinding. • Grind on sides of abrasive wheels. • Allow the tool rest to be more than one-eighth inch from the stone. • Allow the distance between the wheel edge and the adjustable tongue to be more than one-fourth inch. • Use rags to hold material while grinding. • Grind non-ferrous material (i.e., aluminum, brass or plastic) on wheels designed for grinding steel.

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76.5.6: Anvils / Dies / Trip Hammers

76.5.6	**Anvils / Dies / Trip Hammers** Do not use your hands to place blocks, tools or other material on anvils, dies or trip hammers.

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77.0: MECHANICAL LIFTING/PULLING OPERATIONS

77.0: MECHANICAL LIFTING/PULLING OPERATIONS

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77.1: Qualified Employees

77.1	**Qualified Employees** Only qualified employees are permitted to operate cranes, hoists, and mechanical lifting/pulling devices. Employees must be trained in rules and procedures regarding the equipment's operation before qualification is granted. Comply with instructions for operation and care provided by the manufacturer.

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77.2: Inspection

77.2	**Inspection** All hoisting equipment and rigging must be inspected daily before use and periodically as required. If defects are found, they must be corrected or equipment must be removed from service. Maintain a record of inspections on equipment and have records available upon request.

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77.3: Safe Load and Load Control

77.3 *Ref. SRM Section AB & AF*	**Safe Load and Load Control** A load that is suspended or being lifted should be pushed instead of pulled. Hands must not contact wire rope or sheaves on hoisting equipment with load attached unless absolutely necessary, and then only after notifying operator. Use non-conductive push stick or tag lines to prevent uncontrolled movement. When hoisting loads, do not: • Overload hoisting and rigging equipment. • Side-load or drag a load with hoisting equipment. • Drop or jerk the load or tackle. Raise and lower the load gradually and remove buckets or magnets from crane when handling loads with slings. Precautions must be taken to ensure against load swaying or turning. Crane, hoist, or wrecker must not be moved if load is swaying or turning excessively.

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77.4: Positioning

77.4	**Positioning** When working with cranes or other hoisting devices, those in the immediate area must: • Notify groundman or operator before entering the area. • Position themselves where they cannot be struck / crushed by the load, crane or other object. • Stay clear of loads being suspended. • Not be under the crane boom or similar machine when it is lifting or suspending a load. • Not stand near or in the line of fire of a cable, rope or chain under tension in case of breakage, or one that might be tightened at any moment.

	• Not walk or stand in the path of a load being handled by a crane, hoist or wrecker. Loads must not be suspended from booms unless the work requires. In such cases, keep the load secured and as close to the ground as possible. Do not use the crane or other hoisting device to transport suspended loads. Use a flat car or other conveyance to release the weight from the boom during transit. **Avoiding Falls** Maintain secure footing and a firm hand hold to avoid falling when standing on load to adjust cable, chain, sling or hook.

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77.5: Groundman

77.5 *Ref. SRM Section AB & AF Rule 78.7*	**Groundman** The groundman is responsible for directing and safe-guarding all machine movements. Before signaling boom or machine movement, the groundman must ensure the load, cab or boom will not come in contact with nearby wires, structures or other objects and persons. A groundman required to move cars or on-track equipment must be qualified on the use of their braking systems.

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77.6: Crane Operator

77.6 *Ref. SRM Section AA*	**Crane Operator** The crane operator is responsible for the safe operation of the crane and for the safety of employees working in the immediate area. The operator will only take signals given by the groundman, unless the signal is a stop signal.

	Equipment controls must not be left during a lift or when a load is suspended; or with the master clutch engaged.

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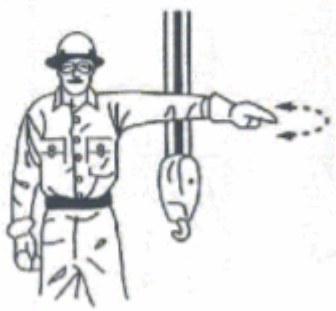
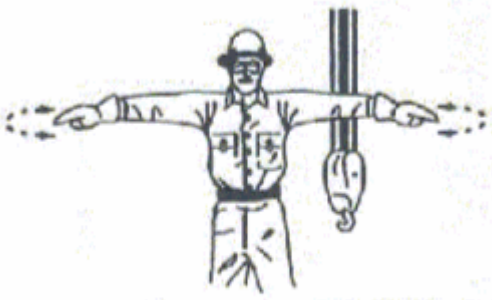
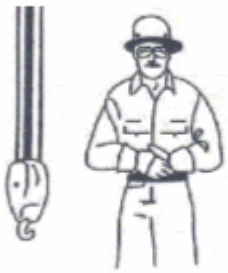
77.7: Signals

77.7	**Signals** Hand signals must be used when possible. If crane hand signals cannot be used, crane audio signals may be used. The crane operator and groundman must agree beforehand on the signals to be used and must use only these approved signals. The person giving signals must: • Make sure signals can be plainly seen. • Give signals clearly so they can be understood. If the person giving signals disappears from the view of the crane operator, movement must be stopped. **Emergency Stop Signals** Anyone can give emergency stop signals. The crane operator must immediately recognize and act upon any stop signal or any other motions or movements that might indicate such action is necessary.
	Use the following standard hand signals while operating cranes and hoists: STOP  **Stop:** Arm extend, palm down, move arm back and forth horizontally. EMERGENCY STOP  **Emergency Stop:** Both arms extend, palm down, move arms back and forth horizontally. ########## ##########

DOG EVERYTHING



Dog Everything: Clasp hands in front of body.

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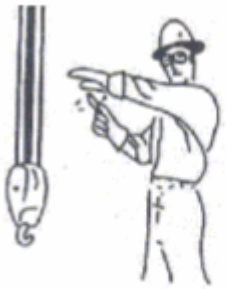
MOVE SLOWLY



Move Slowly: Use one hand to give motion signal and place other hand motionless in front of hand giving the motion signal.

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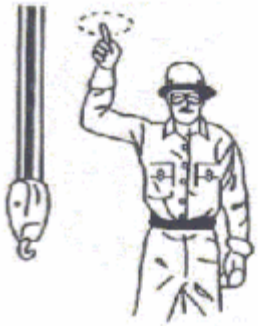
HOIST



Hoist: With forearm vertical, forefinger pointing up, move hand in small horizontal circle.

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LOWER

Lower: With arm extended downward, forefinger pointing down, move hand in a small horizontal circle.

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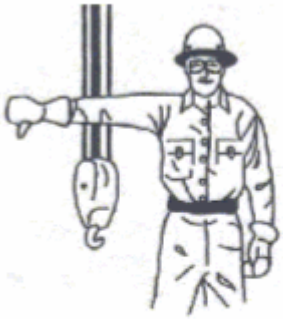
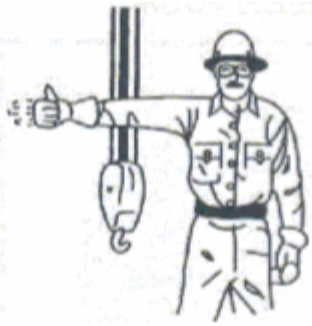
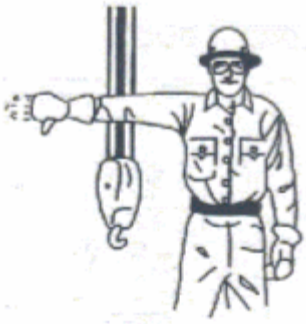
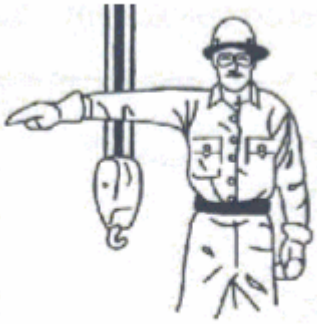
	USE MAIN HOIST  **Use Main Hoist:** Tap fist on head, then use regular signals. ##########
	USE WHIP LINE  **Use Whip line:** (auxiliary Hoist) tap elbow with one hand, then use regular signals. ##########
	RAISE BOOM  **Raise Boom:** Arm extended, fingers closed, thumb pointing upward. ##########
	LOWER BOOM  **Lower Boom:** Arm extended, fingers closed, thumb pointing downward. ##########

	RAISE THE BOOM AND LOWER THE LOAD  **Raise Boom and Lower the Load:** With arm extended, thumb pointing up, flex fingers in and out as long as load movement is desired. ##############################	**LOWER THE BOOM AND RAISE THE LOAD**  **Lower Boom and Raise the Load:** With arm extended, thumb pointing down, flex fingers in and out as long as load movement is desired. ##############################
	SWING  **Swing:** Arm extended, point with finger in direction of swing of boom. ##############################	**RETRACT BOOM** (Telescoping Boom)  **Retract Boom:** (telescoping booms) One hand signal, fist in front of chest, thumb extended out, heel of fist tapping chest. ##############################

RETRACT BOOM
(Telescoping Multiple Booms)

Retract Boom: (telescoping booms) Both fists in front of body with thumbs pointing toward each other.

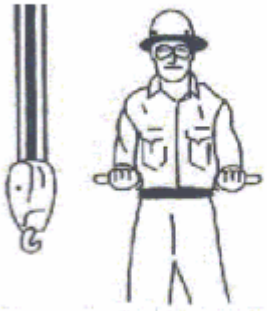
##############################

EXTEND BOOM
(Telescoping Boom)

Extend Boom: (telescoping boom) One hand signal, fist in front of chest, thumb extended and tapping chest.

##################################

EXTEND BOOM
(Telescoping Multiple Booms)



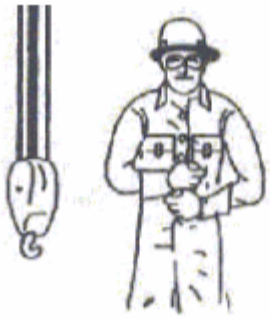
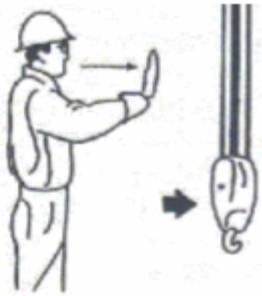
Extend Boom: (telescoping booms) Both fists in front of body with thumbs pointing outward.

##############################

TRAVEL
(One track. For crawler cranes only.)

Travel: (one track crawler cranes) Lock the track on the side indicated by the raised fist, and travel opposite track in direction indicated by circular motion of other fist rotated vertically in front of body.

##

	TRAVEL (Both tracks. For crawler cranes only.)  **Travel:** (both tracks crawler cranes) Use both fists in front of body, making a circular motion about each other, indicating direction of travel, forward or backward. ########## TRAVEL  **Travel:** Arm extended forward, hand open and slightly raised, make pushing motion in direction of travel. ##########

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77.8: Crane Audio Signals

77.8	**Crane Audio Signals** If voice communication is utilized, the voice commands by the groundman to the crane operator shall be in a continuous manner. Use a pause between a common command of approximately one second in duration per ten feet until the load is in the desired position. If the proper communication stops, or is not understood, all crane movements shall stop immediately. Voice Commands shall be as follows: • UP ON THE LOAD • DOWN ON THE LOAD • BOOM UP • BOOM DOWN • BOOM UP AND LOWER THE LOAD • BOOM DOWN AND RAISE THE LOAD

	• SWING LEFT • SWING RIGHT • EXTEND OUT • RETRACT IN • STOP If special voice commands are required to perform the lift, they shall be mutually agreed upon between the groundman and the crane operator before lifting begins.

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77.9: Raising Personnel

77.9	**Raising Personnel** Only raise and lower persons in an approved aerial basket designed for that purpose. Do not use cranes, derricks or hoists to raise or lower persons. Do not ride on loads or rigging.

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77.10: Operation with Trains Passing

77.10 *Ref. Rule(s)* *43.10* *121.0* *81.1.1*	**Operation with Trains Passing** When trains are passing on adjacent tracks, if any part of equipment or load can foul adjacent tracks, crane operators and groundman must ensure: • Work is stopped. • Swing brakes are set if equipped. • Tongs, buckets, loads, or lines come to rest on the ground or car.

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77.11: Pulling Applications

77.11	**Pulling Applications** When wire rope, chain, synthetic tow straps or similar devices are used for pulling applications (i.e., dragging rail, straightening safety appliances, aligning drawbars, towing vehicles, etc.), take the following precautions to avoid personal injury and property damage: • Inspect the equipment to ensure it is in good condition and has the capacity to handle the task. • Protect pulling device from sharp corners or objects. • Do not jerk against the load being pulled. Make all movements smoothly. • Position yourself and others out of the line of fire should the pulling device or attachments fail. • Protect yourself from possible whipping or recoil action should the device release suddenly.

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77.12: MOBILE CRANES

77.12 MOBILE CRANES

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77.12.1: Safe Load Placard

77.12.1	**Safe Load Placard**

	Equipment for lifting, hoisting or handling material must have a Load Chart Placard posted where it is visible to the crane operator. The placard indicates the safe loads at various radii. Crane operators must be familiar with the safe lifting limitations as specified on the placard. **Do not handle loads that exceed the load chart capacities.**

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77.12.2: Boom Inspection

77.12.2	**Boom Inspection** Booms must be lowered for: • Inspections. • Lubrication. • Repairs.

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77.12.3: Handling Equipment in Work Train

77.12.3	**Handling Equipment in Work Train** When equipment with booms, leads or other attachments is being handled in work train service, the crane operator must remain on the machine during all train movements unless the machine has been securely blocked to protect against swinging or other movements. Properly block machines mounted on top of or working from flat cars to prevent the machine from moving when cars are being switched or moved. Do not block the machine when it is being used and is under the control of a crane operator.

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77.13: OVERHEAD CRANES / HOISTS

77.13 OVERHEAD CRANES/HOISTS *Note: See Safety Resource Manual, Overhead Crane Policy Section IV-AA.*

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77.13.1: Test Crane / Hoist

77.13.1
 	
Ref. Rule(s) 138.0
	Test Crane/Hoist
	
	Test crane/hoist at the beginning of each shift or prior to first use as follows:
	
	• Notify personnel in the area that the crane/hoist will be tested and to stay clear.
	• Test controls to ensure proper operation of trolley, bridge, and hoist movements.
	• Verify that:
	  ○ Crane/hoist is operable.
	  ○ Hook is free of obstructions and is not attached to a load.
	  ○ Brakes are properly adjusted.

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77.13.2: Load Movement

77.13.2	**Load Movement**

	When traveling, sound alarm frequently if not automatically actuated. Suspended load must not pass over any individual or come in contact with equipment or other objects along the load path.

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77.14: WIRE ROPE

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77.14.1: Wire Rope Inspection / Repair / Replacement

77.14.1	**Wire Rope Inspection / Repair / Replacement** Inspect, repair or replace wire rope when the following defects are discovered: • In running ropes, six or more randomly distributed broken wires in one lay or three or more broken wires in one strand in one lay. (One lay of wire rope is the distance along the wire rope in which one strand makes a complete revolution around the rope.) • In rotation resistance ropes, 2 randomly distributed broken wires in 6 rope diameters or four randomly distributed broken wires in 30 rope diameters. • Wear of one-third of the original diameter of outside individual wires. • Kinking, crushing, bird-caging, or any other damage that distorts the wire rope structure. • Evidence of any heat damage. • Nominal diameter reduced by more than: - 3/64 inch for diameters up to and including 3/4 inch. - 1/16 inch for diameters 7/8 inch to 1-1/8 inches. - 3/32 inch for diameters 1-1/4 inches to 1-1/2 inches. • In standing ropes, more than two broken wires in one lay in sections beyond end connections. • Corroded, broken wires, cracked, bent, worn, or improperly applied end connections.

	• Any wire rope, one or more broken wires at an end connection. For this type of break, if the wire rope is long enough, cut off 6 to 8 feet of rope from the end connection and make a new connection. • One or more broken wires in running rope, with breaks in the valleys between strands. Use only the wire rope recommended by the manufacturer. Ensure the wire rope has the required certification paper detailing size, construction, type of lay, breaking strength and other pertinent information. • **Exception:** Wire rope, removed from service, may be used in non-critical applications such as tie downs, closing line for buckets, etc.

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77.14.2: Wire Rope Handling

77.14.2	**Wire Rope Handling**
	
	Store and install wire rope as follows:
	
	• Store wire rope to prevent damage or deterioration.
	• Lubricate stored rope to prevent corrosion or rust.
	• Uncoil wire rope with care to avoid kinking or twisting.
	• Before cutting a wire rope, place seizings on each side of the point where the wire rope will be cut to prevent the strands from unwinding. Place the seizings as follows:
	  • On preformed wire rope, place one seizing on each side of the cut.
	  • On non-preformed wire ropes of 7/8-inch diameter or smaller, place two seizings on each side of the cut.
	  • For non-preformed wire ropes 1 inch or larger, place three seizings on each side of the cut.
	
	Avoid dragging the wire rope in dirt or around objects that will scrape, nick, crush or cause sharp bends in the wire rope.

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77.14.3: Wire Rope Maintenance

77.14.3	**Wire Rope Maintenance** Wire rope cleaning and lubrication: • Clean wire ropes as necessary. • Use compatible lubricant specified by the manufacturer. • When lubricating, pay particular attention to sections located over sheaves or otherwise hidden during inspection and maintenance procedures. • Periodic field lubrication is particularly important for non-rotating wire rope. Keep wire rope lubricated to reduce internal friction and prevent corrosion. Do not over lubricate.

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77.14.4: Drum Fastening

77.14.4	**Drum Fastening** Securely fasten one end of the wire rope to the drum or reel. Two full turns must always remain on the drum or reel. Do not allow the wire rope to fully unwind. Securely fasten the lifting or "dead" end of the wire rope to the block, device or reel with a tapered socket or an oval thimble.

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77.14.5: Sockets, Clamps, and Thimbles

77.14.5	**Sockets, Clamps, and Thimbles** Use wire rope sockets on all hoisting lines at the bucket or hoist hook end, where facilities permit proper application. When applying thimbles, utilize the proper size and apply: • Three properly sized clamps on 3/4 inch wire ropes and under. • Four clamps on 7/8 inch wire ropes. • Five clamps on 1 inch to 1-1/4 inch wire ropes, inclusive. • Six clamps on 1-3/8 inch and larger wire ropes. Make sure clamp spacing is no less than six times the diameter of the wire rope. Apply U-bolt over dead end of the wire rope. Live end of the wire rope must rest in the saddle. Clamps must be torqued before lifting initial load and re-torqued before lifting second load.

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77.15: RIGGING

77.15 RIGGING

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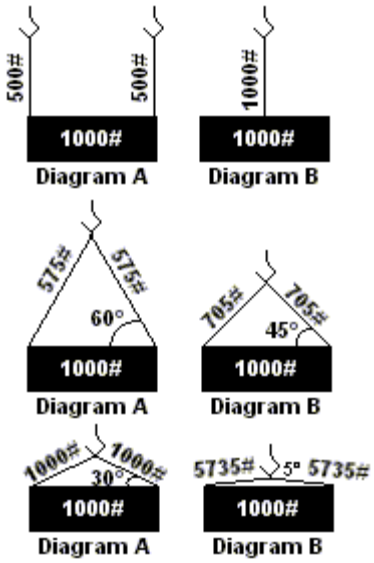
77.15.1: Rigging

77.15.1	**Rigging** Use slings (wire rope, chain or synthetic fiber) that are certified to handle the load. When determining the proper sling, consider that the stress in a sling varies with the angle of its legs. The following diagrams illustrate how the stress is increased as the angle of the legs with the horizontal is decreased. Stress for any other load will be directly proportional.

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77.16: FITTINGS

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77.16.1: Fitting Inspection and Replacement

77.16.1	**Fitting Inspection and Replacement** Fittings must be inspected when purchased and prior to each use. Replace fittings if any of the following defects are discovered during inspection: • Indication (significant change in shape) that a fitting has been overloaded.

	• More than 10% wear of any sectional dimension. This is measured by comparing to a section of fitting that has no wear, or to original dimensions specified by the manufacturer. • Any crack, sharp nick or gouge in the surface of any fitting. • Any modification such as welding, heating, substitution of parts, or bending. • More than one broken wire at any (within one wire rope diameter of the fitting) termination.

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77.16.2: Hooks and Attachments

77.16.2	**Hooks and Attachments** Handles and other attachments must not be welded to hooks. Hooks designed for safety latches must have them in place prior to use. Do not use: • Non-alloyed carbon-steel hooks. • Repair links or other attachments. • Shop made hooks or attachments unless approved through departmental procedures. • Makeshift bolts, rods, shackles, hooks or other attachments. Hooks must be replaced if they show any deformation such as: • Visible bend or twist from the plane of the unbent hook. • Distortion causing an increase in throat opening. • Cracks, excessive wear or damage from chemicals, heat, etc. For hooks rated at 10-ton capacity or greater, annual dye penetration test or an equivalent test by a qualified contractor must be conducted. Hooks purchased after Sept. 30, 1991, require a dated record of proof load testing.

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77.17: SLINGS

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77.17.1: Slings Inspections / Replacement

77.17.1	**Sling Inspection / Replacement** Inspect slings prior to each use. A periodic inspection must be performed by a designated person; a record of the inspection is required. Slings must be replaced or re-rated if sling identification tags are missing or unreadable. **A. Wire Rope Slings** Inspect prior to each use and replace if any of the following defects are discovered: • Distortions of the sling such as kinking, crushing, un-stranding, bird-caging, main strand displacement, or core protrusion. • General corrosion of the sling or severe corrosion of the end attachments. • Broken or cut strands. • Ten randomly distributed broken wires in one wire rope lay, or five broken wires in one rope strand in one rope lay for strand laid and single part slings. • Loss of wire rope diameter in short rope lengths or unevenness of outer strands. • Severe localized abrasion or scraping. • Heat damage. • Cracked, deformed, or worn end attachments to the extent the strength of the sling is substantially affected. **B. Chain Slings and Attachments** Inspect prior to each use and replace if any of the following defects are discovered: • Wear, nicks, cracks, breaks, gouges, bends and weld splatter. • Elongation exceeding 15%. • Discoloration from excessive temperature. • Excessive throat openings of hooks. • Chain links or attachments do not hinge freely to adjacent links. • Latches on hooks, if equipped, do not hinge freely, seat properly or are permanently distorted.

	C. Synthetic, Webbing, and Round Slings Inspect prior to each use and replace if any of the following defects are discovered: • Acid or caustic burns. • Melting or charring. • Tears, cuts, snags, or excessive abrasive wear. • Broken or worn stitching in load bearing splices. • Knots in any part of the sling or slings tied together. • Excessive pitting or corrosion. • Cracked, distorted or broken fittings. • Visible damage that may compromise the strength of the sling. Replace slings equipped with a protective cover if broken or worn stitching exposes the core fibers of the sling.

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77.17.2: Chain Working Loads

77.17.2	**Chain Working Loads** Grade 80 or above high-strength alloy is the only chain to be used for lifting, hoisting, pulling, or any other load bearing application; unless the chain is supplied and certified by a manufacturer as a part of a manufactured device (i.e. a lifting sling, chain hoist, etc.).

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77.17.3: Chain Lifting Devices

77.17.3	**Chain Lifting Devices** All lifting devices, such as hooks, links, pins, etc., must be made of alloy steel.

	Lifting devices made of mild or rolled steel are prohibited.

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77.17.4: Chain Sling Use

77.17.4	**Chain Sling Use**
	To avoid personal injury or chain damage:
	• Keep chains free of twists, kinks or knots.
	• Grab hooks must fit the chain and be placed on the hitch to prevent side strain during the lift.
	• Apply load gradually to prevent chain jerk.
	• Protect chain from sharp corners or objects, corrosion, and high temperature.
	• When repairing lifting chains, do not use the following types of links:
	  • Patent.
	  • Repair.
	  • Figure eight.

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77.17.5: Chain Lubrication

77.17.5	**Chain Lubrication** Use an approved lubricant on chains as required when operating over sheaves or pulleys. Minimize dripping of lubricant.

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77.17.6: Eye Bolts and Hoist Rings

77.17.6	**Eye Bolts and Hoist Rings** Select the proper size swivel hoist ring to allow for load in sling leg. Use the following guidelines: • Use shoulder nut eye bolts for angular lifts. • Tighten nuts securely against the load. • Apply load to eye bolt in the plane of the eye. Do not: • Exceed working load limits. • Use regular eye bolts for angular lifts. When using lifting slings of two or more legs make sure the forces in the leg are calculated.

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77.17.7: Ropes

77.17.7	**Ropes** Inspect all manila, hemp, or synthetic fiber ropes before they are used for lifting. Remove any frayed, cut, or defective rope from service immediately.

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78.0: ELECTRICAL

78.0: Electrical

78.0 ELECTRICAL

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78.1: Qualified Employees

78.1 *Ref. Electrical Safety Rules (ESR) PB-20502* *SRM* *Section AB & AF*	**Qualified Employees** Only qualified employees are permitted to: • Work on electrical apparatus of equipment. • Climb poles and replace fuses on power poles or work on transformers. • Work on lines or equipment energized in excess of 50 volts phase to ground.

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78.2: Lockout / Tagout

78.2 *Ref. SRM Section H & ESR 3.3*	**Lockout/Tagout** Lockout or tagout a de-energized energy source before performing maintenance or repair work. • **All Lockout/Tagout procedures must comply with ESR 3.3.** Do not: • Remove any lockout or tagout device, lock or tag that another employee installed unless qualified to do so (such as an Employee in Charge) and only after you have completed the Lockout Removal Form. • Energize any machine that was under lockout and/or tagout protection unless authorized to do so (Authorized Person, Qualified Person, or Employee in Charge) and only using proper start-up procedures.

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78.3: Electrical Cords / Insulation / Grounding

78.3	**Electrical Cords / Insulation / Grounding** Power cord insulation and connections on electrical cords must be frequently inspected and maintained in a safe condition. If an electrical tool is not UL listed as double insulated, proper ground connection is required. Use cords in an approved manner. Electric power tools must not: • Be picked up or lowered by the power cord. • Have grounding prong removed. • Overload electrical outlets.

	The use of a ground fault circuit interrupter (GFCI) is required for use in any work environment that is or may become wet and any other areas that are highly grounded. For example, a work area with a metal floor.

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78.4: Electrical Panels

78.4	**Electrical Panels** In shop areas, the floor area in front of electrical panels must be kept clear of any obstruction. The cleared surface must be: • Painted red with a white border. • Extended a minimum of 36 inches forward of the electrical panel. • A minimum of 36 inches wide, or the width of the box, whichever is greater. • Stenciled with wording "KEEP CLEAR." Circuit breakers must be properly labeled as to the circuit controlled.

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78.5: Voltage Rated Rubber Gloves

78.5 *Ref. ESR 3.5.2*	**Voltage Rated Rubber Gloves** Wear approved voltage rated rubber gloves when working on energized circuits of 50 volts or more. Gloves must be tested before use by inflating with air. If a leak exists, remove a glove finger and discard the glove. Gloves must be electrically tested every six months. Always wear leather protector gloves over voltage-rated gloves.

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78.6: Precautions Around Exposed Energized Circuits

78.6 *Ref. ESR 3.3 & 3.4.1*	**Precautions Around Exposed Energized Circuits** The policy of UPRR is to place all electrical components in an electrically safe condition before work on them begins, and that only qualified employees are to work on conductors or circuit parts. The only energized circuit work allowed is testing and troubleshooting by qualified employees using properly rated test equipment and properly rated shock and arc flash protection. Unqualified employees may work no closer than specified in Table E.

Table E
NEC Approach Boundaries for Unqualified Employees From Live Equipment

Voltage Range (line to line)	Approach boundary from Live Fixed Equipment	Approach Boundary from Live Movable Conductors
50 to not over 750 V	4 ft. 0 in. (1.22 m)	10 ft. 0 in. (3.04 m)
over 750 V, not over 15 kV	5 ft. 0 in. (1.52 m)	10 ft. 0 in. (3.04 m)

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78.7: Employees Working Near Power Lines

78.7 *Ref. NFPA 70E 2012 Table 130.4 (C)(a) Rule(s) 78.8*	**Employees Working Near Power Lines** A qualified person is required to measure clearances using the proper instruments. Do not use steel or cloth tapes, ropes or strings to measure overhead clearance. When performing work near electrical power lines, the clearance shown below must be maintained between unqualified personnel, tools and equipment, and the nearest power line.

Operating Voltage	Distance

	50 V - 750 V	10 feet
	751 V - 72.5 kV	10 feet
	72.6 kV - 121 kV	10 feet 8 inches
	138 kV - 145 kV	11 feet
	161 kV - 169 kV	11 feet 8 inches
	230 kV - 242 kV	13 feet
	345 kV - 362 kV	15 feet 4 inches
	500 kV - 550 kV	19 feet
	765 kV - 800 kV	23 feet 9 inches

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78.8: Operating Booms Near Power Lines

78.8 *Ref. NFPA* 70E, 2012, 130.8(F)	**Operating Booms Near Power Lines** Do not operate booms over power lines at any time. Do not operate booms under power lines unless proper clearance is maintained. At stationary worksites, crane operators must place at least three (3) orange cones evenly spaced along the minimum clearance line to mark the minimum safe working distance to overhead power lines. **A. Operation Near Energized Lines** A. If booms must be operated near energized lines, maintain the minimum clearances listed in the Minimum Clearance Distances table: MINIMUM CLEARANCE DISTANCES

Voltage (nominal, kV, alternating current)	Minimum clearance distance (feet)
up to 50	10

over 50 to 200	15
over 200 to 350	20
over 350 to 500	25
over 500 to 750	35
over 750 to 1,000	45
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

Note: The value that follows "to" is up to and includes that value. For example, over 50 to 200 means up to and including 200kV

A groundman must be designated to observe equipment clearance and give timely warning for all operations when it is difficult for the operator to observe clearance.

B. In Transit

B. When in transit with no load and boom lowered, use the Minimum Clearance Distances While Traveling With No Load table:

MINIMUM CLEARANCE DISTANCES WHILE TRAVELING WITH NO LOAD

Voltage (nominal, kV, alternating current)	While traveling—minimum clearance distance (feet)
up to 0.75	4
over .75 to 50	6
50 to 345	10
over 345 to 750	16
over 750 to 1,000	20
over 1,000	(as established by the utility owner/operator or registered professional engineer who is a qualified person with respect to electrical power transmission and distribution).

If proper clearance cannot be maintained, shut off the power and ground power lines before performing work per Rule 78.9.

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78.9: Power Supply Turned Off

78.9 *Ref. Rule(s)* *78.7* *78.8* *ESR 5.2*	**Power Supply Turned Off** When necessary to perform work near non-UPRR power lines that will not permit maintaining the clearance outlined in Rule 78.7 and 78.8: • Notify the power company or controlling authority to de-energize the power supply for the affected district. • Do not start any work until authorized by the power company or controlling authority. • Do not notify the power company or controlling authority to restore power until authorized by the employee in charge. When performing work near a 50 volt or greater UPRR power line that will not permit the clearance outlined: • Notify the local qualified employee to de-energize that portion of line. • Do not start work until the local qualified employee confirms the line has been de-energized and **grounded** if required, and lockout/tagout procedures have been followed. • Ensure local qualified employee understands not to energize the line until advised by the employee in charge of the work.

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78.10: Handling Electric Wires

78.10	**Handling Electrical Wires** Immediately report electrical wires found broken, crossed or on the ground to the train dispatcher or proper authority. Do not consider any electrical wire dead until positive information has been received that it has been de-energized and is safe to handle. Live wires can only be handled by a properly trained electrician, using approved methods and tools.

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79.0: WELDING

- 79.20.9: Reserved

79.0: WELDING

79.0 WELDING
CUTTING, WELDING OR HEATING Rules in this chapter, if applicable, apply to both oxygen and fuel gas operations as well as electric welding. Additional welding instructions are contained in PB-21321 and Safety Resource Manual AQ "Hot Work Program".

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79.1: Authorized Employees

79.1	**Authorized Employees** Only authorized employees are permitted to use welding equipment. Welding, cutting and heating will be done only by or under the direct supervision of a qualified employee and comply with manufacturer's instructions.

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79.2: Protective Equipment

79.2 Protective Equipment

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79.2.1: Eye Precautions / Shade Requirements

79.2.1

Ref. Rule(s) 71.5.2

Eye Precautions / Shade Requirements

All persons performing or observing cutting, welding or heating operations must wear proper eye protection and other personal protective equipment. They must not look at electric arc or oxyfuel flame unless properly protected and must warn others against looking at the arc or flames.

Cracked filter glasses (lens shade) must be replaced immediately. Shade numbers of filter plates are not cumulative. For example, a Number 6 and Number 8 filter do not have the same effective density as a Number 14 filter.

Refer to the following chart for minimum shade requirements of eye protection while cutting or welding.

Welding Operation	**Shade No.**
Shielded Metal — Arc Welding — Electrodes up to and including 5/32 inch diameter	10
Gas Tungsten — Arc Welding (non-ferrous) and Gas-shielded Arc Welding (non-ferrous) — Electrodes up to and including 5/32 inch diameter	11
Gas Tungsten — Arc Welding (ferrous) and Gas-shielded Arc Welding (ferrous) — Electrodes up to and including 5/32 inch diameter	12
Shielded Metal — Arc Welding: Electrodes 3/16 through 1/4 inch diameter 5/16 through 3/8 inch diameter	 12 14
Carbon — Arc Gouging — For most applications Large diameter carbon electrodes	12 14
Soldering	2
Performing oxygen — fuel gas brazing — cutting — heating	5
Light Cutting up to 1 inch	4
Medium Cutting, 1 inch to 6 inches	5
Heavy Cutting, 6 inches and over	5 or 6
Gas Welding (light) up to 1/8 inch	5
Gas Welding (medium) 1/8 inch to 1/2 inch	5 or 6
Gas Welding (heavy) 1/2 inch and over	6 or 8

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79.2.2: Fire Protection / Shielding

79.2.2 *Ref. SRM Section AH* *Ref. Rule(s) 72.2.*	**Fire Protection / Shielding** Before welding, heating, or cutting on or near equipment with fuel tanks, ensure appropriate fire prevention measures have been implemented. Fire extinguishers, fire hoses, or other suitable fire extinguishing equipment must be on hand during welding, cutting, and other open flame torch operations. Use shields or other protective devices to: • Prevent setting fire to or damaging bridges, structures, or other material. • Shield the welding arc from the view of others whenever possible. Before leaving the work site, the employee in charge must comply with their departmental fire prevention plan and ensure no fire or fire hazard exists.

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79.2.3: Proper Clothing

79.2.3 *Ref. SRM Section A*	**Proper Clothing** When cutting, heating or welding, wear proper PPE in accordance with the PPE Matrix in SRM Section A. Always wear approved flame resistant clothing that: • Protects the skin from infrared and ultraviolet radiation and covers the arms.

	• Reduces the possibility of catching fire. • Has all buttons and snaps fastened. • Has sleeves and pockets secured against sparks or slag. • Is free of oil or grease. • Is without cuffs. For overhead welding and other applications where clothing or body may be exposed to sparks or slag, wear a full leather welding jacket and additional approved leather protective outerwear such as: • Spats or sleeves. • Aprons. • Leggings. • Welding helmet designed for overhead welding. Kevlar jackets with or without leather sleeves are not intended for overhead welding.

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79.3: Cleaning Work Area

79.3	**Cleaning Work Area** Do not use your hands, gloved or not, to remove slag or metal from material being welded or cut.

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July 2, 2013

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79.4: Welding, Heating, or Cutting on Freight Equipment

79.4	**Welding, Heating, or Cutting on Freight Equipment** Before welding, heating, or cutting, a job briefing must be conducted to ensure: • It is known what the car contains, or last contained if empty and any special safety precautions needed.

	• A fire extinguisher of the proper class is in the immediate vicinity of the work.
	• Lading or equipment will not be damaged by the work.
	• Adequate ventilation and/or respiratory equipment are provided when required.
	• Cars are placed at the end of the shop, when possible.
	• Welding, heating or cutting will be stopped 30 minutes before close of shift.
	
	While working:
	
	• On a loaded boxcar, the door must be open and interior of car continuously monitored until no threat of fire exists.
	• In the event of a fire:
	  • Close car doors and move car outside shop to be extinguished if it can be done without causing injury.
	  • Extinguish fire only if injury can be prevented.
	  • Contact local emergency personnel if necessary to safely extinguish fire.
	• Meet UPRR, FRA and AAR criteria for safety and interchange ability.
	
	Before leaving the worksite:
	
	• Ensure no fire exists.
	• Re-check cars that were welded or heated anytime during the shift.
	• Perform turnover with subsequent shifts regarding cars that were welded, heated or cut.
	• Ensure cars are set on their trucks at the close of work, whenever possible.
	• Close doors on cars left under shop roof.

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79.5: Welding, Cutting, or Heating on Tank Cars

79.5 *Ref. SRM Sections E, G & I* *Rule(s) 70.21 79.4*	**Welding, Cutting, or Heating on Tank Cars** In addition, follow departmental policy, and other applicable policies, i.e., Confined Space Entry, Respiratory Protection, Hazard Communication Standard, etc. When making repairs to tank cars, other than maintenance of way water cars, follow these procedures: 1. Determine car's contents, or if empty, its last contents and comply with the hazardous material information, or information available on precautions to be taken. 2. Inspect for physical signs of content leakage and check the car with a flammable gas detector prior to performing repairs on a tank car that contains or last contained:

	• Flammable gas, liquid or solid. • Chlorine or other poisonous gas. • Corrosives. • Explosives. If leakage exists, follow procedures outlined in your response plan. Leakage must be stopped before making repairs. **3.** Repairs to the top dome areas or near the bottom outlet must be restricted to those necessary for safe movement only. Welding, cutting, and/or heating is prohibited in these areas. **4.** Welding or use of a cutting torch directly on either the inner or outer tank shell jacket is prohibited, unless departmental instructions make provisions for such work. These instructions apply to tank cars that are within 50 feet of welding or torch burning repairs being performed on other equipment.

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June 1, 2017

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79.6: Welding Equipment Repairs or Alterations

79.6	**Welding Equipment Repairs or Alterations** Do not make repairs or alterations to: • Cylinders. • Valves. • Torches. • Regulators. Hoses must be replaced when showing: • Leaks. • Burns. • Excessive wear. • Damage from flashback. or • Other defects.

	Defective regulators, torches or other equipment must not be used and must be tagged and returned for repair.

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79.7: Torch Test

79.7	**Torch Test** Torch test must be conducted: • Prior to each use. • When combination torches have been changed. • When the torch equipment has been dropped or is suspected of being damaged. • When a flashback has occurred. • When new torch equipment is installed. Torch test must be conducted in a well ventilated area with no ignition sources present. Test will be conducted in accordance with departmental instruction.

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May 2, 2016

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79.8: Ventilation and Respiratory Protection

79.8 *Ref. SRM Section E*	**Ventilation and Respiratory Protection** Exposure to lead, zinc or other welding fumes requires use of an approved respirator. Spray or dust respirators are not suitable and must not be used. Ensure work areas have adequate ventilation. Use additional forced air ventilation when necessary.

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July 2, 2013

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79.9: Reserved

79.9	**Reserved**

Rule Updated Date

January 7, 2019

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79.9.1: Reserved

79.9.1	**Reserved**

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January 7, 2019

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79.10: Hot Work on Containers

79.10 *Ref. LMI-2501*	**Hot Work on Containers** Do not perform hot work on any containers such as drums, barrels, or tanks until the following conditions have been met: 1. Determine what the container last held. Thoroughly steam and wash out any container that held volatile or flammable materials. 2. Prior to performing hot work on any new or used container, trained personnel must test the container. The Lower Explosive Limit (LEL) must be <10% prior to and during any hot work activity. 3. After cleaning, further safeguard the container by filling it with water, if possible. 4. If the container last held a gas or liquid which may not readily dissolve in water, an inert gas must be used to evacuate any flammable gas or vapors from the container.

	5. Ensure container has a vent or opening to allow heated air to escape. Thoroughly steam and wash new or used piston heads and hollow casting prior to performing hot work.

Rule Updated Date

July 2, 2013

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79.11: Oil and Grease

79.11	**Oil and Grease** Do not allow oil and grease to come in contact with oxygen and: • Keep hands, gloves, clothes, and welding equipment free of oil and grease to prevent fires. • Do not allow oil and grease to touch regulators, valves, or connections.

Rule Updated Date

June 1, 2017

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79.12: Metal Cutting Precautions

79.12	**Metal Cutting Precautions** Take precautions when cutting by using barrier or spark guard to prevent sparks, hot metal, or severed sections from contacting: • Cylinders. • Hoses. • Cables. or • Other flammable material. Do not lay object or material to be heated, cut, or welded across a cylinder or on concrete.

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June 1, 2017

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79.13: Cutting Under Tension

79.13 *Ref. Rule(s) 70.17*	**Cutting Under Tension** Take precautions to prevent personnel from being struck by severed sections when cutting: • Twisted rail. • Cars. • Locomotives. or • Other damaged steel sections. Special equipment, such as burning bars, are available for this operation and should be used.

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June 1, 2017

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79.14: Cylinders

79.14	**Cylinders**
	
	A. Storing Cylinders
	
	When fuel gas and oxygen cylinders are stored:
	
	• Handle with extreme caution to avoid dropping and damaging valves.
	• Separate oxygen cylinders from fuel gas cylinders.
	  • Maintain a minimum distance of 20 feet.
	  or
	  • Place a barrier of noncombustible material that is at least 5 feet high and has a fire resistance rating of at least 1/2 hour between the oxygen and fuel gas cylinders.
	• Keep in upright positions on approved racks and properly secured with valve ends up when stored or transported.
	• Keep in cool, well ventilated buildings away from elevators, stairs and passageways and near exits when possible for easy removal in case of fire.

	• Do not smoke or use open-flame in buildings where cylinders are stored. Keep cylinders away from combustible materials (e.g., oils, paints, shavings, and other flammable materials). • NO SMOKING and KEEP OPEN FLAMES AWAY signs must be posted on all visible sides. • All valves must be kept closed with valve caps in place when not in use, including empty cylinders. • Connections and appliances must be free from oil and grease. • Do not handle cylinders with oily hands or gloves. When possible, store cylinders in the open, provided cylinders can be protected against freezing or direct sunlight. **B. Working With or Near Cylinders** Keep fuel gas and oxygen cylinders in an upright position and do not: • Place where they may become part of an electrical circuit, near wires and electrical welding circuits. • Strike an arc on or tap an electrode against a cylinder. • Throw, drop or roughly handle cylinders. Compressed gas cylinders must be secured in an upright position at all times except while being hoisted or carried. Cylinders may be lifted by a crane, derrick, or hoist only when a company-approved lifting device is used, and employees have been instructed on its use. Do not use an electric magnet to lift cylinders. When working near cylinders, do not allow cylinders to be exposed to: • Sparks. • Hot slag. • Open flame and other sources of excessive heat. **C. Transporting Cylinders** Remove gauges and regulators, and apply caps before transporting oxygen or fuel gas cylinders, unless valves are covered by a DOT approved safety cap or device designed for that purpose. When completing a single series of welding operations, caps are not required. When transporting cylinders in enclosed compartments, ensure ventilation is provided. Cylinders must be properly secured before transporting. **D. Empty Cylinders** When cylinders are empty: • Close the valve before disconnecting the hose. Valves must remain closed when not in use. • Cap empty cylinders. • Remove the bottom half of the tag when provided.

	• Separate empty cylinders from full cylinders. • Promptly exchange empty cylinders at the supply point. **E. Leaking Cylinder** When a leaking cylinder is discovered: • Move it to an open area away from possible ignition sources until the cylinder becomes empty. • Mark the cylinder, to indicate the leak for the supplier to take necessary action. **F. Changing Cylinders** Before a regulator is removed, the cylinder valve must be closed and the gas released from the regulator. Remove any possible gas mixture by draining both hoses, oxygen hose first.

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79.15: Regulators

79.15	**Regulators** **A. Proper Regulator** Do not use a regulator with a gas not intended for that regulator. Each oxygen/fuel gas station must: • Have a shut off valve. • Be controlled with a pressure reducing regulator. • Have regulators with operable gauges to obtain the recommended test pressures. Regulators without gauges must not be used. **B. Connections and Adapters** Do not force connections. If the thread does not run easily, usually the wrong sized regulator is being applied. Use a standard adapter between the cylinder and the regulator if required. "T" or "Y" type connectors are not allowed. **C. Connecting Regulators**

	To remove foreign matter, before connecting regulators to cylinders, the valve must be opened approximately one-quarter turn and closed immediately. Do not open valve near other welding work or near sparks, flame or other possible sources of ignition. Pressure adjusting screws must be fully released before attaching regulator to cylinder. **D. Protecting Regulators** Protect regulators when not in use by: **1.** Closing cylinder valves. **2.** Draining hose at the torch. ○ Prevent a gas mixture from accumulating in the hose when either is being relieved of pressure by closing the valve of the other hose. This will prevent flashback which could damage the torch, hose or pressure regulator. **3.** Releasing pressure on the diaphragm.

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79.16: Valves

79.16	**Valves** **A. Opening Cylinder Valves** When opening cylinder valves: • Stand to one side, away from gauge faces and front of the regulator. • Slowly open cylinder valve until the high-pressure gauge indicates full pressure. Then fully open the valve. • When a "T" wrench is used on an acetylene cylinder valve do not open the valve more than 1 ½ turns. Leave the "T" wrench on the valve stem in case of emergency. • Tools that could damage regulator connections must not be used. Do not use hammer or wrench to open a valve. Return cylinder to vendor if valve cannot be opened by hand. Do not use the recessed top of a cylinder as a receptacle for tools or other articles. **B. Closing Valves**

	When not in use, work is stopped, or the operator leaves the equipment, close valves and relieve pressure on regulators and hoses. **C. Clogged Valves** If acetylene cylinder valves become clogged by ice or snow, use warm water to thaw them. Do not use boiling water or any type of flame to thaw acetylene cylinder valves.

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79.17: Hoses

79.17	**Hoses** Use only oxygen-fuel equipment designed for the particular fuel gas. When not in use, hoses must be properly stored to prevent damage. **A. Hoses and Color Codes** Hoses must be inspected prior to each use. Repair or replace hoses with leaks, excessive wear or other defects. Use long lengths of hose only when necessary. Check connections for leaks and protect hose from being stepped on, run over, kinked or tangled. When hoses are taped together to prevent tangling, not more than 4 inches out of 12 inches may be covered by tape. Use T-Grade welding hose for welding. Where possible, 3/8 inch hose will be used to reduce pressure drop. Color codes for hose are: Red -----Combustible gases Green---Oxygen Hose must be used only with the gases for which intended. Do not use hose for other purposes. **B. Hose Connections** Purge new hose with gas for which the hose will be used to remove talc. When making hose connections use only: • Crimp ferrules.

	• Approved reverse flow devices. • Approved positive locking quick disconnects designed for oxygen-fuel. Use no more than two splices for any length hose. Do not use tape or wire to splice or repair hose.

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79.18: Torches

79.18	**Torches**
	
	Torches must be maintained in good condition and:
	
	• Handled carefully.
	• Used with tips designed for the fuel gas.
	• When lit must not be:
	  ○ Laid down.
	  ○ Passed from one person to another.
	  or
	  ○ Kept in your hand when climbing.
	• When not in use, valves must be closed and torch stored in a safe place.
	• Do not use torch as a hammer.
	
	A. Torch Precautions
	
	When working with torches:
	
	• Ensure gas stream is not directed toward yourself or others.
	• Keep flame and sparks directed away from personnel, flammables, or equipment.
	• Torch must be purged prior to lighting to ensure flow of oxygen and fuel gas.
	
	B. Torch Valves
	
	Ensure torch valves are open when changing or adjusting pressure on regulators. Do not exceed pressure authorized for welding or cutting.
	
	C. Lighters
	
	Use only a standard friction lighter to ignite all fuel gas equipment.

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79.18.1: Flashback Arrestors

79.18.1	**Flashback Arrestors** Ensure proper approved torch mounted flashback arrestors are installed at the torch handle. If a flashback occurs: • Immediately shutoff the oxygen valve on the torch handle if welding, or the cutting attachment if cutting. • Determine the cause and correct, in addition to replacing the flashback arrestors or sinter filter before resuming operations. Built-in flashback arrestors have a replaceable sinter filter. Flashback arrestors must be replaced if they become clogged and severely restrict gas flow.

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79.19: Use of Natural Gas

79.19	**Use of Natural Gas** When equipped with heads designed for use with natural gas, a standard torch may be used for cutting and heating. Do not use natural gas for welding.

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79.20: Electrical Welding

79.20 Electrical Welding

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79.20.1: Maintenance and Repair

79.20.1	**Maintenance and Repair** Only a qualified person may make repairs or adjustments to electrical welding equipment. **EXCEPTION:** Welders may make routine operating adjustments.

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79.20.2: Cable Precautions

79.20.2	**Cable Precautions** Make sure electrode and ground cables are insulated throughout the entire length. Do not allow welding cable or electrode holder to contact water.

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79.20.3: Cables

79.20.3 *Ref. SRM Section H*	**Cables** Use only approved cable connections. Cables must be in continuous lengths without splices or taps. To prevent possible electrical shock or fire hazard, ensure ground and electrode cable size is correct. Comply with Lockout / Tagout Procedures when repairing cables or cable ends.

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79.20.4: Portable Welding Machines

79.20.4	**Portable Welding Machines** Portable welding machines must be properly grounded. Set disconnect switch to the OFF position before plugging or unplugging welding machines.

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79.20.5: Grounding Electrical Arc Welding

79.20.5	**Grounding Electrical Arc Welding** Fixed electrical welding equipment must be permanently grounded on the service side to the ground system. When performing electrical arc welding on machinery or equipment of any kind, apply the ground cable to the particular part or piece of machinery or equipment being welded and as near as possible to the point being welded. Do not permanently bond welding ground lead to any: • Rail.

	• Building steel. or • Other structure. Note: Ground cable clamps must provide good mechanical and electrical contacts with enough carrying capacity to handle welding current without undue heating.

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79.20.6: Protect from Electrical Shock and Moisture

79.20.6	**Protect from Electrical Shock and Moisture** The electrode and work (or ground) circuits are energized when the welder is on. To protect yourself from possible electrical shock: • Do not permit contact between energized parts of the circuits and exposed skin or wet clothing. • Wear approved welding gloves that are dry and free of defects. • Insulate yourself from the work and ground by using dry insulation when wet conditions are present. • Maintain electrode holder, work clamp, welding cable and welding machine in good, safe operating condition. • Do not loop or coil electrode cables around the body. • During inclement weather, electrical welding equipment must be properly protected from moisture. When using the welding machine as a power source for mechanized welding, the above precautions also apply for the welding wire, wire reel, welding head or nozzle.

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79.20.7: Electrodes / Electrode Holder

79.20.7	**Electrodes / Electrode Holder**
	
	Electrode safety:
	
	• When not welding, ensure no part of the electrode circuit contacts the work or ground. Accidental contact can result in electrical shock, or cause over-heating and result in fire.
	• Electrodes must be removed from holder when not in use.
	• Electrode holders and wire feeder guns shall be placed or protected so they cannot make electrical contact with employees or conducting objects.
	• If electrode holder is overheating it is usually due to:
	  • Improper amperage rating.
	  • Loose connections.
	  or
	  • Dirty contacts with electrode.
	
	Electrodes and welding wire must be stored where they can be kept free of moisture.

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79.20.8: Polarity Switch

79.20.8	**Polarity Switch** Do not adjust the polarity switch while welder is in operation. Doing so could result in arcing and damage to the switch.

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79.20.9: Reserved

79.20.9	**Reserved**

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80.0: WALKING/WORKING SURFACES

80.0: WALKING/WORKING SURFACES

80.0 WALKING/WORKING SURFACES

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80.1: Avoiding Slips, Trips, and Falls

80.1 *Ref. Rule(s)* *1.19* *1.24*	**Avoiding Slips, Trips, and Falls** Observe safety practices that eliminate slips, trips, and falls by: • Performing work to avoid creating hazards. • Maintaining good housekeeping. • Cleaning up spills. • Erecting barricades, signs, or cones where appropriate. • Keeping aisles, stairways, and walkways free of all obstructions.

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80.2: Precautions Against Slips, Trips, and Falls

80.2 *Ref. Rule(s)* *2.21*	**Precautions Against Slips, Trips, and Falls** Be alert to underfoot conditions and take precautions to avoid slipping on: • Slick surfaces such as recently washed or waxed floors. • Oil, grease or soap. • Snow, ice, wet spots, or other hazards. Use appropriate footwear and accessories. Spread sand/salt mixture (as appropriate) on ice before proceeding when icy conditions exist. When walking, keep your eyes on the pathway and: • When hazardous underfoot conditions exist, take short, deliberate steps with toes pointed outward. • When stepping over objects, such as rails, be sure your front foot is flat before moving your rear foot. • Keep your hands out of pockets for balance. Employees are prohibited from running except when necessary to prevent injury to themselves or others. Do not run up or down stairs. Do not ascend or descend stairways with hands in pockets and use the handrail where provided.

	Cellular phones and other electronic devices, including headphones, ear buds, head sets, etc., must not be used while walking.

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January 7, 2019

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80.3: Reserved

80.3	**Reserved**

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January 7, 2019

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80.4: Look Both Directions

80.4	**Look Both Directions** Look in both directions and know the path is clear before: • Crossing roadways. • When walking through doorways. or • Going around corners or obstructions.

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80.5: Jumping

80.5	**Jumping** Do not jump from equipment or structures such as docks, trucks, rail cars, platforms, etc., or across ditches, pits, manholes or other openings.

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80.6: Working at Night or Low Light Level

80.6	**Working at Night or Low Light Level** Employees must carry a light when working at night or in reduced lighting. Exercise care to avoid hazards caused by shadows resulting from the use of lights. Specific lighting requirements for: • Remote Control Operator - Hands free light. (Lantern may be used if hands free light fails or as an auxiliary light). • Trainmen – Lantern • Engineers - Lantern, flashlight, and/or hands free light. Trainmen may use a hands free light in addition to a lantern.

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October 1, 2014

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80.7: Reserved

80.7	**Reserved**

Rule Updated Date

January 7, 2019

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80.8: Safe Distance from Edge

80.8	**Safe Distance from Edge** Keep a safe distance from the edge of pits, turntables, platforms or trenches. Exercise caution when working on or near steep slopes.

Rule Updated Date

July 2, 2013

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80.9: Turntables

80.9	**Turntables** Do not get on or off moving turntables or transfer tables.

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July 2, 2013

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80.10: Overhead Hazards

80.10	**Overhead Hazards** Avoid overhead hazards and do not work, walk or stand under workmen on ladders, platforms or scaffolds from which objects could fall. If required to work under overhead hazards, wear the proper protective equipment (e.g., hard hats).

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June 1, 2017

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80.11: Ladders

80.11	**Ladders** Use only single person ladders which are rated 1A or 1AA or have been approved by the Safety Department. Standing on boxes, barrels, chairs, handrails or other improvised supports is prohibited. Ladders or specially designed platforms are required to service, maintain or repair elevated locations on locomotives. **Metal/Wooden Ladders** Do not use metal ladders or scaffolds when working on or near energized electrical wires. Wooden ladders must not be painted. **Extension Ladders** Assemble and carefully raise to ensure guides and hooks are properly engaged. Use the ladder's rope to raise and lower the extension and keep hands and fingers clear of the moving portion. **Step Ladders** A step ladder must not be used unless it is fully opened and the spreaders properly set. Step ladders more than 10 feet high must not be used unless held and steadied by another individual. Standing on the top step, platform or those parts of the ladder labeled "NO STEP" is prohibited. Stepladders that are two sided and can accommodate two people at one time must have a minimum total capacity rating of 500 pounds. *(Note: All ladders and portable steps must be properly stored.)*

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80.11.1: Inspection

80.11.1	**Inspection** Before a ladder, scaffold, platform or elevated board is used, check to ensure it has been:

	• Securely placed and is capable of supporting the load. • Inspected for broken or missing steps, rungs, cleats, broken side rails or other defects. Do not use a defective ladder. Defective ladders must be removed from service and tagged, "OUT OF SERVICE." Before using a portable ladder, ensure it is equipped with spikes or non-slip feet suitable for the surface which it will be used. Portable ladders used in areas where they could contact exposed energized parts must have nonconductive side rails.

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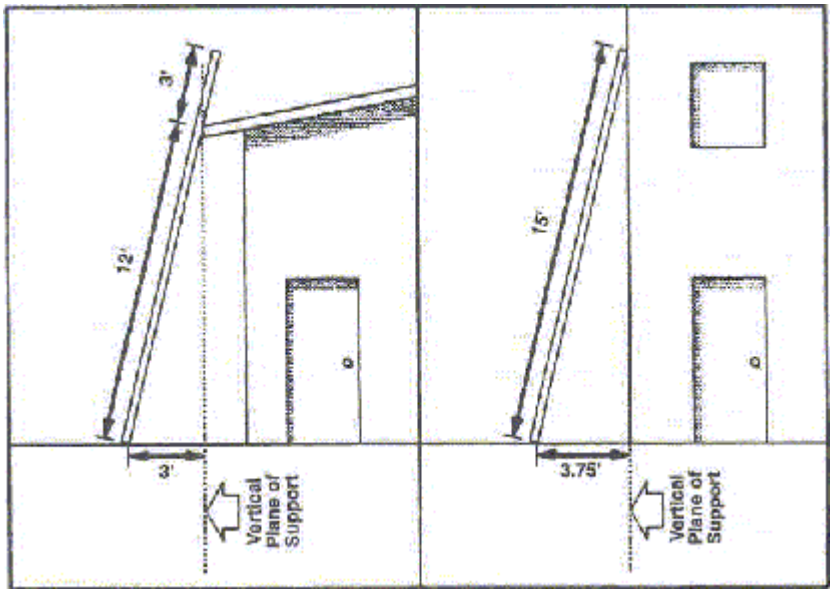
80.11.2: Placement

80.11.2	**Placement** Place a straight ladder so that the horizontal distance from the base to the vertical plane of the support is approximately one-fourth the ladder length between the supports. When it is required to exit the top of the ladder, the ladder side rails must extend at least three feet above the top landing, eaves, gutter or roof. Place ladder legs on firm footing and secure against movement. Do not lean a ladder against an unstable object or place on a box, barrel, block or other unstable base for additional height. Ladders must be secured to prevent movement. Do not use a ladder in a horizontal position as a runway or scaffold. 

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80.11.3: Ascending or Descending

80.11.3	**Ascending or Descending** Face ladder and use both hands when ascending or descending maintaining three point contact.

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80.11.4: Near Doors and Aisles

80.11.4	**Near Doors and Aisles** Ladders used near a door, aisle, pathway or roadway must be secured or guarded.

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80.11.5: Climbing with Tools/Material

80.11.5	**Climbing with Tools/Material**

	Do not climb ladders with tools or materials in your hands; tools must be carried in an approved tool belt or use a hand line. Tools or materials must not be placed on a scaffold or platform in such a manner that they may fall or be knocked off.

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80.12: Platforms

80.12	**Platforms** Platforms more than 6 feet above the ground or floor in construction operations or 4 feet in General Industry operations must have: • Guard rails with a nominal height of 42 inches. • Mid-rail at one half the height distance of the top rail. • Toe board of 4 inches nominal height on all open sides and ends. Exception: In California the above applies to platforms 30 inches or more above the ground or floor.

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80.13: Sectional Scaffolding

80.13	**Sectional Scaffolding** Sectional scaffolding must be erected in accordance with the manufacturer's instructions. Scaffolding equipped with wheels must be equipped with wheel locks and be locked before work is performed. Outriggers and toe boards, where provided, must be in working condition and protected from damage. Scaffolding legs must be placed on firm footing and secured against movement.

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80.14: Fall Protection

80.14 *Ref. SRM Section J* *Rule(s) 1.21*	**Fall Protection** Do not work on bridges, elevated structures or roofs of cars and locomotives without proper authority. Comply with appropriate departmental instructions and the Fall Protection Policy.

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81.0: WORKING AROUND TRACKS OR BEING ON EQUIPMENT

81.0: Working Around Tracks or Being on Equipment

81.0 WORKING AROUND TRACKS OR BEING ON EQUIPMENT

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81.1: Precautions Around Tracks and Moving Equipment

81.1 Precautions Around Tracks and Moving Equipment

Rule Updated Date

July 2, 2013

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81.1.1: Precautions Near Passing Trains or Equipment

81.1.1 *Ref. Rule(s)* *SSI Item 12*	**Precautions Near Passing Trains or Equipment** When near passing trains or equipment: • Move away from the track to avoid being struck by car doors, protruding or falling articles. • Stand clear of all tracks when trains are approaching or passing in either direction. Do not: • Stand on one track while trains are passing on an adjacent track. • Allow anyone next to or between equipment while a train or equipment is closely passing on the adjacent track. • Rely on others for notification of an approaching train, engine or other equipment unless that person's duties include providing warnings. Engineering employees are governed by Chief Engineer Bulletins and other M of W rules when working on adjacent tracks.

Rule Updated Date

July 2, 2013

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81.1.2: Reserved

81.1.2	**Reserved**

Rule Updated Date

January 7, 2019

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81.1.3: Warning Traffic at Grade Crossings

81.1.3	**Warning Traffic at Grade Crossings** When required to be on the ground at a grade crossing to warn traffic of an approaching movement, the employee must be in a safe location to avoid injury. Do not cross or stand in traffic lanes when warning traffic.

Rule Updated Date

June 1, 2017

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81.2: Crossing Tracks

81.2 Crossing Tracks

Rule Updated Date

July 2, 2013

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81.2.1: Walking Near or Crossing Track

81.2.1	**Walking Near or Crossing Tracks** When assigned duties require standing, walking, or working between or near tracks, keep a careful lookout in both directions for trains, locomotives, cars or other moving equipment.

	Expect movement at any time, on any track, in either direction. Do not rely on hearing the approach of a train or equipment. Supervisors or others in charge of employees working on or about the track must require employees to be alert, watchful, and to keep out of danger. Employees must not stand, sit, walk fouling of or walk between rails of any track unless required by assigned duties. Stop before fouling or crossing track(s) and: • Look in both directions. • Ensure no movement is closely approaching. • Look for conditions that could interfere with footing. When walking near or crossing tracks: • Walk straight across tracks. • Avoid conditions that could interfere with footing. • Step over rails, frogs, switches, guardrails, etc.

Rule Updated Date

May 2, 2016

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81.2.2: Sufficient Distance

81.2.2 *Ref. Rule(s)* *5.13* *81.5.4* *81.23*	**Sufficient Distance** Unless authorized, employees must not: • Cross or step foul of tracks closely in front of or behind moving equipment. • Go around the end of equipment unless there is at least 20 feet between the employee and the equipment. • Go between equipment if the separation is less than 100 feet. When it is known no movement will occur and sufficient distance is maintained to avoid injury, employees may go: • Between or around the equipment in less than the specified distance provided employee is protected by Rule 5.13 or 81.23. • Around the end of equipment in less than 20 feet when the equipment is protected by Rule 81.5.4.

Rule Updated Date

June 1, 2017

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81.3: Safety Appliances

81.3	**Safety Appliances** Visually inspect safety appliances on equipment for defects such as loose, damaged or missing hand holds, ladders, grab irons, sill steps, or crossover platforms. Do not use defective safety appliances. Warn others and report any defects to the yardmaster, train dispatcher or supervisor. Do not get on equipment that is not equipped with safety devices.

Rule Updated Date

June 1, 2017

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81.4: Getting On or Off Equipment

81.4	**Getting On or Off Equipment** Do not get on or off equipment except when required in the performance of duty, and only when it can be done safely.

Rule Updated Date

July 2, 2013

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81.4.1: Standing Equipment

81.4.1	**Standing Equipment**
	
	The following precautions must be taken when getting on or off and while on standing equipment:
	
	• Always use the provided appliances (steps, ladders and hand holds). Be aware of and take necessary precautions to prevent injury from the build up of snow, ice, water, mud, grease and oil on footwear, sill steps, platforms and side ladders.
	• Keep hands free of all objects that may hinder a secure handhold. Always maintain a secure grip on the handholds on engine platforms or while using appliances on the equipment. Be prepared for sudden movement.
	• Use extreme care during wet, muddy, snowy or icy conditions and at night in unlit areas.
	• When getting on or off standing equipment:
	  • Face the equipment and use the side ladder or steps, maintaining three-point contact. Feet must be securely placed.
	  • Pause at the bottom step maintaining 4 point contact and observe surface conditions of the ground and activity in the area before getting off.Guard against injury by looking out for unsafe footing, obstructions or equipment moving on other tracks. Perform a 180 degree look before stepping off equipment.
	  • When getting off, retain a grip with both hands on the hand hold until both feet are firmly placed on the ground or other support and pause with 4 point contact before releasing your grip on the hand hold.
	  • When practical, get on or off equipment on the side away from main tracks or close clearances.
	  • When practical, get off of equipment on the same side that you got on the equipment.

Rule Updated Date

June 1, 2017

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81.4.2: Moving Equipment

81.4.2	**Moving Equipment** Except where local instructions approved by the Regional Vice President have been issued, employees are prohibited from getting on or off moving equipment unless necessary to prevent injury to themselves or others. Where permitted or if necessary to get on of off moving equipment, the following precautions apply: • Speed of movement must not exceed walking speed (no more than 4 MPH), except when necessary to prevent injury to yourself or others. • When getting on, stand clear of equipment so as not to be struck.

	• When boarding boxcars or similar equipment, grasp the leading grab iron with leading hand in direction of movement, then step up with the trailing foot as you grasp trailing grab iron, putting trailing foot in trailing corner of step letting movement lift you off the ground. • When getting off, do not step between the rails, on tie ends or immediately ahead of switches. Make sure you are clear of the engine or car. The trailing foot (foot opposite from the direction of movement) must strike the ground first, directing you away from the equipment.

Rule Updated Date

February 15, 2019

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81.4.3: Loading and Unloading Luggage and Supplies

81.4.3	**Loading and Unloading Luggage and Supplies** Use the following precautions when loading or unloading grips, luggage, ice chests, and other supplies on equipment: • Load or unload from the side of equipment, not the front. • Do not throw or swing luggage or materials onto a locomotive from the ground. • Board or detrain carrying luggage with shoulder strap(s) on your shoulder(s). Load or unload materials without straps before or after getting on or off. • Maintain firm footing and use proper body mechanics, lifting techniques, and 3 point contact. • If necessary, pass items to a co-worker.

Rule Updated Date

June 1, 2017

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81.5: Crossing Through or Fouling Equipment

81.5 *Ref. Rule(s)* *81.5.4* *5.13*	**Crossing Through or Fouling Equipment** Do not get on, cross through, crawl, sit or lie under cars, unless duties require. When duties require, assure that all movement has stopped, protection has been provided and no movement will occur.

Rule Updated Date

July 2, 2013

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81.5.1: Crossing Through Standing Equipment

81.5.1 *Ref. Rule(s)* *81.6*	**Crossing Through Standing Equipment** When duties require crossing through a standing train or cut of cars, proper protection against movement must be provided and employees must: • Choose equipment carefully, using cars with ends equipped with a crossover platform and hand holds, when available. • Keep hands free of objects that may hinder a secure handhold. • Be prepared for unexpected movement, maintaining a three-point contact while walking across the end of the car. On equipment where crossover platforms and hand holds are not available, use end of car structural bracing to maintain three point contact, if safe to do so. If no structural bracing is available, do not cross through. A train or cut of cars made up of intermodal cars equipped with crossover platforms without handholds may be crossed through without three-point contact; taking short, deliberate steps.

Rule Updated Date

July 2, 2013

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81.5.2: Stepping from One Car to Another

81.5.2	**Stepping from One Car to Another** Stepping from one car to another is permitted only if: • Equipment is standing. • It can be done safely. • Proper protection against movement has been provided.

Rule Updated Date

July 2, 2013

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81.5.3: Moving Cars

81.5.3	**Moving Cars** Do not cross under, over, through or ride between moving cars. Some maintenance activities require movement from car to car. Equipment must be designed for movement such as: • Rail loading and unloading. • Rail grinding. • Car top material handling. • Loading and unloading wheeled equipment from flatcars.

Rule Updated Date

July 2, 2013

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81.5.4: Establishing Protection Before Crossing Through or Fouling Equipment

81.5.4 *Ref. Rule(s)* 5.13 7.2 70.3 *81.2.2* *81.5* *81.11.3* *81.13* *81.13.1*	**Establishing Protection Before Crossing Through or Fouling Equipment** **Red Zone Protection:** A Train, Engine or Yard employee must establish Red Zone Protection before: • Performing work where there is potential to be struck by moving equipment. or • Crossing through or fouling equipment coupled to or on the same track as: ○ An engine occupied by an engineer. ○ An active remote control engine. or ○ Other occupied motive equipment. Exceptions:

- Pulling pins
- Primary RCO opens knuckles during humping operations or kicking cars. Movement must be stopped.
  Note: Refer to rule 81.2.2 if required to cross in front of equipment. Minimum distance of 20 feet required if Red Zone Protection has not been established.
- Employee is protected by Rule 5.13.
- Using a crossover platform to reposition:
  - After movement has stopped when riding the:
    - Trailing end of rear car of a pulling movement.
      or
    - Leading end of lead car of a shoving movement.
  - During a pulling movement when riding the trailing end of rear car.
- Ascending, descending, or crossing through locomotives.
- Using a brake stick if body does not break the plane.
- Crossing through or fouling equipment when it is determined*:
  - No cars will be kicked, shoved or pulled from the track(s).
    and
  - There is no occupied motive equipment, active remote control engine or engine occupied by an engineer on the track(s).

*At locations where other jobs are working, employee(s) who will perform work in the Red Zone must first communicate with job(s) near tracks to be fouled, and if necessary, contact yardmaster, or employee in charge, to ascertain which jobs are working.

Establishing Red Zone Protection:

When required, employee(s) must establish Red Zone Protection as follows:

Note: This applies to TE&Y employees only. All other crafts will be governed by their department's rules.

1. Request Red Zone Protection from the engineer or primary operator through a face-to-face job briefing, agreed upon hand signal, or radio communication.
2. Actions Required Before Entering the Red Zone:

   A. Allow movement to stop and slack to adjust.

   B. The engineer or primary control operator must:

   - Fully apply locomotive brakes and apply train air brakes if necessary. (Locomotive brakes must not be released until all employees are clear of the Red Zone.)
   - Center the reverser / direction selector.
   - Confirm Red Zone Protection with requesting employee using one of the following:
     - Announce job or locomotive ID, Red Zone or set and centered condition, and name of the track to be protected over the radio.
       or
     - Sound whistle cadence 5.8.2 (2) when using hand signals.

	Releasing Red Zone Protection: • Each employee who established Red Zone Protection must convey to the engineer or primary control operator when they are clear of the Red Zone by radio, face-to-face job briefing, or agreed upon hand signal. • Before initiating movement, the engineer or primary control operator must confirm release of Red Zone Protection with each employee who requested protection. Confirm release over the radio, by face-to-face job briefing, or sounding whistle cadence 5.8.2 (3) when using hand signals.

Rule Updated Date

January 7, 2019

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81.5.5: Trainline Power Cables

81.5.5	**Trainline Power Cables** Before going between equipment to work on or make adjustments to trains equipped with electrical power cables between equipment, employees must ensure that electrical power to these cables is off unless cable is clear of the area where the employee will be working.

Rule Updated Date

July 2, 2013

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81.6: Coupler and End Sill

81.6	**Coupler and End Sill** Do not: • Position any part of the body on or between coupler and car end sill. • Reach over drawbars to open or close angle cocks. When near cars equipped with movable center sills, take precautions to avoid injury in case of movement, even though the car is standing.

Rule Updated Date

June 1, 2017

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81.6.1: Placing Feet

81.6.1	**Placing Feet** Do not place feet on knuckles, uncoupling lever, drawbar assembly or any cushioning drawbar device.

Rule Updated Date

July 2, 2013

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81.7: Riding Equipment

81.7	**Riding Equipment** **A. Determine If You Should Ride** Ride equipment only when duties require and after determining you can do so safely. When determining whether equipment should be ridden, employees must consider: • Alternatives such as repositioning locomotives to pull instead of shoving equipment, repositioning of crew members or utilizing other employees to complete the task without having to ride moving equipment. • Weather conditions that may cause unsafe conditions to ride, e.g. ice storms. • Designs and configuration of cars that may make them unsuitable to ride. • Selecting or repositioning other equipment to ride. • Your physical limitations. • Potential slack action. • Applicable Operating and Safety Rules. **B. Do Not Ride** Employees must not ride: • On equipment when close clearance conditions exist.

- On side of equipment with one vertical handhold.
- On equipment that are rolling free, except where a 'Gravity Switch' has been authorized by a 'Superintendent Bulletin' and then only when movement can be controlled by a hand brake located on the trailing end of the trailing car in the direction of movement
  (See Rule 7.7.1 Gravity Switch).
- Inside equipment (i.e. hopper cars, gondola cars, etc.).
- On any part of coupler apparatus, center sill, side sill, or end sill.
- In a location where you may be struck or pinched by moving lading or equipment.
- While sitting on walkways, steps, or platforms of locomotives.
- On equipment where track conditions cannot be clearly observed because of debris, snow, ice, water, grain, sand or mud.
- On sill step of equipment (stirrup beneath ladder), engine steps, caboose steps or vestibule steps of cars when moving over a street or highway crossing, or yard access crossing.
- On side ladders leading to engine cabs on full body type locomotives.

C. How to Ride

When riding on equipment, employees must:

- Maintain three-point contact with hands and feet on fixed platforms and/or grab irons designed for this purpose. Hand brake may not be used as one of the required points of contact.
- Look in the direction of movement.
- Ride on the side of the car, the vertical plane of the end of the car must not be broken; except:
  - May ride on the brake or end platform on the trailing end of the last car in direction of movement.
  - When riding on the deck of a TOFC/COFC flat car.
  - May ride on end platform of ARMN, JRSX cars equipped with an end platform and hand rails. The platform is located on the "A" end of the car.

D. Where to Ride

When riding on equipment, employees must be positioned:

- On the side of leading end of equipment or on the trailing end of the last car in direction of movement while making a pulling movement.
- On the deck of a TOFC/COFC flat car only if you can mount the car safely and kneel or sit as near as possible to the center of the car until the car has come to a complete stop. If equipped with two vertical hand holds or horizontal hand hold positioned to allow an erect body position, you may ride on side of car.

	E. Riding Tank Cars Employees may only ride a tank car when the tank car is the first car of a shoving movement or the last car in a cut of cars being handled. Employees must maintain three or four-point contact and: When shoving: • Be on leading end of leading car and be positioned outside the gauge of the track and behind the safety bar or on the outer portion of the crossover platform facing direction of movement on cars equipped with two vertical hand holds. • Place both feet on the car to provide secure contact with the car. If unable to place both feet in a secure position, employee must not ride the car.

When pulling:

- Be on the trailing end platform of the last car, facing the direction of movement.
- Place both feet on the end platform to provide secure contact with the car.

F. Riding Bulkhead or Centerbeam Flat Cars

When shoving empty bulkhead or centerbeam flat cars, employees must ride on the deck behind the bulkhead in the direction of movement and maintain three point contact while facing the direction of movement. On a pulling move, employees must ride on either the end platform or on side ladder if equipped with horizontal handholds on the trailing end when it is the last car in the direction of

	movement. On a shoving move, employees may only ride loaded bulkhead or centerbeam flat cars on the side ladder if the car is equipped with horizontal handholds

Rule Updated Date

September 19, 2018

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81.7.1: Unexpected Movement

81.7.1	**Unexpected Movement** When duties require moving around, inside, or on equipment, anticipate and protect yourself from sudden stops, starts, slack action or other movements and: • Be adequately braced. • Maintain a firm hand hold. • Sit down quickly and safely. • Unless duties require otherwise, remain seated when stopping, entering, or departing terminals. • Stay out of cars being or about to be switched and notify all occupants before switching cars. When above normal vertical or lateral motion is detected on a locomotive, the train dispatcher must be notified. Engineer must reduce speed to a level that provides a normal ride.

Rule Updated Date

June 1, 2017

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81.7.2: Shiftable Lading

81.7.2	**Shiftable Lading** Do not: • Stand or place any part of body on or between the side or end of a car loaded with any lading that could shift. • Be in a position where you can be struck by drop ends that may fall inwards. • Hold on to the end post or stand near the end door on a gondola equipped with drop ends.

Rule Updated Date

June 1, 2017

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81.7.3: Business Cars or Passenger Equipment

81.7.3	**Business Cars or Passenger Equipment** Side and trap doors of vestibules must be kept closed while the train is in motion, except when attended by a crew member. When vestibules are in use at stations: • Open them only on the side where passengers are received and discharged. • Place an end gate at the rear of the last car in a train if the car has a vestibule. • Use chain or crossbar if the car does not have a vestibule. Trainmen must know that end gate or chain is in the proper position at the end of each car when making cuts between occupied passenger cars during switching operations.

Rule Updated Date

July 2, 2013

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81.7.4: Riding Locomotive Cranes and Work Equipment

81.7.4	**Riding Locomotive Cranes and Work Equipment** Unless authorized, do not ride on cranes, ditchers, other machines or cars on which machines are mounted. When authorized to ride, do not go out on a ledge, running board or any other outside part of moving locomotive cranes or other roadway equipment. However, a designated ground man is permitted to ride on the locomotive crane footboard that is equipped with a standard riding cage under the following conditions: • Maximum crane speed is 10 MPH. • The crane will approach no closer than one car length from standing equipment.

	• Riding is only allowed at the project site and as necessary to support bridge work. The limitations of the project site shall be as follows:
	  • From the material staging area to the bridge, not to exceed 1,400 feet.
	  • No more than 300 feet past either end of the bridge.
	• Riding is not permitted through public road crossings.
	• When riding on the leading end, the crane operator must have the rider in visual sight at all times.
	• Riding is not permitted on the same end of the crane that cars are coupled to.
	
	The footboard shall be large enough to completely and firmly support both feet of the rider. The rider must have three-point contact at all times.
	
	• Footboard and riding cage must be inspected daily and repaired immediately if damaged.
	• Cage must be removed when the locomotive crane is entrained.

Rule Updated Date

July 2, 2013

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81.8: Close Clearances

81.8 Close Clearances

Rule Updated Date

July 2, 2013

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81.8.1: Avoiding Fouling Hazards

81.8.1 *Ref. Rule(s) 7.1*	**Avoid Fouling Hazards** Do not leave equipment standing where it will foul equipment on adjacent tracks or cause injury to employees riding on the side of a car or engine. On tracks where clearance point is indicated, leave equipment beyond the clearance point.

	If clearance point is not indicated or visible, determine clearance point by standing outside the rail of adjacent track and extending arm towards the equipment. When unable to touch equipment, leave the equipment at least an additional 50 feet into the track to ensure equipment is beyond the clearance point. Equipment may be left on a: • Main track, fouling a siding track switch, when the switch is lined for the main track. • Siding, fouling a main track switch, when the switch is lined for the siding. • Yard switching lead, fouling a yard track switch, when the switch is lined for the yard switching lead. or • Industry track beyond the clearance point of the switch leading to the industry.

Rule Updated Date

July 2, 2013

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81.8.2: Reserved

81.8.2	**Reserved**

Rule Updated Date

January 7, 2019

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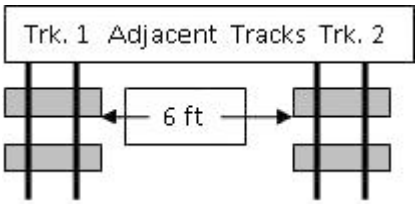
81.8.3: Impaired Clearances

81.8.3	**Impaired Clearances** Keep a careful lookout in both directions for trains, engines or cars on adjacent tracks. Look for other close clearances when duties require any part of the body to be extended beyond the side of a moving or standing engine or car. Do not ride on the side of a moving car, engine or other equipment:

	• Next to a structure.
	• Through gates or doorways.
	• Into, out of, or within enclosed buildings. Before entering enclosed buildings, an employee must precede movement if safe to do so. Further movements must only be made on employee's signal.
	• Any time equipment on an adjacent track is foul of or appears to be foul of clearance point.
	• In a curve or through a turnout when there is less than 6 feet between the ends of ties of adjacent tracks and:
	  • There are cars on the adjacent track in the curve or turnout.
	  • If in doubt that the distance between the ends of the ties between the tracks is at least 6 feet.
	 
	
	Do not position yourself or allow others to position themselves between a structure and moving car(s), engine(s) or other equipment when clearance is minimal.

Rule Updated Date

January 7, 2019

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81.9: Reserved

81.9	**Reserved**

Rule Updated Date

January 7, 2019

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81.10: Moving Equipment in Locomotive, Car, or Maintenance of Way Repair Facilities

81.10 Moving Equipment in Locomotive, Car, or Maintenance of Way Repair Facilities

Rule Updated Date

July 2, 2013

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81.10.1: Before Moving Equipment

81.10.1	**Before Moving Equipment** A job briefing will be conducted between all involved employees. This must include a thorough understanding of moves to be made and what hand signals or radio communication will be used before moving equipment and: • Cars must be coupled or secured to the locomotive, car mover or equipment, unless repair facility car moving systems are designed for other operation. • Maximum speed must not exceed 5 mph. • If hand signals are used, and the person giving signals disappears from view, movement must be stopped. If radio communication is used, distance and direction must be specified.

Rule Updated Date

January 2, 2014

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81.10.2: Using Mobile Equipment

81.10.2	**Using Mobile Equipment** When using Trackmobile, car mover or other work equipment as the primary mover: • Inspect equipment for safety defects prior to movement. If defects are found that prevent safe movement, corrective action must be taken to prevent derailment or further damage. • The operator or groundman will notify affected employees, including others moving equipment, prior to movement. Equipment will be inspected for persons on, under or between before coupling. • When coupling to cars, the operator or groundman must observe that the coupler pin has dropped and stretch slack before movement. Equipment left standing must be properly secured. • Crossings will be cleared prior to movement. • A groundman must be in a position to protect movement when the cab end is not leading.

Rule Updated Date

July 2, 2013

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81.10.3: Using Locomotive

81.10.3 *Ref. Rule(s)* *31.8.7.1*	**Using Locomotive** When a locomotive(s) is used the following applies: • If operator is in the lead unit with the controlling cab facing the direction of movement, protection by a groundman is not required if operator can visually determine the move can be made safely. • If operator is not in the lead unit with the controlling cab facing the direction of movement, protection for the movement is required. A groundman must be positioned on the ground or ahead of movement to visually determine that movement can be made safely. • When a spotting operation involves movement of less than 10 feet, movement may be made without groundman ahead of the movement. • When making coupling, groundman must be on the ground when coupling is made. • After coupling, stretch the slack to ensure coupling was made. • After movement is complete, secure equipment per operating rules. Follow applicable shut-down policy.

Rule Updated Date

July 2, 2013

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81.10.4: One Person Operation

81.10.4 *Ref. Rule(s)* *32.2* *31.8.7.1*	**One Person Operations** One person operations may be made as follows: 1. Ensure the area is protected in accordance with Rule 5.13, Blue Signal Protection of Workmen. 2. Determine by visual inspection that no person is on, under or between the equipment. Confirm that no personnel or rolling equipment will enter track where move is to be made.

	3. Determine by visual inspection that other equipment or structures will not be struck, or insufficient clearances created, by moving locomotives or equipment. 4. On locomotives, apply the independent brake and visually inspect to ensure brakes apply, then release hand brakes. 5. Turn on headlight to the front and rear when possible. 6. On locomotives, ring the bell before moving and during the entire movement. 7. Sound the whistle prior to moving, when reversing direction of movement, when approaching crossing and when employees or others are seen within the area of movement. 8. Operate the locomotive or controlling equipment facing the direction of movement whenever possible. Stop before coupling and then proceed to make coupling. 9. After coupling to other equipment, stretch the slack to ensure coupling was made. 10. Do not make movements farther than the distance inspected in steps 2 and 3 above, unless additional visual inspections are completed. After movement is complete, secure all locomotives and/or equipment per operating rules. Follow applicable shut-down policy.

Rule Updated Date

June 1, 2017

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81.11: Hand Brake

81.11 *Ref. Rule(s) 81.11.3*	**Hand Brake** Before operating hand brake inspect for defects. Use good body mechanics to prevent strains, sprains, etc. Maintain firm footing and hand hold to prevent slipping, falling or injuries. While operating hand brakes employees must not: • Use end ladders to go up or down the car. • Brace any part of body against another car. • Place feet in wheel or on a hand brake lever or pawl. • Hold brake tension on moving car by hand without using a pawl and ratchet. • Place thumb inside wheel when applying or releasing wheel type brake. • Apply or release brake from ground while car is in motion. • Use unapproved material or device to apply or release brake. • Place both hands on brake wheel. The following hand brakes must be operated from a position on the equipment:

	• End-mounted brake. • Horizontal wheel (staff) hand brake. • Inward facing end mounted brake on TOFC/COFC and similarly configured cars. The following hand brakes may be operated from a position on the ground provided they are within easy reach and good body mechanics are maintained: • Side-mounted brake. • Outward facing end-mounted brake on TOFC/COFC and other cars with the brake located at the same approximate height.

Rule Updated Date

June 1, 2017

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81.11.1: Releasing Hand Brake

81.11.1	**Releasing Hand Brake** Use caution when releasing hand brake. Obtain help when necessary. Avoid being struck by the brake wheel when the pawl is released. Avoid having clothing or hand caught in a spinning brake wheel. When unable to release a hand brake that has been set after an air brake application, if possible, follow this procedure: 1. Recharge train line pressure of the car. 2. Reapply air brake (to relieve tension on hand brake chain). 3. Release hand brake by hand.

Rule Updated Date

July 2, 2013

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81.11.2: Difficult or Defective Hand Brake

81.11.2	**Difficult or Defective Hand Brake** If hand brake is difficult to operate, defective or damaged, do not attempt to operate it.

	Report the defective brake to proper authority and attach a bad order tag to hand brake wheel or lever.

Rule Updated Date

July 2, 2013

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81.11.3: Brake Sticks

81.11.3 *Ref. Rule(s)* *81.5.4*	**Brake Sticks** When practical and available, use approved brake sticks to operate: • Hand brake wheels. • Knuckles. • Angle cocks located on the side nearest where you are standing. Precautions when using brake sticks: • Car must be stopped. • Work from the field side rather than between adjacent tracks when possible. • Keep handle clear of moving equipment on adjacent track. • Maintain proper footing and do not exert unnecessary force. Do not: • Place the butt of the brake stick against your body. • Climb or cross equipment with the brake stick in your hand. • Use brake stick while in or on a vehicle. • Operate the hand brake quick release with a brake stick. • Use brake sticks less than 5 feet in length to reach across drawbar to operate handbrake wheel. Local instructions may be issued regarding use of brake sticks.

Rule Updated Date

June 1, 2017

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81.12: Wheel Chocks / Skate

81.12	**Wheel Chock / Skate** Use wheel chocks or skates where required. When placing or removing wheel chocks or skates, keep body outside rail or place from outside the rails to avoid pinch points.

Rule Updated Date

July 2, 2013

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81.13: Coupling and Uncoupling Equipment

81.13 *Ref. Rule(s)* *81.5.4*	**Coupling and Uncoupling Equipment** When coupling or uncoupling: • Stand in the clear. • Ensure couplers are in proper alignment and knuckle is open before coupling. • Turn face away from connected air hoses while uncoupling. Do not: • Ride cars to coupling. • Use your feet to operate uncoupling lever. • Use excessive force or jerk on uncoupling lever. • Operate an uncoupling lever on a car or engine while riding on another car or engine. Be alert for pinch points. Always place your hand on portion of uncoupling lever that is designed as the handle. Use the uncoupling lever to open knuckles when possible. If you must use hands to open the knuckle on standing equipment, avoid placing more than one foot between the rails when possible. During coupling operations, separate equipment at least 100 feet and stop equipment before reaching in. Make sure knuckle pin is in place before placing hand on the knuckle.

Rule Updated Date

September 19, 2018

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81.13.1: Working Between Equipment

81.13.1 *Ref. Rule(s)* *81.2.2* *81.5.4* *81.13.3*	**Working Between Equipment** Do not go between, in front of or behind moving equipment to arrange knuckles, couplers or manipulate other appliances for any reason without sufficient distance. Allow slack to adjust before going between equipment to perform work. To prevent movement on tracks where cars are likely to roll together: • Apply sufficient hand brakes, but not less than two, on the end of the unattached portion closest to the employee working. or • Have another employee provide lookout protection until work is completed.

Rule Updated Date

September 19, 2018

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81.13.2: Coupler Adjustment

81.13.2 *Ref. Rule(s)* *81.2.2*	**Coupler Adjustment** When necessary to make a coupler adjustment: • Avoid lifting the full weight of couplers. • Do not kick or use your foot to make a coupler adjustment. • Coupler must move without applying excessive force. If unable to make the adjustment using reasonable force, use a Knuckle-Mate or coupler alignment strap, if available.

Rule Updated Date

July 2, 2013

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81.13.3: Using a Knuckle-Mate

81.13.3 *Ref. Rule(s)* *81.2.2* *81.5.4* *81.13.1*	**Using a Knuckle-Mate** When using a Knuckle-Mate to adjust a misaligned coupler, the following procedure must be used: 1. Separate the misaligned couplers at least 100 feet, then close the knuckle of the coupler or couplers that need adjustment. 2. Place the Knuckle-Mate over the top of the knuckle, making sure the central pin is securely in the hole of the knuckle (pin may be adjusted by loosening the levered nut). 3. Assume a braced position with both hands on the handle. 4. Exert a steady pull on the handle, being careful that an unexpected movement of the coupler does not cause overbalance. 5. When couplers are properly aligned, remove the Knuckle-Mate, open at least one knuckle, stand clear of the equipment and proceed with the coupling. 6. Return the Knuckle-Mate to its assigned location.

Rule Updated Date

July 2, 2013

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81.13.4: Using Coupler Alignment Strap

81.13.4 *Ref. Rule(s)* *81.2.2* *81.5.4* *81.13.1*	**Using a Coupler Alignment Strap** When using a coupler alignment strap to adjust misaligned couplers, the following procedure must be used: 1. Separate the cars with misaligned coupler(s) at least 100 feet. 2. Apply sufficient hand brakes to secure the car(s) not coupled to the engine. 3. Close knuckles on both cars and check that the locking blocks have dropped. 4. Check for large burrs on the knuckle surfaces that could cut or damage the nylon material of the strap. If a burr or other defect is discovered that would damage the strap, change the knuckle or notify mechanical personnel for assistance. 5. Place one loop on the strap inside the closed knuckle on the misaligned coupler. Lay the remaining strap material on the top of the coupler shank. 6. Move the equipment together until the couplers are about three feet apart. 7. Keeping one foot outside the rail, place the remaining strap loop inside the closed knuckle of the coupler to be used for pulling. 8. Stand clear of the track and the alignment strap.

	9. Move the engine very slowly in the direction that tightens the strap until the coupler is centered. 10. Move the engine in the direction that puts slack back into the strap, until about three feet separates the equipment. 11. Keep one foot outside the rail. Lift the uncoupling lever to open the knuckle and remove the strap. 12. Remove the strap from the other knuckle.

Rule Updated Date

July 2, 2013

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81.13.5: Replacing Knuckle

81.13.5 *Ref. Rule(s)* *81.2.2* *81.5.4* *81.13.1*	**Replacing Knuckles** When replacing a knuckle, the following procedure must be used: 1. Use the correct knuckle type. 2. Keep your feet clear of the area under the coupler to the extent possible. 3. Make sure the knuckle pin is in place, then open the knuckle. 4. Remove the pin and place within easy reach. 5. Remove the knuckle from the coupler and dispose of it ensuring it will not become a tripping hazard. 6. Holding or securing the uncoupling lever up, ensure that the lock block is back into the coupler recess as far as it will go. 7. Use good body mechanics and lift the knuckle and place it into the coupler pocket. 8. Insert the knuckle pin into the pin hole, close the knuckle and check to see that it locks properly. Do not close it with your foot.

Rule Updated Date

July 2, 2013

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81.13.6: Opening Angle Cock

81.13.6	**Opening Angle Cock**

Ref. Rule(s) 81.11.3	Do not kick, strike or shake pressurized hose couplings. Turning angle cock on moving equipment is prohibited. When opening angle cock the following procedure must be used: 1. Open angle cock slowly. Do not use excessive force. 2. Keep your legs and feet clear of the air hose coupling. 3. Listen for air escaping, which will indicate a faulty coupling which may fly apart. If an air leak is heard, close both angle cocks and ensure pressure in the hoses is fully depleted before attempting adjustment or repair. Before opening the angle cock to an uncoupled air hose: 1. Grasp the hose at the glad hand, clear of the vent port. 2. Brace the glad hand firmly against your thigh just above the knee with vent port directed away from you. 3. Turn your face away from the glad hand before opening the angle cock.

Rule Updated Date

July 2, 2013

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81.13.7: Coupling and Uncoupling Hoses

81.13.7 *Ref. Rule(s) 81.5.4*	**Coupling and Uncoupling Hoses** When coupling and uncoupling hoses the following applies: • Avoid being struck or burned when coupling air hoses or steam connections. • Before coupling or uncoupling air hoses by hand, or before operating angle cocks, have a clear understanding with the engineer and other crew members as to the work to be performed. • When coupling air hoses together or uncoupling air hoses by hand, keep one foot outside the rail and place the other inside the rail. However, when coupling high air dump hoses on cars so equipped, it is permissible to place both feet between the rails. Be prepared to step out should the equipment move. • When necessary to part air brake train line hose connections; close the angle cocks, grasp the hoses firmly, and turn your face away while making the uncoupling. • When separating locomotives allow air hoses to pull apart with the movement of the locomotives.

Rule Updated Date

July 2, 2013

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81.14: Dump Cars

81.14 *Ref. Rule(s)* *1.35*	**Dump Cars** When dumping loads or working around dump doors: • Ensure all persons are clear on both sides of car and no one is inside before opening the dump door. • Do not close dump doors of empty cars while cars are in motion. • Do not be on or inside cars when it is necessary to "shake" or "bump" cars to loosen gravel or other material. • Do not ride in air dump cars.

Rule Updated Date

July 2, 2013

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81.15: Car Doors

81.15	**Freight Car Doors** TE&Y employees must not open or close freight car doors. When opening or closing freight car doors: • Keep fingers clear of the edge or door jamb, casting or rail on which the door travels. • Keep your body clear of the door opening to avoid injury from falling freight. • Check box car doors for damage by thoroughly inspecting the top and bottom track and rollers. • On plug doors examine the roller assembly, locking rods and all crank arms. Make sure the door is properly tracked before opening it. If the door is off track, take necessary precautions before opening it. If a plug door is found open enroute, car may continue in the train to the next location where mechanical forces are available to close the door. • If there is evidence of load shift, i.e. bulging door, take action to relieve the pressure on the car door before opening it. • Guard against spinning or kicking of handles.

	Close and open doors with a mechanical device if normal force used by one person cannot accomplish the task. Use of excessive force is prohibited. Always position yourself in the clear, should the door fall, and be prepared for any sudden movement of the door. Use proper body positioning to prevent injury.

Rule Updated Date

June 1, 2017

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81.16: Load Dividers

81.16	**Load Dividers** Inspect the load dividers on a railcar carefully before operating to be certain load divider is properly tracked. The upper and lower crane rails must be free of defect that could derail or hinder load divider operations. If load divider is off track or safety straps are not in place, necessary precautions must be taken to safeguard its use. Do not push or move the door into an area that has not been inspected or is not properly tracked. Operators should position their body to prevent injury in the event of unsuspected movement, falling or stopping of load divider. While operating load dividers, fingers must be kept clear of pinch points and feet clear of gate swing to avoid foot injury.

Rule Updated Date

July 2, 2013

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81.17: Cars Being Loaded or Unloaded

81.17	**Cars Being Loaded or Unloaded** Personnel who load or unload cars are responsible to: • Remove and clear platforms, boards, tank car couplings and connections, conveyers, loading or unloading spouts, similar appliances or connections, vehicles and other obstructions. • Ensure plug-type and swinging doors on cars are closed. • Make sure persons in, on or about cars have vacated cars before allowing switching. • Avoid damaging lading of partly loaded cars.

	• Raise and lock the plates on cars equipped with bridge plates. **Preventing Uneven Loads.** When loading or unloading cars, take precautions to prevent the load from becoming unevenly distributed which may cause the car to overturn or derail. Do not handle cars with improper or uneven loads if the load could shift or fall from the car or the car could derail or overturn.

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July 2, 2013

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81.18: Loading Roadway Equipment

81.18	**Loading Roadway Equipment** Observe loading rules when loading and securing roadway equipment, cranes, dragline or other similar equipment loaded on cars. At stations where Car Department personnel are not available, cars loaded with roadway machinery must be inspected and must not be moved until authorized by the train dispatcher. The train dispatcher must: • Not authorize movement until receiving confirmation cars are loaded according to loading rules and are safe for movement. • Request inspection from Car Department at the first inspection point en route. Cars loaded with roadway equipment must receive frequent inspections en route.

Rule Updated Date

June 1, 2017

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81.19: Air Brake Rigging

81.19	**Air Brake Rigging**

Ref. Rule(s) *32.7.3*	When working on the air brake rigging of cars or other equipment, except locomotives, the air brakes must be cut out and the air reservoir must be drained until repairs are completed.

Rule Updated Date

July 2, 2013

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81.20: Moving In and Out of Equipment or On Equipment

81.20 *Ref. Rule(s)* *80.6,* *81.21.3*	**Moving In and Out of Equipment or On Equipment** When entering equipment employees must: • Observe and allow eyes to adjust to changing light level. • Use a light when working at night or in reduced lighting. • Prepare for possible missing or unsecured floor panels. • Know and adjust to different step and ladder arrangements. • Not allow tools, chains or other items to be placed where you have to step. • Be prepared for electrical or other compartment doors that may have been left open. • Keep all electrical and other compartment doors securely latched when locomotive is under load, except when locomotive forces are conducting load tests. • Report all defective latches and doors that will not stay closed. If you observe oil or other foreign substances on ladders, steps or walkways, warn other employees and, if practicable, avoid using that part of the equipment until the condition is corrected. Be sure you report it properly if you cannot correct it yourself.

Rule Updated Date

June 1, 2017

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81.21: Locomotives, Working On or About

81.21	**Locomotives, Working On or About**

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July 2, 2013

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81.21.1: General Requirements

81.21.1	**General Requirements** While working on or about locomotives employees must: • Know that all workmen are in a safe position before starting an engine. • Keep safety guards in position and fastened. • Keep hands out of radiator shutters and all other equipment that engage automatically. • Keep engine room, cab, walkways, steps, and grab irons clean and free from oil, grease, rags, debris, obstructions, snow, ice, sand, etc. • Place material or equipment on locomotives where it will not create a hazard while being transported, i.e. EOT devices, brooms, air hoses, wrenches, etc.

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July 2, 2013

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81.21.2: Restrictions

81.21.2	**Restrictions** **Employees must not:** • Put face or hands near the main generator or any high-voltage equipment while it is working under load. • Have an open flame in the engine room. • Pull fuses while they are under load. • Open ground relay protective knife switches when ground relay is tripping. • Manually operate high-voltage contactors while the engine is in motion, even though the power plant supplying that particular cabinet is shut down. • Use hands, feet or improvised objects to close or open contacts while under electrical load. • Open high-voltage cabinet when the engine is under load. **EXCEPTION:** These restrictions do not apply to mechanical forces for inspection purposes.

	After performing engine maintenance, ensure no tools are left near electrical or rotating equipment.

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July 2, 2013

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81.21.3: Locomotive Cab Floor

81.21.3	**Locomotive Cab Floor** If necessary to remove floor board(s) for inspection or repair purposes: • "Danger Floor Out" sign must be placed at each door to the locomotive cab at all times when the floor boards are removed. • Floor boards should be replaced when leaving the cab. If it is not practical to replace the floor board due to work in progress and there is potential for anyone entering the cab, the cab doors must have yellow caution tape tied across the door openings. If available, a flashing red strobe light may also be left in the locomotive cab. • If possible, locomotive cab lights should be left on so the opening is visible. • Floor boards must be replaced when work is complete.

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July 2, 2013

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81.21.4: Locomotive Electrical Components

81.21.4	**Locomotive Electrical Components** Employees may only make repairs for which they are qualified. The generator field switch must be "OFF" while working on or inspecting the main generator or power circuits on diesel locomotives. On multiple unit locomotives, the power plant must be isolated from control. When traction motors are to be inspected, the generator field switch must be "OFF", the throttle closed, the reverser handle removed and the air brakes set. At locations other than established inspection or shop locations, the employee making the inspection must carry the reverser handle with him while making the inspection and tag the control stand "out of service".

	Do not repair any switches, contactors or relays on locomotives without first shutting down the diesel engine and opening the control switch and the main battery switch. Do not attempt repairs on switches, contractor relays or related electrical apparatus without first shutting off all power. A volt meter must be used to ensure all current has been disconnected before starting repairs.

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July 2, 2013

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81.22: Securing Supply Apparatus

81.22	**Securing Supply Apparatus** After supplying a train with fuel, water, or sand, replace and secure the apparatus in a position clear of tracks.

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July 2, 2013

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81.23: Lockout Protection Required

81.23	**Lockout Protection Required** Lockout protection must be provided before beginning work activities that require protection for employees or contractors not governed by other lockout protection rules as follows. **A. Effective Lockout Protection** Line the switch away from movement or place a derail at least 150 feet (50 feet if track speed is 5 MPH) from end of rolling equipment and secure the switch or derail with an effective locking device. The derail or switch must be able to restrict access to the portion of track where work is being performed. **One Locking Device** Use one locking device if the employees being protected: • Are assigned to work together as a unit under a common authority. • Communicate with each other while working.

	Additional Locking Devices If more than one working group exists, the employees must communicate and apply an additional locking device to the derail or switch. **B. Red Flag** At each lockout position, display a red flag that can be clearly seen during the day. At night, display a red light with the flag. Do not place a derail or switch in the lockout position until red flag protection is in place. Do not remove the red flag protection until lockout protection is removed. **C. Common Authority** Common authority must be established. The person or persons in authority must: • Communicate with all employees being protected by a red flag and lockout device. • Control the red flag and the only keys to the lockout protection. • Be responsible for the safety of all employees in the working area. Do not work on the track or railroad rolling equipment until both ends of the track have a red flag and lockout protection. **D. Derails** Derails that are used in conjunction with worker protection must be in the derailing position with proper flag displayed only when their use is required for such protection. When their use is not required for protection: • Remove portable derails, then remove flag. or • Lock fixed derails in non-derailing position with an effective locking device, then remove (take down) flag.

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July 2, 2013

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82.0: HANDLING SWITCHES AND DERAILS

82.0: HANDLING SWITCHES AND DERAILS

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82.1: Switches and Derails

82.1	**Switches and Derails** Only authorized persons may unlock, operate or repair switches or derails. Do not sit or lean on any part of switch or derail.

Rule Updated Date

July 2, 2013

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82.2: Operating Switch by Hand

82.2 *Ref. Rule(s)* *8.2*	**Operating Switch by Hand** When switch is to be operated by hand, equipment must not pass the following limits: **Trailing Point movement:** • Stop movement before fouling adjacent track to prevent tension being placed on switch points and switch handle. **Facing Point movement:** • Stop movement a sufficient distance from switch points to prevent binding of switch points.

Rule Updated Date

July 2, 2013

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82.3: Switch Operation

82.3 *Ref. Rule(s)* *8.2* *8.8*	**Switch Operation** Switches have different physical operating characteristics. Be familiar with the procedures for properly lining each type of switch. Switch operation will change depending on weather, temperature, maintenance, and other operating conditions. While operating a switch or derail, keep hands and feet clear to avoid being caught or struck by the switch lever handle or ball. Before operating a switch or derail: 1. Look in both directions and be alert for moving equipment on adjacent tracks. 2. Visually inspect the switch or derail, making sure it is not damaged, locked, tagged or spiked and points are not obstructed by ballast, ice, snow, or other material which may interfere with the normal movement of switch points. **Note:** When a switch will be used multiple times for switching, pickups, setouts, etc., visual inspection is only required before initial operation of the switch.

	3. If necessary to remove foreign material between the switch point and stock rail, use a broom, stick or similar object. Do not use your hand or foot for this purpose. If the switch is spiked, do not attempt to operate it. 4. Always take a firm stance and be alert for conditions which may cause loss of footing. After operating a switch or derail: 1. Look in both directions and be alert for moving equipment on adjacent tracks. 2. Visually inspect the switch or derail, confirming the points fit properly and the target, if so equipped, corresponds with the switch's position.

Rule Updated Date

February 15, 2019

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82.4: Defective Switches

82.4	**Defective Switches** When a switch is hard to operate, defective, or in need of maintenance, do the following: • Take the switch out of service. • Report the switch to the proper authority, including its exact location and problem. • Tag the defective switch with a warning tag describing the defect. • Spike switch when necessary. **CAUTION: Do not rely solely on tags for identifying spiked switches.** The switch must remain out of service until an inspection and repairs can be completed.

Rule Updated Date

July 2, 2013

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82.5: Operating High / Low-Stand Switch

82.5	**Operating High / Low-Stand Switch**

Ref. Rule(s) *8.8*	**CAUTION: The switch handle may be under compression and may swing around when released from the keeper slot.** **When operating a high / low stand switch:** 1. Lift up on switch handle, keeping the body clear of handle movement. 2. Do not jerk handle and avoid placing body in a twisted or awkward position. Pull handle slowly through its arc of travel. Expect that the switch may suddenly operate in either an easy or stiff manner. 3. Always keep firmly braced and do not exert unnecessary force. Reposition feet as necessary to maintain good body mechanics. Use leg muscles instead of back muscles. 4. When switch is in the desired position, fully insert the handle into the keeper slot. 5. Once the handle is down, secure it with a lock or hook, when available. Use either the two-hand or the mast-support method to lift the lever handle out of the base. **Two-Hand Method** When using the two-hand method: 1. Stand facing the switch stand and place both hands near the end of the handle. 2. Lift up the switch handle, keep your back as straight as possible and your legs slightly bent. **Mast-Support Method** When using the mast-support method: 1. Place one hand on the mast and the other hand on the end of the handle. 2. Stand parallel to the handle and slowly pull the handle through the line of travel. 3. After completing the move, stand as close to the handle as possible, leaving room for the handle to clear the body, and push the handle down into keeper slot. Do not use your feet to operate this type of switch or secure the handle.

Rule Updated Date

July 2, 2013

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82.6: Operating Lever-Action Switches

82.6	**Operating Lever-Action Switches** CAUTION: The switch lever may be under compression and could pop up when released from the latch or keeper.

	When operating a lever-action switch: 1. Stand parallel to handle movement, with your stance centered over the lever arm handle. 2. If the switch is equipped with a foot latch, keep foot on the latch until lever is moved toward the vertical position. Hand or other object must not be used to release latch. 3. Stand as close as possible to the lever arm and when operating a: • Ground throw switch, place one hand on knee or on top of the switch staff if necessary for support and place other hand on the handle. • 45 degree switch (bow handle), both hands may be placed on the handle. 4. Lift up slowly and smoothly. 5. Once the lever has traveled at least to the vertical position, reposition feet and hands so lever movement may be completed with a pushing motion. 6. On ground throw switches (not 45 degree switches), where movement is completed in close proximity to the ground, it is permissible to use one foot to complete the last 6 inches of movement, provided good balance is maintained. Place one foot near the end of the lever and step down until lever arm is latched. **CAUTION: Avoid using feet to push the lever arm down during wet, ice, or snow conditions, or if oil, grease, or other such contaminants are present.**

Rule Updated Date

February 15, 2019

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82.7: Switch Point Locks

82.7	**Switch Point Locks** Switch point locks are installed on certain main track switches at the base of the rail and locked with a switch lock. Switches equipped with this device are identified by: • A sign on the switch stand. or • A switch handle or bottom portion of stand painted yellow. To operate the switch, remove the lock and depress the foot pedal with your foot. This must be done before attempting to operate the switch. Do not use your hands to depress the foot pedal. To reengage the device, snap the switch point lock into locking position by returning the switch to the normal position. Inspect to assure the locking position before putting hands near the switch point lock

	or replacing the padlock. If the switch point lock fails to snap into locking position, reopen the switch and repeat the process. If defect(s) exist: • Do not attempt to pull the pedal by hand or other means. • Contact the train dispatcher and report the switch point lock defective. Attach an out-of-service or warning tag to the switch.

Rule Updated Date

June 1, 2017

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82.8: Reserved

82.8	**Reserved**

Rule Updated Date

January 7, 2019

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82.9: Power Switch

82.9	**Power Switch** Take precautions to avoid injury when working on power-operated, remote or automatic control, or interlocking switches, derails, or movable point frogs. • Keep hands and feet clear of connections. • Do not place hands or feet between switch point and stock rail without first isolating the switch against remote operation.

Rule Updated Date

July 2, 2013

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82.10: Switch Heaters

82.10	**Switch Heaters** Avoid contact with switch heaters or switch rails when heaters are operating.

Rule Updated Date

July 2, 2013

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83.0: INTERMODAL RAMP RULES

83.0: INTERMODAL RAMP RULES

83.0 INTERMODAL RAMP RULES
Note: This chapter governs all Union Pacific Railroad employees and any contractor or vendor whose duties may include working within or close to intermodal facilities.

Rule Updated Date

July 2, 2013

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83.1: General Intermodal Ramp Rules

83.1 General Intermodal Ramp Rules

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83.1.1: Authorized Personnel on Company Property

83.1.1	**Authorized Personnel on Company Property** All employees and third parties including vendors, contractors and visitors who are not assigned to the intermodal facility must receive permission to enter by checking in with gatehouse personnel.

Rule Updated Date

July 2, 2013

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83.1.2: Walkways

83.1.2	**Walkways** Use only designated pathways for walking. Keep eyes on path and remain alert for obstructions and walking conditions including moving vehicles and equipment.

Rule Updated Date

May 2, 2016

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83.1.3: Reserved

83.1.3	

Rule Updated Date

June 1, 2017

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83.1.4: Riding In/On Intermodal Equipment

83.1.4	**Riding In/On Intermodal Equipment** Only the operator may ride in a packer, crane, hostling truck, or forklift while the equipment is moving. Exception: Employees in training may ride in the packer or crane.

Rule Updated Date

July 2, 2013

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83.1.5: Parking of Containers, Trailers, Chassis

83.1.5	**Parking of Containers, Trailers, Chassis** Do not park equipment where it will protrude into roadways or is hazardous to passing vehicles or equipment.

Rule Updated Date

July 2, 2013

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83.1.6: Adjustment of Containers on Chassis

83.1.6	**Adjustment of Containers on Chassis** Employees must ensure containers are properly seated on chassis and not resting on top of chassis pin locks or twist locks. Employees finding such a condition must immediately report it to the proper authority for immediate correction and reseating on chassis. Employees are prohibited from attempting to adjust containers not properly seated on chassis by other than securing the proper lift equipment to reseat the container onto the chassis. Do not use any of the following to adjust containers not properly seated on chassis: • Hammers. • Crowbars. • Any other devices. Employees are prohibited from placing hands between the container and chassis.

Rule Updated Date

September 30, 2016

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83.1.7: Security Bolts and Seals

83.1.7	**Security Bolts and Seals** Employees are prohibited from applying or removing security bolts and seals from trailer or container doors. Only Freight Damage Prevention personnel or Railroad Police are authorized to open trailer/container doors and check for proper blocking and bracing of lading in containers or trailers.

Rule Updated Date

May 2, 2016

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83.1.8: Repairs to Equipment

83.1.8	**Repairs to Equipment** Non-authorized personnel are prohibited from making repairs to railroad or private equipment.

Rule Updated Date

July 2, 2013

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83.1.9: Intermodal Equipment Maintenance and Repair Lockout / Tagout Procedures

83.1.9	**Intermodal Equipment Maintenance and Repair Lockout / Tagout Procedures** In order to properly lock out and tag out equipment on UPRR intermodal ramps and service areas, prior to performing service, maintenance, adjustments or repair of any energized type of equipment, the following steps must be taken: 1. Apply the parking brake if equipped and test the brake to ensure that it will hold. 2. Shut the equipment down and remove the key from the ignition switch.

	3. Release all stored energy in hydraulic, pneumatic, electric, mechanical, chemical, thermal and any other sources of energy present in equipment. 4. Block at least one of the equipment's wheels on both sides to prevent unwanted movement. 5. Ensure that no movement will take place if controls are moved, whether intentionally or unintentionally. All lockable or brace-able components must be locked or braced to prevent any movement of equipment. 6. Place a "do not operate / out of service" sign facing inward at the driver's controls, attached to the steering wheel or blocking door entry way to ensure that anyone approaching the equipment controls will see the sign. 7. Place reflective safety cones in the front center and rear center of equipment. 8. Disconnect the battery using the battery disconnect switch and lock if the battery is equipped. If there is no disconnect switch, disconnect the battery cables from the battery and place a lock in the ring on the battery cable with a tag indicating "out of service" so the battery cannot be reconnected without removing the lock. In cases where the battery cable is disconnected, the cable must be placed in a position to ensure that it will not accidentally come into contact with the battery terminal. 9. Follow all manufacturer procedures to ensure that the equipment is safe for performing maintenance or service. 10. Test the integrity of the tagout. If the equipment cannot be started and the components cannot be energized, you may safely start the maintenance or service. 11. Only the employee who tagged the equipment out of service or that individual's supervisor, may remove the lock out- tag out locks and tags and restore equipment to service.

Rule Updated Date

April 6, 2018

System Special Instructions

Effective Date: June 1, 2018

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83.1.10: Safety Cones on Intermodal Ramps

83.1.10	**Safety Cones on Intermodal Ramps** When work is being done on, under, or near intermodal equipment (trailers, containers, chassis, lift equipment, etc.) contractors or employees must display safety cones to provide protection. Employees, contractors or 3rd party providers who are working or traveling in an intermodal facility must remain on the lookout and visually determine if safety cones are displayed. When safety cones are displayed:

	• Do not enter or begin work in an area or on a piece of equipment until a job briefing is conducted with the employee that placed the cone(s) or their supervisor. If a different craft needs to do work concurrently in such an area, common authority must be established. • Do not remove any cones until after it has been confirmed that the work to be performed has been completed and the cone is no longer needed. Safety cones must: • Only be removed by a member of the craft that placed them or their supervisor. • Be labeled with the name of the craft or company (for UP contractors). • Be highly visible, not worn or faded, and free of dirt, oil, grease grime, etc.

Rule Updated Date

April 6, 2018

System Special Instructions

Effective Date: June 1, 2018

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83.2: Operating Vehicles on Ramp

83.2 Operating Vehicles on Ramp

Rule Updated Date

July 2, 2013

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83.2.1: Speed Limits on Ramp

83.2.1	**Speed Limits on Ramp** Maximum speed on intermodal ramps is 20 MPH.

Rule Updated Date

May 2, 2016

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83.2.2: Observing Stop Signs

83.2.2	**Observing Stop Signs** All vehicle operators must come to a complete stop prior to passing a stop sign or painted stop bar location.

Rule Updated Date

May 2, 2016

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83.2.3: Vehicle Lights

83.2.3	**Vehicle Lights** All vehicles and equipment operating on ramps will have headlights/running lights on dim and four-way flashers on while operating. All equipment and vehicles assigned to ramp operations must display illuminated amber strobe lights.

Rule Updated Date

May 2, 2016

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83.2.4: Operating Vehicles

83.2.4	**Operating Vehicles** Only authorized drivers are permitted to operate yard vehicles. Compliance with other vehicle rules including speed and inspection also apply to operating all vehicles. Reckless or careless driving is prohibited. Operators of vehicles must:

	• Maintain control at all times. • Be prepared to stop within one half their range of vision short of any person or object. • Avoid striking standing or moving equipment or being struck by moving equipment. • Maintain sufficient clearance from tracks and equipment on those tracks. • Operate only in designated areas and over designated crossings, pathways and road ways. • Know the vehicle and load will clear all obstructions or close clearances. • Observe all traffic signs, warnings and pavement direction indications. • Yield to all trains, and lift equipment. • Maintain a minimum of 400 feet from lift equipment unless authorized by ramp management. • Back into parking stalls. Operators of vehicles must not: • Make adjustments or disable any speed limiting devices. • Park the vehicle foul of any railroad track. • Park vehicle to foul a portion of a roadway unless proper warning to approaching traffic is provided. • Cut through empty parking stalls. • Pull through parking stalls. • Cross over yellow crane safety distance lines. • Drive under or park under overhead cranes. • Enter a protected work area. • Pass any vehicle on the right side of the roadway.

Rule Updated Date

July 2, 2013

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83.3: Working on or Around Equipment

83.3 Working on or Around Equipment

Rule Updated Date

July 2, 2013

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83.3.1: Precautions Near Equipment

83.3.1	**Precautions Near Equipment** All personnel on the ground must remain alert and attentive to equipment movement and expect movement at any time. Employees on the ground must maintain a safe distance from tractors, trailers, or any other equipment standing or moving.

Rule Updated Date

May 2, 2016

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83.3.2: Overhead Lifting

83.3.2	**Overhead Lifting** At points where side loaders or cranes are used, do not walk between the trailer or container and the flat car during any step of the loading or unloading cycle. Exception: It is permissible to raise or lower landing gear after all other movement has stopped and a job briefing has been performed with the crane or packer operator.

Rule Updated Date

July 2, 2013

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83.3.3: Working Around Lift Equipment - Groundmen

83.3.3	**Working Around Lift Equipment - Groundmen** All personnel must stay clear of crane or packer lifting arms at all times.

	When groundmen are utilized, they must remain in contact with the crane or packer operator at all times during the loading and unloading process. If the operator loses contact with the groundman, all movement must be stopped until contact is restored and the operator knows the groundman's location. When working with cranes or packers, the groundmen and all personnel in the vicinity must: • Be positioned where they cannot be caught between the load being handled and an obstruction. • Stay clear of suspended loads. • Not be under the crane boom or similar machine when it is lifting or suspending a container, trailer or chassis. • Not stand near or in line with a cable, rope or chain under tension or one that might be tightened at any moment. • Not operate equipment under crane area unless authorized to do so by crane operator.

Rule Updated Date

June 1, 2017

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83.3.4: Staying Clear of a Suspended Load

83.3.4	**Staying Clear of a Suspended Load** Working, standing or walking under a suspended load is prohibited. Keep hands and feet clear of a suspended load.

Rule Updated Date

July 2, 2013

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83.3.5: Getting On and Off Intermodal Cars

83.3.5 *Ref. Rule 81.4.1*	**Getting On and Off Intermodal Cars** Employees are permitted to get on and off standing intermodal cars by stepping on truck bolsters provided: • Track is known to be protected by blue and/or red flags.

	• Truck bolster is seen to be free of debris and moisture. • Hands are free while getting on or off cars. • Employee is facing equipment when getting on or off. • Three-point contact is maintained.

Rule Updated Date

May 2, 2016

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83.3.6: Top Chords-Double Stack Cars

83.3.6	**Top Chords-Double Stack Cars** Only use the walkways provided. Do not walk on top chords of double stack cars.

Rule Updated Date

July 2, 2013

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83.3.7: Standing on Platform

83.3.7	**Standing on Platform** Do not stand on a platform or well of a car while that same platform or well is being loaded or unloaded.

Rule Updated Date

July 2, 2013

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83.3.8: Crossing Platforms

83.3.8	**Crossing Platforms** Cross from platform to platform using the walkways provided. Do not cross from car to car over the drawbars.

Rule Updated Date

July 2, 2013

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83.4: Loading Trailer/Container on Flat Car

83.4 Loading Trailer/Container on Flat Car

Rule Updated Date

July 2, 2013

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83.4.1: Trailer/Container Doors

83.4.1	**Trailer/Container Doors** Close and secure trailer and container doors before moving or loading.

Rule Updated Date

July 2, 2013

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83.4.2: King Pin

83.4.2	**King Pin** On a railcar: While a trailer is being loaded, loading employees must visually inspect the trailer king pin to ensure that: • It is properly seated and secured in the hitch. • The diagonal strut is locked in the upright position, as evidenced by the hitch-lock indicators. On Tractor or Hostler Vehicle: Before moving, employees must be certain that the chassis or trailer king pin is properly seated and secured in the fifth wheel. A "tug test" must be performed before departing the pickup location to ensure proper seating of the king pin in the fifth wheel. The "tug test" must follow this procedure: • After attaching the king pin of the trailer or chassis to the fifth wheel, and before attaching air lines, raise the fifth wheel only enough to allow ground clearance of dolly legs. • With the chassis brakes locked, place the truck or hostler in drive and pull forward only enough distance to ensure the fifth wheel jaws are locked to the king pin. • Place the vehicle in reverse to make sure the king pin has engaged the fifth wheel. (This is to ensure that the king pin is not seated behind the fifth wheel plate and allows the jaws to fully engage). • Place vehicle in drive a second time and pull forward to make sure the fifth wheel jaws are locked. • If properly locked and seated, secure vehicle and attach air lines.

Rule Updated Date

October 12, 2016

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83.4.3: Loading Container on Flat Car - COFC

83.4.3	**Loading Container on Flat Car - COFC** **A. Loading Container With Detachable Chassis** When containers with chassis are loaded on flat cars, make sure the pins securing the chassis to the container body are in place and locked. Before loading a container/chassis assembly, ensure all chassis locks are in place and secure. **B. Loading Container Without Detachable Chassis**

	When containers without chassis are loaded on flat cars, inspect the containers and make sure all corners are secured and locked in the corner castings.

Rule Updated Date

July 2, 2013

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83.4.4: Electrical Wrenches

83.4.4 *Ref. Rule(s) 78.2*	**Electrical Wrenches** Employees must ground electric screw wrenches properly. Extension cords must be no longer than 89 feet. Wear rubber gloves when operating electrical wrenches in wet conditions.

Rule Updated Date

July 2, 2013

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83.4.5: Hitches

83.4.5	**Hitches** Employees must stay clear of the diagonal strut of "pull-up" hitches to avoid injury in case the hitch is knocked down inadvertently. Do not manually open hitch jaws until ensuring the diagonal-strut indicator shows "locked." To lower a knockdown hitch properly, complete these steps, making sure to stand clear of the stanchion: 1. Stand on either side of the stanchion with your legs positioned to give solid support. 2. Using a sledge hammer, strike the unlocking knockdown lever located between the upper diagonal struts. 3. Make sure this action causes the knockdown lever to retract the diagonal locking plunger, causing the stanchion to fall.

	If this procedure fails, "bad order" the hitch until a railroad maintenance employee repairs the hitch and returns it to service. Do not: • Use a pry bar to force the hitch down. • Place a bar between the locking plunger and the locking plate to try to retract the locking plunger. Anytime a locking mechanism does not work freely and requires excessive force, "bad order" the hitch and have it repaired before using the mechanism again.

Rule Updated Date

July 2, 2013

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83.5: Container on Double Stack Car

83.5 Container on Double Stack Car

Rule Updated Date

July 2, 2013

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83.5.1: Loading Container

83.5.1	**Loading Container** When loading double stack cars, make sure the container Interbox Connectors (IBCs) are locked in the proper position.

Rule Updated Date

July 2, 2013

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83.5.2: Side Spacers

83.5.2	**Side Spacers** On doublestack car platforms equipped with side spacers, the side spacers must be in the down position before loading 96 inch wide containers, and in the up position before loading 102 inch wide containers.

Rule Updated Date

July 2, 2013

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83.5.3: IBC Storage

83.5.3	**IBC Storage** IBCs must be stored in the box provided on each platform of a double stack car. IBCs must not be left on walkways or stored in other than the IBC box.

Rule Updated Date

July 2, 2013

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83.5.4: Securing Containers

83.5.4	**Securing Containers** Double stacked containers must be loaded using four (4) AAR approved IBCs. All four (4) IBCs must be locked in the corner casting of the stacking post for the container to be secure. All containers that are positioned in a double stack car (bottom well loading only) shall have IBCs removed from the top of container before car is released for movement.

Rule Updated Date

July 2, 2013

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83.6: Stacking Chassis

83.6	**Stacking Chassis** To secure the arms in the chassis stacks, complete these steps: 1. Center the mast over the chassis stack. 2. Lower the arms until the foot pads are below the bottom chassis. 3. Make sure the arms are lined between the tandems at each end. 4. Obtain four chains that are 12 feet long and made of 1/2 inch alloy steel. Ensure the chains have a certified working rating of 11, which is 200 pounds or more. 5. Wrap one end of the chain completely around the arm just above the foot pad and hook the chain in place. 6. Take the other end of the chain and wrap it around the bottom chassis frame, pull the slack out of the chain, and hook the chain in place. 7. Repeat steps 5 and 6 on the other three arms.

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GLOSSARY: Glossary

GLOSSARY: Glossary

Glossary

Authorized
The supervisor of an authorized employee has assured that the person under their direction has been qualified and is competent to perform their required work in a safe manner. Authorization in any other manner requires approval from another qualified person.

Body Mechanics
Movement and positioning of the human body. A person who uses good body mechanics properly positions their body or parts of their body in relationship to tasks being performed, stabilizes movement, maintains good footing and grip, and avoids placing undue stress or strain on muscles, ligaments, and joints.

Energized
Connected to an energy source.

Facing Point Movement
Facing point movement is moving into the switch points or making movement from the switch points into the body of the switch.

Fouling a Track
Placement of an individual or a piece of equipment in such proximity to a track that the individual or equipment could be struck by a moving train or on-track equipment, or in any case is within 4 feet of the field side of the near running rail.

Fumes
Minute solid particles arising from the heating of a solid.

Gases
A state of matter which diffuses with other gases, uniformly distributes itself when in a container and changes state as a result of changes in pressure and/or temperature.

Groundman
The person assigned to assist an operator in assuring a safe operation. This is the designated person to give signals.

Licensed
Person has completed appropriate training and passed required examinations.

Off-Road and Yard Vehicles
Off-road and yard vehicles may or may not be licensed, and are primarily used in and around yards to perform railroad service.

Operator
The person at the controls of a tool, machine or piece of equipment.

Periodic Inspection
Inspection conducted as required based on usage of equipment, severity of service conditions, experience gained as to need, but at least annually.

Qualified
Person has been trained and instructed to perform the work in a competent and safe manner.

Three Point Contact
When ascending, descending, crossing through or riding equipment, the use of two feet and one hand or two hands and one foot to maintain contact with the equipment.

Red Zone
Anytime an employee is working within an area where there is the potential to be struck by moving equipment, when required to work on under or between equipment, when working with or around machinery or when entering control operator/train dispatcher work stations.

Toxic
A substance that can potentially cause harm to the body.

Trailing Point Movement
Movement is traveling in a direction from the switch frog towards the switch points.

Vapors
The gaseous form of substances which are normally in a solid or liquid state.

Work Activities (working on the ground)
TE & Y employees performing duties such as walking between adjacent parallel tracks, switching, inspecting, testing, repairing, or servicing equipment or components etc. Activities such as walking to and from a crew van, yard office, or train (which would include getting on and off a locomotive), are not considered work activities.

Rule Updated Date

June 1, 2017

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