Mechanical Safety Rules

March 25, 2019
MECHANICAL SAFETY RULES

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STATEMENT OF SAFETY POLICY

OUR COMMITMENT

Knowledge vigilance and caring are the foundation to any successful safety process. An older and wiser mentor of mine said to me many years ago;

"People don't care how much you know until they know how much you care."

At Central Maine and Québec Railway, one of our highest priorities will be to create an environment that is conducive to continuous learning and continuous improvement. It will also incorporate safety, not as a slogan or phrase on a calendar, but as essential to how we conduct our business.

Safety will be a condition of employment for all of us.

High standards and relentless follow-up are two of the key pillars of a successful safety process. Central Maine & Québec Railway will foster an environment with the highest of standards in the area of safety as well as classic railway operations.

Central Maine & Québec Railway will strive to demonstrate these high standards to our employees, customers, and the public.

Central Maine & Québec Railway emphatically believes that each injury and human factor incident can be avoided. The leadership team at Central Maine & Québec Railway will provide each member of its team with the training, tools and time necessary to complete each task safely. Our highest expectation of our entire team that we WILL complete each task safely.

Our success depends entirely on our team - as a team. The team will only attain our goals if each individual attains their goal. We are committed to creating and maintaining an environment that allows us to obtain our goals.

Please join me in this commitment.

Ryan Ratledge
President & Chief Executive Officer
JOB BRIEFING RECOMMENDED WORK GUIDELINES

Before beginning any task, be sure that a complete job briefing is conducted with all individuals involved in the task. The principles of the job briefing are as follows:

**What?**
A communication tool used by professionals to ensure that every team member knows what is to be done, how it is to be done safely, and is alert and focused on the job.

**Who?**
All members of the work group, including outside parties or contractors, are to be included and are responsible to participate in the briefing.

**Why?**
To ensure that the job is done right the first time: no injuries, no damage, and meeting CMQ’s standards.

**When?**
At the beginning of the job or at any time during the job as conditions change or new tasks are started.

**Where?**
Hold Job Briefings at or near the work site, in a safe location where the entire work group is together.

**How?**

*Plan the job:* Define the work to be done. How will it be done? What are the potential hazards? How will work assignments be made? What tools, equipment, and materials will be used?

*Talk it through:* Use “how” and “why” questions to communicate specifically who does what, when, where, why, how. What special precautions need to be taken? What if a hazard emerges?

*Ask questions:* All members of the work group are responsible to ask questions if they are unclear about work activities or have any safety concerns.

*Make room for special conditions:* If the job is complex enough, brief it in portions. What portions work best? What changes in job conditions require a re-briefing?

*Do it again:* If the job changes or a new task is begun, take time to make the right plan and talk it over. Whenever in doubt we are responsible to stop and conduct a job briefing.

*Follow-up:* We are responsible to follow the briefing plans and make sure others in our work group follow the plans.
Why Bother?
The individual who is typically alert and focused, but who is thinking of others things today, might be the same person to whom you are trusting your life.

Finding Information

This book is organized into three sections:

Section I: Core Safety Rules
These are rules that are common to all crafts. The Core Safety Rules are organized into Rights and Responsibilities; Personal Protective Equipment and Clothing, Work Environment; Working On or About Tracks; and Vehicles, Equipment, and Tools.

Section II: Craft-Specific Rules, Recommended Work Guidelines, and PPE Charts
This section establishes rules for craft-specific work activities and also provides Recommended Work Guidelines—craft-specific practices that professional railroaders have found to be safe and efficient for years. Rules must be complied with at all times. Recommended Work Guidelines should be followed unless another method is known to be as safe or safer. These practices give us freedom to decide which is the safest way for us to work. The Personal Protective Equipment charts outline requirements for the use of specific protective equipment.

Section III: Appendix
The appendix includes a glossary of terms used in CMQ Safety Rules.

Feedback on CMQ Safety Rules and Recommended Work Guidelines
CMQ welcomes feedback and suggestions on improving any safety rule. Contact any railway manager with your suggested changes.
SECTION I: CORE SAFETY RULES

RIGHTS AND RESPONSIBILITIES

1. We have the right and the responsibility to make decisions based on experience, personal judgment, and training. We must make certain that:
   a. A copy of the CMQ Safety Rules and Recommended Work Guidelines is accessible to us while on duty.
   b. Sufficient time is allowed to perform all work safely.
   c. Job briefings are conducted prior to work and when activity changes.
   d. Co-workers are warned of known hazards.
   e. Warning signs, posted instructions, placards, or barriers marking restricted areas are displayed and complied with at all times.
   f. Our work place is drug and alcohol free.
   g. The behavior in our work place is civil and courteous.
   h. Oral and written reports of accidents and injuries are made to the supervisor or employee in charge immediately.
   i. One person does not engage in work activity that can only be done safely by two or more people.
   j. Anyone performing an unsafe act is redirected to safe work practices.

2. Only personnel with the proper authority and training will perform job tasks.

3. We must comply with all CMQ rules and policies and with local, state/provincial, and federal laws and regulations that relate to your job task(s).

CLOTHING AND PERSONAL PROTECTIVE EQUIPMENT

4. Wear approved personal protective equipment and clothing as required for your job and/or work environment.

5. Confirm that personal protective equipment is in good working condition before use. Remove from service if defective.

6. Use the approved personal protective equipment for the purpose(s) intended. Unauthorized modifications are prohibited.
WORK ENVIRONMENT

7. Keep work area and environment clean, orderly, and free from clutter, debris, and controllable hazards.

8. Handle, store, and dispose of contaminants, hazardous chemicals, and waste according to all applicable environmental regulations and CMQ policies.

WORKING ON OR ABOUT TRACKS

9. Expect the movement of trains, engines, cars, or other equipment at any time, on any track, and in any direction.

10. Do not foul or stand on the track in front of an approaching engine, car, or other moving equipment.

11. Look in both directions prior to:
   - Fouling or crossing tracks
   - Moving from under or between equipment
   - Getting on or off equipment
   - Operating a switch

VEHICLES, EQUIPMENT, AND TOOLS

12. Obey all traffic laws and regulations when operating vehicles on company business.

13. Before riding in or operating a motor vehicle, confirm that the vehicle is safe to operate. Secure tools, equipment, and materials in designated areas. Report defects. If unsafe to operate, remove from service.

14. Wear seat belt while operating or riding in motor vehicles operated off the rail. Exception: Seat belts are not required while traveling within a yard at speeds of 10 MPH or less.

15. While being transported in motor vehicles, only ride in seats permanently installed and approved by the manufacturer.

16. Before backing, confirm area to the rear is clear to ensure that no persons or obstructions are in the path of movement.

17. While operating company vehicles do not:
   - Leave motor running while unattended
   - Ride with the doors open or leave doors open while stopped
   - Open doors while vehicle is in motion
• Leave keys in unattended vehicles

18. Face the equipment and use three-point contact when getting on or off equipment, track units or vehicles or when ascending or descending ladders.

19. Use the approved tool(s) for the purpose(s) intended. Unauthorized modifications are prohibited.

20. Inspect all tools, equipment, and related safety devices for unsafe conditions before use. Remove from service if defective.

21. Use safety equipment associated with all tools and equipment.

OPENING DOORS OR WINDOWS

22. When opening doors or windows:
   • Do not use brute force
   • Avoid placing any part of your hand or body where it can be pinched
   • Use door handles or other opening/closing devices whenever provided

SMOKING

23. Smoking is prohibited in all enclosed properties. Outdoor smoking should be confined to designated smoking areas and where it will not interfere with non-smokers.

   • Smoking means lighting, burning, inhaling or exhaling any substance, tobacco or vapor product including electronic cigarettes, pipes or cigars which emits either vapor or smoke.
   • Enclosed properties means all owned or leased office space or buildings, shops, automobiles, rail or work equipment vehicles, locomotives, and all other railroad rolling stock. All the federal, state, provincial and local smoking laws / prohibitions must also be complied with.
SECTION II: RULES, RECOMMENDED WORK GUIDELINES, 
AND PPE CHARTS

M-1 COMPRESSED AIR

a. Use air nozzle that meets regulatory requirements (less than 30 PSI with effective chip guarding).
b. Inspect hose before charging with pressure.
c. Direct airflow away from clothing, body, or closed containers.

Recommended Work Guidelines

Ensure that each hose has an easily accessible, separate supply valve.
Use vacuum rather than compressed air for cleaning when possible.

M-2 COMPRESSED GAS

a. Keep sparks, flames, and other ignition sources away from where compressed gas cylinders are stored.
b. Keep all gas cylinders upright and secured against movement when being used, stored, or transported.
c. Store oxygen and fuel gas cylinders in an area that meets regulatory requirements, or separate them by at least 20 feet.
d. Remove gauges and apply protective caps per regulatory requirements when transporting compressed gas cylinders on the highway.
   • Exception – gages and valves may be left in place in lockers of vehicles designed specifically for cylinder storage.
e. Close cylinder valve when not in use.
f. Do not use oxygen as a substitute for compressed air or as a source of pressure.
g. Keep grease and oil away from oxygen or equipment through which oxygen passes.
h. Do not throw, drop, bump, or drag loaded or empty gas cylinders.
i. Use soapy water with a nonfat base when testing for leaks. Do not use an open flame.
j. Remove a leaking compressed gas cylinder to a safe area, close the valve, tag the cylinder, and return to distributor.
k. Leave vehicle cylinder storage locker doors open when compressed gas is in use, unless the locker is bottom vented.

Recommended Work Guidelines

Use approved mechanical devices to handle compressed gas cylinders. Do not lift by protective cap.
Use spark-free wrenches when loosening or tightening connections.
Do not place a hose in use over any part of your body.
M-3 CONFINED SPACE ENTRY

a. Only trained and qualified individuals may enter a confined space or participate in a confined space entry task.
b. Consider all confined spaces hazardous. Possess a permit before entering a permit-required confined space.

M-4 COUPLING/UNCOUPLING RAIL EQUIPMENT

See also Transportation Safety Procedures

a. Only use your hand to operate uncoupling lever
b. Do not adjust the coupler or knuckle of an approaching engine or car.
c. When connecting air hoses, keep one foot outside the rail.
d. Keep feet clear of area under coupler.

M-5 CRANES, HOISTS AND RIGGING

a. Only authorized and trained individuals may operate cranes, derricks, and other power-driven equipment.
b. Crane operators must read and understand machine load chart and operator's manual.
c. Use chains, slings, and hardware that are certified, tagged, and meet regulatory requirements whenever possible.
d. Do not operate crane if anti-two block system is not operable.
e. If you lose visual contact with person giving signal, stop all movement.
f. The equipment operator must take signals from only one designated person when moving hoisting equipment or load.
g. Keep equipment and boom away from all obstructions and power lines.
h. Secure load to be lifted before lifting.
i. Wait to be signaled before moving a load.
j. When signaling crane operator, position yourself so that your signal can be clearly seen. Protect yourself from hook, block, boom, and load being lifted.
k. Ground-person must immediately signal operator to stop if wheels or tracks begin to rise as lift is made.
l. Do not walk, work, or place any body part under suspended load.
m. Stay at controls when load is suspended.
n. Do not overload the crane. When determining load weight, confirm the following:
   • Weight of the load.
   • Weight of bucket, blocks, and rigging.
   • Position of the crane.
   • Condition of the track or ground where crane is to be set.
   • Wind and changing weather conditions.
o. When swinging a load, do not lift any higher than necessary to clear obstacle in path.
p. Confirm load is resting securely before removing sling or lifting mechanism.
q. Properly secure equipment when leaving it.
**Recommended Work Guidelines**

Use tag line to control movement of load lifted over four feet.

Check annual overhead crane inspection dates prior to use.

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**M-6 CROSSING THROUGH RAIL EQUIPMENT**

*See also Transportation Safety Rules*

a. Do not cross through moving equipment.
b. Do not cross under couplers or underneath cars unless duties require and protection against movement has been provided.
c. Do not step on the coupler or uncoupling lever.
d. Do not place hands, feet, or other parts of the body on the sliding sill or between the coupler horn and end sill of the car.

**Recommended Work Guidelines**

When crossing through a standing train or cut of cars, only cross through or over:

- Cars equipped with crossover platforms and hand holds.
- Empty intermodal cars or the empty stanchion ends of intermodal cars.

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**M-7 ELECTRICAL SAFETY**

*See also CMQ Electrical Safety Program and Derby Shops electrical cut out procedures*

a. Do not attempt electrical work unless qualified and trained.
b. Report to the proper authority broken or sagging communication and signal wires, power lines, and guy wires. Do not touch broken or sagging wires, and protect others from them.
c. Always treat wires and circuits as if they were energized.
d. Keep all electrical cabinet doors closed and latched, except when work is being performed.
e. Follow lock-out tag out procedures as required by M-24.

**Recommended Work Guidelines**

Use only nonmetallic-cased flashlights around electrical equipment.

Do not wear metal bracelets, watches or the like when working with energized electrical equipment.

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**M-8 ELEVATED PLATFORMS AERIAL BASKETS OR SCISSOR LIFTS**

a. Check overhead area and pathway for obstructions.
b. Wear an approved safety harness and lanyard attached to the boom or basket when working from an aerial device. EXCEPTION: Scissor lift.
c. Do not belt off to an adjacent pole, structure, or other equipment.
d. Maintain a minimum of ten feet from high voltage power sources.

e. Stand only on floor of basket.

f. Do not climb in or out of elevated lift. EXCEPTION: Scissor lift.

g. Do not move an aerial lift device unless equipment is designed to be moved.

h. Use only booms, platforms, or equipment designed primarily as personnel carriers and that have both upper and lower platform controls, with the lower controls overriding the upper controls. EXCEPTION: Scissor lift.

i. Do not rest elevated platform or scissors on or against any structures.

j. Protect area below the platform or scissors lift with cones, barrier tape, or equivalent.

**Recommended Work Guidelines**

Keep people ten feet away from elevated lift.

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**M-9 ENVIRONMENTAL SAFETY**

**SEE ALSO CMQ’s INSTRUCTIONS FOR HANDLING HAZARDOUS MATERIALS**

a. Do not clean any part of your body with gasoline, solvents, or oily or dirty rags. Use only hand creams and soaps designed for cleaning hands, arms, face, and other parts of the body.

b. Identify and label all chemical containers.

**Recommended Work Guidelines**

In the event of a chemical spill, avoid contact with materials and stay upwind of the site until the materials are identified and safe handling procedures are determined.

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**M-10 FALL PROTECTION**

**SEE ALSO M-37 WHEN WORKING ON TOP OF LOCOMOTIVES AND CARS**

a. Only trained and qualified individuals may use fall protection equipment.

b. Wear fall protection when working 12 feet or more above the ground, water, or next safe level.

c. Use a fall protection system at any height above hazardous conditions if exposed to falling into water with a strong current, hazardous substance(s), from a height greater than 5 feet, or other potentially hazardous conditions.

d. Review post-fall rescue procedures prior to each job that requires the use of fall protection equipment.

e. Use only fall-arrest systems that have an anchor point capable of withstanding a force of 5,000 pounds without failure. EXCEPTION: Horizontal lifelines that must be designed by a registered professional engineer.

f. Use fall protection if duties require you to work on or inspect a bridge under the following conditions:
   - No handrails in moderate rain and/or wind conditions.
   - No handrails when duties require you to step outside the rail.
• If ties are being replaced, are damaged, or are missing.
• If a space exists, anywhere on the horizontal surface of the bridge, that you could fall through (approximately 18 inches or greater).
• Inspect full body harness, belts, and attachments prior to each use and periodically as mandated by manufacturer.
• Use an approved life vest during work over or adjacent to water having a depth of 4 feet or greater, unless employee is using a fall arrest system or safety nets that prevent water entry.

M -11 FIRE SAFETY

a. Maintain unrestricted access to fire extinguishers, alarm boxes, exit aisles, and emergency exits.
b. Do not use gasoline or other flammable liquids to start or intensify a fire.
c. Store flammable and combustible material away from ignition sources.
d. Store flammable liquids only in approved containers.
e. Use proper grounding and bonding techniques to prevent static electricity charge when dispensing or transferring flammable liquids.
f. We may choose to fight a fire to protect life and company property, but only in those situations where we believe it is safe to do so.

Recommended Work Guidelines

Be familiar with the location and use of fire extinguishers, fire alarm boxes, fire exits, and evacuation plans in your work environment.

M -12 FORKLIFTS

a. Only trained and qualified persons are permitted to operate a powered industrial truck (lift truck or forklift)
b. When operating a forklift:
   • Warn others when working near the stacking operations.
   • Reduce speed and sound a warning when rounding corners or passing doorways or congested areas.
   • Do not exceed posted or recognized speed limit.
   • Watch for overhead and side obstructions and high voltage wires on or near the right-of-way.
   • Confirm the way is clear before moving in any direction.
   • Bring it to a complete stop before changing direction.
   • Look in both directions before crossing tracks.
c. Back a loaded forklift down ramps or inclines.
d. Keep the forks 18 inches or less from the floor or ground when moving an unloaded forklift.
e. Always set the handbrake and lower the forks to the floor when parking a forklift.
f. Do not work or walk under a suspended load.
g. Remove key when not in use.
**Recommended Work Guidelines**

- Keep the height of the load as low as possible.
- Ensure load is not loose or unstable before lifting.
- Do not park a forklift on a ramp or incline.
- Cross tracks diagonally.
- Be prepared to stop short of objects or people.

**M -13 FOULING TRACKS**

1. Do not cross within 25 feet of the end of standing equipment, unless appropriate protection has been provided.
2. Do not enter or cross between uncoupled equipment that is separated by less than 50 feet, approximately one car length.
3. Unless duties require, do not sit or step on:
   - Rail, frogs, switches, switch machines or connecting rods
   - Derails
   - Retarders
   - Any part of a defect detector
4. Do not walk between the rails of, or foul the track except when duties require.
5. Do not position yourself between any structure and standing or moving equipment without sufficient clearance to avoid injury.
6. Do not occupy the top of railcars unless duties require.
7. Do not sit or lie underneath standing equipment unless duties require and proper protection has been provided.
8. Do not stand or sit on engine or caboose handrails.
9. Do not sit on steps of engines or cabooses.

**M -14 FUSEES**

1. Store fusees in approved metal containers in motor vehicles and other designated equipment.
2. Keep fusees away from high temperatures, open flames and locations where they may become wet.
3. Strike fusees away from the body when lighting.
4. Do not use fusees that have been soaked in liquid (such as water or oil) or are otherwise damaged. Dispose of them appropriately.
5. Do not place a fusee where the fire may spread to platforms, bridges, buildings, or combustible materials.
M -15 GETTING ON AND OFF EQUIPMENT

See also Transportation Safety Rules

Maintain 3-point contact, face the equipment and use side ladders, sill steps, and grab irons provided when getting on or off equipment.

a. Do not board cars or engines that bear “bad order” cards without first knowing the nature of the defect so the defect can be avoided.

b. Do not get on or off moving cars or engines except in cases of emergency.

c. When getting on or off moving equipment in an emergency:
   - Look where you are going to place your feet to avoid hazards.
   - Face the equipment.
   - Get on or off with your trailing foot in the direction of movement.

d. Do not get on or off equipment under the following conditions:
   - When carrying any items that would prevent a secure handhold or proper balance.
   - In areas of bad footing or close clearances.

e. When riding any type of car and before coupling to equipment, employees must stop the movement and dismount prior to making coupling

Recommended Work Guideline

Use smooth motions and do not overexert yourself as you climb.

M-16 2-STEP PROTECTION

1. Two Step Protection is required when entering the RED ZONE on equipment coupled to an operator controlled locomotive:

   The RED ZONE is defined as:
   - Breaking the side plane of a car with one foot
   - Occupying the space within 25 feet of the end of a railcar

   For the purposes of:
   - Coupling air connections
   - Opening or closing angle cocks
   - Applying or releasing handbrakes
   - Inspecting or repairing equipment
   - Installing or removing markers
   - Adjusting mismatched couplers
   - Opening knuckles
a. When necessary to enter the RED ZONE an employee must request 2 Step Protection from the engineer by stating “Stepping in”.
   - The engineer MUST provide Two-Step Protection as follows:
     1. Fully apply the independent brake and, if necessary, apply the automatic brake.
     2. Center the reverser.
     3. Confirm with the employee that steps 1 and 2 have been completed by responding “Set and centered”.

NOTE: If request for 2-Step Protection is given by radio, respond by radio.
If request for 2-Step Protection zone is given by hand signal, respond with hand signal or one short blast of whistle. Hand signals for 2-step protection will be determined by a Job Briefing prior to beginning switching operations.
   - After the engineer confirms that 2-Step Protection is applied the employee may enter the RED ZONE.
   - The engineer must not leave the locomotive unattended while 2-Step Protection is being provided.

b. Watch for slack adjustment if hand brakes are being released.

c. Do not go between uncoupled locomotives or cars when clearance between them is less than 50 feet, approximately one car length.

d. Utility Employees not attached to a crew must establish Blue Signal Protection when it is necessary to go on, under or between standing equipment.

2. Releasing 2-Step Protection:
   - The engineer must not move or change the controls of the locomotive until 2-Step Protection has been canceled and the employee(s) has reported clear of the Red Zone.
   - The Employee requesting 2-Step Protection will be responsible for maintaining that protection until all employees are in the clear.
   - Release 2 Step Protection when clear of the Red Zone
   - The engineer must acknowledge release of 2-Step Protection

NOTE: For purposes of this rule, the “engineer” is defined as the employee operating the controls of the locomotive.

Action 1 - Conductor radios to engineer “Stepping IN”
Action 2 – Engineer centers reverser and applies air brakes
Action 3 – Engineer radios to conductor “Set and centered”
Action 4 – The conductor may enter the RED ZONE to perform duties

**M -17 HAND BRAKES**

**SEE ALSO TSP-32**

a. Do not operate hand brakes on moving cars, except in an emergency or if making gravity switch moves.
b. Do not use your feet to operate the hand brake, except to manipulate the pawl on horizontal wheel (staff) brakes.
c. Do not apply or release a hand brake located at the end of a car while standing on the ground unless it is specifically designed at the edge of the end of the car for ground operation. When releasing this type of brake keep your body clear of the car and expect sudden movement.

M-18 INTERIOR/EXTERIOR CAR DOORS

a. Visually inspect door and supporting hardware before opening or closing doors.
b. Do not remove or replace doors while car is on jack stands.
c. Secure doors prior to making adjustments or repairs.

Recommended Work Guidelines

Be aware of operating mechanism and handles under tension. Mechanism or handle could move unexpectedly.

Use a bar to inch door along track when opening or closing a door.

Pull doors open or closed in order to keep clear of door should it fall.

M-19 JACKING CARS, LOCOMOTIVES AND WORK EQUIPMENT

a. Verify that jacks being used are stenciled with rated capacity.
b. Confirm jacks are adequate for weight to be lifted.
c. Chock wheels securely on end opposite of end to be jacked. EXCEPTION: Electric locomotive or floor jacks must be chocked on jacking end.
d. Use cushioning material between jack and equipment to prevent slipping. Do not allow metal-to-metal contact. Do not go under jacked equipment until jack stands, center sill stands, or blocking between truck side and car body is in place.
e. Use tongs or center pin remover when removing or replacing center pin under cars.

Recommended Work Guidelines

When using center stand other than at end of car, keep center as close to body bolster as possible.

M-20 LADDERS, SCAFFOLDS AND PLATFORMS

a. Use only approved ladders or scaffolds. Use non-conductive type ladders and scaffolds near communication, signal, and electrical wires.
b. Secure all ladders, scaffolds, and platforms.
c. Set ladder on a stable surface and at a safe angle of one foot away from wall for every four feet of ladder height.
d. Climb no higher than the third rung from the top of a straight ladder or the second step from the top of a stepladder.

e. Never climb a ladder on which someone else is standing.

f. Face the ladder at all times when climbing and descending.

g. Protect ladders from moving equipment and door swings.

h. Use only a fully open stepladder with spreaders properly set.

i. Use stepladder for purposes intended, not as a straight or extension ladder.

j. Use hand line when climbing or descending ladder with tools or materials. Do not carry items in your hand.

**Recommended Work Guidelines**

Use a hand line or a lifting device to move tools or materials to a level different from the one on which you are currently working.

Use caution not to overextend your reach.

Extend ladder at least three feet beyond top plane.

Use fall protection systems on fixed ladders when provided.

Position tools or materials on a scaffold or platform where they will not fall or be knocked off.

Take precautions to prevent the tools or equipment from falling when people must walk underneath overhead work.

**M -21 BODY MECHANICS AND LIFTING**

**Lifting and Carrying**

a. Use the following principles of safe lifting:
   - Ensure good 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.
   - Lift with legs, not back.
   - Do not lift and twist at the same time.
   - If load slips from your grip, let it fall.

b. Obtain assistance or lighten the load if it is too heavy to lift safely by you.

c. Before lifting, carrying, or lowering objects with two or more people, confirm everyone knows movements to be made and coordinates the work.

**Recommended Work Guidelines**

Use good lifting practices and body mechanics when lifting.

Use lifting and carrying equipment to lift and move heavy loads.

Avoid tripping and slipping hazards while lifting or carrying.
Estimate weight of any object you plan to lift by test-tilting the object. If you are unaccustomed to lifting, use extra caution and get help, or do not lift. Use only moderate force and do not overexert when lifting, pushing, or pulling. Stretch frequently and take short rest pauses to avoid excessive fatigue. Schedule tasks to provide breaks from continuous work.

Office Ergonomics

Recommended Work Guidelines
Adjust the chair height so your elbows are at about desktop level and your knees are at least as high as your hips.
Adjust seat back for good support of the lower back, using a lumbar support if needed.
If your seat has a tilt feature, set this so you are comfortably supported.
If your feet don’t comfortably reach the floor or there is excessive pressure on the backs of your legs, use a footrest or lower the keyboard.
Locate your monitor so the top of the viewing area is at or below eye level.
With elbows at desk level, your wrists should be straight. Use a wrist rest if desired. If you have armrests, try to adjust them so they support your arms without being too high or low.
Locate the mouse next to the keyboard so both elbows are by your sides while working. Use your mouse pad or another soft surface to pad edge of desk. Avoid pressing hands or arms against sharp edges.

Adjust screen brightness and contrast for clear, comfortable viewing. Clean the screen frequently.

Stretches

Recommended Work Guidelines
Perform stretches:
• At beginning of tour of duty.
• Prior to performing strenuous activity.
• After a period of inactivity.
Do not “bounce.” Stretch slowly and only to the point of mild tension.
Follow the guidelines on the following diagram:
Recommended Stretches:

- **Back Extension**: Repeat 3 times, 5 seconds each.
- **Neck Forward**: Do once for 15 seconds.
- **Neck Left & Right**: Do once for 15 seconds each side.
- **Elbow Pullover**: Repeat 3 times, 5 seconds each side.
- **Shoulder Over**: Do once for 15 seconds each side.
- **Shoulder Across**: Do once for 15 seconds each arm.
- **Shoulder Back**: Do once for 15 seconds, both arms.
- **Bridge Stretch**: Do once for 15 seconds.
- **Forearm & Wrist**: Do once for 15 seconds each way, both arms.
- **Hamstring Stretch**: Do once for 15 seconds both legs.
- **Quad & Flexor Stretch**: Do once for 15 seconds each leg.
- **Calf Stretch**: Do once for 15 seconds each leg.
M -22 LIQUID PETROLEUM GAS (LPG)

a. Do not smoke when fueling LPG tanks.
b. Turn off valves on tanks of LPG when not in use.
c. Keep units powered by LPG away from extreme heat near ovens, furnaces, or other high temperature sources.
d. Notify the supervisor if a tank containing LPG leaks and stay upwind of the leak.
e. Do not use an open flame near the leak.
f. Refuel LPG tanks outdoors at least 50 feet from buildings and at least 15 feet from storage tanks at the end farthest from the relief valve.
g. Change portable tanks outdoors where possible. Stop the motor when placing LPG tanks on motor vehicles.

M -23 LOADING/UNLOADING RAIL CARS

a. Confirm car is blue flagged or that other appropriate protection is provided.
b. When unloading tank cars, verify all ladders and railings are secure before climbing.
c. Secure car(s) by applying handbrakes and chocks.

M -24 LOCKOUT/TAGOUT

SEE ALSO CMQ LOCKOUT/TAGOUT 1/31/2012

a. Lockout/tagout procedures must be administered by equipment operator, mechanic, or other authorized personnel.
b. Follow location or equipment-specific lockout/tag procedures.
c. Employees responsible for lockout/tagout procedures must be trained.
d. Only the employee who applies a lock and/or tag may remove it unless appropriate lock/tag removal procedures are followed.

M -25 CELL PHONE AND RADIO USE

See General Special Instruction to CROR A xiii

a. Do not use cell phones or radios when doing so would interfere with the safe performance of duties.

Recommended Work Guidelines

When operating a motor vehicle, pull over and park before using cell phone or other electronic device.

Use hands-free cell phone while driving when necessary to use cell phone.
M-26 MOVING LOCOMOTIVES IN OR AROUND DIESEL FACILITIES

a. Do not exceed five mph within shop facility except when testing locomotives as instructed by supervisor.
b. Confirm all personnel and equipment are clear of movement.
c. Remove blue signal protection on locomotive to be repositioned.
d. Stop movement and dismount before passing close clearance and other side or overhead obstruction. Stay ahead of the movement when track cannot be clearly seen due to any obstruction or debris.
e. Release brakes and remove wheel chocks before moving.
f. Give and receive the proper signal before moving.
g. When locomotive is in new position, apply handbrakes and wheel blocks to prevent movement. Reestablish blue signal protection.
h. Ring engine bell:
   • When an engine is about to move.
   • While approaching or moving Into/out of diesel facilities.
   • While moving over road crossings.

Recommended Work Guidelines

Do not exceed two mph over turntables, drop tables, and wheel truing machines.

When practical, at night, when engines are being moved, a standard white headlight must be displayed on the leading end of the engine in the direction of movement. If not practical to display headlight, engine must be protected while movement is being made

Signals

a. Keep signaling devices in working order and ready for use.
b. Position yourself so that your hand signal can be clearly seen.
c. If you lose visual contact with person giving the hand signal, stop all movement.
d. Use the appropriate signal for what you are communicating, and signal clearly.
e. For radio communications, if there is a break in radio contact, regard this as a stop signal.
f. Confirm everyone understands other signals you may use.

M-27 MOVING/SECURING RAIL CARS, LOCOMOTIVES, AND/OR EQUIPMENT

See also Transportation Safety Rules

a. Do not give the signal to move cars or other equipment until all people and equipment are clear of the movement.
b. Use only a sound wooden chock or an approved chocking device when chocking cars.
c. Use alignment device, or get help, if draw bar cannot be adjusted by pushing using moderate force.
d. Do not open the angle cock on the leading end of a moving car or engine to control or stop movement.
e. Before attempting to operate, visually inspect switch or derail to confirm it is not:
   • Damaged.
   • Locked/tagged.
   • Spiked.
   • Fouled by ballast, ice, snow, or other debris.
   Remove from service if defective.

M-28 PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING

Clothing
a. Wear clothing appropriate for your specific duties to perform work safely.
b. Always wear a waist-length shirt with sleeves and ankle-length pants except when in office-type environments.

Eye and Face Protection
SEE ALSO MECHANICAL EYE AND FACE PROTECTION CHART
a. Wear safety glasses with side-shields or goggles when on duty except when in office-type environments, parking lots, business rail cars, or locomotives and vehicles with windows and doors closed.
b. Wear High Visibility Clothing when on duty except when inside mechanical shop buildings, office-type environments, parking lots, business rail cars, or automobiles, locomotives and trucks. Note: Highly reflective vests are not required inside a shop facility.
c. Follow additional requirements as designated in the Mechanical Eye and Face Protection Chart.

Footwear
a. Wear footwear that conforms to the following criteria except while working in office-type environments, parking lots, or business rail cars:
   • Lace-up work boot.
   • Six inches high (minimum).
   • Safety toe.
   • Near 90 degree heel.
   • Leather or leather-like uppers.

Recommended Work Guidelines
Wear slip-retardant footwear or shoe accessories when icy conditions exist.
Do not wear shoe chains or metal-studded footwear when walking on exposed concrete or steel surfaces.

Gloves
SEE ALSO MECHANICAL GENERAL PPE REQUIREMENTS AND WORK GLOVE CHARTS
a. Follow requirements as designated in the Mechanical General PPE Requirements and Work Glove Charts.

Hair and Jewelry
a. Secure hair when working around machines or equipment in which hair could become tangled.
b. Remove loose or dangling jewelry when working in non-office environments.
c. Remove finger rings when working in non-office environments.

Recommended Work Guidelines

Keep hair, clothing, or jewelry from becoming entangled in machines or equipment.

Head Protection
a. Wear a hard hat or bump cap furnished or approved by CMQ except when in automobiles or trucks, enclosed cabs of work equipment or locomotives, office-type environments, or parking lots.
b. Hard hats are required:
   • When engaged in rerailing operations
   • When working with any crane, derrick or truck mounted mechanical lifting device

Hearing Protection
a. Use hearing protection:
   • On locomotives under load or in motion.
   • On or within 100 feet of Locomotives or Roadway machines (other than Hi-Rail vehicles) that are operating above the idle position.
   • Where posted.
   • When you have to raise your voice to clearly communicate with co-worker who is next to you.

Exception: when in office-type environments, parking lots, passenger rail cars, vehicles or locomotives with windows closed.
b. Follow additional requirements as designated in the Mechanical General PPE Requirements chart.

Respirator Selection and Use
a. Employees must be authorized and trained to use respirators.
b. Use only respirators you are qualified to wear through fit testing.
c. Use only respirators and cartridges approved by the Mechanical Department.

M-29 RESERVED
M-30 PERSONAL PROTECTIVE EQUIPMENT CHARTS

The following pages contain four craft-specific PPE charts for Mechanical that outline requirements for protective equipment. The PPE charts are designed to work in conjunction with the rules and recommended work practices under M-28 Personal Protective Equipment and Clothing.

**Mechanical General PPE Requirements:** Requirements for hearing protection, protective hand-wear (refer to Mechanical Work Glove Chart), respiratory protection, disposable overalls, rubberized aprons, and welding apparel (refer to Welding Shade Chart). This main chart also refers to other charts as described below.

**Mechanical Eye and Face Protection Chart:** Additional requirements are outlined beyond safety glasses for specific tasks according to the level of exposure.

**Mechanical Work Glove Chart:** Establishes the requirement for the type of work glove required for specific tasks.

**Welding Shade Chart:** Outlines welding shade requirements for specific welding operations.
## Mechanical General PPE Requirements

<table>
<thead>
<tr>
<th>Activity</th>
<th>Heating Protection</th>
<th>Protective Handwear</th>
<th>Respiratory Protection</th>
<th>Disposable Overalls</th>
<th>Rubberized Apron</th>
<th>Welder’s Sleeves</th>
<th>Welder’s Leathers/Suit</th>
<th>Spats/Leggings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive grinding/cutting (portable)</td>
<td>R</td>
<td>R</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Abrasive grinding/cutting (stationary)</td>
<td>R</td>
<td>R</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banding materials</td>
<td>R</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Batteries: Servicing/Storage</td>
<td>R</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blowing/cleaning with compressed air, steam, water.</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Boring, reaming, or drilling</td>
<td>R</td>
<td>X</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>*</td>
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<tr>
<td>Brakes, presses, shears, and lathes</td>
<td>X</td>
<td>X</td>
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<td></td>
</tr>
<tr>
<td>Breaking frozen material (ice, ground, gravel, cinders, ballast, etc.) with hand tools</td>
<td>*</td>
<td>R</td>
<td></td>
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</tr>
<tr>
<td>Breaking or cutting concrete, stone, or asphalt</td>
<td>R</td>
<td>R</td>
<td>X</td>
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<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Buffing and polishing with a wire wheel</td>
<td>X</td>
<td>R</td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon-arc cutting and gouging</td>
<td>R</td>
<td>R</td>
<td>X</td>
<td>R</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Chain saw</td>
<td>R</td>
<td>R</td>
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<td></td>
<td>R</td>
</tr>
</tbody>
</table>

For Abrasive grinding/cutting (portable), Overhead work requires earflaps, earplugs, hoods, or other protective device to prevent material entering ear canal.

For Abrasive grinding/cutting (stationary), Overhead work requires earflaps, earplugs, hoods, or other protective device to prevent material entering ear canal.

For Buffing and polishing with a wire wheel, Overhead work requires earflaps, earplugs, hoods, or other protective device to prevent material entering ear canal.

For Chain saw, do not wear rubber gloves when operating rotating tool.
# Mechanical General PPE Requirements

**R** = Required equipment  
**X** = May be required based on task and materials.  
* = Recommended additional equipment.

| Chemicals, refrigerants, or fuels – handling | R | X | X | X |  |  | Remarks / Special Requirements | Overhead work requires earflaps, earplugs, hoods, or other protective device to prevent material entering ear canal. |
| Chop Saw | R | X | X | X |  |  |  |  |
| Chipping or Cutting | X | R | X |  | X | X |  |  |
| Cleaning agents – spray/general use | X | X | X | X |  |  | Follow manufacturer’s instructions. |  |
| Cut-off disks, saws, or other tools with carbide bits | R | X | X |  | X | X |  | Overhead work requires earflaps, earplugs, hoods, or other protective device to prevent material entering ear canal. |
| Cutting rivets, bolts, or cotter keys; splitting nuts, etc. | R | X | X |  | X | X |  |  |
| Dusty Conditions and sanding locomotives | * | R | X |  |  |  |  |  |
| Electrical Hazard | X |  |  |  |  |  | If voltage is 50-600 volts, low voltage gloves are required. Over 600 volts, lineman’s gloves are required. |  |
| Electrical Welding (MIG/TIG) | R | R | X | R | X | X | X | Kneepads required when kneeling for extended periods. Overhead work requires earflaps, earplugs, hoods, or other protective device to prevent material entering ear canal. |
| Fueling locomotives | X | R | * |  |  |  |  |  |
| Gas welding, cutting, or heating | R | R | X | R | X | X | X | Kneepads required when kneeling for extended periods. Overhead work requires earflaps, earplugs, hoods, or other protective device to prevent material entering ear canal. |
# Mechanical General PPE Requirements

<table>
<thead>
<tr>
<th></th>
<th>Hearing Protection</th>
<th>Protective Handwear</th>
<th>Respiratory Protection</th>
<th>Disposable Overalls</th>
<th>Rubberized Apron</th>
<th>Welder’s Sleeves</th>
<th>Welder’s Leathers/Suit</th>
<th>Spats/Leggings</th>
<th>Remarks / Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand Tools</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>Do not use rubber gloves while operating rotating equipment.</td>
</tr>
<tr>
<td>Hydraulic Tools</td>
<td></td>
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<td></td>
<td></td>
<td>Enhanced visibility work-wear must be worn.</td>
</tr>
<tr>
<td>Intermodal facility: working in non-office areas</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Wear hard hats with chin straps.</td>
</tr>
<tr>
<td>Mule: operation of</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Painting/spray painting</td>
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<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Pneumatic Tools</td>
<td>R</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Do not use rubber gloves while operating rotating equipment.</td>
</tr>
<tr>
<td>Powder-actuated tools</td>
<td>R</td>
<td>R</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Respirator is not required if employee is protected by isolation from sand blaster. Contact Safety Department prior to sand blasting outside of enclosed hood.</td>
</tr>
<tr>
<td>Sand blasting (abrasive blasting)</td>
<td>R</td>
<td>R</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scaling, scraping, or removing welding flux</td>
<td>X</td>
<td>R</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steam cleaning</td>
<td>X</td>
<td>R</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Striking or striking with hardened tools and fastenings</td>
<td>X</td>
<td>R</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Woodworking machines</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>
# Mechanical Eye & Face Protection Chart

<table>
<thead>
<tr>
<th>Requirements for safety eye/face wear by task.</th>
<th>Basic Requirement*</th>
<th>More Severe Exposure</th>
<th>Remarks/Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive grinding or cutting (portable)</td>
<td>Face Shield</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abrasive grinding or cutting (stationary)</td>
<td>Face Shield</td>
<td>Face Shield over impact goggles</td>
<td></td>
</tr>
<tr>
<td>Batteries: servicing or storage</td>
<td>Face Shield</td>
<td>Face Shield over splash goggles</td>
<td></td>
</tr>
<tr>
<td>Blowing and cleaning with compressed air, steam, or water</td>
<td>Face Shield</td>
<td>Face Shield over splash or impact goggles</td>
<td>Always direct away from eyes. Always use nozzle that meets OSHA requirements (max. 30 PSI &amp; can’t be deadheaded)</td>
</tr>
<tr>
<td>Boring, reaming, or drilling</td>
<td></td>
<td>Impact goggles</td>
<td></td>
</tr>
<tr>
<td>Brakes, punches, shears, &amp; lathes</td>
<td>Face Shield over safety glasses or impact goggles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking frozen material (ice, ground, gravel, cinders, ballast, etc.) with hand tools</td>
<td>Face Shield or impact goggles</td>
<td>Face Shield over impact goggles</td>
<td></td>
</tr>
<tr>
<td>Breaking or cutting concrete, stone, or asphalt</td>
<td>Face Shield over impact goggles</td>
<td>Face Shield over impact goggles</td>
<td></td>
</tr>
<tr>
<td>Buffing and polishing with a wire wheel</td>
<td>Face Shield</td>
<td>Face Shield over impact goggles</td>
<td></td>
</tr>
<tr>
<td>Carbon-arc cutting and gouging</td>
<td>Welding helmet</td>
<td></td>
<td>See Welding Shade Chart</td>
</tr>
<tr>
<td>Chain saw, chop saw</td>
<td>Face Shield</td>
<td>Face Shield over impact goggles</td>
<td></td>
</tr>
<tr>
<td>Chemicals, refrigerants, or fuels – handling</td>
<td>Face Shield</td>
<td>Face Shield over splash goggles</td>
<td></td>
</tr>
<tr>
<td>Chipping or cutting</td>
<td>Face Shield</td>
<td>Face Shield over impact goggles</td>
<td></td>
</tr>
<tr>
<td>Cleaning agents: spraying/general use</td>
<td>Face Shield or splash goggles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cut-off disks or saws with carbide tips</td>
<td>Face Shield</td>
<td>When working overhead, wear impact goggles and face shield.</td>
<td></td>
</tr>
<tr>
<td>Cutting rivets, bolts, or cotter keys: splitting nuts: etc.</td>
<td>Face Shield or impact goggles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dusty conditions</td>
<td>Impact goggles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical welding (MIG/TIG)</td>
<td>Welding helmet</td>
<td>See Welding Shade Chart</td>
<td></td>
</tr>
<tr>
<td>Fueling and sanding locomotives</td>
<td>Face Shield over splash goggles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas welding, cutting, heating</td>
<td>Welding goggles or shaded face shield</td>
<td>Welding helmet</td>
<td></td>
</tr>
</tbody>
</table>
## Mechanical Eye & Face Protection Chart

Requirements for safety eye/face wear by task.  *Basic requirement always includes safety glasses with side-shields unless goggles are being worn. Properly tinted lenses must be used as required.*

<table>
<thead>
<tr>
<th>Basic Requirement*</th>
<th>More Severe Exposure</th>
<th>Remarks/Special Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hand tools</td>
<td>Impact goggles</td>
<td></td>
</tr>
<tr>
<td>Mule: operation of</td>
<td>Impact goggles</td>
<td></td>
</tr>
<tr>
<td>Painting/spray painting</td>
<td>Face Shield</td>
<td></td>
</tr>
<tr>
<td>Powder actuated tools</td>
<td>Face Shield or impact goggles</td>
<td>Face Shield over impact goggles</td>
</tr>
<tr>
<td>Scaling, scraping, or removing welding flux</td>
<td>Impact goggles</td>
<td></td>
</tr>
<tr>
<td>Steam cleaning</td>
<td>Face Shield over splash goggles</td>
<td></td>
</tr>
<tr>
<td>Striking or striking with hardened tools and fastenings</td>
<td>Face Shield or impact goggles</td>
<td></td>
</tr>
<tr>
<td>Woodworking machines</td>
<td>Face Shield or impact goggles</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: If a face shield is required, wear a polycarbonate face shield when the primary hazard is from impact. Wear a polypropinate face shield if the primary hazard is due to chemical use.
## Mechanical Work Glove Chart

**R** = Required equipment  
**X** = May be required based on task and materials  
* = Recommended additional equipment

<table>
<thead>
<tr>
<th>Task</th>
<th>Canvas</th>
<th>Leather Palm</th>
<th>Rubber/Chemical Resistant</th>
<th>Welding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive grinding or cutting (portable)</td>
<td>R</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Abrasive grinding or cutting (stationary)</td>
<td>R</td>
<td></td>
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<tr>
<td>Banding materials</td>
<td>R</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Batteries: servicing or storage</td>
<td>R</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Blowing &amp; cleaning with compressed air, steam, or water</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boring, reaming, drilling</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brakes, presses, shears, and lathes</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking frozen material (ice, ground, cinders, ballast, etc.) with hand tools</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breaking or cutting concrete, stone, or asphalt</td>
<td>R</td>
<td></td>
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</tr>
<tr>
<td>Buffing and polishing with a wire wheel</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon-arc cutting and gouging</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chain saw</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals, refrigerants, or fuels – handling</td>
<td>R</td>
<td></td>
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<tr>
<td>Chipping or cutting</td>
<td>R</td>
<td></td>
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<tr>
<td>Chop Saw</td>
<td>X</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Cleaning agents: spray/general use of</td>
<td>X</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Cut-off disks, saws, or other tools with carbide bits</td>
<td>X</td>
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<td></td>
<td></td>
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<tr>
<td>Cutting rivets, bolts, or cotter keys; splitting nuts; etc.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dusty conditions and sanding locomotives</td>
<td>*</td>
<td></td>
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<td></td>
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<tr>
<td>Electrical hazard</td>
<td>X</td>
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<td></td>
<td></td>
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<tr>
<td>Electrical welding (MIG/TIG)</td>
<td>R</td>
<td>R</td>
<td></td>
<td></td>
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<tr>
<td>Fueling locomotives</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas welding, cutting, heating</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hand tools</td>
<td>X</td>
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<td></td>
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<tr>
<td>Hydraulic tools</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intermodal facility: working in non-office areas</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mule: operations of</td>
<td>*</td>
<td></td>
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</tr>
<tr>
<td>Activity</td>
<td>Canvas</td>
<td>Leather Palm</td>
<td>Rubber/Chemical Resistant</td>
<td>Welding</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
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<td>---------------------------</td>
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</tr>
<tr>
<td>Painting/spray painting</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Pneumatic painting</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Powder-actuated tools</td>
<td></td>
<td>R</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sand Blasting (abrasive blasting)</td>
<td></td>
<td>X</td>
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<td></td>
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<tr>
<td>Scaling, scraping, or removing welding flux</td>
<td></td>
<td></td>
<td>R</td>
<td></td>
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<tr>
<td>Steam cleaning</td>
<td></td>
<td></td>
<td>R</td>
<td></td>
</tr>
<tr>
<td>Striking or striking with hardened tools and fastenings</td>
<td>R</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woodworking machines</td>
<td></td>
<td>X</td>
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</tbody>
</table>
## Welding Shade Chart

Lens selection guide for filter shades that must be used when welding and cutting.

<table>
<thead>
<tr>
<th>Shade Number</th>
<th>2</th>
<th>3/4</th>
<th>4/5</th>
<th>5/6</th>
<th>6/8</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>14</th>
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</thead>
<tbody>
<tr>
<td>Carbon-arc cutting &amp; gouging</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Carbon-arc welding</td>
<td></td>
<td>X</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Gas shielded-arc welding (ferrous): 1/16”, 3/32”, 1/8”, 5/32” electrodes</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Gas welding: up to 1/8”</td>
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<td></td>
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<td>X</td>
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<tr>
<td>Gas welding: 1/8” to 1/2”</td>
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<td></td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Gas welding: 1/2” and over</td>
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<td>X</td>
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<tr>
<td>MIG welding</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Oxygen heating &amp; cutting: up to 1”</td>
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<tr>
<td>Oxygen heating &amp; cutting: 1” to 6”</td>
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<tr>
<td>Oxygen heating &amp; cutting: 6” and up</td>
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<td>X</td>
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<tr>
<td>Plasma-arc cutting: less than 300 amps</td>
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<td>Plasma-arc cutting: 300 to 400 amps</td>
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<tr>
<td>Plasma-arc cutting: greater than 400 amps</td>
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<td>X</td>
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<tr>
<td>Shielded metal-arc welding: 1/16”, 3/32”, 1/8”, 5/32” electrodes</td>
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<td></td>
<td></td>
<td>X</td>
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<tr>
<td>Shielded metal-arc welding: 3/16”, 7/32”, 1/4” electrodes</td>
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<td>X</td>
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<tr>
<td>Shielded metal-arc welding: 5/16”, 3/8” electrodes</td>
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<td></td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>Soldering</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>X</td>
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<tr>
<td>TIG welding: less than 50A</td>
<td></td>
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<td>X</td>
<td></td>
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<tr>
<td>TIG welding: 50 – 150A</td>
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<td>X</td>
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<tr>
<td>Torch brazing</td>
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</tr>
</tbody>
</table>

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34
M-31 RAMPS

a. Verify that safety chains and guard rails on locomotive maintenance ramps and drop tables are in their upright and secure position except when maintenance requires chains or guard rails to be dropped.

b. Verify that chains or guardrails are reapplied when maintenance is completed or at the completion of your tour of duty.

M-32 TOOLS

a. Recondition tools and equipment according to the manufacturer's instructions.

b. Do not carry tools in hands while getting on or off equipment.

c. Do not unload tools from moving equipment.

d. Confirm path is clear before unloading tools from standing equipment.

e. If a tool or other object falls to the bed of a machine, stop the machine before removing tool.

f. When cutting bands, keep clear of band(s) and out of the path of falling material.

Recommended Work Guidelines

Stay clear of the arc of swinging tools. When using swinging tools (such as spike maul, sledge, axe, pick, brush hook, hand adz, etc.), warn others to keep clear. Stand so that the point is away from your body if the tool unexpectedly flies to the side.

Remove oil, grease, and dirt from hands and handles before using swinging tools.

Direct the cutting edge of sharp tools such as knives, chisels, and screwdrivers away from your body.

Use band cutters to cut bands.

When bands are being removed from items such as cartons, boxes, pallets, or ties, stay away from the direct line of bands under tension.

Use tools defensively so that if they slip or move unexpectedly, you will not lose your balance or risk injury.

Position tools or materials on a scaffold or platform where they will fall or be knocked off.

When people must walk underneath overhead work, take precautions to prevent tools or equipment from falling.

Hand Tools

Jacks

a. Do not strike jack with tools to force it under object to be lifted.

b. Use only a lining bar or approved jack handle to operate track jack.

c. Never straddle, sit, or stand on the bar.

d. Keep clear of pinch points.
e. Remove the bar when not operating jack.
f. Confirm that all employees, tools, and materials are in the clear before tripping or lowering a load.
g. Do not set jacks for tripping until you are ready to release the load.

**Recommended Work Guidelines**

Set track jacks outside the rail if possible.

Place the jack base on an even and firm surface so the jack will not overturn under the load.

Stand beside the bar and pump it in an even rhythm, making sure the ratchet is fully engaged.

Use jacks with metal and heated material as follows:

- When using a jack against metal, insert cushioning material (wood or rubber) between the jack head and the load. The material must be at least ½” thick, but no more than 1” thick. Use special rubber pads with stationary jacks.
- When placing a jack directly on a heated area, secure the jack with a chain or by other means if you cannot place flameproof material between the ram and the work.

Where possible, place jacks and extensions perpendicular to the material being straightened.

Secure jacks to prevent slippage.

Stand clear of jacking areas.

**Wrench**

a. Use properly sized wrench for the job.
b. Do not use extensions or "cheaters" unless approved by the original tool manufacturer.
c. In close spaces, brace yourself to avoid falling if the wrench slips or the bolt breaks.

**Recommended Work Guidelines**

Pull on the wrench whenever possible. If necessary to push, do so with an open palm.

In close spaces, position hands to avoid injury if the wrench slips.

**Drift Pin**

a. Use a sledgehammer to strike the pin.
b. Surround the striking surface with a collar made of rubber.
c. Hit the pin lightly until it is securely in the hole.
d. Before driving a drift pin, confirm no one is in position to be injured.

**Power Tools**

a. Do not lie down power tool while tool is running or in a position where accidental start up will occur.
b. Stand to one side of rotating saw blades except when operating a rail or chain saw.
c. Do not use your hands to remove chips or shavings from drills or other machines. Use a brush, vacuum equipment, or special tools designed for that purpose.
d. Do not place electric power tools on wet surfaces or in loose material.
e. Disconnect the power source on electric and pneumatic power tools before cleaning, repairing, adjusting, or replacing accessories.
f. Only use electric power tools with three-wire ground protection.

**Recommended Work Guidelines**

When cleaning any machine or tool, ensure cloth or other materials do not get caught in the machine or tool.

Avoid using strong-grip force when using vibrating power tools.

**Bench Grinder**

a. Confirm tool rest is no more than 1/8 inch from the wheel and the hood or tongue adjustment is not more than 1/4 inch from the wheel.

**Air Hose Connections**

a. If air lines are connected and charged, do not uncouple until relieving line pressure.

**M-33 WELDING AND CUTTING**

a. Only qualified employees or employees directly supervised by a qualified employee may perform welding, cutting, and thermite procedures.
b. Inspect item or equipment you are welding or cutting on for hazards.
c. Have fire extinguisher readily accessible.
d. Do not weld, heat, cut, or rivet tank cars, locomotive fuel tanks, barrels, pipes, or similar containers that have held gasoline, oil, or other flammable or explosive material until the containers have been thoroughly purged.
e. Do not weld, heat, or cut in areas with flammable vapors present until the vapors are completely vented or neutralized.
f. Do not weld, cut, or heat chains, hooks, rings, links, or couplings intended for lifting purposes.
g. Shield concrete when welding or cutting on or near it.
h. In case of flashback, shut off oxygen valve immediately and close fuel gas valve.
i. Do not lay down a lighted torch or pass it to another person.
j. On manifold fuel gas systems, install combination flashback arrestor/reverse flow check valves on the fuel gas and oxygen outlets in the piping system. Install flashback arrestors at the torch on both the gas and oxygen lines.
k. On portable systems, install reverse flow check valves on the hard piping at the gas and oxygen outlets at the regulators. Install flashback arrestors at the torch on both the gas and oxygen lines.
l. Follow thermite welding manufacturer's recommendations.
m. Keep thermite portion, crucible, and molds dry before and during welding.
Recommended Work Guidelines

When welding, wear natural fiber clothing such as cotton or wool under PPE and ensure all body parts are covered.

Remove combustible and flammable items from area before beginning work.

Weld and cut in a well-ventilated area.

Protect other people in immediate work area from intense light, radiation, and molten material.

Be alert for sudden movement of material when cutting rail or any material under stress.

M-34 Wire Brush/Abrasive Wheels, Blades, and Stones

a. Do not use warped abrasive products.

b. Protect abrasive products from cracks and chips during storage and use.

c. Keep free from grease, oil, and solvents.

d. Use properly rated/RPM and properly sized abrasive product and wire brush wheels as specified by equipment manufacturer.

e. Perform ring test on abrasive product as recommended by manufacturer.

f. Inspect each wheel immediately after unpacking it from the shipping container and again just before mounting it on the grinder. If defective, remove from service.

g. Confirm protective guards are in place, secured, and properly aligned.

h. Run new wheels at full operating speed for at least one minute before applying work as most defective wheels break when first started. Do not stand or walk in the direct line of the rotating wheel.

i. Store abrasive disks and wheels in a dry area without extreme temperature changes, especially below freezing temperatures. Wet wheels may break or crack if frozen. Handle abrasive stones carefully to prevent dropping or bumping them.

M-35 Work Environment

a. Arrange office equipment and work areas to keep aisles emergency exits, and access to fire extinguishers clear.

b. Arrange contents of filing cabinets to balance the cabinet. Keep cabinet and desk drawers closed while unattended.

c. Keep body parts clear when using paper cutters. Close the cutting blade after use.

d. In walking areas, encase telephone or electrical cords in floor molding, or properly secure them.

e. Use ladder or approved lifting device to reach overhead objects. Do not use a chair, desk, or box.

Recommended Work Guidelines

Be prepared for hazardous footing conditions in your work environment.
Use hand holds where provided.
Inspect chairs and other office equipment for defects, removing from service if defective.
Use handrails when ascending or descending stairs or ramps.
Know the location of emergency exits and fire extinguishers.
Store frequently handled or heavy objects between mid-thigh and shoulder height.
When working on office machines (copiers, faxes, printers) use caution around sharp edges and parts with excessive heat.
Before placing equipment on a desk or table, check to be sure the table is stable and can support the weight of the equipment.
Store sharp and pointed objects safely. Do not reach for them without looking.
Report any malfunctioning electrical equipment or other types of hazards to your supervisor. Do not wait for someone else to make the workplace safe.

**M-36 WORKING ON OR NEAR LOCOMOTIVES**

a. Before starting the engine, determine that all employees are clear of moving parts.
b. Do not put your face or hands near the main generator or any high-voltage equipment while it is working under load.
c. Do not pull fuses while they are under load.
d. To inspect the fan and radiator compartment, shut down the engine.
e. Do not open the ground relay protective knife when the ground relay is tripping.
f. When the cab floor is removed in a locomotive cab, mark and barricade the cab doors to prevent unauthorized people from entering the cab.
g. After testing and before putting the engine in service, securely fasten all safety guards, equipment cabinet covers, and ceiling hatch covers.

**Recommended Work Guidelines**

Avoid open flames in the engine room unless duties require.
Carefully remove the radiator cap on a hot engine.
Keep the engine room, cab, running boards, catwalks, steps, and grab irons clean and free from oil, grease, rags, debris, or obstructions while repairs are being made.

**Air Brake Rigging**

a. Cut out the air brakes at the truck cutout when working on the air brake rigging of engines.
b. When working on rail cars and other equipment, close the branch pipe cutout and drain the reservoirs until the repairs are complete.

**Recommended Work Guidelines**

Hold a Job Briefing with other employees immediately prior to cutting in/out Air Brakes
M-37 Working on Top of Locomotives and Cars

a. Employee must contact his/her supervisor or lead person prior to performing work on top of the equipment. The supervisor or lead person must give employee(s) a specific job safety briefing, confirm the task and procedures to be done, and give permission to begin work.
b. Inspect work areas for oily, icy, or slippery conditions, and review the safety precautions to be followed to work with or eliminate the risk of losing balance, falling, or the dropping of objects.
c. Use tools or equipment defensively to avoid the loss of balance if the tool slips or disengages. Do not overreach while working or place yourself in precarious positions.
d. Ensure that areas subject to falling objects are clear of personnel and breakable items.
e. While performing duties, DO NOT make sudden movements in an attempt to catch a falling object. LET IT FALL.
f. Access to locomotive roof must be from the rear end only or with approved ladder platform from nose to cab roof.
g. Use fall protection devices where required.

Recommended Work Guidelines

Work in a kneeling or seated position whenever possible.

M-38 Fueling

a. Fuel gasoline-powered tools before use, away from the location where they will be used.
b. Stop engines when fueling vehicles, machinery, power tools, and other equipment except for diesel locomotives.
c. Do not smoke when fueling.
d. Do not fuel near open flames.
e. Use only approved metal fuel containers to store, transport, or transfer gasoline.

Recommended Work Guidelines

Allow engine to cool before refueling a hot engine.

M-39 Avoiding Human Remains, Blood or Other Fluids

After any accident or incident where human remains, blood or other fluid are observed on company equipment or property:

- Only qualified persons may remove or clean this matter.
- Promptly notify the RTC or supervisor so that appropriate action can be taken to perform any necessary cleaning of the equipment as soon as possible.

If employees come in contact with human remains, blood or other fluids, immediately wash the contact area then notify a supervisor.
M-40 VISITORS AND CONTRACTORS

While on CMQ property, visitors and contractors must:

- Comply with all CMQ safety rules and policies.
- Wear personal protective equipment as instructed by CMQ personnel.
- Participate in job briefings.
SECTION III: APPENDIX

GLOSSARY

Authorized
Given the right to act.

Confined Space
A confined space is an area that:
• Has an opening large enough and configured such that it will allow an employee to enter.
• Has limited or restricted means of access for entry and/or exit.
• Is not designed or intended for continuous human occupancy.

Gravity Switch Move
Cars moving under their own momentum with movement not initiated by locomotive.

Job Briefing
A communication tool used by professionals to make sure that everyone involved in a task knows what is to be done, how the task is to be accomplished, and how to mentally prepare to accomplish it. If an employee is to perform a task alone, a mental assessment of the task must be conducted.

Mechanized Equipment
Equipment without rubber tires, including but not limited to track equipment and steel-wheel equipment.

Motor Vehicles
Motor vehicles include:
• All rubber-tired equipment on or off the rail.
• Privately owned vehicles used on company business.
• Rented, leased, or hired vehicles.

Personal Protective Equipment (PPE)
Any material or device worn to protect a person from exposure to or contact with any harmful substance or force.

Qualified
A status attained by an employee who has:
• Successfully completed any required training.
  or
• Demonstrated proficiency in the duties of a particular position or function and has been authorized by CMQ to perform those duties.
**Regulatory Requirements**
Standards and regulations issued by the applicable government, state or provincial agency. Regulatory requirements may include the Occupational Health Safety Administration (OSHA – USA), Labor Canada, Federal Railroad Administration or Transport Canada.

**Restricted Area**
A designated space (often marked with warning signs, posted instructions, or placards) requiring compliance with special safety requirements or briefings due to unique situations with potential hazard(s).

**Three-Point Contact**
Three-point contact consists of two hands and one foot or two feet and one hand.

**Trained**
Participation in learning event(s) appropriate to the topic. Learning events include but are not limited to, the following: one-on-one coaching on the job, job briefings, and formal programs.

**Work Environment**
The physical location, equipment, materials processed or used, and the kinds of operations performed in the course of an individual’s work, whether on or off CMQ premises.