

FEATHER RIVER RAIL SOCIETY

WESTERN PACIFIC RAILROAD MUSEUM



Preserving *"The Feather River Route"*

CODE OF SAFE PRACTICES

Injury and Illness Prevention Program

Rev. 2 4/18/2000
Rev. 3 7/23/2011
Rev. 4 12-28-2015

Code of Safe Practices

Forward

This employee/volunteer safety handbook is presented to make all members aware of basic rules and guidelines which will help to provide a safe and healthy work environment.

It is in no way meant to be all-inclusive, nor cover every possibility.

There are several other safety documents within the Museum, see related items at the end of this document.

The Department Head or Supervisor is responsible for enforcing safe work practices and housekeeping guidelines.

All employees and volunteers are expected to follow these guidelines and help to enforce them through example.

Your fellow museum members will ask you to comply with all safety rules.

**SAFETY IS OF THE FIRST IMPORTANCE IN THE DISCHARGE OF
DUTY, OBEDIENCE TO THE RULES IS ESSENTIAL TO SAFETY AND
IS REQUIRED**

**THIS DOCUMENT APPLIES TO BOTH THE FEATER RIVER RAIL SOCIETY AND
THE WESTERN PACIFIC RAILROAD MUSEUM.**

General Safety Rules

Table of Contents	Page
Accident Reporting, Investigation	3
Safety Tailboard Procedures	3
Chemical Safety	4
Confined Space Entry	6
Dress Requirements	6
Drum Handling	7
Electrical Safety	8
Emergency Showers and Eye Wash Stations	9
Eye Protection	10
Facility Evacuation	11
Falls	11
Fire Extinguishers	12
Fire Prevention and Protection	12
Flammable Liquid Handling	13
Footwear	14
Fork Lift Trucks	15
Gas Cylinders	16
Hand Tools	16
Hazard Communication	17
Hoists and Cranes	17
Hot Work	20
Housekeeping	20
Ladder Safety	20
Lifting	21
Lock-Out & Tag	22
Lone Worker Rule	23
Machine Guards	23
Office Safety	23
Parking Lot Safety	24
Portable Power Tools	25
Personal Protective Equipment	25
Respiratory Protection	26
Fall Protection	27
Spills & Clean Up	27
Soldering Irons/Pots	27
Welding and Cutting	28

ACCIDENT/INJURY REPORTING

All injuries, no matter how "minor" they seem, are to be reported immediately to your Supervisor, Department Head, Superintendent of Operations or the Safety Officer. If professional medical treatment is needed, they will make the necessary arrangements. Failure to follow this procedure could jeopardize your health. Neglected injuries can be the cause of serious complications. Should none of these people be available, notify the Museum Manager.

IN CASE OF INJURY:

Report it immediately to your Supervisor, or Department Head, no matter how minor. **You must fill out an Injury report, no matter how minor it may seem.**

ACCIDENT INVESTIGATION

All accidents and near misses will be investigated by your Supervisor, or Department Head with the Safety Officer, with planned corrective actions to eliminate the root cause(s) and prevent future occurrence.

A written Accident Report Form must be filled out and submitted to the Superintendent of Operations within 24 hours, of the event.

The Safety Officer, will do a follow-up on all accidents reported.

TAILBOARD BRIEFING

- (a) Tailboard briefing, "tailboard conferences," or "job procedure discussions" means holding a pre-work meeting in a safe location, usually at the job site, to talk the job over before starting to work, so that all supervisors and members of each crew involved thoroughly understand the job to be done and the method of accomplishing it. The tailboard briefing shall describe potential hazards and provide a plan for eliminating or controlling safety and health hazards. A tailboard briefing shall be given by the employee in charge of the job:
 - (1) At the start of the job.
 - (2) At any time conditions at the job site change (e.g., work scope or activities change, crew member(s) change, new equipment introduced, contractor activities change, etc.).
- (b) The tailboard briefing shall be given in a positive manner and encourage employee and volunteers involvement and participation. The briefing is conducted so that all working involved will understand:

The work methods, procedures, and proper sequences for the job.

What he\she is to do.

What the other members of the crew are to do.

The responsibilities and appropriate actions for emergency situations.

The potential or known hazards or trouble spots involved and will know how to overcome such problems.

See document “Job Briefing Safety Tailboard”, “Safety Tailboard” form and “Safety Orientation Checklist”.

CHEMICAL SAFETY

The Museum uses many kinds of chemicals. Many of these substances present little hazard, but others are potentially extremely hazardous and must be carefully and rigidly controlled at all times.

Chemicals present different problems in storage, handling, use, and control. Some explode when heated, react with water, heat spontaneously, decompose into hazardous substances, or cause ignition on contact with combustible materials. It is essential that the properties of each chemical you work with be known and understood. Always check with your supervisor or department head prior to using any chemical that you are not familiar with. **DON'T TAKE CHANCES.** If you don't know **ASK.**

Toxic chemicals are hazardous substances, which if eaten, inhaled, or absorbed through the skin, even in small quantities, may endanger health.

Corrosive chemicals can cause severe skin irritations or burns if used incorrectly. If these materials enter the eyes, they can blind you.

Remember, there are no safe chemicals, only safe ways of using them. If you have any questions or doubts, please contact your department head or supervisor. Report all adverse reactions with chemicals.

Personal protective equipment such as safety goggles, face shields, gloves, aprons, and respirators must be worn when handling hazardous materials. Department rules will indicate what protective equipment is required for your job.

CHEMICAL SAFETY GUIDELINES**California Proposition 65**

See Proposition 65 in Plain Language and Proposition 65 List.

For general information on the Proposition 65 list of chemicals, you may contact OEHHA's Proposition 65 program at (916) 445-6900, or visit <http://www.oehha.ca.gov/prop65.html> . For enforcement information, contact the California Attorney General's Office at (510) 873-6321, or visit <http://oag.ca.gov/prop65>.

1. Eye protection in the form of safety glasses or goggles must be worn in designated areas at all times.
2. Fire prevention is of great importance wherever chemicals are used and where sources of heat exist such as solder areas. Use extreme caution when working with flammable liquids. Electrical sparks, heat or flame can ignite a flammable vapor/air mixture.
3. Alcohol and flux are flammable and must be protected from excessive heat and flame.
4. All waste solvents are to be placed in designated waste disposal cans.
5. Practice good housekeeping. Cluttered benches, hoods and work areas are dangerous.
6. When handling acids, alkalis or other corrosive or toxic materials, use equipment provided for your safety such as: gloves, masks, aprons, glasses, bottle carriers, etc.
7. If in doubt concerning the properties of any chemical, consult the Material Safety Data Sheet (MSDS) for that chemical especially concerning safe storage and handling.
8. Be familiar with the Hazardous Material Identification System (HMIS) for proper labeling of chemicals. All chemical containers including waste containers, shall be accurately labeled and dated.
9. Never use chemical glassware for drinking purposes; it may contain or be contaminated with poisonous or corrosive material.
10. Pour acid into water, never water into acid.
11. All operations involving toxic or irritating materials must be confined to a hood or local exhaust.
12. Protect your eyes from ultraviolet or laser light sources; use approved eye protection where designated.

13. Keep all compressed gas cylinders fastened securely (chain or strap) in the upright position and stored away from heat and combustibles. Store cylinders with caps on. Transport with the use of a cylinder truck. Improperly handled cylinders can be potential bombs or jet propelled missiles causing severe damage.

CONFINED SPACE ENTRY

This applies to any spaces that have limited openings for entry, exits that would make escape difficult in an emergency, a lack of ventilation, contain known and potential hazards, and are not intended nor designated for continuous human occupancy. Some of the hazards could include lack of oxygen, presence of flammable and/or toxic vapors and pose a safety and equipment hazard. The following are examples of confined spaces: utility tunnels, storage tanks, process vessels, furnaces, boilers, dust collectors and spaces usually entered through a manhole. Open-topped spaces more than 4 ft deep that may not give good ventilation, such as pits, trenches, and wells would also qualify.

Entry into confined spaces require a Confined Space Permit issued by the Safety Officer.

DRESS REQUIREMENTS

Clothing and accessories which create potentially hazardous conditions may not be worn in the shop or work areas. Specific examples are listed below, but your supervisor or department head are authorized to use their discretion in disapproving clothing items considered potentially hazardous or otherwise inappropriate.

THE FOLLOWING HAZARDS ARE TO BE AVOIDED IN ALL WORK AREAS:

1. Dangling jewelry such as beads, long necklaces, bracelets, and earrings;
2. Ties or scarves;
3. Bracelets, wristwatches, rings, or other metal items when working on or around electrical or moving equipment.
4. Loose fitting or long clothing, which could become caught in moving equipment.

LONG HAIR

A serious threat to the safety of an employee with long hair exists when working with or around machinery with moving parts. Your hair can become entangled in the machine. You must take one of the following precautionary measures if your hair style is long enough to get entangled:

1. Wear a headband. This method may be used only if a headband is sufficient to prevent the hair from falling forward or into moving equipment.
2. Tie your hair back behind your head. This method may be used for medium long hair as long as the resulting pony tail is not long enough to fall forward or over the shoulder and fall into moving equipment.
3. Wear a cap or net with your hair tucked into it. This method MUST be used on very long hair where headbands or hair ties do not provide adequate protection.

DRUM HANDLING

Handling drums can be a dangerous job. The preferred method of moving drums is with a drum hand cart or drum lift adapter on a forklift truck. Multiple drums are to be secured on a pallet for forklift transport. When manual moving is required, the employee or volunteer should follow the guidelines presented, in order to minimize the potential for injury. In addition, the employee or volunteer should refer to the Material Safety Data Sheet for specific information regarding handling and storage of drums.

BREAKING OF DRUMS

- Keep hands apart
- Shoulder at chime height (drum rim)
- Body close to drum
- Push at chime height (drum rim)

ROLLING DRUMS

- Proceed slowly
- Body close and ahead of drum
- Do not cross hands or feet when rolling drum

PALLETIZING DRUMS

- Keep bottom chime high on pallet
- Shoulder low, close to chime and push
- Watch for pinch points, keep hands near front chime

LABELING

Assure each drum has been carefully labeled by supplier. When contents are transferred to another container, that container must be marked using the HMIS policy to inform associates of all potential hazards.

SAFETY EQUIPMENT

Gloves, safety shoes, and safety glasses should be worn when handling drums.

ELECTRICAL SAFETY

An inherent hazard of the electronics industry is the potential presence of exposed quantities of lethal voltages and currents. Every effort must be made to insure that "live" electrical sources are shielded or covered to prevent accidental contact. Because of the danger of electric shock, you must keep equipment and work areas safe at all times.

When making repairs to electrical equipment, All sources are to be tuned off and tagged out and locked out.

THE FOLLOWING RULES MUST BE STRICTLY OBSERVED:

1. Observe the Lone Worker Rule.
2. Only trained and authorized employees shall operate electrical equipment.
3. Safety devices which have been installed on equipment are there for your protection and should not be circumvented. However, if it is absolutely necessary to circumvent a safety device in order to perform a required operation, you must obtain specific authorization from the department head or safety officer. Equivalent alternate means of protection must be provided.
4. Hazardous set-ups must be avoided. However, if the operation is of an experimental nature and has been cleared by the area supervisor, equivalent alternate means of protection are acceptable. For example, the area must be barricaded and appropriate signs displayed to warn personnel of the potential dangers. Additionally, the proper protective equipment for such circumstances must be used.
5. Operators of electrical equipment are responsible for seeing that visitors are not exposed to any hazard.
6. Maintenance, repair, or construction of electrical equipment must be performed only by designated, qualified personnel. Consult the practices on Electrical Lockout Procedures.

TIPS FOR WORKING AROUND ELECTRICAL EQUIPMENT:

1. Move slowly.
2. Make sure your feet are firmly placed for good balance.
3. Don't lunge after falling tools.

4. Kill all power and ground all voltage points before touching wiring.
5. "Lock out and Tag out" to make sure that power cannot be accidentally restored.
6. Do not work on ungrounded - HOT - equipment.
7. Don't work on any hazardous operation, especially live equipment when mentally or physically fatigued.
8. Keep one hand in your pocket while investigating live electrical equipment, and use protective equipment. Above all, do not touch electrical equipment while standing on metal floors, damp concrete or other well-grounded surfaces. Do not handle electrical equipment while wearing damp clothing (particularly wet shoes) or while skin surfaces are damp.

ELECTRICAL SHOCK - FIRST AID

1. **Call for Help, and call 911 for Emergency Personnel.**
2. Cut voltage and/or remove victim from contact as quickly as possible. If power cannot be disconnected, free the victim with a length of dry wood, rope, blanket, etc.

DO NOT TOUCH THE VICTIM UNTIL FREED. DO WHAT YOU CAN, BUT DO NOT ENDANGER YOUR OWN SAFETY.

3. Keep the victim warm and lying down.
4. Call the Safety Officer or other persons qualified in first aid procedures in your area.
5. If required and you are qualified, administer artificial respiration and/or heart massage (CPR) until help arrives.

EMERGENCY SHOWERS AND EYE WASH FOUNTAINS

If harmful chemicals come in contact with your eyes or skin, the proper use of emergency showers and eye wash fountains can significantly reduce the possibility of serious injury. Make sure you know the location of the nearest emergency shower and eye wash fountain in your area.

Speed is essential. If you receive a chemical splash in your eyes or on your skin, **IMMEDIATELY** start flushing the area with lots of water. Remove any contaminated clothing as you rinse. You must not worry about modesty in these circumstances. Your fellow workers will shield you from view and assist you.

Continue flushing with lots of water for at least 15 minutes. Even if a taxi or other emergency vehicle has arrived to transport you to a medical facility, continue flushing the area for at least 15 minutes.

EYE PROTECTION

You are required to wear adequate eye protection when your work exposes you to a risk of eye injury, or when you are in areas which present eye injury hazards. This policy also applies to visitors. Regular tempered eye glasses are not necessarily safety glasses.

WATCH FOR SIGNS INDICATING THAT EYE PROTECTION IS REQUIRED!

In protecting employees and visitors in areas where eye injury hazards may be encountered, the basic consideration is to avoid injury. A pair of safety glasses may not be sufficient. Safety goggles, safety face shields, or safety glasses with side shields may be necessary. Rules are posted in areas requiring eye protection.

CONTACT LENSES ARE NORMALLY PROHIBITED IN DESIGNATED EYE HAZARD AREAS EXCEPT UNDER SPECIFIED CIRCUMSTANCES TO BE INDIVIDUALLY DETERMINED.

ADEQUATE EYE PROTECTION IS MANDATORY DURING THE FOLLOWING OPERATIONS:

1. All machine shop operations
2. Soldering
3. Using any gas torch
4. Using compressed air hoses
5. Operating grinding machines
6. Handling or using hazardous liquids or chemicals
7. Welding and cutting
8. Pot soldering, lead-joint pouring, or other splashing metal operations
9. Snipping and trimming metal
10. Belt sanding
11. Abrasive blasting
12. Grinding
13. Metal scaling, chipping, and stone dressing
14. Woodworking, as directed by supervisor in charge
15. Chipping, involving use of chisels or wedges
16. Electric spot and butt welding
17. Plating and other dipping operations involving hazardous materials
18. Operations involving exposure to visible glare
19. A Operations producing-infra-red or ultraviolet radiation

FACILITY EVACUATION

This is done to establish an orderly way of protecting you in the event of emergency.

If you are told to evacuate over the public address system, hear the continuous sounding of the evacuation alarm, or are notified by any volunteer to evacuate, you should:

1. Stop all work.
2. Shut off electrical equipment and machines, if possible.
3. Walk to the nearest exit, including emergency exits with crash bar assemblies. Push the bar and exit the building.
4. Exit quickly. Do not stop for personal belongings.
5. Move to the evacuation assembly area. Do not leave evacuation assembly unless you are released by the safety officer or other museum official.
6. Do not re-enter the facility until you are instructed to do so.

Evacuation assembly area is located at: “Main entry to the Museum at the Pedestrian Crossing” at the parking lot.

If you are not working at your normal work area, or if you are in the hallways, lobbies, restrooms, or board room, leave the area you are in and leave through the nearest exit. Once outside the building, stay at least 150 feet away from it as you go to the evacuation assembly area. If you do not know your evacuation assembly point, ask your department head or the safety officer.

Throughout the museum facilities, emergency evacuation signs have been posted. Become familiar with the ones in your area so that you will know which exit to use in case of emergency.

FALLS

Falls are the cause of more serious injuries in industry than any other reason. There are a few simple precautions which must be taken in order to help avoid falls.

Running is dangerous and will not be permitted on the premises.

Caution is required while climbing up or down stairs. Use hand rails, keep to the right and watch your step. Watch for slippery surfaces. Mark and report them immediately.

Housekeeping is important for the prevention of falls; floors, stairs, and aisles must be kept clean. Objects under foot must be picked up and all spillage's cleaned up at once.

Spills that are not immediately cleaned up, provide a potential hazard. Mark spills with yellow caution signs. All spills should be immediately cleaned up.

Electric cords must be arranged so as not to present a tripping hazard. Keep them away from passageways and arrange them so that they are not going to catch anyone's foot.

Overhead objects are to be reached by use of ladders or stepstools. Chairs, boxes or other objects are not permitted for use as stepstools or ladders.

FIRE EXTINGUISHERS

Fire extinguishers are located conveniently throughout the buildings. Be sure you know the location of fire extinguishers in your area.

A minor fire can burn out of control if not combated quickly and effectively. Now is the time to learn the correct procedure for using a fire extinguisher so that you will be ready to act in an emergency. Study the following rules carefully:

DIFFERENT TYPES OF FIRE REQUIRE DIFFERENT TYPES OF EXTINGUISHERS

- Type A Fires -- Paper or wood fires
- Type B Fires -- Flammable Liquids fires
- Type C Fires -- Electrical fires
- Type D Fires -- Metals that burn, Chemical fires

Make sure that the correct type of extinguisher is placed in your area for all anticipated hazards.

If you observe that the extinguisher seal is broken, notify the Environmental, Safety and Industrial Hygiene Department.

IN CASE OF FIRE:

1. Notify 911 immediately and evacuate all people from the immediate area.
2. Locate the extinguisher in your area.
3. Remove the ring from the handle.
4. Standing well back from the flames, aim the extinguisher at the bottom of the fire and squeeze the handle to eject the extinguishing medium.
5. If the fire gets out of control, leave the area immediately.
6. Stay out of the way of fire fighters.

FIRE PREVENTION AND PROTECTION

Fire is an ever present threat in any area. By exercising care and following safe practices, you can help avoid the causes and dangers of fire.

Smoking is strictly prohibited around any flammable materials. All lighted cigarettes, cigars, pipe ashes and matches are to be deposited in safety receptacles before entering a "Smoking Prohibited" area.

Any welding, cutting, repair or installation work requiring the use of open flames, must be done in a safe and approved manner.

All containers used in the transfer of liquid flammables are to be grounded by means of ground and bonding wires. All flammable liquids are to be stored in sealed containers or approved safety cans.

Keep fire extinguishers and fire doors clear at all times. Do not open fire door or any door that seems warm.

Learn the location of the fire extinguishers in your area of work. Designated personnel are instructed in the use of extinguishers.

In the event of a fire, sound the alarm. If trained, attack the fire with the appropriate extinguisher and call for back up. Do not attempt to extinguish a large fire; if extinguisher is not sufficient, leave the area immediately.

If you are not involved in the work of controlling the fire, you must evacuate the area in accordance with the provisions of the evacuate procedure.

Disconnect; unplug all electric tools such as soldering irons, pots and heat guns at the end of the day.

FLAMMABLE LIQUIDS

Flammable liquids do not, in the strict sense of the word, burn. Their vapors burn. The temperature at which just enough vapor is given off to form an ignitable mixture with air is called the "flash point." The commonly termed "volatile" liquids, such as acetone, toluene, ethers, and alcohol, give off vapors in ignitable quantities at ordinary room temperatures.

Every vapor or gas that will burn will also explode when mixed with air in the right proportions.

Whenever flammable vapors are present, there is both a fire and an explosion hazard. These vapors will collect above the surface of the liquid in a container, spill over its edge, and be carried by air currents. The vapors will rise if lighter than air, and fall if heavier than air, to lower levels. They will continuously mix with the air. The degree of danger depends largely on the kind of liquid, presence of an ignition source, and the concentration of vapors in the air.

You must be aware of the hazards of flammable liquids, and you must take positive measures to eliminate the risk of injury. All these substances can be managed safely if they are stored, handled, mixed, and poured according to the following safety procedures:

HANDLING FLAMMABLE LIQUIDS

1. Always wear the required protective equipment. Some flammable liquids can be irritating to the skin and eyes and may be toxic if inhaled in sufficient quantities.

2. Open flames and smoking are prohibited in all areas where flammable liquids are stored, handled, or used.
3. Use only under ventilated hoods or in adequately ventilated areas.
4. Avoid contact with the skin.

POURING AND FILLING

1. Do not mix liquids or chemicals unless specifically stated in your operating procedures.
2. Make certain your containers are grounded and connected to each other to prevent static discharge. A static spark will occur between two containers or different electrical potential. This can be prevented by grounding one container and electrically connecting the two containers together with a conductor.
3. Transfer flammable liquids only under ventilated hoods or in a well ventilated area.

STORAGE

1. Do not store flammable liquids in open containers.
2. Quantities of flammable liquids in excess of one pint should be stored in approved safety cans or flammable liquids lockers.
3. Mark all containers with their contents and hazards, using approved warning labels.
4. Keep only the minimum amounts required at work areas.
5. Reserve supplies of flammable liquids stored in buildings must be in approved flammable liquid storage cabinets.

FOOTWEAR

Safety shoes are required in jobs that may cause injury due to impact or falling or dropping of heavy objects, use of hand trucks, pallet jacks, fork lift trucks, machine shops, heavy materials handling, drum and cylinder handling,

Open toed shoes, slippers, thongs, sandals, or other similar types of shoes are **not** permitted to be worn around the museum.

All operating department personnel shall use high top boots for ankle support.

THE "DON'TS" OF FORK LIFT TRUCKS

Any employee operating a fork lift truck must be properly trained.

FORK LIFT OPERATIONS MUST STRICTLY ADHERE TO THE FOLLOWING RULES:

1. WHEN OPERATING - **DON'T**:
 - a. Drive up to anyone standing in front of a bench or other fixed object.
 - b. Allow anyone to stand or pass under the elevated portion of the truck, whether loaded or empty.
 - c. Lift anyone up on the forks with a standard pallet. Personnel may be lifted on a safety platform pallet.
 - d. Allow passengers to ride on the truck.
 - e. Place arms or legs between the uprights of the mast or outside the running lines of the truck.
 - f. Leave the truck unattended on an incline without first blocking the wheels.
 - g. Leave the truck unattended until the hoist mechanism is fully lowered, controls neutralized, power shut off, brakes set, and the key removed.
 - h. Enter a truck or van until you are certain that the brakes are set and the wheels blocked.
 - i. Operate a truck if it is defective in any way that could affect its safe operation.
 - j. Fill the fuel tanks with the engine running.
 - k. Start the engine until all fuel or oil spills have been cleaned up or have evaporated.
 - l. Operate a truck with a leak in the fuel system.
2. WHEN TRAVELING DON'T:
 - a. Exceed speed limits of 5 M.P.H. inside buildings.
 - b. Travel forward if your vision is obscured by the load.
 - c. Descend a grade in excess of 10% when loaded unless the load is upgrade.

- d. Have forks higher than necessary to clear the floor when moving.
 - e. Stunt drive or engage in horseplay. Violation of this rule will result in severe disciplinary action.
3. WHEN LOADING DON'T:
- a. Handle a load that is over the rated capacity of the truck.
 - b. Handle a load unless the forks are under the load as far as possible.
 - c. Transport a load with the tilt forward. Make sure the load is well balanced and stable before moving.

GAS CYLINDERS

Compressed gas cylinders require careful use. The contents are often in a condensed or highly pressurized state and may be release when the cylinders are roughly handled, dropped, exposed to heat, or otherwise mishandled. In addition to being potential bombs or projectiles, many contain contents that are toxic, flammable, or corrosive.

Store cylinders on end on a smooth floor. Chain or otherwise fasten firmly against a wall, post, or other solid object. Empty cylinders must be stored apart from full cylinders. Flammable gas containers stored inside shall be kept at least 20 feet from flammable liquids, combustible materials, arcing electrical equipment, open flames or other sources of ignition. Protective valve caps must be kept in place when not in use.

HAND TOOLS

Rules for tools must be observed at all times:

- 1. Use the right tool for the job.
- 2. Use it properly.
- 3. Only use tools that are in good condition.
- 4. Always put tools away in their proper places.

Screw drivers should not be used to pry or chisel. Use right size screw driver for job. Never hold the work in palm of hand while using a screw driver. Use a vise or clamp or support work on a firm surface.

Xacto blades or utility knives must be used with extreme care. Always cut in the direction **away from** body and fingers. Open only to necessary level. When not in use, blade should be drawn back or covered. **Never use razors.**

HAZARD COMMUNICATION

OSHA Hazard Communication Program is intended to assess the possible dangers of the chemicals you may use, inform you of these hazards and provide training so you can protect yourself from them.

It is your job to:

1. Be aware of chemical hazards around the museum.
2. Know where the Material safety Data Sheets (MSDSs) are located for your department.
3. Know how to use the information on Material Safety Data Sheets.
4. Protect yourself from chemical hazards by using the protective measures provided for you.
5. Interpret labels on containers of hazardous chemicals.
6. Actively participate in all training and educational programs given by the museum.
7. Discard all chemicals, no matter how small, according to environmental waste management guidelines.

Cranes, Hoists, and Derricks

Hoists or cranes, whether power operated or manually operated, may be provided to increase safety and efficiency in the handling and storage of materials. Selection of the wrong type of equipment, or its improper use, can introduce serious hazards.

Never use any lifting machine or device until you have been instructed in its use and fully understand all details of its operation.

- (a) Cranes, hoists, and derricks shall be operated only by qualified and authorized persons.
- (b) When mobile hoists, cranes, booms, or other similar lifting devices are used near energized equipment, all persons shall remain in the clear until the equipment is in a safe position. The person in charge shall check and determine that all persons remain in the clear while the vehicle is being moved or the boom is being repositioned.
- (c) Employees/volunteers shall not ride on loads suspended from cranes, hoists, or derricks.

- (d) A sign shall be posted in the cab of all outdoor portable cranes, hoists, and derricks reading essentially as follows:

"Unlawful to operate this equipment within 10 feet of high voltage lines of 50,000 volts or less. The clearances in the table, below, do not apply to authorize work by qualified electrical workers on or near energized high voltage conductors or apparatus."

Operators not qualified to exercise the above exemption, or not under the immediate, direct supervision of a qualified electrical worker, shall maintain the distances from energized high voltage lines specified in the following table:

Minimum Clearance Distances


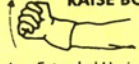
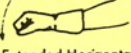










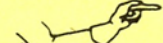


(For Operators of Cranes, Hoists, and Derricks who are not Qualified Electrical Workers or Under the Direct Supervision of a Qualified Electrical Worker)

Nominal Voltage <i>(phase-to-phase)</i>	Minimum Required)Clearance (Feet)
600- 50,000	10'
over 50,000 - 75,000	11'
over 75,000 - 125,000	13,
over 125,000 - 175,000	15,
over 175,000 - 250,000	17'
over 250,000 - 370,000	21'
over 370,000 - 550,000	27'

Note: If the voltage of the power line involved is not known, consult an appropriate electric department representative.

- (e) Operators shall not move loads over the heads of workers or others unless authorized by the employee in charge. Operators shall not leave cranes, hoists, or derricks unattended while, load is suspended, unless suspended over a barricaded area, blocked or otherwise supported from below during repair, or in an emergency.
- (f) No crane, hoist, or derrick shall be loaded in excess of its rated capacity.
- (g) Crane, hoist, or derrick operators shall take signals only from the person designated by the person in charge.
- (h) Uniform hand signals shall be used to signal overhead traveling cranes, derrick and crane operators shall be used.

UNIFORM HAND SIGNALS FOR MOBILE-TYPE CRANES AND DERRICKS

<p>LOWER OUTRIGGERS</p>  <p>Hands Open, with Downward Motion</p>	<p>RAISE BOOM</p>  <p>Arm Extended Horizontally, Palm Up, Fist Closed— Move Extended Arm Upward</p>	<p>LOWER BOOM</p>  <p>Arm Extended Horizontally, Palm Down, Fist Closed— Move Extended Arm Downward</p>
<p>RAISE OUTRIGGERS</p>  <p>Hands Open, with Upward Motion</p>	<p>EXTEND BOOM</p>  <p>Hand Closed, Two Fingers Up</p>	<p>RETRACT BOOM</p>  <p>Hand Closed, Two Fingers Down</p>
<p>RAISE HOIST LINE</p>  <p>Hand Closed, Thumb Up</p> <p style="text-align: center;">OR</p>  <p>Hand Closed, Forefinger Up, Circular Motion</p>		<p>ROTATE BOOM</p>  <p>Hand Closed, One Finger Pointing in Direction of Movement</p>
<p>LOWER HOIST LINE</p>  <p>Hand Closed, Thumb Down</p> <p style="text-align: center;">OR</p>  <p>Hand Closed, Forefinger Down, Circular Motion</p>		<p>STOP</p>  <p>Arm Raised, Hand Open</p> <p style="text-align: center;">OR</p>  <p>Hand Open, Palm Down</p>
<p>TRAVEL</p>  <p>Arm Extended, Slightly Raised, Hand Closed, Forefinger Extended— Make Motion in Direction of Travel</p>	<p>USE AUX. HOIST</p>  <p>Tap Elbow with One Hand, Then Use Regular Signals</p>	<p>USE MAIN HOIST</p>  <p>Tap Fist on Head, Then Use Regular Signals</p>

*Select either signal; use selected signal throughout operation.

HOT WORK

Hot work is defined as any activity which involves welding, cutting, use of spark producing tools, portable gasoline/diesel engines, sand blasting, or the use of other equipment or materials which may cause or provide a source of ignition in hazardous areas.

HOUSEKEEPING

All work areas must be clean and orderly if it is to be safe, efficient, and pleasant to work in. Materials and equipment should be kept out of the aisles and returned to storage after use. You may prevent a serious accident by picking up potential tripping hazards.

FOLLOW THESE RULES:

1. If you spill a liquid, protect yourself and others by cleaning it up immediately.
2. If a chemical spill occurs, the Safety Officer shall be notified.
3. Throw all trash and scrap in the proper waste containers.
4. Take the time to put things where they belong when you have finished with them.
5. Report worn or broken flooring, stair treads, or other hazardous housekeeping conditions to your department head.
6. All exits, stairways, ramps, and aisles shall be kept clear of obstructions.

Housekeeping is simple if things are kept picked up, and tools and materials are stored in their places after use.

Keep all aisles, doors and exits clear from obstruction at all times.

Remember fire is our common enemy. It can destroy life, property, and jobs. Join us in our efforts to help prevent its occurrence at all times.

LADDER SAFETY

Choosing the right ladder:

1. Must extend 3' above the landing.
2. Strong enough to support the job.
3. Must meet OSHA requirements.

4. Do not use conductive ladders (aluminum) for any work around electricity (Including changing light bulbs).
5. Make sure the ladder has the right feet for the terrain.

Use of a ladder:

1. Belt Buckle Rule, keep your belt buckle between the side rails.
2. Always face the ladder.
3. 4:1 Rule the base should be about 1' away from the vertical support for every 4' in height.
4. Use both hands, grasp the side rails, not the rungs.
5. Carry small tools in a workbelt, or hoist larger tools with a handline.
6. Never climb higher than the 2nd rung from the top on a stepladder.
7. Never climb higher than the 3rd rung from the top on an extension ladder.
8. Never try to shift the position of a ladder while you are on it.
9. Have only one person on a portable ladder at a time.
10. Never place a ladder in front of a door.
11. All extension ladders must be tied-off to prevent them from slipping or sliding away from the work area.

Do not use a defective ladder. Take it out of service immediately and either fix it or destroy it.

LIFTING

The secret to proper lifting is to bend your knees, but not your back so that you let the more powerful leg muscles do the work. It is a simple technique, but it makes lifting easier and reduces the possibility of severe back strain.

Here is a fact that proves the point. When you bend your back and lift, there is almost five times more force acting on your lower back than is exerted when you lift the same object by bending your knees and lifting with your legs.

The main points to safe lifting are:

1. Get the center of the weight as high above the ground as possible.

2. Get the object as close as possible to the supporting column (your backbone).
3. Position your legs and feet firmly with your back as nearly vertical as possible.
4. Lift with the arms first, and roll the object over your knee.
5. Pull the object as close to you as possible.
6. Stand up with the load, using the legs, thus placing little or not strain on the back.
7. Now turn your feet, not your hips or shoulders, if your assignment requires turning.

LOCKOUT & TAG PROCEDURE

The purpose of the Lock-Out and Tag Procedure is to ensure the safety of employees and volunteers by preventing the accidental or intentional starting or electrical energizing of machinery or activation of a line while maintenance service is being performed.

The Lock-Out and Tag Procedure must be followed whenever maintenance, repairs or adjustment work is to be performed on electrical or mechanical equipment, high pressure lines or lines carrying hazardous substances.

Any unauthorized person who removes locks and/or tags or attempts to operate "Locked-Out" equipment will be subjected to disciplinary action. In addition, any authorized person who does not correctly follow the Lock-Out and Tag Procedure will be subject to disciplinary action.

This program will be supervised and enforced by Maintenance, Facilities Manager, Department Heads, volunteers and any employees.

Look out for Lockout tags:

DANGER
DO NOT
OPERATE

EQUIPMENT
LOCKED OUT

SIGNED DATE

THE LONE WORKER RULE

Any employee or volunteer engaging in hazardous activity is required to be within sight and hearing at all times of another employee who is familiar with the job and the hazards involved.

ALL HAZARDOUS WORK ASSIGNMENTS MUST BE IN CONFORMANCE WITH THIS RULE. THE LONE WORKER RULE MUST BE APPLIED TO THE FOLLOWING OPERATIONS:

1. Building construction, Power Tool operation.
2. Chemical mixing activities.
3. Electrical and electronic installations, operations, maintenance, and testing.
4. Abrasive blasting operations.
5. Machine Shop operations.
6. Any other hazardous activity as determined by the Safety Committee, Safety Officer or the supervisor responsible for the operation.

MACHINE GUARDS

Machine guards and other safety devices are provided for your protection. They may only be removed by authorized personnel for purposes of making repairs, cleaning, or lubricating. They must be replaced before starting or operating machinery.

OFFICE SAFETY

Very serious accidents can occur in office areas. Some of the more common causes of office injuries are associated with improper material handling, incorrect use of file cabinets, and poor housekeeping.

THE FOLLOWING RULES SHOULD BE STRICTLY OBSERVED:

1. Use the proper lifting techniques. (See section on Lifting.)
2. Do not overload top drawers of filing cabinets. Prevent tipping.
3. Close one filing cabinet drawer before opening another.
4. Close cabinet drawers gently.
5. Keep file and desk drawers closed when not in use.

6. Wipe up spilled liquids immediately.
7. Keep machine cords out of the way where they will not create tripping hazards.
8. Pick up dropped paper clips, pencils, papers, etc. immediately.
9. Use ladders to reach high storage areas. Do not stand on office furniture such as chairs or tables.

PARKING LOT SAFETY

Parking lot safety is very basic and consists of a few easily remembered, extremely important rules. Parking areas are often crowded with vehicles and people, requiring extra care as you maneuver your vehicle.

ALWAYS FOLLOW THESE RULES:

1. **OBSERVE** all posted speed limits and signs, and remember, the **MAXIMUM** speed in the parking lot is 5 m.p.h.
2. **BE AWARE** of pedestrians and other moving vehicles, keep a close watch for:
People emerging from between vehicles, Vehicles moving between parking lanes,
Cars backing out of parking slots
3. **ALWAYS** follow the directional arrows and do not back into the parking slots.
4. **NEVER** park in restricted areas, even momentarily. Be sure that your auto is not blocking fire lanes or access for emergency vehicles to the buildings. Only park in marked slots.
5. **CAUTION** is necessary when rain or sprinkler run-off create slippery surface conditions in the parking lot. Drive slowly and watch your step as you enter the building.
6. **ALWAYS** lock your car, even if you do not store valuables in your car.
7. Never park in handicapped parking spaces unless your car has handicap plates or placard for window. You can be ticketed by the police.
8. Take care when you walk from your car to the facility. Watch out for approaching vehicles. Remember, you can stop more easily than a 3,000 pound vehicle can.
9. Automotive maintenance should not perform in the parking lot, i.e. oil changes or other fluid changes.

PORTABLE POWER TOOLS

The most serious potential hazard in the use of portable power tools is electric shock. Make sure electric tools are checked for electric shorts before use. Stock personnel are responsible for tool testing. Do not use a power tool with frayed cord, defective plug or open contacts. Where a three wire electrical supply is not available, make sure the power tool is properly grounded by use of a third wire and battery clip attached to a source of ground - water pipe, electric conduit, etc.

Double insulated power tools with polarized plugs are also acceptable.

The source of power should always be disconnected before accessories on a portable tool are changed. Do not leave power tools in an overhead place where the power cord or hose, if pulled, will cause the tool to fall. Do not hang cords or hoses over nails, bolts or sharp edges.

Be sure that the power tool being used is adequate for the operation being performed.

Turn off tool before unplugging; be sure tool is off before plugging in.

Should power actuated fasteners (guns) be used, all guidelines are to be followed and strict adherence to all safety procedures.

PERSONAL PROTECTIVE EQUIPMENT

If your work exposes you to potential hazards, appropriate equipment or your personal protection equipment must be used. Protective equipment used at FRRS includes such items a safety glasses, goggles, face shields, respirators, hearing protection, gloves, plastic aprons, arm guards, smocks, bunny suits, hard hats, and safety shoes. You must take reasonable care of your protective equipment and use it only for the purpose intended.. Damaged or worn safety equipment must be replaced prior to use.

Keep safeguards, shields and interlocks in place.

Head Protection

A hard hat/cap, furnished by the FRRS, shall be worn by all employees and volunteers when exposed to energized conductors or apparatus, falling or flying objects, or as required by the person in charge.

(a) Hard hats/caps shall not be painted, drilled, or marked by stamping, scratching, or cutting, or by any method which defaces the shell.

(b) For the purpose of identification, the volunteers name and classification may be placed on the shell, using vinyl tape labels.

- (c) When replacing accessories (all parts except the shell), manufacturer's standard parts shall be used.
- (d) Each employee/volunteer is responsible for checking his/her hard hat/cap for damage such as cracking or chipping. When cracking or chipping is found, it shall be reported to the department head or supervisor who will determine if replacement is necessary. Replacement should occur at least once a year for suspension parts and at least every 5 years from the date of issue for the shell, or as required by the manufacturer's instructions.
- (e) Hard hats/caps shall not be stored in an area where they are exposed to sunlight, extreme heat or cold, or carried on the shelf in the rear of passenger vehicles.

HEARING PROTECTION

Employees/volunteers shall wear approved hearing protective devices:

When operating tools or equipment to which decals have been affixed indicating that hearing protection must be worn, or which generate noise at 85 decibels or above.

When in areas where signs have been posted indicating that hearing protection must be worn, or in areas of noise of 85 decibels or above.

In all other areas where the noise level exposure will, or may, equal or exceed 85 dB, TWA. (an 8-hour time-weighted-average (TWA) of 85 decibels (dB))

When so instructed by the person in charge.

RESPIRATORY PROTECTION

Respiratory protection is available for use where deemed necessary. Everyone required to wear respiratory protection must:

1. Be trained concerning the nature of the hazard, proper respirator selection, fitting maintenance, inspection and storage.
2. Be able to achieve a satisfactory respirator fit test using an irritant smoke test agent.
3. Maintain their facial grooming so that a proper seal is obtained between respirator face piece and face. Facial hair that interferes with this seal is not permitted.
4. Change the cartridges as follows:
 - after 4 continuous hours of use, or
 - when odor or taste is detected (chemical cartridges), or
 - when breathing resistance occurs (dust respirator).

5. Before each use, a positive or negative pressure test must be performed to ensure that the respirator is properly fit.
6. Keep respirator clean and inspect for defects and missing parts.

SAFETY BELTS, LIFE LINES, RAILINGS, ETC.:

Employees/volunteers shall use approved safety belts and straps, life lines, temporary guard railings, or other adequate protection as required when working in elevated positions.

FALL PROTECTION

Fall Protection must be used at heights greater than 6 feet off the ground. Approved safety tie-off and safety belts with monkey tail must be used.

SPILLS AND SPILL CLEAN-UP

Spills are not just accidental, they will occur and need to be cleaned up right away, or better yet, have some containers on hand to catch leaks, especially when locomotives are in the shop.

Just throwing absorbent on a spill can create a hazard also, from slipping to tripping. All spills **MUST** be cleaned up.

SOLDERING IRONS/POTS/PASTE

The soldering irons used are potentially dangerous tools because their temperatures range from 350 to 650 degrees F. They could cause a serious burn to yourself or to someone near you. Never take any soldering iron for granted.

1. Never pick up a solder tip from a tray with your fingers. Use a pair of needlenose pliers.
2. Never use a soldering iron with a loose barrel or a frayed cord.
3. Return the soldering iron to the holder immediately after use.
4. Flux and alcohol are flammable - use extreme care around heat gun.
5. Use flame arrester container for alcohol, close after use.
6. Wear safety glasses.

Note: Lead and tin are not released as hazardous fumes unless heated to about 1000° F, so lead Inhalation, is not a concern.

Never eat, smoke, drink, chew gum or apply make-up at a work area. Always wash your hands with soap and water after leaving your work area as ingestion (swallowing) of lead is a possibility.

Prevent dust by wiping down with a wet rag. Wear gloves while cleaning area.

Wash hands before breaks.

WELDING AND CUTTING

Only qualified personnel shall be assigned to gas and/or electric cutting and welding operations.

WHEN CUTTING AND WELDING, FOLLOW THESE RULES:

1. Wear the proper protective clothing and equipment.
2. Avoid setting up operations close enough to combustible materials to constitute a fire hazard.
3. Always use the proper pressure regulator on the cylinder.
4. Do not mix air or oxygen with combustible gases, except at the burner or in a standard torch.
5. Do not transfer gases from one cylinder to another.
6. Do not expose cylinders to heat.
7. Avoid rough handling or dragging of cylinders.
8. Never: use cylinders as supports or rollers.
9. Never place cylinders where they might contact an electrical circuit.
10. Do not use equipment with leaking valves, hoses, or fittings.

References:

FRRS Safety and Health Program
California Proposition 65
Safety Tailboard Procedures
Safety Tailboard form
Safety Orientation Checklist
General Code of Operating Rules