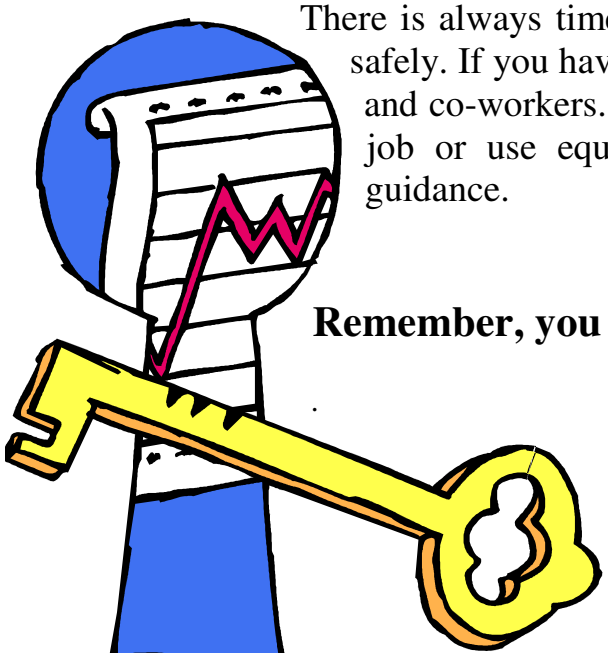
SAFETY HANDBOOK

Introduction:

The City of Oakley wishes to be an example for safety and to provide a safe environment for employees and members of the public. This handbook provides employees with some valuable and required information about how to avoid getting injured or exposed to hazards. Working safely is an essential part of a job and the responsibility of all employees.



There is always time to do the job right and doing it right is doing it safely. If you have a safety suggestion, share it with your supervisor and co-workers. Most importantly, if you are not sure how to do a job or use equipment that you are not familiar with, ask for guidance.

Remember, you are the key to safety.

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SECTION A:

Applies to All Employees

Injury and Illness Prevention Program (IIPP):

By law the City of Oakley is required to have a written Injury and Illness Prevention Program, which is available to all employees for review. This program contains important safety information on the following topics:

- ✓ Safety Responsibilities & General Safety Rules
- ✓ Safety Communications
- ✓ Inspections
- ✓ Hazard Evaluations
- ✓ Injury Reporting
- ✓ Job Safety Classes
- ✓ General Job Hazards
- ✓ Codes of Safe Practices
- ✓ Safety Training

If you do not already have a copy, ask your supervisor for the location of the written Injury and Illness Prevention Program and review all elements in the program.

The following will briefly recap aspects of the IIPP:

Safety Responsibilities & General Safety Rules:
The safety of all employees is of prime importance to the City. All employees, from top management down to entry-level new hires have a responsibility to work safely and to follow the Injury and Illness Prevention Program. The following must be adhered to:

- ✓ Immediately report all injuries, incidents or exposures to your supervisor as soon as possible, but later than the completion of your work shift.

- ✓ Safety equipment issued to employees shall be used as the job assignment dictates. When any safety apparel (gloves, raincoats, coveralls, etc.) becomes worn and requires replacement, the employee shall present the worn safety apparel to the appropriate supervisor for replacement.

- ✓ Report all safety hazards or unsafe work practices observed to your supervisor.

- ✓ Obey all safety rules and regulations. Additional safety rules for specific operations and department's apply to those engaged in hazardous work areas or operations. These rules are contained in other safety handbook chapters and standard operating procedures.
- ✓ Pay strict attention to your work. Fighting, wrestling, joking, and horseplay will not be tolerated.

- ✓ Follow all Warning signs and signals posted to point out dangerous conditions.

- ✓ Do not remove, displace, destroy, damage, or carry off any safety device, safeguard, or warning unless instructed to do so.

- ✓ Wear seat belts, both as an operator or passenger in vehicles equipped with seat belts. The driver is responsible for not moving the vehicle until all belts are fastened. (Exceptions can be authorized by the supervisor where the nature of the vehicle or work reasonably precludes the use of seat belts.)

- ✓ Employees should not jump from truck beds, platforms, fences, or other elevated places unless essentially necessary to the performance of duty, and then only after looking to be sure no objects are in the way.

- ✓ Employees should not ride in truck beds or be transported by industrial (forklift) trucks unless they are contained within an attached device designed for human transport or lifting.

- ✓ Running is dangerous. Employees should refrain from running unless absolutely necessary to the performance of duty.

- ✓ Only trained and authorized persons shall operate power equipment. An employee assigned to operate any power equipment (truck, tractor, mower, sprayer, chain saw, etc.) is responsible for all safety rules involved in its use.

- ✓ Act in a manner designed to preserve the health and safety of yourself and the public being served.

- ✓ Never take short cuts in or over dangerous places. Anyone taking unnecessary risks that place him or herself or others in danger shall be subject to disciplinary action.

- ✓ Use, possession, sale or being under the influence of illegal drugs, misuse of prescription drugs and/or alcohol is not permitted on Company Property or while "on duty".

- ✓ Only authorized and trained Employees may repair or adjust machinery and equipment.

- ✓ Only qualified and trained Employees may work on or near Exposed Energized Electrical Parts or Electrical Equipment. Follow Electrical Safety Rules when working with electrically powered machinery and equipment.

- ✓ Only authorized and trained Employees may enter a posted Confined Space. All confined spaces will be posted *Confined Space - Permit Required*. Entry is allowed only after permits are properly issued.

- ✓ Only authorized and trained Employees may dispense or use chemicals. It is your responsibility to know where MSDS's are located and that they are available for your use and review.

It is the duty and responsibility of each employee to participate in the effort to promote and maintain a safe work environment. Failure to follow the above rules may cause serious injury and/or illness.

Disciplinary Action, up to and including Termination, may be used to assure rule enforcement. Please use common sense and think before you act. If you are not sure how to complete a job or task safely or have any questions, ask your supervisor.

Safety Communications:

The City of Oakley has a safety committee that meets periodically to discuss safety issues. You may also have safety bulletins or information posted in employee work areas. Ask your supervisor who is on the safety committee. You can forward suggestions directly to your safety committee.

Worksite Safety Inspections:

There is a formal safety inspection program as part of the IIPP, with the purpose of identifying safety hazards before they cause an injury. However it is important for you to inspect your work area, tools you use, vehicles you operate and your own personal protective equipment each day, for safe operation and sufficient supply. Do not use, take out of service and report to your supervisor all defective equipment.

Job Safety Classes and Codes of Safe Practices:

All employees are divided into Job Safety Classes by the nature of their work performed. Examples are:

- Administrative / Administrative Support Personnel
- Maintenance Personnel
- Inspection Services Personnel
- Recreation

Ask your Supervisor which Job Safety Class that you belong to. Then in the IIPP document (appendix), locate your Job Safety Class and Codes of Safe Practices. Review this, as it identifies the general hazards of your job and the safe practices that are expected of you, as well as of your Supervisor and Division/Department Head. The Codes of Safe Practices also identifies the specific Safety Training that applies to your job.

Prevention of Violence in the Workplace:

Workplace violence includes threats and/or acts of physical violence or verbal abuse by employees, visitors, or the public, or other signs of stress, strain, or abusive conduct that demonstrates recognizable signs of violent behavior.

It is City policy to conduct business, provide services, and protect its employees and the public from harm by providing a safe and secure work environment that has zero tolerance for violence, threats, harassment, and intimidation.

The City has a written **Workplace Security** policy and program designed to minimize instances of workplace violence. Please check with you Supervisor for specific information regarding this program. However some basic information on this program is as follows:

The three major types of workplace violence are:

TYPE I.

The perpetrator has no legitimate relationship to the workplace and usually enters the workplace to commit a robbery or other criminal act. Bill payments and cash handling at administrative offices is where this type of workplace violence may occur.

TYPE II.

The perpetrator may be either the recipient or the object of a service provided by the agency, e.g., the assailant is a current or former client, customer, passenger, criminal suspect, or prisoner. These involve assaults on public safety and correctional personnel, municipal bus drivers, community service providers, receptionists, personnel offices, resident engineers, and other public employees who provide professional, public safety, administrative, or business services to the public.

TYPE III.

The perpetrator has an employment-related involvement with the workplace. A Type III event usually involves an assault or a threat of violence, or a physical act of violence resulting in a fatal or nonfatal injury, committed by a current or former employee, supervisor or manager; a current or former spouse or lover; a relative or friend; or some other person who has a dispute involving an employee in the workplace.

Employee Action

You are responsible for following proper work practices and for helping maintain a safe and secure work environment by:

- being considerate and respectful of co-workers, visitors, and the public; and,
- not engaging in any disruptive behavior, which may include profanity, obscenities, obscene gestures, or exhibiting abusive conduct that demonstrates recognizable signs of violent behavior.

Whenever an actual or alleged act of workplace violence occurs, the first person who becomes aware of an accident/incident shall report the incident to their supervisor, Department Head, or Human Resources immediately.

The first person aware of an incident shall take necessary precautions to ensure their safety and the safety of anyone who may be in danger.

After this is done, obtain sufficient preliminary information about the accident or incident so that management can be as well informed as possible during the early stages of the reporting procedures:

Types of Reportable Incidents:

- An employee is struck by another person.
- An employee is struck with another object; such as, a stapler, ruler, a book, a door, a computer mouse.
- An employee is spit upon.
- An employee receives a bomb threat.
- An employee receives a threat involving the destruction of personal or agency property.
- An employee feels threatened, harassed, or intimidated by a co-worker, visitor, or members of the public.
- A person attempts to strike an employee, to throw an object at an employee, or to hold or restrain an employee's movements.
- A person writes a threat on a Departmental form; mails or delivers a threatening letter, postcard, or note - via electronic or paper.
- A person challenges an employee to a fist fight.
- A person purposely damages an employee's vehicle while the employee's vehicle is parked.
- A person purposely damages an employee's personal property, calculator, purse, shoes, clothing, etc.
- A person purposely damages an office wall, kicks the door and breaks the glass, or causes other damage to state property.

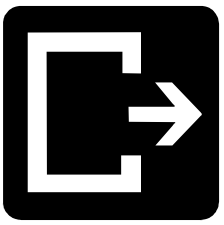
All incidents of verbal or written abuse must be reported when an employee feels threatened, provoked, or intimidated by the incident, or when the person making the statement or comment intends for their conduct to be perceived as a threat.

Emergency Action/ Fire Prevention Plan:

Emergency Action Plans are designed to control events and minimize the affects. Through careful pre-planning, establishment of Emergency Action Teams, training and drills, employees can be safeguarded and potential for injury or damage minimized.

The City and your department has a specific Emergency Action Plan developed so that building evacuations can be enacted in a swift and efficient manner. The Plan includes:

1. Exits routes, meeting areas and employee accounting
2. Emergency evacuation, incident command and notification to emergency services
3. Bomb threats and facility security
4. First Aid Response
5. Fire Prevention and the use of fire extinguishers



There are evacuation maps posted in the work area that identifies the routes to take to exit the facility. All employees when evacuating a building should meet at a predestinated location. Ask your supervisor where this location is and what the evacuation notification will be (bell/ intercom/ word of mouth). You may also review the written Emergency Action Plan.

The follow Fire Prevention protocols apply in all departments:

- Your job in fire prevention is to keep things that start fires away from things that burn. No open flames or smoking shall be permitted in areas where flammable gases or liquids are stored or used. *No Smoking,* *No Open Flames" signs shall be posted.
- Report fires promptly to the Fire District by calling 911. Do not risk your life trying to extinguish a fire, which may get out of control.
- Flammable liquids shall be stored and properly labeled in an approved safety cans. Drums of flammable liquids shall be stored in a upright position and dispensing shall only be done with an approved crank-type pump. All drums of flammable liquids shall be properly grounded.
- The dispensing of flammable liquids shall be done in an approved mixing and dispensing room or in the open and well away from open flames and other sources of ignition, and all containers shall be grounded or bonded.
- Open-flame heaters, including water heaters, shall be properly guarded and located. No clothing or combustible material shall be stored in close proximity to any open flame or electric heater in such a manner as to permit Ignition.
- Care should be exercised in the correct location and selection of a proper type of fire extinguisher. Learn the location of and proper use of fire extinguishers and hose lines.

- In the event that circumstances require the use of carbon-dioxide fire extinguishers in enclosed spaces of manholes, extreme caution shall be exercised to insure that no one enters the enclosed space until the carbon dioxide has been expelled by ventilation.
- The City shall insure periodic inspection and proper care of fire extinguishers. When an extinguisher appears to be in doubtful condition report it immediately to the supervisor. All fire extinguishers shall be serviced at least once a year and immediately after being used.
- Exit signs and directional exit signs, when required, shall be properly maintained. Exit doors must be unlocked when the building is occupied and free passage to and through these exits must be maintained at all times. Know the exits from the building in which you work.
- Passageways and work areas around fire extinguishers shall be kept unobstructed at all times.
- Oil and paint soaked rags shall be stored only in approved safety containers. Disposal of such rags shall be only in safe receptacles placed outside the building daily, or in approved safety containers.

FIRE EXTINGUISHERS

Fire Extinguishers are classed by the type fire they can put out. Some extinguishers are **Combination** types that can be used on several different types of fires

Using a Fire Extinguisher

P-A-S-S

Pull the pin

Aim at base of fire

Squeeze the handle

Sweep from side to side

Types of Fires

Class A

Combustible material such as paper and wood

Class B

Fires involving flammable liquids such as gasoline, paint, diesel fuel or solvents

Class C

Fires started in electrical equipment by arcing or overheating
Fires involving combustible metal powders, flakes or shavings

Safety Rules

Stand 6 to 8 feet away from the fire

Use an extinguisher ONLY if you have been trained to use it.

Fire Extinguishers are for small fires in the early stages.

Know where fire extinguishers are located

Never place a pressurized fire extinguisher upright unless you are holding it - if it falls over the nozzle can break off

All fire extinguishers should have an inspection tag and a trigger seal and a pin

After use, do not put a fire extinguishers back on its mounting – it must be refilled before being returned to its location

Office Safety:

The office is like any other work environment in that it may present potential health and safety hazards to you. Environmental conditions, such as noise, temperature, and humidity, may cause temporary discomforts. Environmental pollutants such as chemical vapors released from new carpeting and furniture may also induce discomforts. Notify your supervisor should you be affected by any of these conditions.

Housekeeping

Good housekeeping is an essential important element of accident prevention in offices. You are responsible for maintaining your work area in a clean and uncluttered manner.

Passageways in offices should be free and clear of obstructions. All aisles within the office should be clearly defined and kept free of obstructions. Chairs, files, bookcases and desks must be replaced or repaired if they become damaged. Damaged chairs can be especially hazardous. Notify your supervisor if there is damaged equipment in your work area.

Filing cabinet drawers should always be kept closed when not in use. Heavy files should be placed in the bottom file drawers. File cabinets and bookcases over 50" tall or more than 4 drawers shall be secured to a wall or braced to avoid tipping over in an earthquake.

Materials stored within supply rooms must be neatly stacked and readily reached by adequate aisles. Care should be taken to stack materials so they will not topple over. Under no circumstances should materials be stacked within 18 inches of ceiling fire sprinkler heads. Materials shall not be stored so that they project into aisles or passageways in a manner that could cause persons to trip or could hinder emergency evacuation. Use a step stool or ladder to reach high objects. Never climb on chairs or tables.

Electrical Safety

Electric cords should be examined on a routine basis for fraying and exposed wiring. Particular attention should be paid to connections behind furniture, since files and bookcases may be pushed tightly against electric outlets, severely bending the cord at the plug.

Use of Extension Cords

- Extension cords shall only be used in temporary situations where fixed wiring is not feasible.
- Extension cords shall be kept in good repair, free from defects in their insulation. They will not be kinked, knotted, abraded, or cut.
- Extension cords shall be placed so they do not present a tripping or slipping hazard. Extension cords shall not be placed through doorways having doors that can be closed, and thereby damage the cord.

- All extension cords shall be of the grounding type (three-conductor).
- Surge protectors shall not be connected / chained together.

Computer Work Stations

Musculoskeletal problems occur with computer operations. Most common are complaints relating to the neck, shoulders, and back. Others concern the arms and hands and occasionally the legs. Certain common characteristics have been identified and associated with increased risk of musculoskeletal problems. These include:

- Design of the workstation.
- Nature of the task.
- Repetitiveness of the job.
- Degree of postural constraint.
- Work pace.
- Work/rest schedules.

The key to comfort is in maintaining the body in a relaxed, natural position. The ideal work position is to have the arms hanging relaxed from the shoulders. Arms should be bent at right angles at the elbow, with the hands held in a straight line with forearms and elbows close to the body. The head should be in line with the body and slightly forward.

VDT Display Screens

When work is conducted at a computer, the top of the display screen should be at, or just slightly below, eye level. This allows the eyes to view the screen at a comfortable level, without having to tilt the head or move the back muscles.

Control glare at the source whenever possible; place VDTs so that they are parallel to direct sources of light such as windows and overhead lights, and use window treatments if necessary. When glare sources cannot be removed, seek appropriate screen treatments such as glare filters. Keep the screen clean.

Your Chair

The chair is usually the most important piece of furniture that affects user comfort in the office. The chair should be adjusted for comfort; making sure the back is supported and that the seat pan is at a height so that the thighs are horizontal and feet are flat on the floor. An ergonomically sound chair requires four degrees of freedom - seat pan tilt, backrest angle, seat height, and backrest height. Operators can then vary the chair adjustments according to the task. In general, chairs with the most easily adjustable dimensions permit the most flexibility to support people's preferred sitting postures.

Armrests on chairs are recommended for most office work except where they interfere with the task. Resting arms on armrests is a very effective way to reduce arm discomforts. Armrests

should be sufficiently short and low to allow workers to get close enough to their work surfaces, especially for tasks that require fixed arm postures above the work surface.

Work/Rest Schedules

One solution for stress and fatigue is to design the computer operator's work so that tasks requiring concentrated work at the terminal are alternated with non-computer based tasks throughout the workday. Also, a short break (5-10 minutes) should be taken at least once each hour when involved in continuous work at the computer.

Other Solutions

Additional measures that will aid in reducing discomfort while working with VDTs include:

- Change position, stand up or stretch whenever you start to feel tired.
- Use a soft touch on the keyboard and keep your shoulders, hands, and fingers relaxed.
- Use a document holder, positioned at about the same plane and distance as the display screen.
- Rest your eyes by occasionally looking off into the distance.

Preventing Strain Injuries to Backs, Shoulders, and Knees:

Strain and soft tissue injuries happen to employees in all departments. While many occupations require routine lifting, a back injury can occur even if lifting is not part of your job. Important guidelines for preventing strain injuries are:

- Warm up and do stretching exercises before attempting to lift.
- Plan your lift and movements ahead.
- Use mechanical devices, dollies, hand trucks or carts as much as possible.
- Lift only what you can do safely.
- Keep a wide stance and solid footing
- Keep back in its natural curves, don't bend over, and squat.
- Keep your head up and tuck chin to keep the spine straight.
- Use your leg muscles to lift
- Never twist while lifting
- Carry loads close to your body
- Lower the load safely by using your leg muscles.
- Work as a team for heavy, bulky, large or awkward loads.

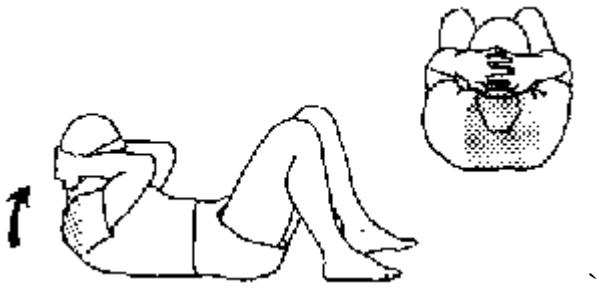
How to Stretch:

-Stretch to a point where you feel mild tension and relax as you hold the stretch for 10-30 seconds.

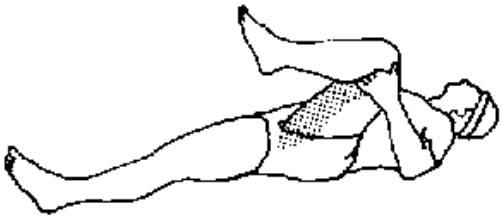
-Breathe slowly and rhythmically as you stretch within your comfortable limits; never to the point of pain.

-To stretch correctly the feeling of stretch should slightly subside as you hold the stretch.

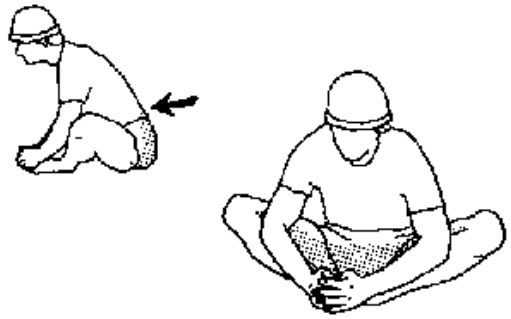
#1 Interlace your fingers behind your head and rest your arms on the floor. Using the power of your arms, slowly bring your head, neck and shoulders forward until you feel a slight stretch. Hold an easy stretch for 5 seconds. Repeat three times. Do not overstretch.



#2 Next, straighten both legs and relax, then pull your left leg toward your chest. For this stretch keep the back of your head on the mat, if possible, but don't strain. Hold an easy stretch for 30 seconds. Repeat, pulling your right leg toward your chest.

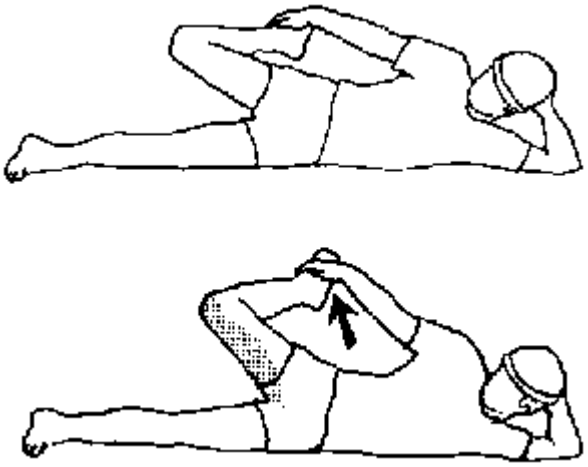


#3 Put the soles of your feet together with your heels a comfortable distance from your groin. With your hands around your feet slowly contract your abdominals to assist you in flexing forward until you feel an easy stretch in the groin. Make your movement forward by bending from the hips and not from the shoulders. If possible, keep your elbows on the outside of your lower legs for greater stability during the stretch. Hold a comfortable stretch for 20-30 seconds.

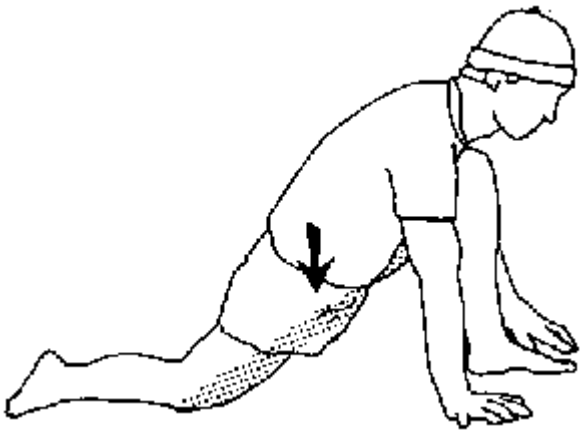


#4 Lie on your left side and rest the side of your head in the palm of your left hand. Hold the top of your right foot with your right hand between the toes and ankle joint. Now move the front of your right hip forward by contracting the right butt (gluteus) muscles as you push your right foot into your right hand. This should stretch the front of your thigh. Hold an easy stretch for 10 seconds. Keep your body in a straight line.

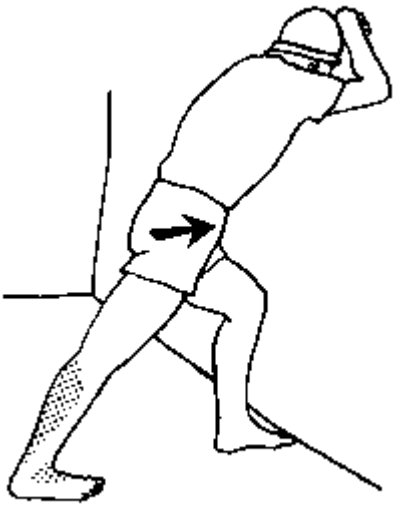
Repeat for other leg.



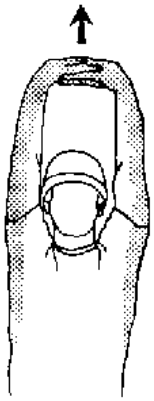
#5 As shown in the drawing above, move one leg forward until the knee of the forward leg is directly over the ankle. Your other knee should be resting on the floor. Now without changing the position of the knee on the floor or the forward foot, lower the front of your hip downward to create an easy stretch. This stretch should be felt in front of the hip and possibly in your hamstrings and groin. This will help relieve tension in the lower back. Hold the stretch for 20-30 seconds. Repeat for other leg.



#6 To stretch your calf, stand a little ways from a solid support and lean on it with your forearms, your head may rest on your hands. Bend one leg and place your foot on the ground in front of you leaving the other leg straight, behind you. Slowly move your hips forward until you feel a stretch in the calf of your straight leg. Be sure to keep the heel of the foot of the straight leg on the ground and your toes pointed straight ahead. Hold an easy stretch for 20 seconds. Do not bounce. Stretch both legs.

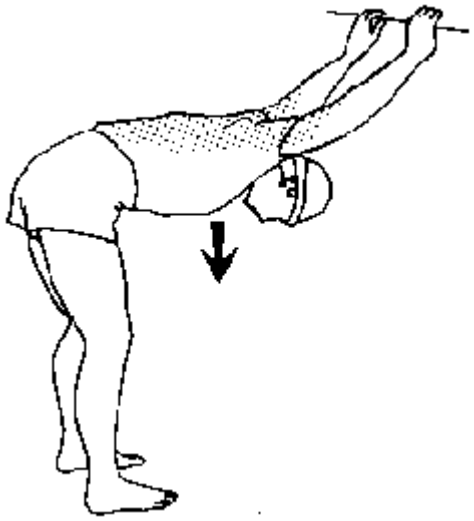


#7 Interlace your fingers above your head. Now, with your palms facing upward, push your arms slightly back and up. Feel the stretch in arms, shoulders and upper back. Hold stretch for 15 seconds. Do not hold your breath. This stretch is good to do anywhere, anytime.



#8 Standing with knees slightly bent, place your palms on lower back just above your hips, fingers pointing downward. Gently push your palms forward to create an extension in the lower back. Hold comfortable pressure for 10-12 seconds. Repeat twice. Use this stretch after sitting for an extended period of time.

#9 Place both hands shoulder width apart on a fence or ledge and let your upper body drop down as you keep your knees slightly bent (1 inch). Your hips should be directly above your feet. To change the area of the stretch, bend your knees just a bit more and/or place your hands at different heights. Find a stretch that you can hold for at least 30 seconds. (Remember to always bend your knees when coming out of this stretch.)



Hazard Communication & Chemical Safety:

Your job may involve the use and /or handling of chemicals, or you may work in an area where others use chemicals (such as custodians) and you may be exposed to a hazardous substance. In either case, you have a *right to know* about the chemical hazards present in your workplace. Therefore we have a Hazard Communication Program, required by law, which will inform you of the specific chemical hazards present in your workplace. Please ask your Supervisor for the location of your department's Hazard Communication Program and Material Safety Data Sheets/Safety Data Sheets (MSDS/SDS).

Please keep in mind that some chemicals are explosive, corrosive, flammable, or toxic. Other chemicals are relatively safe to use and store but may become dangerous when they interact with other substances. To avoid injury and/or property damage, persons who handle chemicals in any area of this agency must understand the hazardous properties of the chemicals.

Before using a specific chemical, safe handling methods and health hazards must always be reviewed. Supervisors are responsible for ensuring that the equipment needed to work safely with chemicals is accessible and maintained for all employees on all shifts.

Job Specific Training

Employees will receive on the job training from their supervisor. This training will cover the proper use, inspection and storage of necessary personal protective equipment and chemical safety training for the specific chemicals they will be using or will be working around.

General Chemical Safety

Assume all chemicals are hazardous. The number of hazardous chemicals and the number of reactions between them is so large that prior knowledge of all potential hazards cannot be assumed. Use chemicals in as small quantities as possible to minimize exposure and reduce possible harmful effects.

The following general safety rules shall be observed when working with chemicals:

- Read and understand the Material Safety Data Sheets/Safety Data Sheets.
- Keep the work area clean and orderly.
- Use the necessary safety equipment.
- Carefully label every container with the identity of its contents and appropriate hazard warnings.
- Store incompatible chemicals in separate areas.
- Substitute less toxic materials whenever possible.
- Limit the volume of volatile or flammable material to the minimum needed for short operation periods.
- Provide means of containing the material if equipment or containers should break or spill their contents.

Chemical Storage

The separation of chemicals (solids or liquids) during storage is necessary to reduce the possibility of unwanted chemical reactions caused by accidental mixing. Explosives should be stored separately outdoors. Use either distance or barriers (e.g., trays) to isolate chemicals into the following groups:

- Flammable Liquids: store in approved flammable storage lockers.
- Acids: treat as flammable liquids
- Bases: do not store bases with acids or any other material
- Other liquids: ensure other liquids are not incompatible with any other chemical in the same storage location.
- Lips, strips, or bars are to be installed across the width of storage shelves to restrain the chemicals in case of earthquake.

Chemicals will not be stored in the same refrigerator used for food storage.
Refrigerators used for storing chemicals must be appropriately identified by a label on the door.

Container Labels

It is extremely important that all containers of chemicals are properly labeled. This includes every type of container from a 5000 gallon storage tank to a spray bottle of degreaser. The following requirements apply:

- All containers will have the appropriate label; tag or marking prominently displayed that indicates the identity, safety and health hazards.
- All warning labels, tags, etc., must be maintained in a legible condition and not be defaced. Safety inspections shall check for compliance of this rule.
- Incoming chemicals are to be checked for proper labeling and Material Safety Data Sheets. Forward new MSDS/SDS to your supervisor for filing.

Emergencies and Spills

In case of an emergency, implement the proper Emergency Action Plan

- Evacuate people from the area.
- Isolate the area.
- If the material is flammable, turn off ignition and heat sources.
- Only personnel specifically trained in emergency response are permitted to participate in chemical emergency procedures beyond those required to evacuate the area.

Housekeeping

- Maintain the smallest possible inventory of chemicals to meet immediate needs.
- Periodically review stock of chemicals on hand.
- Ensure that storage areas, or equipment containing large quantities of chemicals, are secure from accidental spills.
- Rinse emptied bottles that contain acids or inflammable solvents before disposal.

- Recycle unused laboratory chemicals wherever possible.
- ***DO NOT*** Place hazardous chemicals in salvage or garbage receptacles.
- ***DO NOT*** Pour chemicals onto the ground.
- ***DO NOT*** Dispose of chemicals through the storm drain system.
- ***DO NOT*** Dispose of highly toxic, malodorous chemicals down sinks or sewer drains.

MSDS/SDS Information

Material Safety Data Sheets/Safety Data Sheets are provided by the chemical manufacturer to provide additional information concerning safe use of the product. Each MSDS/SDS provides:

- Common Name and Chemical Name of the material
- Name, address and phone number of the manufacturer
- Emergency phone numbers for immediate hazard information
- Date the MSDS/SDS was last updated
- Listing of hazardous ingredients
- Chemical hazards of the material
- Information for identification of chemical and physical properties

Employee Use of MSDS/SDS

For MSDS/SDS use to be effective, YOU must:

- Know the location of the MSDS/SDS
- Understand the major points for each chemical
- Check MSDS/SDS when more information is needed or questions arise
- Be able to quickly locate the emergency information on the MSDS/SDS
- Follow the safety practices provided on the MSDS/SDS

SECTION B:

Applies to employees that fall into the Maintenance and Inspection safety classifications

Housekeeping:

- ✓ Each employee shall be responsible for cleaning up his or her own working area.
- ✓ Aisles and passageways shall not be used for the storage of hand trucks and stock.
- ✓ Oil or grease shall immediately be wiped up or sprinkled with absorbent floor compound.
- ✓ Gather up all tools and return them to their proper places. Make sure that no tool or other appliance has been left in any machine or other place where it might fall or cause damage when the power is turned on.
- ✓ Walkways, stairways, and fixed ladders shall be kept free of obstructions.
- ✓ Return all surplus materials to stock.
- ✓ The bench and work area to which you are assigned should be clean and neat. Keep tools and equipment arranged in a safe, orderly manner.
- ✓ Welding leads, electric, steam and airlines should be kept off of floor whenever possible.
- ✓ Scrap material and rubbish shall be placed only in containers provided for that purpose.
- ✓ Metal stock, lumber, and cased or crated goods should be stored in a neat and orderly manner. Round stock should be blocked to prevent rolling, gas cylinders secured by chains in an upright position, and tiered materials cross-tied.
- ✓ Do not hang clothing, towels, rags, or other combustible materials on radiators, hot lines, or similar locations.
- ✓ Equipment or materials shall be neatly stored when not in use.

Personal Protective Equipment:

Appropriate protective clothing and safety devices shall be provided to and worn by employees. Please note that failure to use your proper protective equipment may subject you to disciplinary action:

- Hard hats shall be worn when assigned to the following jobs (or as Directed by your supervisor or as deemed necessary by the type of work): construction (hard hats should generally be worn on all construction projects, especially for work involving power equipment and excavation), working with backhoe (digging, trenching, loading), and other assignments as designated by the supervisor requiring the use of hard hats. Hard hats are recommended when assembling, erecting and performing maintenance on park structures, and installation of play equipment. Your supervisor will be responsible for determining conditions which may require that hard hats be worn and will monitor the use of hard hats to ensure employee safety.

- Proper type of eye protection for the job shall be worn by employees working in locations where eye hazards due to flying particles, hazardous substances, or injurious light rays are inherent in the work or environment. Eye protection shall be worn when assigned to the following jobs (or as Directed by your supervisor or as you deem necessary): pick/sledge (digging, breaking, cleaning), mowing (operating rotary mowers), all rotating equipment such as saws (cutting wood or timber), chain saw, and other hazardous assignments designated by your supervisor.

- Approved face-protection welding helmets must be worn by all employees engaged in gas or electric welding. Skin should be adequately protected against flash burns.

- Gloves of an appropriate type shall be worn when handling rough, sharp, and hot materials, as well as chemically active substances.

- Gloves, heavy-soled boots, and where appropriate, protective clothing shall be worn during the handling of hot asphalt.

- Personnel operating pavement breakers shall wear foot guards or steel toe safety shoes.

- Approved breathing devices shall be worn by employees when working in areas containing dusts or mists, which if breathed, would cause bodily injury. Use approved respiratory devices for fumes, vapors or gases where there may be an oxygen deficiency or concentration of harmful gases. See Respiratory Protection.

- Sound attenuators; (ear protectors) shall be worn by those individuals whose work environment involves loud noises and requires protection. Ear protection shall be worn when assigned to the following jobs (or as Directed by the employee's supervisor or as deemed necessary by the employee): backhoe operator, power saw operator, tractor

operator, rototilling, vibraplate operator, and other hazardous assignments designated by the supervisor.

- Appropriate footwear for the type of work being performed shall be worn by all employees. Safety shoes with toe guards shall be worn at all times by employees designated to wear safety shoes. Shoes shall be replaced as per agency procedures as needed to maintain safety.

- Safety jackets or vests shall be worn by all City employees, except those in the Police Department, who are working or observing work being done in or near any State highway, County road, or City street. Safety jackets or vests shall be the approved type and shall be kept in good condition and clean.

- Safety jackets or vests are not a substitute for the proper use of warning signs, cones and barricades when working on or near any street, road or highway.

- Latex gloves for the protection of Bloodborne pathogens and additional protective equipment specific to the unique hazards of each job shall be supplied by the agency and worn by employees as required for Universal Precautions, MSDS/SDS or as directed by supervisors.

Fall Prevention Program:

Slips, trips, and falls constitute the majority of general industry accidents. They cause 15% of all accidental deaths, and are second only to motor vehicles as a cause of fatalities. Active participation by management, supervisors and employees is necessary to prevent hazardous conditions that could result in slips, trips or falls.

Supervisor Responsibilities:

- Conduct routine inspections to ensure all walking and working surfaces are free from slip, trip and fall hazards.
- Conduct training for employees who use ladders, scaffolds or other elevated platforms
- Conduct training in use and inspection of fall prevention & arrest equipment
- Ensure proper ladders are used for specific tasks
- Provide adequate fall prevention & arrest equipment

Employee Responsibilities:

- Maintain work areas free from slip, trip & fall hazards
- Correct or immediately report slip, trip and fall hazards
- Use proper ladders for assigned tasks

Housekeeping

Simple Housekeeping methods can prevent slip-trip-fall hazards:

- All work areas, passageways, storerooms, and service rooms shall be kept clean and orderly and in a sanitary condition.
- The floor of every area shall be maintained in a clean and, so far as possible, a dry condition. Where wet processes are used, drainage shall be maintained and gratings, mats, or raised platforms shall be provided.
- Every floor, work area and passageway shall be kept free from protruding nails, splinters, holes, or loose boards.

Aisles and Passageways

- Aisles and passageways shall be kept clear and in good repair with no obstruction across or in aisles that could create a hazard.
- Permanent aisles and passageways shall be appropriately marked.
- Where mechanical handling equipment is used, aisles shall be sufficiently wide. Improper aisle widths coupled with poor housekeeping and vehicle traffic can cause injury to employees, damage the equipment and material, and can limit egress in emergencies.

Floor Loading Protection

- Load rating limits shall be marked on plates and conspicuously posted. It shall be unlawful to place, or cause, or permit to be placed, on any floor or roof of a building or other structure, a load greater than that for which such floor or roof is approved.

Guarding Floor & Wall Openings

- Floor openings and holes, wall openings and holes, and the open sides of platforms may create hazards. People may fall through the openings or over the sides to the level below. Objects, such as tools or parts, may fall through the holes and strike people or damage machinery on lower levels.

Protection for Floor Openings

- Standard railings shall be provided on all exposed sides of a stairway opening, except at the stairway entrance. For infrequently used stairways, where traffic across the opening prevents the use of a fixed standard railing, the guard shall consist of a hinged floor opening cover of standard strength and construction along with removable standard railings on all exposed sides, except at the stairway entrance.

Every floor hole into which persons can accidentally walk shall be guarded by either:

- A standard railing with toe board, or
- A floor hole cover of standard strength and construction.

While the cover is not in place, the floor hole shall be constantly attended by someone or shall be protected by a removable standard railing.

Protection of Open-Sided Floors, Platforms, and Runways

Every open-sided floor or platform 4 feet or more above adjacent floor or ground level shall be guarded by a standard railing on all open sides, except where there is an entrance to a ramp, stairway, or fixed ladder. The railing shall be provided with a toe board wherever, beneath the open sides:

- Persons can pass,

- There is moving machinery, or
- There is equipment with which falling materials could create a hazard.

A standard railing, or the equivalent, on all sides 4 feet or more above floor or ground level, shall guard every runway. Wherever tools, machine parts, or materials are likely to be used on the runway, a toe board shall also be provided on each exposed side.

Stairway Railings and Guards

Every flight of stairs with four or more risers shall have standard stair railings or standard handrails as specified below. Stair width is measured clear of all obstructions except handrails.

- On stairways less than 44 inches wide having both sides enclosed, at least one handrail shall be affixed, preferably on the right side descending.
- On stairways less than 44 inches wide with one open side, at least one stair rail shall be affixed on the open side.
- On stairways less than 44 inches wide having both sides open, two stair rails shall be provided, one for each side.
- On stairways more than 44 inches wide, but less than 88 inches, one handrail shall be provided on each enclosed side and one stair rail on each open side.
- On stairways 88 inches or more in width, one handrail shall be provided on each enclosed side, one stair rail on each open side, and one intermediate stair rail placed approximately in the middle of the stairs.

A "standard stair railing" (stair rail) shall be of construction similar to a standard railing, but the vertical height shall be not more than 34 inches nor less than 30 inches from the upper surface of the top rail to the surface of the tread in line with the face of the riser at the forward edge of the tread.

Scaffolding Safety

- The footing or anchorage for scaffolds shall be sound, rigid and capable of carrying the maximum intended load without settling or displacement. Unstable objects, such as barrels, boxes, loose brick, or concrete blocks shall not be used to support scaffolds or planks.
- Scaffolds and their components shall be capable of supporting at least *four times* the maximum intended load.
- Scaffolds shall be maintained in a safe condition and shall not be altered or moved horizontally while they are in use or occupied.
- Damaged or weakened scaffolds shall be immediately repaired and shall not be used until repairs have been completed.

- A safe means must be provided to gain access to the working platform level through the use of a ladder, ramp, etc.
- Overhead protection must be provided for personnel on a scaffold exposed to overhead hazards.
- Guardrails, midrails, and toe boards must be installed on all open sides and ends of platforms more than 10 feet above the ground or floor. Wire mesh must be installed between the toe board and the guardrail along the entire opening, where persons are required to work or pass under the scaffolds.
- Employees shall not work on scaffolds during storms or high winds or when covered with ice or snow.
- As noted earlier, there are a number of scaffold types, and 1910.28 should be reviewed carefully for special requirements that apply to each type.

Ladder Safety:

Ladders present unique opportunities for unsafe acts and unsafe conditions. Employees who use ladders must be trained in proper selection, inspection, use and storage. Improper use of ladders has cause a large percentage of accidents in the workplace are of accidents.

Fixed Ladders

A fixed ladder is a ladder permanently attached to a structure, building or equipment. A point to remember is that fixed ladders, with a length of more than 20 feet to a maximum unbroken length of 30 feet shall be equipped with cages or a ladder safety device. A "cage" is a guard that is fastened to the side rails of the fixed ladder or to the structure to encircle the climbing space of the ladder for the safety of the person who must climb the ladder

Cages shall extend a minimum of 42 inches above the top of a landing, unless other acceptable protection is provided.

Cages shall extend down the ladder to a point not less than 7 feet no more than 8 feet above the base of the ladder.

Ladder Hazards

Falls from ladders can result in broken bone and death. Ladder safety is a lifesaving program at our company.

Hazards include:

- Ladders with missing or broken parts
- Using a ladder with too low a weight rating
- Using a ladder that is too short for purpose
- Using metal ladders near electrical wires
- Using ladders as a working platform
- Objects falling from ladders

Ladder Inspection

Inspect ladders before each use.

- All rungs and steps are free of oil, grease, dirt, etc.
- All fittings are tight
- Spreaders or other locking devices are in place
- Non-skid safety feet are in place
- No structural defects, all support braces intact

Do not use broken ladders. Most ladders cannot be repaired to manufacturer specifications. Throw away all broken ladders.

Ladder Storage

Store ladders on sturdy hooks in areas where they cannot be damaged. Store to prevent warping or sagging. Do not hang anything on ladders that are in a stored condition.

Ladder Ratings

Ladder weight ratings

- I-A 300 pounds (heavy duty)
- I 250 pounds (heavy duty)
- II 225 pounds (medium duty)
- **III 200 pounds (light duty) – should not be used in the workplace**

Limits on ladder length.

- A stepladder should be no more than 20 feet high.
- A one-section ladder should be no more than 30 feet.
- An extension ladder can go to 60 feet, but the sections must overlap.

Ladder Setup

The following procedure must be followed to prevent ladder accidents:

- Place ladder on a clean slip free level surface
- Extend the ladder to have about 4 feet above the top support or work area.
- Anchor the top and bottom of the ladder
- Place the ladder base 1/4 the height, of the ladder, from the wall when using an extension ladder.
- Never allow more than one person on a ladder
- Use carriers and tool belts to carry objects up a ladder
- Do not lean out from the ladder in any direction
- If you have a fear of heights - don't climb a ladder
- Do not allow other to work under a ladder in use.

Ladder Maintenance

- Keep ladders clean
- Never replace broken parts unless provided by the original manufacturer
- Do not attempt to repair broken side rails
- Keep all threaded fasteners properly adjusted
- Replace worn steps with parts from manufacturer

Aerial & Scissors Lift Safety:

Purpose

The purpose of this section is to outline policies and procedures for the safe operations of scissors lift and aerial lifts. It applies to all operations, programs and locations that require employees to access elevated locations and/or use aerial work platforms.

Definitions

Aerial Lift – A piece of equipment, extendable and/or articulating, designed to position personnel and/or materials in elevated locations.
ANSI – American National Standards Institute.
Lanyard – ANSI approved line designed for supporting one person, with one end connected to a safety harness and the other end attached to a suitable anchorage able to support 5,400 pounds of force. The anchorage can be a structural steel member, an approved lifeline, or other approved anchorage points.
Full Body Harness – ANSI approved body device designed for fall protection, which by reason of its attachment to a lanyard and safety line or an approved anchorage point, which will limit a fall to six (6) feet or less.

Fall Protection

Full body harnesses and lanyards shall only be used, as intended by the manufacturer, for employee fall protection. Appropriate devices shall be used to provide 100% fall protection. The "D" ring on the body harness shall be positioned in the back up between the shoulder blades to minimize impact forces of the body in the event of a fall.

All fall protection equipment shall be carefully inspected prior to each use and periodically throughout the day. Safety equipment showing any signs of mildew, torn or frayed fabric or fiber, burns, excessive wear, or other damage or deterioration which could cause failure shall be permanently removed from service. All fall protection equipment shall be properly maintained and stored when not in use. This includes keeping dry and out of sunlight, away from caustics, corrosives or other materials that could cause defects.

Hard hats and safety harnesses shall be worn by employees in the bucket or platform of any aerial lift device. Other safety personal protective items may be required by city/town safety policies. High visibility clothing is recommended while working in the air.

Equipment

Aerial lift devices shall conform to ANSI Standards applicable to the type of equipment being used – bucket truck, portable and/or self-propelled personnel lift. Aerial lift devices shall only be used for the purpose(s) intended by the manufacturer. All manufacturer and maintenance department recommendations and warnings regarding operation, capacity and safety precautions shall be strictly followed. Permanent labeling must be conspicuously posted to indicate lifting capacity and travel height.

Only devices approved for lifting personnel shall be used as aerial lifts. Loaders, forklifts or other material lift devices shall NOT be used to transport employees to elevated locations nor as work platforms. Forklifts and cranes may ONLY be used as a last resort, and then only with approved personnel baskets.
Modifications shall not be made to any aerial lift device without the expressed written authorization from the manufacturer. Buckets and bucket liners shall not be drilled, cut, welded on, etc.

Procedures

Lift equipment shall be inspected upon delivery to the jobsite, and daily prior to use. The daily inspection will include testing the controls prior to use, hydraulic oil levels, battery and tires. All inspections shall be documented.

Before extending or raising the boom or platform, outriggers (if so equipped), shall be positioned properly and the lift will be level. **Outriggers shall be placed on mud mats or another SOLID surface and shall not be used to level the vehicle.** The wheels shall be chocked and the parking brake set. Sufficient clearance shall be checked before raising the lift.

Employees shall keep both feet on the floor of the bucket or platform at all times. You should never climb out of the bucket or platform until it has been lowered. Never climb down the extended arm or rails.

When the lift has to be moved, it shall only be moved when the bucket or platform is at the lowered position. For scissors lifts, this is lowered all the way down, and for aerial lifts, this is lowered to the lowest point that the operator can safely see to drive the vehicle. Check all clearances and underneath before lowering the lift.

Employees are required to wear full body safety harnesses with lanyards. The lanyards shall be attached to an engineered anchorage point inside the lift. Do not wrap the lanyard around a rail and tie back onto itself. Employees are not to anchor on structural members outside of the lift, unless exiting the lift to get on the structural members.

Platform lifts (scissors lifts) shall have a top and mid rail and a kick plate (toe board), along with an engineered anchorage point to tie off. Employees shall not climb nor stand on the mid or top rails, keeping both feet on the floor of the platform.
Tools, parts or any materials shall not be dropped or thrown from the bucket or platform. When using welding or heating equipment from the bucket or platform, the vehicle shall be protected from sparks and slag and special care shall be taken to remove flammable objects away from the lifts.

Excavations & Street Work Protection:

Working in and around excavations and on open streets with vehicular traffic exposes you to many hazards. Accordingly the following procedures shall apply:

Excavations

- You should never enter an excavation to a depth of five (5) feet or more unless it is effectively shored and guarded in accordance with the State Construction Safety Orders.
- Excavated material shall be kept at least one (1) foot from excavations of less than five (5) feet in depth and two (2) feet from the edge of deeper excavations. Excavating machinery shall be kept away from electrical, gas, and water lines.
- The supervisor or person in charge of an excavation to a depth of five (5) feet or more shall provide a sturdy ladder for access. The ladder shall be placed within twenty-five (25) feet of the trench working area.
- No work may be done which could cause the undermining of foundations, retaining walls, or other structures until adequate safety measures have been taken. Report evidence of such problems immediately.
- Where excavation is necessary, the operator of the equipment shall first determine the location of electrical, gas, and water lines that may be in the area of excavation, and qualified observer must be present to guide the operation.
- Only one person should direct the operating of excavating machinery.
- All persons **working around excavation** machinery shall be in a safe position so as not to be in danger of falling into or otherwise contacting the machinery.
- You must not enter confined spaces, closed compartments, manholes, storm drains, tanks, voids, and vaults until tests are made for oxygen deficiency, explosive gases, and other dangerous gases which may be present. Employees shall not enter such areas until the supervisor or lead man has issued an "all clear." This must be done at each time of entry or re-entry. (See Confined Spaces Program).
- Smoking or open flames are prohibited in or about open manholes or in sewers.
- Hard hats shall be worn at all times by workers in or around excavations, trenches, tunnels, sewers, or other sub-surface operations.

Traffic Control Plans:

All work on public streets with vehicular traffic present shall follow the Federal Manual on Uniform Traffic Control Devices MUTCD 2003 version and the Cal Trans Supplement. See the following websites for more information:

http://mutcd.fhwa.dot.gov/kno-2003.htm AND
http://www.dot.ca.gov/hq/traffops/signtech/mutcdsupp

General Procedures for Traffic Control Plans:

A Traffic Control Plan must be developed for all street work. Every Traffic Control Plan (TCP) is Date and Time Specific – delays or modifications to the scope of the project will require additional review or the submission of a new TCP.

Phased work – if work is done in phases, submit a separate TCP for each phase.

Traffic Flow Interference – all efforts shall be considered to minimize traffic flow interference, including phasing the construction and/or reducing the size of the work zone

Road Closures

- Every effort must be made in order to permit emergency vehicles to transit through the closed zone if necessary.
- Proper detour signs must be placed to allow for the smooth flow of traffic around the road closure.
- Notification of closures must be made to the designated City representative 48 hours in advance and when the road is re-opened.
- Every effort must be made in order to permit emergency vehicles to transit through the closed zone if necessary.

Flagging shall follow the Cal Trans Flaggers Instruction Manual. In addition, the following shall apply:

- A major consideration in the matter of protection for areas of work in or near streets is that there should be a minimum of interference with the flow of traffic.

- One or more of the following devices are to be used in various arrangements according to the specific conditions on each project: horse or fence barricades, orange traffic cones or pylons with reflective coating, red warning flags and holders (low level and high level), signs, flashing amber lights or lanterns, flashing amber lights on vehicles.

- Each situation should be carefully considered in relation to the following factors: the nature and extent of the work being done and portion of roadway involved; the type of road involved as to size, number of lanes, surface, curves, grades, intersections, parking areas, shoulders and curbs; traffic conditions as to speed and volume; surrounding general illumination through entire night; possible fire hazards if flares are used; and, dangers of vandalism to any part of the warning systems.

- The first consideration in the protection of the public and employees when work areas are in or close to streets is advance warnings. Adequate notice must be given of the existence of the obstruction or interference to allow drivers to reduce speed and change course, or stop if necessary. This must be done day and night as long as the condition remains. Consideration must be carefully given to the placement of all advance warnings and signs so that they can be seen in heavy traffic either above or to the side of vehicles, or both if practical. They may be needed on both sides of the street or lane. Particular attention must be given to advance warnings when the work area is located over a hill or around a blind curve, and when the area may be approached at a high rate of speed.

- Guidance is the second important consideration in street-work obstructions. In general, barricades and traffic delineators (guides for the directions of traffic) should be placed to allow some room inside them as clearance for vehicles, which may not be able to stop in time. Personnel working within the protected areas should remain as far as possible from the perimeter of the area in case it is accidentally invaded by traffic. Equipment and material should be kept out of the street as much as possible - where necessary to be in the street, reflectors, flashers, etc., should be operating.

- When traffic can be permitted only in a single lane, Flaggers must be used. Flaggers must wear safety jackets or vests and should remain to the side and minimize their exposure to traffic as much as possible.

Respiratory Protection:

It is important that you know the following information, even if you do not use a respirator on the job. If you do use a respirator, your Supervisor will have a formal Respiratory Protection program, which includes the forthcoming program elements.

Please keep in mind that in the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, or while they are being instituted, appropriate respirators shall be used.

Voluntary Use of Respirators

Cal OSHA requires that voluntary use of respirators, when not required by the agency, must be controlled as strictly as under required circumstances. To prevent violations of the Respiratory Protection Standard, you are not allowed voluntary use of your own or agency supplied respirators of any type. Exception: Employees whose only use of respirators involves the voluntary use of filtering (non-sealing) face pieces (dust masks).

Training and Information

Should you be required to wear a respirator at work, training will be provided prior to requiring the use of the respirator. The training shall ensure that you can demonstrate knowledge of at least the following:

- Why the respirator is necessary and how improper fit, usage, or maintenance can compromise the protective effect of the respirator
- Limitations and capabilities of the respirator
- How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions
- How to inspect, put on and remove, use, and check the seals of the respirator
- What the procedures are for maintenance and storage of the respirator
- How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators
- The general requirements of the Respiratory Protection Program

Basic Respiratory Protection Safety Procedures

1. Only authorized and trained employees may use respirators. Those employees may use only the respirator that they have been trained on and properly fitted to use.

2. Only Physically Qualified employees may be trained and authorized to use respirators. A pre-authorization and annual certification by a qualified physician will be required and maintained. Any changes in an employee's health or physical characteristics must be evaluated by a qualified physician.

3. Only the proper prescribed respirator or self-contained breathing apparatus (SCBA) may be used for the job or work environment.

4. Employees working in environments where a sudden release of a hazardous substance is likely will wear an appropriate respirator for that hazardous substance (example: Employees working in an ammonia compressor room must have an ammonia APR respirator on their person.).

5. Should you be issued a respirator on "permanent check out", you are responsible for the sanitation, proper storage and security.

6. If you are the last employee using a respirator and/or SCBA that is available for general use, you are responsible for proper storage and sanitation. Monthly and after each use, all respirators will be inspected with documentation to assure its availability for use.

Respirator User Policies

Adherence to the following guidelines will help ensure the proper and safe use of respiratory equipment:

- Wear only the respirator you have been instructed to use. For example, do not wear a self-containing breathing apparatus if you have been assigned and fitted for a half-mask respirator.

- Wear the correct respirator for the particular hazard. For example, some situations, such as chemical spills or other emergencies, may require a higher level of protection than your respirator can handle. Also, the proper cartridge must be matched to the hazard (a cartridge designed for dusts and mists will not provide protection for chemical vapors)

- Check the respirator for a good fit before each use. Positive and negative fit checks should be conducted.

- Check the respirator for deterioration before and after use. Do not use a defective respirator.

- Recognize indications that cartridges and canisters are at their end of service. If in doubt, change the cartridges or canisters before using the respirator.

- Practice moving and working while wearing the respirator so that you can get used to it.
- Clean the respirator after each use, thoroughly dry it and place the cleaned respirator in a sealable plastic bag.
- Store respirators carefully in a protected location away from excessive heat, light, and chemicals.

Identification of Filters & Cartridges

All filters and cartridges shall be labeled and color-coded with the NIOSH approval label and that the label is not removed and remains legible. A change out schedule for filters and canisters has been developed to ensure these elements of the respirators remain effective.

Respirator Filter & Canister Replacement

An important part of the Respiratory Protection Program includes identifying the useful life of canisters and filters used on air-purifying respirators. Each filter and canister shall be equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant; or

If there is no ESLI appropriate for conditions a change schedule for canisters and cartridges that is based on objective information or data that will ensure that canisters and cartridges are changed before the end of their service life.

Physical and Medical Qualifications

Medical evaluation required

Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee. Therefore by law the agency must provide you with a medical evaluation to determine whether or not it is safe for you to use a respirator, should your job require such use. This evaluation must be done prior to fit testing or the required use of a respirator in the workplace.

Medical evaluation procedures

The employee will be provided a medical questionnaire by the designated Occupational Health Care Provider

Follow-up medical examination

The agency shall ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions in Part B of the questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination. The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the Physician deems necessary to make a final determination.

Administration of the medical questionnaire and examinations
The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire shall be administered in a manner that ensures that the employee understands its content. The agency shall provide the employee with an opportunity to discuss the questionnaire and examination results with the Physician.

Supplemental information for the Physician
The following information must be provided to the Physician before the Physician makes a recommendation concerning an employee's ability to use a respirator

- The type and weight of the respirator to be used by the employee
- The duration and frequency of respirator use (including use for rescue and escape)
- The expected physical work effort
- Additional protective clothing and equipment to be worn
- Temperature and humidity extremes that may be encountered
- Any supplemental information provided previously to the Physician regarding an employee need not be provided for a subsequent medical evaluation if the information and the Physician remain the same

The agency must provide the Physician with a copy of the written respiratory protection program and a copy of the Cal OSHA respiratory protection standard, Title 8 §5144.

Respirator Fit Testing
Before you are required to use any respirator with a negative or positive pressure tight-fitting face piece, you must be fit tested with the same make, model, style, and size of respirator that will be used. The agency shall ensure that an employee using a tight-fitting face piece respirator is fit tested prior to initial use of the respirator, whenever a different respirator face piece (size, style, model or make) is used, and at least annually thereafter.

Respirator Storage
Respirators are to be stored as follows:

- All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals, and they shall be packed or stored to prevent deformation of the face piece and exhalation valve.
- Emergency Respirators shall be:
- Kept accessible to the work area;
- Stored in compartments or in covers that are clearly marked as containing emergency respirators; and
- Stored in accordance with any applicable manufacturer instructions.

Confined Space Program:

Whether or not your job requires entering a confined space, it is critical that you understand the hazards and dangers involved in confined space entry. If your agency does confined space entry, it must have a Confined Space Entry Program, which is required by law, to protect authorized employees that will enter confined spaces and may be exposed to hazardous atmospheres, engulfment in materials, conditions which may trap or asphyxiate due to converging or sloping walls, or contains any other safety or health hazards.

Definitions

Confined space:
Is large enough or so configured that an employee can bodily enter and perform work.
Has limited or restricted means for entry or exit (i.e. tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry).
Is not designed for continuous employee occupancy.

Permit required confined space (permit space), is a confined space that has one or more of the following characteristics:

1. Contains or has a potential to contain a hazardous atmosphere.
2. Contains a material that has the potential for engulfing an entrant.
3. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly covering walls or by a floor, which slopes downward and tapers to a smaller cross-section.
4. Contains any other recognized serious safety or health hazard.

Each Permit-Required Confined Space must be marked "Confined Space - Entry Permit Required".

Entry Standard Operating Procedures

Should your agency do routine permit required confined space entry, it must have a confined space Standard Operating Procedure (SOP) that has been developed for each permit required confined space to standardize the entry procedure. The SOP must outline:

- Hazards
- Hazard Control & Abatement
- Acceptable Entry Conditions
- Means of Entry
- Entry Equipment Required
- Emergency Procedures

Permit Required Confined Space Entry General Rules

During all Confined Space Entries, the following Safety Rules must be strictly enforced:

1. Only Authorized and Trained Employees may enter a Confined Space or act as Safety Watchmen.

2. No Smoking is permitted in a Confined Space or near entrance/exit area.

3. During Confined Space Entries, a Watchman must be present at all times.

4. Constant visual or voice communication will be maintained between the Safety Watchmen and Employees entering a Confined Space.

5. Air and Oxygen Monitoring is required before entering any Permit-Required Confined Space. Oxygen levels in a Confined Space must be between 19.5 and 23.5 percent. Levels above or below will require the use of an SCBA or other approved air supplied respirator. Additional ventilation and Oxygen Level Monitoring is required when welding is performed. The monitoring will check Oxygen Levels, Explosive Gas Levels and Carbon Monoxide Levels. Entry will not be permitted if explosive gas is detected above one-half the Lower Explosive Limit (LEL).

6. To prevent injuries to others, all openings to Confined Spaces will be protected by a barricade when covers are removed.

Confined Space Entry Procedures

Each employee who enters or is involved in the entry must:

1. Understand the procedures for confined Space Entry

2. Know the Hazards of the specific space

3. Review the specific procedures for each entry

4. Understand how to use entry and rescue equipment

Confined Space Entry Permits

Confined Space Entry Permits must be completed before any Employee enters a Permit-Required Confined Space. The Permit must be completed and signed by an Authorized Member of Management before entry.

- Permits will expire before the completion of the shift or if any pre-entry conditions change. Permits will be maintained on file for 12 months.

Contractor Entry

All work by non-agency employees that involves the entry into confined spaces will follow the procedures of this program. The information of this program and specific hazards of the confined spaces to be entered will be provided to Contractor Management prior to commencing entry or work.

Training

Training for Confined Space Entry includes:

1. Duties of Entry Supervisor, Entrant and Attendants

2. Confined Space Entry permits

3. Hazards of Confined Spaces

4. Use of Air Monitoring Equipment

5. First Aid and CPR Training

6. Emergency Action & Rescue Procedures

7. Confined Space Entry & Rescue Equipment

8. Rescue training, including entry and removal from representative spaces

Confined Space Hazards

Flammable Atmospheres

A flammable atmosphere generally arises from enriched oxygen atmospheres, vaporization of flammable liquids, byproducts of work, chemical reactions, concentrations of combustible dusts, and desorption of chemical from inner surfaces of the confined space.

An atmosphere becomes flammable when the ratio of oxygen to combustible material in the air is neither too rich nor too lean for combustion to occur. Combustible gases or vapors will accumulate when there is inadequate ventilation in areas such as a confined space. Flammable gases such as acetylene, butane, propane, hydrogen, methane, natural or manufactured gases or vapors from liquid hydrocarbons can be trapped in confined spaces, and since many gases are heavier than air, they will seek lower levels as in pits, sewers, and various types of storage tanks and vessels. In a closed top tank, it should also be noted that lighter than air gases may rise and develop a flammable concentration if trapped above the opening.

The byproducts of work procedures can generate flammable or explosive conditions within a confined space. Specific kinds of work such as spray painting can result in the release of explosive gases or vapors. Welding in a confined space is a major cause of explosions in areas that contain combustible gas.

Chemical reactions forming flammable atmospheres occur when surfaces are initially exposed to the atmosphere, or when chemicals combine to form flammable gases. This condition arises when dilute sulfuric acid reacts with iron to form hydrogen or when calcium carbide makes contact with water to form acetylene. Other examples of spontaneous chemical reactions that may produce explosions from small amounts of unstable compounds are acetylene-metal compounds, peroxides, and nitrates. In a dry state, these compounds have the potential to explode upon percussion or exposure to increased temperature. Another class of chemical reactions that form flammable atmospheres arises from deposits of pyrophoric substances (carbon, ferrous oxide, ferrous sulfate, iron, etc.) that can be found in tanks used by the chemical and petroleum industry. These tanks containing flammable deposits will spontaneously ignite upon exposure to air.

Combustible dust concentrations are usually found during the process of loading, unloading, and conveying grain products, nitrated fertilizers, finely ground chemical products, and any other combustible material. High charges of static electricity, which rapidly accumulate during periods of relatively low humidity (below 50%), can cause certain substances to accumulate electrostatic charges of sufficient energy to produce sparks and ignite a flammable atmosphere. These sparks may also cause explosions when the right air or oxygen to dust or gas mixture is present.

Toxic Atmospheres

The substances to be regarded as toxic in a confined space can cover the entire spectrum of gases, vapors, and finely divided airborne dust in industry. The sources of toxic atmospheres encountered may arise from the following:

- The manufacturing process (for example, in producing polyvinyl chloride, hydrogen chloride is used as well as vinyl chloride monomer, which is carcinogenic).

- The product stored [removing decomposed organic material from a tank can liberate toxic substances, such as hydrogen sulfide (H_2S)].

- The operation performed in the confined space (for example, welding or brazing with metals capable of producing toxic fumes).

- During loading, unloading, formulation, and production, mechanical and/or human error may also produce toxic gases, which are not part of the planned operation.

- Carbon monoxide (CO) is a hazardous gas that may build up in a confined space. This odorless, colorless gas that has approximately the same density as air is formed from incomplete combustion of organic materials such as wood, coal, gas,

oil, and gasoline; it can be formed from microbial decomposition of organic matter in sewers, silos, and fermentation tanks. Carbon monoxide is an insidious toxic gas because of its poor warning properties. Early stages of CO intoxication are nausea and headache. Carbon monoxide may be fatal at 1000 ppm in air, and is considered dangerous at 200 ppm, because it forms carboxyhemoglobin in the blood, which prevents the distribution of oxygen in the body.

- Carbon monoxide is a relatively abundant colorless, odorless gas, therefore, any untested atmosphere must be suspect. It must also be noted that a safe reading on a combustible gas indicator does not ensure that CO is not present. Carbon monoxide must be tested for specifically. The formation of CO may result from chemical reactions or work activities, therefore fatalities due to CO poisoning are not confined to any particular industry. There have been fatal accidents in sewage treatment plants due to decomposition products and lack of ventilation in confined spaces. Another area where CO results as a product of decomposition is in the formation of silo gas in grain storage elevators. In another area, the paint industry, varnish is manufactured by introducing the various ingredients into a kettle, and heating them in an inert atmosphere, usually town gas, which is a mixture of carbon dioxide and nitrogen.

- In welding operations, oxides of nitrogen and ozone are gases of major toxicologic importance, and incomplete oxidation may occur and carbon monoxide can form as a byproduct.

- Another poor work practice, which has led to fatalities, is the recirculation of diesel exhaust emissions. Increased CO levels can be prevented by strict control of the ventilation and the use of catalytic converters.

Irritant (Corrosive) Atmospheres

Irritant or corrosive atmospheres can be divided into primary and secondary groups. The primary irritants exert no systemic toxic effects (effects on the entire body). Examples of primary irritants are chlorine, ozone, hydrochloric acid, hydrofluoric acid, sulfuric acid, nitrogen dioxide, ammonia, and sulfur dioxide. A secondary irritant is one that may produce systemic toxic effects in addition to surface irritation. Examples of secondary irritants include benzene, carbon tetrachloride, ethyl chloride, trichloroethane, trichloroethylene, and chloropropene.

Irritant gases vary widely among all areas of industrial activity. They can be found in plastics plants, chemical plants, the petroleum industry, tanneries, refrigeration industries, paint manufacturing, and mining operations.

Prolonged exposure at irritant or corrosive concentrations in a confined space may produce little or no evidence of irritation. This may result in a general weakening of the defense reflexes from changes in sensitivity. The danger in this situation is that the worker is usually not aware of any increase in his/her exposure to toxic substances.

Asphyxiating Atmospheres

The normal atmosphere is composed approximately of 20.9% oxygen and 78.1% nitrogen, and 1% argon with small amounts of various other gases. Reduction of oxygen in a confined space may be the result of either consumption or displacement.

The consumption of oxygen takes place during combustion of flammable substances, as in welding, heating, cutting, and brazing. A more subtle consumption of oxygen occurs during bacterial action, as in the fermentation process. Oxygen may also be consumed during chemical reactions as in the formation of rust on the exposed surface of the confined space (iron oxide). The number of people working in a confined space and the amount of their physical activity will also influence the oxygen consumption rate.

A second factor in oxygen deficiency is displacement by another gas. Examples of gases that are used to displace air, and therefore reduce the oxygen level are helium, argon, and nitrogen. Carbon dioxide may also be used to displace air and can occur naturally in sewers, storage bins, wells, tunnels, wine vats, and grain elevators. Aside from the natural development of these gases, or their use in the chemical process, certain gases are also used as inerting agents to displace flammable substances and retard pyrophoric reactions. Gases such as nitrogen, argon, helium, and carbon dioxide, are frequently referred to as non-toxic inert gases but have claimed many lives. The use of nitrogen to inert a confined space has claimed more lives than carbon dioxide. The total displacement of oxygen by nitrogen will cause immediate collapse and death. Carbon dioxide and argon, with specific gravities greater than air, may lie in a tank or manhole for hours or days after opening. Since these gases are colorless and odorless, they pose an immediate hazard to health unless appropriate oxygen measurements and ventilation are adequately carried out.

Oxygen deprivation is one form of asphyxiation. While it is desirable to maintain the atmospheric oxygen level at 21% by volume, the body can tolerate deviation from this ideal. When the oxygen level falls to 17%, the first sign of hypoxia is deterioration to night vision, which is not noticeable until a normal oxygen concentration is restored. Physiologic effects are increased breathing volume and accelerated heartbeat. Between 14-16% physiologic effects are increased breathing volume, accelerated heartbeat, very poor muscular coordination, rapid fatigue, and intermittent respiration. Between 6-10% the effects are nausea, vomiting, inability to perform, and unconsciousness. Less than 6%, spasmatic breathing, convulsive movements, and death in minutes.

Mechanical Hazards

If activation of electrical or mechanical equipment would cause injury, each piece of equipment should be manually isolated to prevent inadvertent activation before workers enter or while they work in a confined space. The interplay of hazards associated with a confined space, such as the potential of flammable vapors or gases being present, and the build-up of static charge due to mechanical cleaning, such as abrasive blasting, all influence the precautions, which must be taken.

To prevent vapor leaks, flashbacks, and other hazards, workers should completely isolate the space. To completely isolate a confined space, the closing of valves is not sufficient. All pipes must be physically disconnected or isolation blanks bolted in place. Other special precautions must be taken in cases where flammable liquids or vapors may re-contaminate the confined space. The pipes blanked or disconnected should be inspected and tested for leakage to check the effectiveness of the procedure. Other areas of concern are steam valves, pressure lines, and chemical transfer pipes. A less apparent hazard is the space referred to as a void, such as double walled vessels, which must be given special consideration in blanking off and inerting.

Thermal Effects

Four factors influence the interchange of heat between people and their environment. They are: (1) air temperature, (2) air velocity, (3) moisture contained in the air, and (4) radiant heat. Because of the nature and design of most confined spaces, moisture content and radiant heat are difficult to control. As the body temperature rises progressively, workers will continue to function until the body temperature reaches approximately 102^{o}F. When this body temperature is exceeded, the workers are less efficient, and are prone to heat exhaustion, heat cramps, or heat stroke. In a cold environment, certain physiologic mechanisms come into play, which tend to limit heat loss and increase heat production. The most severe strain in cold conditions is chilling of the extremities so that activity is restricted. Special precautions must be taken in cold environments to prevent frostbite, trench foot, and general hypothermia.

Protective insulated clothing for both hot and cold environments will add additional bulk to the worker and must be considered in allowing for movement in the confined space and exit time. Therefore, air temperature of the environment becomes an important consideration when evaluating working conditions in confined spaces.

Noise

Noise problems are usually intensified in confined spaces because the interior tends to cause sound to reverberate and thus expose the worker to higher sound levels than those found in an open environment. This intensified noise increases the risk of hearing damage to workers, which could result in temporary or permanent loss of hearing. Noise in a confined space which may not be intense enough to cause hearing damage may still disrupt verbal communication with the emergency standby person on the exterior of the confined space. If the workers inside are not able to hear commands or danger signals due to excessive noise, the probability of severe accidents can increase.

Vibration

Whole body vibration may affect multiple body parts and organs depending upon the vibration characteristics. Segmental vibration, unlike whole body vibration, appears to be more localized in creating injury to the fingers and hands of workers using tools, such as pneumatic hammers, rotary grinders or other hand tools which cause vibration.

Other Hazards

Some physical hazards cannot be eliminated because of the nature of the confined space or the work to be performed. These hazards include such items as scaffolding, surface residues, and structural hazards. The use of scaffolding in confined spaces has contributed to many accidents caused by workers or materials falling, improper use of guard rails, and lack of maintenance to insure worker safety. The choice of material used for scaffolding depends upon the type of work to be performed, the calculated weight to be supported, the surface on which the scaffolding is placed, and the substance previously stored in the confined space.

Surface residues in confined spaces can increase the already hazardous conditions of electrical shock, reaction of incompatible materials, liberation of toxic substances, and bodily injury due to slips and falls. Without protective clothing, additional hazards to health may arise due to surface residues.

Structural hazards within a confined space such as baffles in horizontal tanks, trays in vertical towers, bends in tunnels, overhead structural members, or scaffolding installed for maintenance constitute physical hazards, which are exacerbated by the physical surroundings. In dealing with structural hazards, workers must review and enforce safety precautions to assure safety.

Gas Cylinders:

The following work rules apply to the use of compressed gas cylinders:

- ✓ Only authorized personnel with prior appropriate training shall be permitted to use compressed gas cylinders.
- ✓ Gas cylinders must not be stored in direct sunlight or any hot place.
- ✓ Employees must not use a cylinder of compressed gas without reducing the pressure through a regulator attached to the cylinder valve or manifold.
- ✓ Oil or grease shall not be used as a lubricant on valves or attachments of oxygen cylinders. Keep oxygen cylinders and fittings away from off and grease, and do not handle such cylinders or apparatus with oily hands, gloves, or clothing.
- ✓ Oxygen shall not be used as a substitute for compressed air in pneumatic tools, in fuel burners, nor to start internal combustion engines, or to dust clothing.
- ✓ Cylinders of oxygen, when stored indoors, shall be kept in areas separate from flammable gases and highly combustible materials, especially oil and grease.
- ✓ Cylinders must be kept in an upright position in racks or stands, and chained or~ cabled to prevent their rolling or being knocked over.
- ✓ Leather washers shall never be used on gas cylinder valves; the regular fiber washer or gasket must be used.
- ✓ The valve protector cap must be kept in place or replaced whenever cylinders are not in use.
- ✓ Cylinders must never be used for other than their designated kind of gas. Gauges and other attachments must be approved for the type of gas used.
- ✓ Do not stand in front of gauges when opening the discharge valve. Open the valve slowly.
- ✓ Pressure-adjusting screws on regulators shall be fully released before the regulator is attached to a cylinder and the cylinder valve opened.
- ✓ Before a regulator is removed from a cylinder valve, the cylinder valve shall be closed and the gas released from the regulator.
- ✓ Handling of cylinders by cranes must be done only when the proper racks or spreader bars and hooks are used. The use of rope or wire slings is prohibited.

- ✓ Remove regulators and place caps over valves when transporting cylinders by other than regular cylinder trucks.

- ✓ Cylinders must never be dropped or treated roughly.

- ✓ Chlorine cylinders and piping must be kept free of water and moisture.

- ✓ Inspect hose lines frequently for leaks. Do not place torches in cans or leave in unventilated places.

- ✓ Personnel using welding or burning equipment should use extreme caution in order to prevent fires.

- ✓ Welder must be certain that approved fire-fighting equipment is nearby before starting welding operations when working in the vicinity of flammable materials.

Cylinder Leak

- ✓ In a situation where a gas cylinder has developed a leak in a confined area, all pilot lights must be extinguished by shutting off the main gas meter; also the main electric meter should be shut off to prevent ignition of gas by pilots and sparks. The leaky cylinder should then be removed to an open area as soon as it is safe to do so. If a chlorine cylinder is leaking, clear the area, call the Fire District for aid, clear the downwind area. When working around a leaking cylinder always use protective clothing, and breathing equipment. Do not use water. CAUTION: chlorine is a highly poisonous substance.

Tool Safety Program:

Use of tools makes many tasks easier. However, the same tools that assist us, if improperly used or maintained, can create significant hazards in our work areas. If you use agency tools, you must be properly trained to use, adjust, store and maintain them properly.

General Safety Precautions

All hazards involved in the use of tools can be prevented by following five basic safety rules:

- Keep all tools in good condition with regular maintenance.
- Use the right tool for the job.
- Examine each tool for damage before use.
- Operate according to the manufacturer's instructions.
- Provide and use the proper protective equipment.

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Appropriate personal protective equipment, e.g., safety goggles, gloves, etc., should be worn due to hazards that may be encountered while using portable power tools and hand tools.

Floors shall be kept as clean and dry as possible to prevent accidental slips with or around dangerous hand tools.

Around flammable substances, sparks produced by iron and steel hand tools can be a dangerous ignition source. Where this hazard exists, spark-resistant tools made from brass, plastic, aluminum, or wood will provide for safety.

Power Tool Precautions

Power tools can be hazardous when improperly used. There are several types of power tools, based on the power source they use: electric, pneumatic, liquid fuel, hydraulic, and powder-actuated.

The following general precautions should be observed by power tool users:

- Never carry a tool by the cord or hose.
- Never yank the cord or the hose to disconnect it from the receptacle.
- Keep cords and hoses away from heat, oil, and sharp edges.

- Disconnect tools when not in use, before servicing, and when changing accessories such as blades, bits and cutters.
- All observers should be kept at a safe distance away from the work area.
- Secure work with clamps or a vise, freeing both hands to operate the tool.
- Avoid accidental starting. The worker should not hold a finger on the switch button while carrying a plugged-in tool.
- Tools should be maintained with care. They should be kept sharp and clean for the best performance. Follow instructions in the user's manual for lubricating and changing accessories.
- Be sure to keep good footing and maintain good balance.
- The proper apparel should be worn. Loose clothing, ties, or jewelry can become caught in moving parts.
- All portable electric tools that are damaged shall be removed from use and tagged "Do Not Use."

Guards

Hazardous moving parts of a power tool need to be safeguarded. For example, belts, gears, shafts, pulleys, sprockets, spindles, drums, fly wheels, chains, or other reciprocating, rotating, or moving parts of equipment must be guarded.

Guards, as necessary, should be provided to protect the operator and others from the following:

- point of operation,
- in-running nip points,
- rotating parts, and
- flying chips and sparks.

Safety guards must never be removed when a tool is being used. For example, portable circular saws must be equipped with guards. An upper guard must cover the entire blade of the saw. A retractable lower guard must cover the teeth of the saw, except when it makes contact with the work material. The lower guard must automatically return to the covering position when the tool is withdrawn from the cutting material.

Electrical Safety (Tools):

Among the chief hazards of electric-powered tools are burns and slight shocks, which can lead to injuries or even heart failure. Under certain conditions, even a small amount of current can result in severe injury and eventual death. A shock also can cause the user to fall off a ladder or other elevated work surface.

To protect the user from shock, tools must either have a three-wire cord with ground and be grounded, be double insulated, or be powered by a low-voltage isolation transformer. Three-wire cords contain two current-carrying conductors and a grounding conductor. One end of the grounding conductor connects to the tool's metal housing. The other end is grounded through a prong on the plug. Anytime an adapter is used to accommodate a two-hole receptacle, the adapter wire must be attached to a known ground. The third prong should never be removed from the plug.

Electric Power Tool General Safety Practices:

- Electric tools should be operated within their design limitations.
- Gloves and safety footwear are recommended during use of electric tools.
- When not in use, tools should be stored in a dry place.
- Electric tools should not be used in damp or wet locations.
- Work areas should be well lighted.

Powered Abrasive Wheel Tools

Powered abrasive grinding, cutting, polishing, and wire buffing wheels create special safety problems because they may throw off flying fragments.

Before an abrasive wheel is mounted, it should be inspected closely and sound- or ring-tested to be sure that it is free from cracks or defects. To test, wheels should be tapped gently with a light non-metallic instrument. If they sound cracked or dead, they could fly apart in operation and so must not be used. A sound and undamaged wheel will give a clear metallic tone or "ring."

To prevent the wheel from cracking, the user should be sure it fits freely on the spindle. The spindle nut must be tightened enough to hold the wheel in place, without distorting the flange. Follow the manufacturer's recommendations. Care must be taken to assure that the spindle wheel will not exceed the abrasive wheel specifications.

Due to the possibility of a wheel disintegrating (exploding) during start-up, the employee should never stand directly in front of the wheel as it accelerates to full operating speed.

Portable grinding tools need to be equipped with safety guards to protect workers not only from the moving wheel surface, but also from flying fragments in case of breakage.

Powered Grinder Safety Precautions

- Always use eye protection.
- Turn off the power when not in use.
- Never clamp a hand-held grinder in a vise.

Pneumatic Tools

Pneumatic tools are powered by compressed air and include chippers, drills, hammers, and sanders. There are several dangers encountered in the use of pneumatic tools. The main one is the danger of getting hit by one of the tool's attachments or by some kind of fastener the worker is using with the tool. Eye protection is required and face protection is recommended for employees working with pneumatic tools. Working with noisy tools such as jackhammers requires proper, effective use of hearing protection.

When using pneumatic tools, employees are to check to see that they are fastened securely to the hose to prevent them from becoming disconnected. A short wire or positive locking device attaching the air hose to the tool will serve as an added safeguard.

A safety clip or retainer must be installed to prevent attachments, such as chisels on a chipping hammer, from being unintentionally shot from the barrel.

Guards must be set up to protect nearby workers from being struck by flying fragments around chippers, riveting guns, staplers, or air drills.

Compressed air guns should never be pointed toward anyone. Users should never "dead-end" it against themselves or anyone else. **Blow nozzles must have a safety pressure discharge attached.**

Powder-Actuated Tools

Powder-actuated tools operate like a loaded gun and should be treated with the same respect and precautions. **In fact, they are so dangerous that you must not use them unless you are trained and authorized.**

Vehicle Safety Program:

City vehicles are easily identified and have what is often called “high exposure”; therefore, they often constitute a traveling advertisement seen by many citizens. City vehicle drivers control an important influence upon good or bad public relations with other motorists, pedestrians, and the general public. Courteous and considerate driving habits combined with the application of defensive driving principles prevent accidents and build good public relations.

1. All agency vehicles will be operated only by employees authorized by management for specific agency purposes.
2. Vehicles will be maintained in a safe condition at all times. In the event of an unsafe mechanical condition, the vehicle will be immediately placed out of service and the appropriate manager notified.
3. All vehicles will be operated, licensed and insured in accordance with applicable local, state and federal laws.
4. All authorized employees must possess a valid state driver's license for the class vehicle authorized.
5. Authorized employees must have a driving record at least equal to that required for maintaining a commercial driver's license.

Authorized Employees

- Operate company vehicles in a safe, responsible manner and obey all traffic laws.
- Participate in driver-training programs.
- Ensure all vehicle occupants use seatbelts before moving the vehicle.
- Follow safe fueling procedures.
- Conduct a pre-use inspection before any first daily use.
- Immediately report any safety defects or vehicle problems.

Vehicle Inspection

Prior to each first daily use the driver shall inspect the vehicle for proper operation of the following safety features, as applicable:

- Horn
- Backup warning
- Head, tail & signal lights
- Windshield wipers
- Tire inflation (visual check)
- Brakes
- Steering control

- Mirrors
- Operational warning lights
- Accident kit in glove compartment
- Fire extinguisher (light trucks & vans)
- Broken glass

Driving Safely

Starting

- Conduct pre-use inspection
- Use seatbelts at all times
- Adjust seat & mirrors before starting vehicle
- Allow a 15 second warm up time
- Check for warning lights

Driving

- Do not drive if drowsy
- Think ahead - anticipate hazards
- Don't trust the other driver to drive properly
- Don't speed or tailgate
- Drive slower in hazardous conditions or hazardous areas
- Pass only in safe areas and when excessive speed is not required
- No loose articles on floor
- Do not read, write, apply make-up, drink, eat or use a phone while driving
- Stay at least four seconds behind the vehicle ahead
- Do not stop for hitchhikers or to provide roadside assistance

Backing

- Back slowly & be ready to stop
- Do not back up if anyone is in path of vehicle travel
- Check clearances
- Don't assume people see you

- Getting out & check if you cannot see from the driver's seat

Stopping

- Park only in proper areas, not roadsides
- Use warning flashers & raise hood if vehicle becomes disabled

Accidents

- Do not admit responsibility
- Notify your agency and law enforcement as soon as possible
- Cooperate with any law enforcement officers
- Move the vehicle only at the direction of a law enforcement officer
- Fill out all sections of the CCCMRMIA accident report in the glove box
- Do not sign any forms unless required by a law enforcement officer
- At the scene get the following information
    - Investigating officer name and law enforcement agency
    - Make, Model & License Plate number of other vehicles
    - Names, address and phone numbers of all witnesses
    - Photos of accident (all 4 sides of all vehicles) if camera is available.
    - Roads and intersection at the scene
    - Interior of all vehicles - seating & floor areas
    - Name, address & license of other drivers

Tree Trimming and Chainsaw Safety:

1. Employees shall be assigned to work in a tree unless they have been trained as a climber and:
    (1) Able to use a climbing rope and saddle.
    (2) Able to tie all necessary knots.
    (3) Able to use necessary hand tools.
2. Before beginning any tree operations check the trees in the surrounding area for any dangerous conditions.
3. Except in cases of emergency, tree work should be avoided when trees are wet, during high winds, or during extreme low temperatures.
4. Only physically fit employees shall be allowed to climb.
5. Tree trimmers should ask for assistance from other members of the crew only -- never from bystanders.
6. Danger signs and barriers shall be placed around areas where tree work is to be done.
7. The supervisor is responsible for instruction to the crew members, inspection of tools, and enforcement of all safety rules and determination of suitable clothing for work activities.
8. Ropes shall be used for raising and lowering tools.
9. Ropes of suitable strength shall be used for lowering large limbs.
10. Safety or climbing ropes shall not be used for lowering limbs.
11. Ladders shall not be used unless they can be set on a firm foundation.
12. Ladders shall be frequently inspected for damage. All additional safety rules regarding ladders shall be adhered to.
13. Climbers shall always call a warning before dropping limbs.
14. Never leave hangers or tools in trees during lunch hour or overnight
15. Special precautions shall be taken when working near live wires.
16. All wires broken or damaged during tree work shall be reported to the proper utility company.
17. Fallen wires shall be guarded until service workers arrive.
18. Do not touch a victim who has come into contact with a live wire. He/she must be separated from the wire by the use of nonconductive materials. Call for assistance at once.
19. Pull ropes shall be used to guide the fall of large trees. Once the notching has begun the tree must not be left unguarded.
20. One-man saws shall only be used in trees. All chain saws shall be roped with their own rope. Either a taut line hitch or a ground person shall secure the rope during tree trimming operations.
21. Turn the saw motor off and point the guide bar to the rear before walking or changing work locations.
22. Never walk or change work locations while the saw motor is running.
23. Always stand behind the saw when cutting -- never at the side.
24. Avoid using the tip of the saw for cutting.
25. Never replace the chain in the guide rail groove while the saw motor is running.
26. Clean and check saws thoroughly and lubricate as required. Maintain proper tension on the chain. Always inspect the saw for sharpness as a sharp saw will reduce maintenance costs and provide faster, safer and easier cutting.
27. Refuel the saw before it runs out of gasoline to avoid a “bound saw” which is difficult to refuel and start, and to avoid the danger of fire when starting a saw at the refueling site.
28. Hard hats and safety goggles or glasses shall be worn when performing tree trimming and chain saw operations. Steel toed shoes should also be worn.

Lawn Mowers:

1. A power lawn mower shall not he left unattended while the motor is running.

2. Prior to starting mower, inspect for loose engine parts or blade.

3. Safety goggles or safety glasses with temple shall be worn by any employee engaged in the operation of a push type rotary lawn mower.

4. Areas to be mowed shall be inspected for foreign objects. Wires, stones, bottle caps, sticks, etc., shal1 be removed before mowing.

5. Bystanders shall be warned by the operator of the danger of flying objects. Extreme precautions shall be taken when there are children in the immediate area.

6. Operators shall keep hands and feet away from the undercarriage of the mower.

7. The spark plug wire shall be disconnected from spark plug during maintenance repairs.

8. After mowing is completed, disconnect the spark plug wire from the spark plug, remove dirt, grass, etc., from the top of the mower and store the mower in a dry location under a protective cover.

9. Operators of power mowers must wear steel toe shoes.

Working in Public Rights of Way:

Tree trimming, curb site planting, landscaping, tasks, utility service repair, street sweeper operation, trash pick-ups, light fixture cleaning, traffic signal repair, and other construction, maintenance, and repair activities often require municipal employees to work in or alongside rights of way normally used for vehicle or pedestrian traffic. These activities may interfere with normal traffic flow in the form of standing or slow moving vehicles and equipment or occasional movement of equipment into the normal right of way. The following safety procedures are established and shall be followed:

1. An orange, yellow, or green warning vest shall be worn by all employees working in or alongside any public right of way.
2. Adequate warning signs and barricades shall be utilized whenever construction, maintenance, or repair work of City crews obstructs any public right of way.
3. Whenever possible, some continued traffic flow providing the least possible interference with normal traffic patterns shall be maintained. Two safety considerations are involved.
    a. Protecting employees from being struck by vehicular traffic.
    b. Assisting the public to safely avoid hazards that interrupt the flow of both vehicular and pedestrian traffic.
4. The Police Department shall be notified before any City street is completely closed for maintenance or repair work.
5. When a portion of a street has been closed and equipment must be operated in lanes left open to traffic, a flag person shall be provided to control traffic.
6. When City work crews must perform emergency work in a posted traffic lane during peak traffic periods, the Police Department shall be notified of the work location, the time work began and the estimated time of completion.
7. When road surfaces are to be repaired, manholes opened, or excavations dug, adequate hazard warnings shall be posted before work is begun. A minimum amount of the right of way (consistent with safety requirements) shall he blocked and that traffic efficiently rerouted.
8. If repair work obstructs a traffic lane and thus compresses several lanes of traffic into fewer lanes, adequate warning signs and barricades shall be placed so as to warn motorists well in advance of the obstruction. If manhole openings and excavations constitute a hazard to pedestrians, adequate barricades and rerouting of walkways shall be provided.
9. If an open cut is left in a posted traffic lane when work is stopped or suspended for any reason, a cover of sufficient strength to sustain normal traffic loads shall be placed over the cut and anchored. If the cut cannot be covered and must be left overnight, adequate warning signs and barricades shall be utilized, adequate lighting shall be provided, and the Police Department shall be notified.
10. Vehicle and Equipment Warning Lights: Mobile equipment used for maintenance or repair of City streets shall be equipped with flashing or rotating lights. Mobile equipment used for other work activities shall be equipped with one or a combination of the following warning lights:
    - Turn Signal Lights
    - Flashing Lights
    - Rotating Lights
    - Oscillating Lights
    - Flashing Arrow Signs Mounted On The Vehicle Or Equipment

    Simultaneous flashing of all warning lights available shall be implemented whenever any mobile equipment is operated in or alongside any public right of way.

ACKNOWLEDGEMENT OF RECEIPT OF SAFETY HANDBOOK

I have received a copy of this Safety Handbook for the City of Oakley, which outlines safe work practices and procedures. I have read all applicable sections and understand that I must not operate equipment if I have not been trained to do so. I agree to work safely, follow the safe work practices outlined in this handbook, wear protective safety equipment and notify my supervisor of unsafe conditions or unsafe work practices in my work environment.

I understand that this form will be placed in my personnel file.

_____
Date:

_____
Employee Name (Print)

_____
Employee Name (Signed)

_____
Department

_____
Supervisor