

Back Injury Prevention in Construction



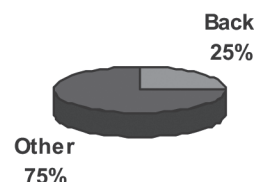
Construction work puts physical stress on the body. Various studies have shown that the construction trades have a higher incidence of back injuries and muscle strains than many other occupations.

Injuries

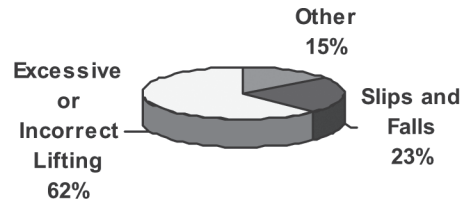
Over the years, back injuries have consistently accounted for about 25% of all the lost workday injuries in the construction trades according to the Bureau of Labor Statistics. Pain in the back and joints is a major factor in forced retirement from the construction trades and in workers seeking less demanding occupations. Such changes are often accompanied by a serious reduction in living standard.

Injury Causes

In construction, over half of the back injuries are attributed to cumulative trauma while roughly 23% are the result of slips, trips and falls. Workers lifting and carrying equipment or materials can be injured when they use improper techniques, twist repeatedly, stand in awkward positions, or try to handle heavy loads without help. Most back injuries are the result of everyday wear and tear rather than a single traumatic event. The cause is generally not a single lift but damage done over time. Back injuries also result from slips, trips, and falls caused by bad weather or poor housekeeping. Repeated twisting, awkward postures, heavy lifting, and prolonged vibration can all contribute to back pain and injury. Unfortunately, once back pain is experienced, the chances of it recurring increase greatly.



Construction Lost Workday Injuries



Causes of Back Injuries

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Injury Prevention Program

To reduce back injuries on the job, an operational process is necessary, covering factors such as housekeeping, workplace postures, proper positioning/ staging of materials and stretching and flexing.



Housekeeping

Back injuries from slips, trips, and falls can sometimes be prevented through good housekeeping. Proper storage of material and regular clean up of debris is critical. Debris and clutter accumulate quickly in construction. In addition to creating trip/fall hazards, poor housekeeping can prohibit the effective operation of mechanical materials handling equipment. As a result, more material is handled manually, creating greater risk of back and other injuries. Failure to keep work and travel areas clear can impede the handling of materials and increase the risk of injury. Plans for housekeeping should cover storage, garbage disposal, and clear work and travel areas.

Well planned storage is an important part of back injury prevention. When storage locations are not designated, material tends to get dumped anywhere. Sooner or later the material has to be moved elsewhere, often by hand and in a rush. This increases the risk of back injury.

Management should designate storage areas, get as much material off the floor and ground as possible, arrange for bins and disposal, put housekeeping provisions in contracts, and ensure that subcontractors meet storage and clean up requirements.

Clean up should take place:

- At the end of each work day or shift
- When trades finish one job and are ready to move on to another area
- When workers or crews change
- When scrap and clutter start to impede work progress and material flow

Workplace Posture

Maintaining proper posture is the most critical part of good back care. Using your muscular system to control posture minimizes the effects of everyday wear and tear on your spine.

Lower back muscles are short, small muscles designed to keep us upright. They are called “anti-gravity” muscles and are usually very strong since they have to work almost continuously.

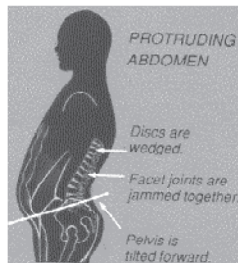
Any position held too long (static loading) is not good for your back. Aches and pains from prolonged working postures are nature’s way of warning you to change positions. If these warnings are continuously ignored, you will be vulnerable to low back injury.

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Unbalanced Pelvis – Weak position vulnerable to injury

When you stand with your stomach protruding, your pelvis is tilted down and your back has an increased curve. In this position, stress is concentrated in your lower back, making it vulnerable to injury. Tightening the lower stomach muscles will straighten the pelvis and correctly align the lower spine.



Balanced Pelvis – Strongest position for the back

When you stand properly with chin tucked in, shoulders back and down, and pelvis level, there is a slight natural inward curve in your lower back. This is the correct posture and the strongest position for your back. Maintaining a level, balanced pelvis is essential to proper back care and helps prevent potential back problems.

Correct Posture

Correct posture is not an erect, military pose but an alignment that maintains the naturally occurring curves in your spine. You have an inward curve (lordosis) at two places in your spine—neck and lower back. You have an outward curve (kyphosis) in your upper back. Keeping your spine aligned in this manner reduces everyday stresses on your back and minimizes the effects of the normal aging process on the spine.

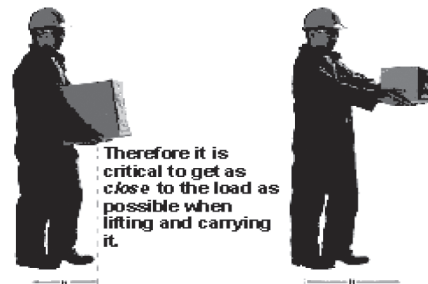
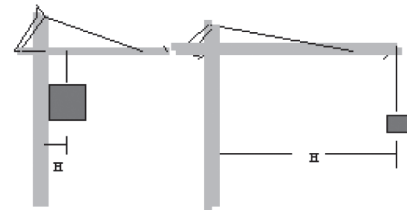
Lifting Techniques

Lifting Capacity

Lifting a weight that is too heavy, lifting in an awkward position, twisting your body when lifting or doing excessively heavy work are all common causes of low back problems. The following lifting models illustrate the need for good work technique.

A Tower crane's lifting capacity is reduced the further the load is away from the mast. Our lifting capacity is also reduced the further a load is away from our spine.

H = The horizontal distance
When H is increased, the crane's capacity to lift the load is decreased.



Lifting Grip

To ensure solid contact when lifting heavy objects, use your entire palm, not just your fingertips.



Unloading

1. Lower the load, maintaining the natural curve of your back.
2. Push the load into place.
3. When lowering a load onto a deep shelf, put it on the edge of the shelf first. Then push it into place.

Carrying

1. Keep your lower back in its normal arched position and use your legs to lift.

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Material on Floor

When possible, before lifting from the floor, every effort should be made to stage the material off the floor at approximately waist height. By placing the material at this height it eliminates the poor postures and high forces on the back when lifting from the floor. In addition, it will improve the efficiency of the job task.

Proper Lifting

Proper Lifting



1. Plan your Move.
 - Size up the load and make sure your path is clear.
 - Get help as needed.
 - Use a dolly or other materials handling equipment if possible.
2. Use a wide, balanced stance with one foot slightly ahead of the other.
3. Get as close to the load as possible.
4. When lifting, keep your lower back in its normal arched position and use your legs to lift.
5. Pick up your feet and pivot to turn. Don't twist your back.
6. Lower the load smoothly, maintaining the natural curve in your lower back.

Transferring Weight

1. Pull the object towards you while transferring your weight to the lift side.
2. Lift only to the level required.
3. Shift your weight to the other leg while pushing the object into position. Do not twist.

Stretching & Flexing

To protect your spine, the muscles supporting your back must be both strong and flexible.

Construction work strengthens some muscles while others that are not being used become shorter and weaker, creating a muscle imbalance. A regular stretching program can help to keep muscles balanced and reduce the risk of lower back injury. A pre-work stretching program is highly recommended as part of a good ergonomic process. Warming up prepares your body for the physical work ahead and helps minimize the risk of injury.

A good stretching program should include both stretching and strengthening exercises. The three essentials are:

- Warm up
- Workout
- Cool down

Remember; check with your doctor before starting any stretching program.

Disregard the old maxim "no pain—no gain." Your muscles can be brought to excellent condition by using a sensible and slow approach. If the stretching and flexing causes pain, don't do it. With a new stretching program, however, temporary muscle ache is normal and may be expected.

Spending 5 – 10 minutes a day on stretching the back can help make a significant difference in how good your back feels and how well you function during the day.

Remember – practicing the principles of proper back care will help to prevent or minimize back problems.

Practice these four rules for back injury prevention.

1. WARM UP – before you start work.
2. TONE UP – with a good stretching program.
3. SIZE UP – the load. Don't lift more than you can safely handle.
4. WISE UP – by using good lifting techniques and materials handling equipment

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Backing Techniques



A National Highway Traffic Safety Administration (NHTSA) study determined that over 90% of backing accidents can be attributed to one of the following causes:

- Driver was unaware of the obstacle
- Driver used improper backing techniques

Yet, these accidents can be prevented by using some of the following simple accident prevention techniques:

Preplan trips to avoid or to minimize the need for backing.

- When entering an alley that does not permit drive through or turnaround, back into the alley, if allowed by local ordinance, since it is usually safer to back into the area with less traffic. This will enable you to see the traffic as you exit the alley.
- When backing out of an alley, ask someone to be your guide, and signal when it is safe to back into traffic.
- When a guide is used, instruct the guide to use appropriate hand signals rather than voice commands.
- The majority of backing accidents with bodily injury involve children under the age of 5. Make a walk around inspection of your vehicle before backing, especially in an area where young children can be anticipated.
- Park defensively to prevent your vehicle from rolling into another vehicle. If parking on an incline, turn the front wheels into the curb to prevent the vehicle from rolling.
- Park in the middle of the parking space. This will allow you room to exit the parking space without backing and provide space if backing is required.
- Never take any situation for granted. Even though you may have parked or backed into a location many times, evaluate the location to determine if clearances have changed or if new obstacles are present.
- Experience is required to develop good backing techniques. If you have access to a designated

area to practice backing – use it.

- Learn exactly how the rear of the vehicle responds to every little movement of the steering wheel. Practice - Practice - Practice!
- Know what's going on around you at all times and perform all backing maneuvers SLOWLY.
- Check all your mirrors when backing. Know the mirror blind spots. Conduct a walk around inspection of your vehicle to check these blind spots or get someone to guide you while backing. Know the clearance to all obstacles and the exact distance to your stopping point.

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Construction Quality - A Model Program



The aim of a quality control program is to prevent construction defects and to ensure the performance and durability of the constructed product.

There is not a one-size-fits-all program. The program must be customized to the unique organization taking into account its: size and complexity, organization, operations, culture, exposure to liability, potential for damages resulting from climate, moisture, and soil conditions.

Contractors can not rely exclusively on the local building inspector as a measure of acceptability. An effective quality program, like any other business program, must include a number of key components. Although easier said than done, the keys to quality construction are the use of consistent and qualified labor and materials, and verification of product quality against a known standard. For these components to be implemented effectively, management must be committed and take responsibility for quality. To reduce the risk of liability associated with construction quality, your quality related activities need to be documented. The 5 key components of the quality program can be listed as follows and are described in greater detail below:

- Management Responsibility
- Material Selection
- Workmanship
- Inspection
- Documentation

Management Responsibility for Quality

- **Written Policy** – The quality policy should be a brief statement which clearly describes the company's commitment to quality. It should be signed by the senior executive and any quality manager.
- **Quality Plan** – A quality plan provides needed quality controls of the construction process and

includes all relevant management, training, sub-contractor agreements, material purchase agreements and specifications, inspection procedures, and worker qualifications.

- **Assignment of Responsibilities** to craftsmen, crew supervisors, purchasing agents, quality manager. Some examples of assigned responsibilities are:

All employees have the responsibility to:

- Stop work that affects the condition in question until any unsatisfactory conditions are corrected.
- Stop work that affects the condition in question if the work would cover up any defects.
- Report all quality or safety concerns to the supervisor.

Craftsman are responsible for:

- Performing only work for which they are qualified.
- Using only approved materials, material use specifications, and procedures.
- Using materials and equipment which are not defective.

The Crew Supervisor is responsible to ensure that:

- Each job meets the contract requirements.
- The work complies with any applicable use instructions, codes, and regulations.
- A qualified craftsman is available to the job site when work is performed. Only approved materials and equipment are used.
- Job site inspections are performed and any non-conformances are corrected.

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The Purchasing Manager is responsible to ensure that:

- All purchasing contracts for materials, equipment and services comply with the requirements of the quality program.

Material Selection

In most cases, since the selection of materials affects quality of the completed product, its fitness for the intended purpose must be verified. The assessment of materials' fitness must consider:

- Building code requirements
- Design specifications
- Demonstrated product performance capabilities and limitations
- UL approved or FM listed materials
- Compatibility of product systems

Materials must be inspected and stored properly, and any defects observed must be reported to the supplier promptly. A record of approved materials should be maintained and updated as needed.

Workmanship

To ensure proper installation and construction of approved materials, skilled, trained, and informed workers must be employed. In addition, every job should have a designated crew supervisor to perform inspections and oversee operations. Selection of workers should be based in part on their demonstration of key skill requirements. Following are some of the key components to ensure quality workmanship:

- Communication of quality program and their responsibilities for quality.

Training of craftsmen should include:

- Quality program responsibilities
- Use of approved materials
- Design requirements
- Installation requirements
- Work instructions

- Material storage requirements
- Job readiness requirements
- Equipment and tools
- Inspection procedures
- Marking of any non-conformances
- Trade contract requirements
- Any product specific training

- Review and approval of workers by crew supervisor.

Trade contractor assessments should evaluate the capability of the trade contractor to:

Perform the specific types of work

- Complete job inspections
- Use qualified craftsmen
- Yield quality results
- Listed as an approved contractor by the product manufacturer

Job Site Inspection

Jobsite Inspection is a critical component to ensure quality construction materials and installation methods are being used at each stage of the construction process. Inspections detect any defects so that corrective action can be taken. Inspection forms are part of the inspection process and must be customized to the specific type of job and operation. Inspections are done by a qualified crew supervisor who must be available at critical job stages. Inspections are performed prior to start to determine readiness conditions during the construction process, and following the completion of the job. Below are more details of the purpose of each of these inspections.

- Readiness Inspection
 - Adequacy of work performed by previous trades that may affect installation quality
 - Building details are compatible with installation requirements
 - No adverse conditions that may impact quality
 - Available installation instructions
 - Only approved materials are available for use

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- Job site is suitable for work to begin
- Process Inspection
 - Crew supervisor inspections at each phase of construction as needed by quality plan
 - Inspection forms available
 - Verify use of specific tools and equipment where quality is affected
 - Any non-conformances, including materials, manufacturers' specifications, work instructions, and trade contracts are reported to management for correction
- Completion Inspection
 - Verify that construction requirements of trade contracts have been met
 - Provide record of any non-conformance
 - Actual measurements are made where dimensional specifications are available
 - Records are maintained
 - Verify that installation instruction needed for next phase is available

Documentation

To help protect against liability and to verify that key activities of the quality program have been completed, documentation is needed. Below are some of the items which should be documented and recorded.

- Materials approved and used
- Readiness, process, and completion inspections
- Resolution of non-conformances
- Training
- Approved trade contractors
- Trade contracts
- List of qualified craftsmen

Sample Quality Policy

Our company shall operate with an effective quality program that ensures the performance and durability of products we construct, and prevents construction defects. Our quality program applies throughout our company to all employees and work activities that affect quality. To this end, we are committed to:

- Use materials and equipment that are capable of performing
- Ensure that work is performed by qualified craftsmen
- Assign clear quality responsibilities in our contracts
- Ensure that job site inspections are done properly and documented
- Comply with any manufacturer specifications
- Comply with any building codes and regulations
- Follow any procedures contained in our quality manual

Senior Executive Signature

_____ Date _____

Quality Manager Signature

_____ Date _____

Quality Plan Design Considerations

A quality plan should define the necessary quality controls and take into account possible defects, frequency and severity, performance and durability, and the effect on final product quality.

Update the quality plan when a product or process is changed, or when the process is unstable or not capable of producing reliable results.

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The plan should include the following elements:

- Work instructions
- Approved materials
- Equipment and tools
- Inspector qualification
- Craftsman qualification
- Trade contractor qualification
- Material storage
- Inspection procedures
- Marking of non-conformances
- Posting of instructions for others

Trade Contracts

To provide a basis for an agreement between the general contractor and the subcontractor, the trade contract should clearly describe the work to be performed and the respective responsibilities of the trade contractor.

The following should normally be included in a trade contract:

- Job site location
- Dates of contract
- Product or system installed
- Responsibility for pre and post quality related activities
- Method of releasing work to start
- Specifications and conditions to be ready to start

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Construction Work Zones



Drivers who have no problems in routine driving may encounter them where road construction or repair is under way.

Drivers should first look out for construction warnings on highways. Some are difficult to notice and others may be overlooked due to anxiety over anticipated delays.

However, drivers who suddenly round a bend at high speed and come upon barricades and a survey party, a road maintenance vehicle, or perhaps a piece of heavy equipment in their lane or entering it, may lose control when they brake quickly and forcefully. In one case, sudden braking for a barricade caused a semi-trailer truck to overturn. The orange signs should be heeded.

The worst thing a driver can do when slowing down or stopping for changing road conditions is to lose his or her temper at the perceived annoyance and take chances in order to make up time or to merely put the situation behind him. A better approach is to take things in stride, to safely do what must be done to protect all parties.

The driver who stays alert for advance warning signs and prepares to follow them protects others. Drivers who do not see or who ignore warning signs and who crash into work areas are a leading cause of death for on the job highway construction workers. Drivers should not resent the necessary slowdown caused by road work but should cooperate with traffic controls. Above all, drivers should slow down for the small work party which may not have properly protected itself with adequate signs and barricades.

Furthermore, drivers who speed past construction sites where people work close to the road and where signs call for slow speeds sometimes hit workers or vehicles that have strayed from the work site onto the road. Since all parties present at road construction sites have a duty to act in a reasonable manner, it does not matter that "the other guy should not have been there."

Rocks and debris that may get on the road from the work site can be picked up by speeding vehicles and flung at the construction crew. The road being worked on is often left open to accommodate motorists, who should reciprocate by driving safely past the work site.

Flag people who direct traffic around a road construction project are highly visible in their bright orange vests, as they hold up their "Stop" and "Go" signs and inform drivers how to proceed through a single lane bypass. There are consequences for ignoring such "flaggers". In many states, disobeying flaggers and speeding in construction work zones is serious business, punishable by fines and imprisonment if it results in a bodily injury accident. Drivers near construction sites should consider that, in most cases, the slowdown is not serious and any delay will not last long.

Bypass lane pavement may not be as smooth as that of the expressway. In fact, it is likely to be rough, uneven, and possibly full of potholes. It could even be muddy and slippery. Drivers should enter bypass lanes slowly and carefully. Speeding through bypass lanes is much more likely to cause lurching, swaying, and loss of control.

Many construction projects are located such that a bypass alongside the work site is not possible. This is true in particular when a bridge is being replaced. In such cases a long detour is required, usually starting back at a cross-roads that connects to an alternate route.

Such detours may involve more hazardous driving than a short bypass. They often make use of secondary roadways, or even unimproved country lanes. Use extreme caution to negotiate unexpected sharp turns in the detour without mishap.

While driving on any kind of an extended detour, be sure to watch for all detour turn signs to avoid getting far off course on uncharted roads. Remember that detour signs are considered temporary, and they may not be displayed

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as prominently as permanent road signs.

Although detour routes may include some stretches of good pavement, slower speeds are normally called for. Resist the temptation to pass other vehicles.

One type of detour that may catch some drivers used to relatively flat roadways unaware is that which involves poorly maintained mountain roads. Any driver who is likely to encounter such driving should consider a few pointers:

- Long pulls on uphill grades and steep inclines where excessive speeds can trap the unwary driver are to be expected in mountain driving.
- If the engine overheats in a long pull in high altitude, find a wide shoulder and stop. Raise the hood and let the engine cool.
- Slow down before entering a downgrade to avoid being fooled by the increase in speed.
- Steady, gentle pressure on the brake pedal is better than intermittent heavy braking, which does not allow enough time between jabs to cool overheated brakes.
- Shift to a lower gear on a steep downgrade and let the engine help with the braking.
- Do not downshift suddenly if the pavement is slippery. Sudden engine braking might cause a skid.
- If a vehicle continues to gain speed after downshifting, slow with the brakes and shift to an even lower gear.
- Never coast downhill in neutral or with a depressed clutch.
- Never turn off the ignition when going downhill.
- Stay on your side of the road and avoid the temptation to pass other vehicles, or to cut corners or swing wide on curves.
- Maintain a greater space cushion (following distance) behind other vehicles than usual, when going downhill, since it takes longer to slow down or stop.

Road construction projects may be frustrating, but they're necessary. So make the best of warnings and road conditions and always drive like a pro – with caution and good sense.

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Driver Distractions



This document is intended to assist CNA customers in developing a program that helps in the control of driver behaviors.

This bulletin provides:

- Information about severity of distracted drivers.
- Steps customers should take to help control their exposure.
- Support materials.
- Sample recommendations.

The University of North Carolina Highway Safety Research Center study titled, *The Role of Driver Distraction in Traffic Crashes*, found that an estimated 284,000 distracted drivers are involved in serious vehicle accidents every year.

Contributing factors were:

- Distractions outside the vehicle.
- Talking or listening on cell phone.
- Adjusting radio or CD player.
- Other occupants.
- Adjusting climate controls.
- Moving object in vehicle.
- Eating or drinking.
- Smoking.

More than 80% of the nation's 94 million cell phone owners use them while driving — at least sometimes. Many states have legislation to regulate cell phone use while driving. At least 13 nations, including England, Germany and Japan, have banned the use of cell phones when driving a vehicle.

In the past few years, cell phone usage has been an issue in several lawsuits, and employers are being held responsible if a worker causes an accident while talking on the phone. So why are employers concerned about

cell phones? Cell phone records can be subpoenaed to prove the employee was on the phone when the accident occurred.

Other distractions cannot be identified to a specific time, and many drivers don't want to say they were distracted and not driving safely.

Interestingly, the distraction problem does not seem to exist with two-way radios, which are as much a staple of contractors as cell phones. This is because those calls are usually much shorter. However, some states that ban handheld phones may consider two-way radios the same. You will need to check with your state's regulations on the use of two-way radios.

While there is no guaranteed defense to liability, developing appropriate policies, training and enforcement mechanisms can help limit potential liability and increase public safety. Some companies prohibit employees from using cell phones while driving on company time. In contrast, other companies adopt cell phone safety guidelines and focus on training and enforcement. Each company should determine whether the benefits of employee cell phone use outweighs the risk. Some examples of cell phone use policies include:

- Completely banning cell phone use while driving.
- Directing employees to comply with all state and local laws governing cell phone use.
- Requiring employees to pull over to take phone calls.
- Instructing employees to avoid or terminate phone calls involving stressful or emotional conversations.
- Prohibiting cell phone use in adverse weather or difficult traffic conditions.
- Prohibiting reading or writing while operating the vehicle.
- Planning calls prior to traveling or while on rest breaks whenever possible.

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- Restricting driver cell phone use to brief conversations.

To protect themselves, companies should consider establishing a written policy restricting any use of a cell phone and ensure employees read and sign the written policy. The restriction should include the use of hands-free headsets, since studies indicate it's the conversation, not the physical act of holding the phone that contributes to accidents. An insurance company's sample policy states:

- Cellular phones should not be used while operating a vehicle.
- Allow voice mail to handle your calls. Return the calls and messages when you are not driving.
- If you need to place a call or send a text, pull off the road to park in a legal and safe location.
- Ask a passenger to make or take the call.
- Inform regular callers of your driving schedule and when you will be available to talk.
- While driving, keep your hands on the wheel and your eyes and mind on the road

Sample Recommendations for Reducing the Risk

Driver Distractions

The number one cause of workplace fatalities is vehicle accidents. Studies have shown that inattentive driving is a leading contributor to vehicle accidents. The purpose of a fleet safety policy addressing driver distractions is to aid management in their efforts to increase vehicle operator safety and control exposures to loss. This policy should be reviewed with all new hires as part of their orientation and with existing employees on a periodic basis. Documentation (employee signatures) should be obtained to ensure all drivers have received, reviewed and understand the policy. A fleet safety policy regarding distractions should include at least the following items:

1. Driver acknowledgement form that explains what the employee is responsible for while driving for the company.
2. Cell phone use policy that limits or restricts usage and provides safe use instructions.
3. Process to inspect vehicles not only for mechanical items but for items that may cause unsafe

behaviors, such as radar detectors, objects hanging from mirrors, loose materials laying about, writing pads designed for use while driving, etc.

If a motor vehicle law of a state is more stringent than this policy, that law will supersede this policy.

Sample Fleet Safety Program Policy

As an authorized driver, you are required to do the following:

- Do not take chances. To arrive safely is more important than to arrive on time.
- Be mentally and physically rested and alert prior to each trip.
- No drinking alcoholic beverages while driving, or driving while under the influence of alcohol or restricted drugs.
- Have a valid driver's license for the type of vehicle to be operated, and keep the license(s) with you at all times while driving.
- Obey traffic laws.
- Never go faster than a rate consistent with existing speed laws, or road, traffic and weather conditions. Posted speed limits must be obeyed.
- Never attempt to exercise the right-of-way. Always let the other driver go first.
- Keep to the right except when overtaking slow-moving vehicles or when getting into a position to make a left turn.
- Never follow another vehicle so closely that you will not be able to make a safe stop under any conditions.
- While going into traffic and before every turn or lane change, use turn signals to show where you are heading,
- Slow down and watch for children in school zones.
- Only allow authorized people to drive vehicles.
- Do not give rides to hitchhikers or strangers.

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- Seat belts should be worn by drivers and passengers.
- Check your vehicle daily before each trip. In particular, check lights, tires, brakes, and steering. An unsafe vehicle should not be operated until repairs are made.
- As required by the law and the company rules, report all accidents immediately.
- Report all arrests and traffic convictions to the company. Repeated traffic convictions or failure to report traffic accidents or convictions may result in disciplinary action.
- Adhere to other safe driving rules adopted by your company, prescribed by the state or local laws, or by the applicable DOT Motor Carrier Safety Regulations.

Sample Driver Acknowledgement Form

When in possession/driving a vehicle provided by the company or any vehicle on company business, I acknowledge and agree that:

- 1) I will abide by the following operating rules/procedures including those specified by the company's Car & Van Drivers' Policies and Procedure manual.
- a. I will notify the company (my supervisor/manager) if I am charged with a DUI/DWI and/or my driving privileges have been revoked, suspended or withdrawn, within one business day following receipt of the notice.
 - b. I will not operate a company vehicle:
 - i. i) if my ability or alertness is impaired through illness or fatigue; or
 - ii. ii) when impaired or intoxicated by alcohol and/or drugs; or
 - iii. iii) if my driving privileges have been revoked, suspended or withdrawn.
- 2) I understand that my Motor Vehicle Record (MVR) will be reviewed:
- a. Once a year; or
 - b. At any time at the discretion of the company.

3) I understand the following safety rules/policies:

- a. I will follow all motor vehicle laws for each state in which I operate a company vehicle.
- b. Wireless telephones - I realize communication is important; however, conflict exists between safety and the utilization of a wireless phone in a vehicle. Therefore, wireless phones are not to be used when driving the vehicle.
- c. Seat belts - As the driver, I must wear my seat belt at all times. The driver must also assure all passengers are wearing their seat belts. I will inspect belts periodically for possible cuts in the fabric or fabric loosening at the buckle or anchor brackets. I will keep the seat belts and shoulder harnesses clean and dry.
- d. I will turn on my low beam lights in rain, fog, darkness or any other time visibility is hampered.
- e. Tires - I will inspect tires at least weekly for pressure and wear.
- f. I will lock the vehicle, and not leave keys inside the vehicle.

4) I understand the following maintenance rules/policies:

- a. I will contact the Fleet Maintenance Department to schedule an appointment for periodic maintenance every 5,000 miles the company vehicle has traveled.

5) Accidents - I will take the following steps if I am involved in an accident in addition to completing the Drivers' Accident Report Kit located in each vehicle:

- a. Take care of any injured persons. Don't try more than basic first aid (unless qualified), and move the injured as little as possible.
- b. Call for medical aid (if required).
- c. Call the police.

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- d. Report accident to Fleet Maintenance as soon as possible, no later than 24 hours.
- e. Get names and address of all parties and witnesses.

Name (print)

Signature

Date

6) I understand the company has the right to implement appropriate disciplinary/corrective actions and/or revoke the use of my company vehicle at any time. Examples of reasons for the above actions include, but are not limited to the following:

- a. I have had my driver's license revoked, suspended or withdrawn for any reason.
- b. I have been charged for operating any vehicle while impaired or under the influence of alcohol, drugs or controlled substances.
- c. I have been charged for leaving the scene of an accident.
- d. I have had two or more at fault accidents, or three or more moving violations, or one at fault accident and two moving violations in a three-year period.
- e. There is evidence of gross negligence, recklessness or incompetence in operating a vehicle.
- f. Making a false accident report.
- g. Allowing use of the company vehicle by an unauthorized driver.

Resource

<http://www.nhtsa.gov/people/injury/airbags/Countermeasures/pages/Chapt4/1p1CellPhLaws.htm>
retrieved July 6, 2010.

7) I understand that if I allow an unauthorized individual to use the company vehicle and it is involved in an accident, I am responsible for all damages to the company vehicle and to any other vehicles, property, and/or individuals involved.

I have read and understand my obligations listed above concerning the possession and use of a company vehicle. Further, I understand that failure to abide by this agreement shall result in suspension/revocation of my company vehicle privileges and/or disciplinary action.

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Excavation



Introduction

The Occupational Safety and Health Administration (OSHA) issued its first Excavation and Trenching Standard in 1971 to protect workers from excavation hazards. Since then, OSHA has amended the standard several times to increase worker protection and to reduce the frequency and severity of excavation accidents and injuries. Despite these efforts, excavation-related accidents resulting in injuries and fatalities continue to occur.

To better assist excavation firms and contractors, OSHA has completely updated the existing standard to simplify many of the existing provisions, add and clarify definitions, eliminate duplicate provisions and ambiguous language, and give employers added flexibility in providing protection for employees. The standard is effective as of March 5, 1990.

In addition, the standard provides several new appendices. One appendix provides a consistent method of soil classification. Others provide sloping and benching requirements, pictorial examples of shoring and shielding devices, timber tables, hydraulic shoring tables, and selection charts that provide a graphic summary of the requirements contained in the standard.

This booklet highlights the requirements in the updated standard for excavation and trenching operations, provides methods for protecting employees against cave-ins, and describes safe work practices for employees.

Scope and Application

OSHA's revised rule applies to all open excavations made in the earth's surface, which includes trenches.

According to the OSHA construction safety and health standards, a trench is referred to as a narrow excavation made below the surface of the ground in which the depth is greater than the width-the width not exceeding 15 feet. An excavation is any man-made cut, cavity, trench, or

depression in the earth's surface formed by earth removal. This can include excavations for anything from cellars to highways.

General Requirements

Planning for Safety

Many on-the-job accidents are a direct result of inadequate initial planning. Correcting mistakes in shoring and/or sloping after work has begun slows down the operation, adds to the cost, and increases the possibility of an excavation failure. The contractor should build safety into the pre-bid planning in the same way all other pre-bid factors are considered.

It is a good idea for contractors to develop safety checklists before preparing a bid, to make certain there is adequate information about the job site and all needed items are on hand.

These checklists should incorporate elements of the relevant OSHA standards, as well as other information necessary for safe operations.

Before preparing a bid, these specific site conditions should be taken into account:

- Traffic
- Nearness of structures and their conditions
- Soil
- Surface and ground water
- The water table
- Overhead and underground utilities
- Weather

These and other conditions can be determined by job site studies, observations, test borings for soil type or conditions, and consultations with local officials and utility companies.

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Before any excavation actually begins, the standard requires the employer to determine the estimated location of utility installations – sewer, telephone, fuel, electric, water lines, or any other underground installations – that may be encountered during digging. Also, before starting the excavation, the contractor must contact the utility companies or owners involved and inform them, within established or customary local response times, of the proposed work. The contractor must also ask the utility companies or owners to find the exact location of the underground installations. To find the exact location of underground installations, workers must use safe and acceptable means. If underground installations are exposed, OSHA regulations also require that they be removed, protected or properly supported.

NOTE: Federal Law titled the "Comprehensive One-Call Notification Act of 1997" requires all states to establish local One-Call centers, and excavators must call the center prior to excavation per state regulations.

When all the necessary specific information about the job site is assembled, the contractor is ready to determine the amount, kind, and cost of the safety equipment needed. A careful inventory of the safety items on hand should be made before deciding what additional safety material must be acquired. No matter how many trenching, shoring and backfilling jobs have been done in the past, each job should be approached with the utmost care and preparation.

Before Beginning the Job

It is important, before beginning the job, for the contractor to establish and maintain a safety and health program for the work site that provides adequate systematic policies, procedures, and practices to protect employees from, and allow them to recognize, job-related safety and health hazards.

An effective program includes provisions for the systematic identification, evaluation, and prevention or control of general workplace hazards, specific job hazards and potential hazards that may arise from foreseeable conditions. The program may be written or verbal, but it should reflect the unique characteristics of the job site.

To help contractors develop an effective safety and health program, in 1989, OSHA issued recommended guidelines for the effective management and protection of worker safety and health. The complete original text of the recommended guidelines is found in the Federal Register (54 FR (18):3904-3916, January 26, 1989).

A copy of the guidelines can be obtained from the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, N.W., Room N-3101, Washington, D.C. 20210, or from the nearest OSHA Regional Office.

To be sure safety policies are implemented effectively, there must be cooperation among supervisors, employee groups, including unions, and individual employees. Each supervisor must understand the degree of responsibility and authority he or she holds in a particular area. For effective labor support, affected unions should be notified of construction plans and asked to cooperate.

It is also important, before beginning work, for employers to provide employees who are exposed to public vehicular traffic with warning vests or other suitable garments marked with or made of reflectorized or high-visibility material and to ensure that they wear them.

Workers must also be instructed to remove or neutralize surface encumbrances that may create a hazard.

In addition, no employee should operate a piece of equipment without first being properly trained to handle it and fully alerted to its potential hazards.

In the training and in the site safety and health program, it also is important to incorporate procedures for fast notification and investigation of accidents.

On-the-Job Evaluation

The standard requires that a competent person inspect, on a daily basis, excavations and the adjacent areas for possible cave-ins, failures of protective systems and equipment, hazardous atmospheres, or other hazardous conditions. If these conditions are encountered, exposed employees must be removed from the hazardous area until the necessary safety precautions have been taken. Inspections are also required after natural (e.g., heavy

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rains) or man-made events, such as blasting, that may increase the potential for hazards.

Larger and more complex operations should have a full-time safety official who makes recommendations to improve the implementation of the safety plan. In a smaller operation, the safety official may be part-time and usually will be a supervisor.

Supervisors are the contractor's representatives on the job. Supervisors should conduct inspections, investigate accidents, and anticipate hazards. They should ensure that employees receive on-the-job safety and health training. They should also review and strengthen overall safety and health precautions to guard against potential hazards, get the necessary worker cooperation in safety matters, and make frequent reports to the contractor.

It is important that managers and supervisors set the example for safety at the job site. It is essential that when visiting the job site, all managers, regardless of status, wear the prescribed personal protective equipment such as safety shoes, safety glasses, hard hats, and other necessary gear (see CFR 1926.100 and 102).

Employees must also take an active role in job safety. The contractor and supervisor should make certain that workers have been properly trained in the use and fit of the prescribed protective gear and equipment, that they are wearing and using the equipment correctly, and that they are using safe work practices.

Cave-ins and Protective Support Systems

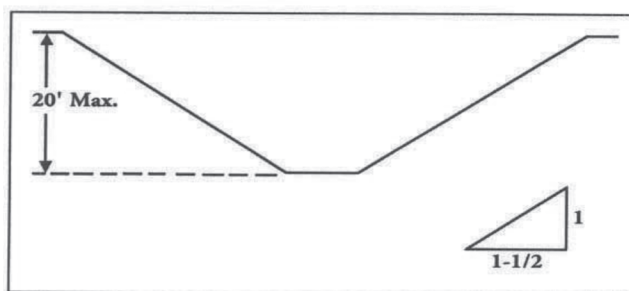
Support Systems

Excavation workers are exposed to many hazards, but the chief hazard is danger of cave-ins. OSHA requires that in all excavations employees exposed to potential cave-ins must be protected by sloping, or benching the sides of the excavation; supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

Designing a protective system can be complex because of the number of factors involved – soil classification, depth of cut, water content of soil, changes due to

weather and climate, or other operations in the vicinity. The standard, however, provides several different methods and approaches (four for sloping and four for shoring, including the use of shields) * for designing protective systems that can be used to provide the required level of protection against cave-ins.

*See Appendix F to the standard for a complete overview of all options.



One method of ensuring the safety and health of workers in an excavation is to slope the sides to an angle not steeper than one and one-half horizontal to one vertical (34 degrees measured from the horizontal). These slopes must be excavated to form configurations that are in accordance with those for Type C soil found in Appendix B of the standard. A slope of this gradation or less is considered safe for any type of soil (see Figure 1).

All simple slope excavations 20 feet or less in depth shall have a maximum allowable slope of 1 ½:1.

A second design method, which can be applied for both sloping and shoring, involves using tabulated data, such as tables and charts, approved by a registered professional engineer. These data must be in writing and must include sufficient explanatory information to enable the user to make a selection, including the criteria for determining the selection and the limits on the use of the data.

At least one copy of the information, including the identity of the registered professional engineer who approved the data, must be kept at the worksite during construction of the protective system. Upon completion of the system, the data may be stored away from the job site, but a copy must be made available, upon request, to the Assistant

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Secretary of Labor for OSHA.

Contractors also may use a trench box or shield that is either designed or approved by a registered professional engineer or is based on tabulated data prepared or approved by a registered professional engineer. Timber, aluminum, or other suitable materials may also be used. OSHA standards permit the use of a trench shield (also known as a welder's hut) as long as the protection it provides is equal to or greater than the protection that would be provided by the appropriate shoring system (see Figure 2).

The employer is free to choose the most practical design approach for any particular circumstance. Once an approach has been selected, however, the required performance criteria must be met by that system.

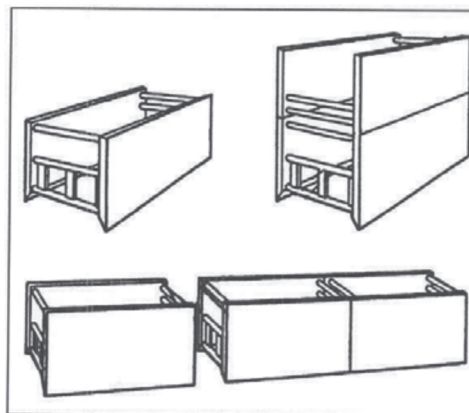
The standard does not require the installation and use of a protective system when an excavation (1) is made entirely in stable rock, or (2) is less than 5 feet deep and a competent person has examined the ground and found no indication of a potential cave-in.

Safety Precautions

The standard requires the employer to provide support systems such as shoring, bracing, or underpinning to ensure the stability of adjacent structures, such as buildings, walls, sidewalks or pavements.

The standard prohibits excavation below the level of the base or footing of any foundation or retaining wall unless: (1) a support system such as underpinning is provided, (2) the excavation is in stable rock, or (3) a registered professional engineer determines that the structure is sufficiently removed from the excavation and that excavation will not pose a hazard to employees.

Excavations under sidewalks and pavements are also prohibited unless an appropriately designed support system is provided or another effective method is used.



Installation and Removal of Protective Systems

The standard requires the following procedures for the protection of employees when installing support systems:

- Securely connect members of support systems
- Safely install support systems
- Never overload members of support systems
- Install other structural members to carry loads imposed on the support system when temporary removal of individual members is necessary

In addition, the standard permits excavation of 2 feet or less below the bottom of the members of a support or shield system of a trench if (1) the system is designed to resist the forces calculated for the full depth of the trench, and (2) there are no indications, while the trench is open, of a possible cave-in below the bottom of the support system. Also, the installation of support systems must be closely coordinated with the excavation of trenches.

As soon as work is completed, the excavation should be backfilled as the protective system is dismantled. After the excavation has been cleared, workers should slowly remove the protective system from the bottom up, taking care to release members slowly.

Materials and Equipment

The employer is responsible for the safe condition of materials and equipment used for protective systems. Defective and damaged materials and equipment can result in the failure of a protective system and cause excavation

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hazards.

To avoid possible failure of a protective system, the employer must ensure that (1) materials and equipment are free from damage or defects, (2) manufactured materials and equipment are used and maintained in a manner consistent with the recommendations of the manufacturer and in a way that will prevent employee exposure to hazards, and (3) while in operation, damaged materials and equipment are examined by a competent person to determine if they are suitable for continued use. If materials and equipment are not safe for use, they must be removed from service. These materials cannot be returned to service without the evaluation and approval of a registered professional engineer.

Other Hazards

Falls and Equipment

In addition to cave-in hazards and secondary hazards related to cave-ins, there are other hazards from which workers must be protected during excavation-related work. These hazards include exposure to falls, falling loads, and mobile equipment. To protect employees from these hazards, OSHA requires the employer to take the following precautions:

- Keep materials or equipment that might fall or roll into an excavation at least 2 feet from the edge of excavations, or have retaining devices, or both.
- Provide warning systems such as mobile equipment, barricades, hand or mechanical signals, or stop logs, to alert operators of the edge of an excavation. If possible, keep the grade away from the excavation.
- Provide scaling to remove loose rock or soil or install protective barricades and other equivalent protection to protect employees against falling rock, soil, or materials.
- Prohibit employees from working on faces of sloped or benched excavations at levels above other employees unless employees at lower levels are adequately protected from the hazard of falling, rolling, or sliding material or equipment.
- Prohibit employees under loads that are handled by lining or digging equipment. To avoid being

struck by any spillage or falling materials, require employees to stand away from vehicles being loaded or unloaded. If cabs of vehicles provide adequate protection from falling loads during loading and unloading operations, the operators may remain in them.

Water Accumulation

The OSHA standard prohibits employees from working in excavations where water has accumulated or is accumulating unless adequate protection has been taken. If water removal equipment is used to control or prevent water from accumulating, the equipment and operations of the equipment must be monitored by a competent person to ensure proper use.

OSHA standards also require that diversion ditches, dikes, or other suitable means be used to prevent surface water from entering an excavation and to provide adequate drainage of the area adjacent to the excavation. Also, a competent person must inspect excavations subject to run-offs from heavy rains.

Hazardous Atmospheres

Under this provision, a competent person must test excavations greater than 4 feet in depth as well as ones where oxygen deficiency or a hazardous atmosphere exists or could reasonably be expected to exist, before an employee enters the excavation. If hazardous conditions exist, controls such as proper respiratory protection or ventilation must be provided. Also, controls used to reduce atmospheric contaminants to acceptable levels must be tested regularly.

Where adverse atmospheric conditions may exist or develop in an excavation, the employer also must provide and ensure that emergency rescue equipment, (e.g., breathing apparatus, a safety harness and line, basket stretcher, etc.) is readily available. This equipment must be attended when used.

When an employee enters bell-bottom pier holes and similar deep and confined footing excavations, the employee must wear a harness with a lifeline. The lifeline must be securely attached to the harness and must be

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separate from any line used to handle materials. Also, while the employee wearing the lifeline is in the excavation, an observer must be present to ensure that the lifeline is working properly and to maintain communication with the employee.

Access and Egress

Under the standard, the employer must provide safe access and egress to all excavations. According to OSHA regulations, when employees are required to be in trench excavations 4 feet deep or more, adequate means of exit, such as ladders, steps, ramps or other safe means of egress, must be provided and be within 25 feet of lateral travel. If structural ramps are used as means of access or egress, they must be designed by a competent person if used for employee access or egress, or a competent person qualified in structural design if used by vehicles. Also, structural members used for ramps or runways must be uniform in thickness and joined in a manner to prevent tripping or displacement.

Related Issues

Hazard Communication

The Hazard Communication Standard (29 CFR 1910.1200) requires employers to inform employees of the identities, properties, characteristics, and hazards of chemicals they use and the protective measures they can take to prevent adverse effects. The standard covers both physical hazards (e.g., flammability) and health hazards (e.g., lung damage, cancer). Knowledge acquired under the Hazard Communication Standard will help employers provide safer workplaces for their employees, establish proper work practices, and help prevent chemical-related illnesses and injuries.

Access to Medical and Exposure Records Under the provision of the Access to Medical and Exposure Records standard (29 CFR 1910.20), employees, their designated representatives, and OSHA are permitted direct access to employer-maintained exposure and medical records. This access is designed to yield both direct and indirect improvements in the detection, treatment, and prevention of occupational disease. Also, access to these records will assist employees in the management of their own safety and health.

Recordkeeping

Each employer must preserve and maintain accurate medical and exposure records for each employee. The standard requires that exposure records be kept for 30 years and medical records be kept for at least the duration of employment plus 30 years. Background data for exposure records, such as laboratory reports and work sheets, need be kept only for 1 year.

Records of employees who have worked for less than 1 year need not be retained after employment, but the employer must provide these records to the employee upon termination of employment. First-aid records of one-time treatment need not be retained for any specified period.

The employer must inform each employee of the existence, location, and availability of these records. When an employer plans to stop doing business and there is no successor employer to receive and maintain these records, the employer must notify employees of their right to access of their records at least 3 months before the employer ceases to do business. At the same time, the employer also must inform the National Institute for Occupational Safety and Health.

State Plan States

States administering their own occupational safety and health program through plans approved under section 18 (b) of the Occupational Safety and Health Act of 1970 must adopt standards and enforce requirements at least as effective as federal requirements. There are currently 25 state plan states; 23 covering private and public (state and local government) sectors and two covering public sector only.

Summary

Trenching and excavation work presents serious risks to all workers involved. The greatest risk, and one of primary concern, is that of a cave-in. Furthermore, when cave-in accidents occur, they are much more likely to result in worker fatalities than other excavation-related accidents. Strict compliance, however, with all sections of the standard will prevent or greatly reduce the risk of cave-ins, as well as other excavation-related accidents.

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Fatigue - In The Work Environment



Fatigue is the temporary inability or decrease in ability or a strong disinclination to respond to a situation because of previous over-activity, either mental, emotional or physical. Fatigue is defined as a reduced muscular ability to continue an existing effort. This phenomenon of reduced performance in the workplace is referred to as muscular fatigue and is characterized by reduced power and slower body movements. When muscular fatigue is excessive we see the manifestation of accidents (soft tissue injuries), increased errors that affect quality, and, in some cases, impaired coordination.

Muscles

The primary purpose of muscles is to support the skeletal system and to provide movement to body segments. The use of muscles to affect movement is the basis of all industrial tasks. Whether the tasks are large or small, muscles must contract so the worker can perform their job task.

What happens to the muscle when an employee is involved in heavy work? We know that when you start pushing, pulling, lifting, and carrying, the muscular contraction that ensues initiates a chemical process that provides the energy for a mechanical effort (the movement of the body and limbs). After the muscle contracts and is in a resting state the energy reserve is replenished (aerobic state). If the energy demand from the work being completed exceeds the rate of regeneration, the muscles begin to fatigue and go into an anaerobic state (lack of oxygen). This results in the development of lactic acid and potassium, which are believed to be the primary reason for muscle fatigue that can lead to soft tissue injuries and a reduction in productivity.

Dynamic and Static Movements

There are two types of work tasks; dynamic and static. The dynamic ones are characterized as movements of

the body such as walking or lifting over hours or minutes. Static tasks are intense work activities for a short period, measured in seconds or minutes with an absence of body movement. The intensity of dynamic work that is acceptable in a job task varies with the length of time it must be sustained, so measuring this work is best done by determining the maximum percentage of oxygen uptake over different work times, expressed in hours. For example, a workload over an eight-hour shift should not exceed 33 % of a worker's capacity for that type work. If the hours are reduced, the maximum oxygen usage for a job task can be increased.

Static work efforts are when the muscles are contracted which, in turn, decreases the blood flow. This makes the heart work harder to overcome the resistance by increasing the beating rate and blood pressure. There is little energy supplied to the contracted muscles; however, this static state can be exhausting to the individual, leading to an increase in susceptibility to a soft tissue injury. When observing the industrial work environment, we see dynamic movement of bending; however, we typically do not recognize the use of static postures and do not identify these as risk factors in the workplace.

Therefore, we need to better design the job tasks to reduce the peaks and valleys of energy expenditure so there are short periods of high exertion and periods of lesser exertion. Working in this manner with peaks and valleys through an eight-hour work shift affects the productivity of the individuals by raising heart rates, blood pressure, and oxygen demands that are associated with excessive energy demands. These high levels of exertion require longer periods for rest and recovery, thus the efficiency and productivity of the employee begins to suffer over an eight-hour work shift, along with increased employee error rates, and reduced quality. Jobs should, therefore, be designed so the individual does not exceed 33% of their maximum aerobic capacity over an eight-hour shift.

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Strategy for Lowering the Exertion Levels

There are three basic methods to achieve a reduction in energy expenditure for job tasks with significant physical demands. The first is redesigning the job task or eliminating the activity that facilitates the high level of energy expenditure. If this can be accomplished then in most cases, the high-energy expenditure can be eliminated and the employee can work in a steady state that allows the optimal oxygen intake, heart rate, and blood pressure, thus reducing worker fatigue and the probability of soft tissue injury while improving worker productivity.

The second method involves providing manual material handling aids, such as lift tables, hoist, vacuum lifts, and conveyors, etc., to assist the employee during the job task. By providing aids of this nature, the physical task demands are reduced, as well as the amount of oxygen needed and high heart rate in job tasks with high-energy expenditures. Although these will not eliminate the high-energy expenditures, they will reduce the amount of energy needed to complete the task.

The third method entails the use of administrative controls, whereby the employee would get help from another employee or job rotation is used with several employees rotating in and out of the high exertion job tasks. This allows for a recovery period where the body can get back to a steady state. This method should only be set up for short periods, typically ninety days or less. The preferred method is redesigning or eliminating the job task with high level of energy expenditure.

Fatigue is a real issue in the work environment, and with the onset of the aging workforce that all employers face in every job sector today, it is very important that management begin to identify and evaluate those jobs associated with a high level of energy expenditure. By taking actions that address physical job fatigue you will not only be able to reduce the risk factors associated with job tasks that create the high energy expenditures, but can likewise improve productivity, and enhance quality.

For more information on fatigue and your work environment, please contact CNA Ergonomic Services at 214-220-5807.

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FATIGUE CAN BE FATAL

How many times have you caught yourself staring fixedly at the road ahead, hypnotized by the monotony of the highway? You suddenly realize that you have passed your turn off – totally inattentive.

Good drivers who spend long hours on the road realize that fatigue can be fatal. Extreme fatigue attacks a driver's mental ability and muscular coordination. Fatigue hampers a driver's ability to judge distances, speed, or driving conditions. These circumstances can lead to a serious accident.

Many times fatigue may also produce a mental state which will deceive drivers into believing that they are capable of driving safely. When tired, drivers often imagine conditions that do not exist. A reaction to some imaginary condition may be disastrous.

The Federal Bureau of Motor Carrier Safety states that, "No driver should operate a motor vehicle, and a motor carrier should not require or permit a driver to operate a motor vehicle, while the driver's ability or alertness is so impaired, or so likely to become impaired, through fatigue, as to make it unsafe to operate the motor vehicle." In fact, the Bureau has established definite time periods for maximum driving,

Why have these regulations been established? Experts have concluded that driver performance deteriorates, driver alertness diminishes, and accident probability increases as driving time increases. The frequency of accidents dramatically increases after about 7 hours of driving time.

All drivers should be aware of the signs of fatigue so that they may take measures to combat it.

While you are still alert, you will sit relatively quiet in your seat. As you begin to tire, you become restless, squirm in your seat, stretch, rub your eyes, and maybe start to crack your knuckles. A driver may experience short lapses of attention, but as fatigue sets in, you pay less and less attention to the instrument panel and the rear and side view mirrors. A driver may even stare fixedly ahead, actually appearing to be in a trance.

It is, at this point, that the driving patterns change. There is less steering, irregular or erratic speed changes, weaving back and forth, and finally, crossing the center line or drifting off the road entirely. This is the time when a fatigued driver is a hazard to himself, as well as others.

Here are some of the precautions you can take to combat fatigue:

1. A driver should not operate a vehicle when tired, ill, or when any other condition makes his driving ability less than 100%.
2. A driver should not operate a vehicle beyond the hours of service limitations developed by the Bureau of Motor Carrier Safety.
3. Frequent rest stops should be made.
4. Any activity which substitutes a different physical act for the monotony of driving helps refresh a driver.
5. If available, a drink of coffee or water is often enough to increase alertness.
6. Fatigue comes on very quickly. Drivers should get off the road before they fall asleep instead of afterwards. A driver who is dog-tired should pull well off the road and take an extended rest break.

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7. Do not use alcohol or drugs of any kind at any time.

Many drivers feel that drugs can increase alertness and efficiency so that they can operate a vehicle beyond their limitations. Drugs may increase alertness for a short period. However, their use is often followed by headaches, dizziness, agitation or irritability, decreased power of concentration, and marked fatigue.

An important factor to note is that the use of drugs can interfere with the body's normal warning symptoms of drowsiness and fatigue. Drivers can use up their body energy without realizing it until they may suddenly collapse.

They are given a false sense of self-confidence and do not realize that their driving ability and alertness are decreasing.

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First Aid



It's an excellent idea for construction workers and for everyone to know first aid fundamentals: how to stop bleeding, start breathing, start a stopped heart beating again, and give any other vitally needed care until professional help arrives.

Whether or not you've had any first aid training, you should know this principle that is too often forgotten in many emergencies: Don't move anyone who appears to be seriously injured. Well-meaning people often have the impulse to hoist an accident victim to a sitting position, or pointlessly move them from here to there...or from there to here.

The victim of a bad fall, or of some other accident on your project, might have internal injuries or a fractured spine; if so, trying to move him needlessly might aggravate the injury – might permanently cripple, or even kill them!

Wait until experts arrive who will transport the victim to a hospital with a minimum of danger. If the person must be moved to save them from additional danger, try to work a blanket or coat under them, and then pull them gently along the ground to a safe location. If they must be lifted, support each part of the body so that the entire frame is kept in a straight line.

Good first aid is not only knowing what to do – how to stop excessive bleeding, or restore breathing; it's also knowing what not to do – not to move a seriously injured person unless absolutely necessary.

It is equally important that you protect yourself when giving first aid. Your good deed could cause you needless pain and suffering.

Avoid all contact with the victim's body fluid. This includes not only blood, but also saliva and other body fluids. If you think you might come into contact, obtain the necessary protection before beginning first aid. This could include disposable gloves, a disposable mouth to mouth resusci-

tator, safety glasses, or even a fluid-resistant mask. Check today to make certain your first aid kit has the appropriate equipment, and to familiarize yourself with its location. If you do come into contact with an injured person's body fluids, let your supervisor know, and seek medical attention as soon as practical.

So if someone is ever seriously hurt on the job, see that professional help is called right away – then see that what needs to be done is done...and that what need not be done isn't done.

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Foresight Preserves Eyesight



There are all kinds of eye hazards in construction work – and there's excellent protection for every eye hazard you'll find on a project. Just remember: there's every kind of eye protective device readily available – but you're using your one and only pair of eyes right now.

Here are some of the more common operations where eye protection is an absolute must:

- Chipping, sledging and hammering on metal, stone or concrete.
- Using manual, pneumatic and power impact tools.
- Caulking, brushing and grinding.
- Drilling, scaling and scraping.
- Soldering and casting hot metals.
- Handling hot tar, oils, liquids, and molten substances.
- Handling acids, caustics, and creosoted materials.
- Gas welding, cutting and brazing.
- Electric arc welding and cutting; also, any operations that may expose the eyes to dust, gases, fumes or liquids. Drilling overhead.
- Working where there's dust blowing around.

Eye protection can be comfortable when you get a good fit. True, goggles can fog up, but you can wear a sweat-band if you sweat a lot – and there are anti-fog liquids, too. Maybe there's some inconvenience involved in using eye protection – but what's that compared with the "inconvenience" of having to learn how to read Braille?

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Goggles - Gloves



Goggles

There is nothing new about wearing goggles for eye protection. Every job is using them to a greater or lesser degree. But the question always arises as to who should not be asked to wear eye protection.

There is no job throughout construction that does not carry a potential eye hazard. In analyzing eye injury cases, it is found that the most common are caused from foreign bodies in the eye, flying objects, dust, and horseplay. The jobs include office workers, laborers, operators, warehousemen, millwrights, drivers, mechanics, carpenters, and so on down the line.

Actual reported cases describe accidents in which a laborer was cleaning out one thing or another when some of the contents of a chemical nature splashed in his eyes and resulted in the loss of his sight. Goggles were not worn, since they were not considered necessary for that type of work or worker. But follow this injury and others like it and you will find that most could have been prevented if the right eye protection had been used.

There's No Such Thing As Being Too Safe!

Gloves

Your hands are your wage earners.

Hands are hurt more often than any other part of the body.

Hand injuries don't have to occur. As talented as your hands are, they can't think, they're your servants, and it is up to you to think and keep them out of trouble.

Be sure you wear the right kind of gloves for the particular kind of work you are doing.

When you wear gloves, you aren't trusting to luck and you're not taking unnecessary chances.

Wear gloves when you are doing a job that needs them, but, not around moving machinery.

Time spent in preparing your hands for the job will not only save trouble for you but will probably save time in doing the job.

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Hard Hats



The average safety hard hat weighs about 14 ounces. The average man's head weighs 14 pounds. So there's an ounce of safety for every pound of head – provided the head protection is properly worn and maintained.

The brain is the control center of the body. The slightest damage to any part of the brain will cause malfunction of some area of the body. The skull, under normal circumstances, protects the brain. But when a possibility of injury from falling or flying objects exists, additional protection is required.

Hard hats not only reduce the chances of serious injury resulting from falling objects, but protect you when you bump your head on things – like machinery, ductwork, ceiling tie wires and forms. Non-conductive hard hats protect you from electrical shock and burns. Never wear metal hard hats around electrical work.

How To Care For Hard Hats

The better care you take of your hard hat, the better care it will take of you. Here are some suggestions:

1. Properly adjust suspension systems to maintain clearance between your head and the shell of the hat.
2. Don't cut holes for ventilation. Don't heat and bend.
3. Don't substitute a "bump cap." They aren't strong enough.
4. Don't paint your hard hat.
5. Don't put anything under it except your head; this includes cigarettes or notebooks.
6. Don't wear it backwards.

Some Common Complaints And The Real Truth

We sometimes hear the following complaints about hard hats. But is there any real basis for them?

"It's too heavy." Hard hats are only a few ounces heavier than a cloth cap, but the extra protection you get is worth the extra weight.

"It's too hot." Measurements taken in hot weather show that the temperature under a hard hat is often cooler than outside.

"It gives me a headache." A thump on the head from something, which has fallen two floors, will give you a worse one. There is, however, no medical reason why a properly adjusted hard hat should cause a headache. Don't alter the suspension system or the hard hat, because you won't get the designed protection.

"It won't stay on." You're right; it won't in a high wind. A chinstrap will solve this problem. Otherwise, you will find that a hard hat stays put no matter how much stooping or bending you have to do – if it's fitted properly.

"It's noisy." That's your imagination. In fact, tests show that properly worn hard hats will shield your ears from noise to some extent.

No Help Unless You Wear It

The hard hat is a useful piece of safety equipment. But like any other protective device, it must be properly adjusted and worn and kept in good condition to give you maximum protection.

Don't be a hard head – get in the hard hat habit.

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Heat Stress Prevention



As spring turns into summer and brings up "hot weather," we should all be aware of some tips to prevent heat stress. Remember, physical activity at high temperatures can directly affect health and indirectly be the cause of accidents.

What is Heat Stress?

It's a signal that says the body is having difficulty maintaining its narrow temperature range. The heart pumps faster, blood is diverted from internal organs to the skin, breathing rate increases, and sweating increases, all in an attempt to transfer more heat to the outside air and cool the skin by the evaporation of sweat. If the body can't keep up, then the person suffers effects ranging from heat cramps to heat exhaustion, and finally to heat stroke.

Dry clothes and skin doesn't mean you're not sweating!

In dry climates you might not feel wet or sticky, but you are still sweating. On a very warm day you can lose as much as two liters of fluid.

Beat the heat. Help prevent the ill effects of heat stress by:

- Drinking water frequently and moderately (about a glassful every 15-30 minutes). Due to the fact that most of us already consume excess salt in our diets, salt tablets are not recommended for general use.
- Resting frequently.
- Eating lightly.
- Doing more strenuous jobs during the cooler morning hours.
- Utilizing ventilation or fans in enclosed areas.
- Remembering that it takes about 1-2 weeks for the body to adjust to the heat; this adaptation is quickly lost – so your body will need time to adjust after a vacation, too.
- Avoiding alcohol consumption. Many cases have occurred the day after a "night on the town."
- Wearing light-colored, cotton clothes and keeping your shirt on – desert nomads don't wear all those clothes for nothing.

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Housekeeping on the Job



You have a pretty good idea how safe a job is just by looking at it before you start to work. Even a "Sidewalk Superintendent" knows this. A job that looks clean, with everything in its place, is a safe job. That's all we mean when we talk about job housekeeping. Good housekeeping calls for just two things. Try to remember them:

First: Keep trash and loose objects picked up and dispose of them.

Second: Pile all materials and park all tools and equipment in the places where they belong.

These are the fundamentals of good housekeeping and they're simple enough. If we don't follow these two rules, we're letting ourselves in for trouble.

Putting the rules to work is not so simple. A grand clean-up once a week won't do the trick. Housekeeping is a job that can't be put off. We have to do it. It's up to each individual to be their own job housekeeper.

When you see something lying around where it could trip an individual or fall on them, put it in a safe place. Don't wait for someone else to do it. If it's something that he or she will be looking for, you can put it safely where they can see it.

You've seen jobs, and probably worked on some, where it wasn't safe to put your foot down without first looking twice to be sure you weren't going to twist an ankle or run a nail through your shoe. A job like that is poorly run, badly managed. Probably it's losing money as well as causing accidents.

Some jobs have walkways, aisles, stairs, and ladders by which you get from one place to another. It's particularly important that these lines of travel be kept safe and clear of loose objects. Workers often carry loads on these routes.

They can't always pick their steps or look around to be sure that nothing is going to trip them or fall on them.

A wet or greasy walkway may cause a bad accident. If you see a treacherous spot, make it your business to do some sweeping, mopping or scraping.

Brick, tile, pipe, steel rods and similar materials scattered about the job or insecurely piled on scaffolds or platforms can cause accidents. All material should be piled in the place set aside for it. Each kind of material has its own characteristic. But some rules for piling apply to all kinds:

First, you have to consider how the material is going to be taken out of the pile. If it's going to be a fast-moving operation with a big tonnage being unloaded in a short time, be sure to leave space for the worker and the equipment that will have to do the work.

Be courteous. Never pile material in such a way that it will endanger a worker who has to work on it or will make a backbreaking job for the worker who breaks down the pile.

Other points to think about are:

1. The strength of the support if you're piling material on a floor, platform or scaffold.
2. The stability of the ground if you're piling a heavy load.
3. The height of the pile so it won't topple.
4. The need for building racks if its pipe or rods you have to stack.
5. The wisdom of waiting for the proper equipment to handle structural steel and other heavy material.

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We all know the value of good lighting in job housekeeping. Poor lighting and accidents go together. When you find a light out, report it and get a replacement.

It's not hard to keep a job clean if all useless materials, boxes, scrap lumber and other trash are picked up and removed regularly. Remember, if they're allowed to accumulate for even a few days, the job becomes a messy and unsafe place to work.

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Introduction to Fall Protection



Falls cost business owners millions of dollars each year in lost time, compensation, and third party lawsuits. However, with the right mix of pre-job planning, proper equipment selection and employee education and training, workers can continue to work at heights while limiting injuries and their associated costs.

There are a number of nationally recognized standards and legislative requirements that govern the use and need for fall protection. Typically, fall protection is required when working six feet above the level or obstruction below, or when a fall from a lesser height may result in a serious injury.

There are a number of important ingredients that must be included in any good fall prevention or protection program. These include identification of the fall hazards, implementation of a company policy, selection and use of the proper equipment and/or systems, and an in-depth training program including rescue.

Fall Prevention

The term fall protection encompasses a broad spectrum of techniques, equipment, and legislation in hopes to minimize injury and damage due to falls. However, where possible, a fall prevention approach should be taken to eliminate the fall altogether. Some examples would include engineering out the hazard by relocating a valve to a more accessible location, or utilizing site fall protection systems such as guardrails and floor covers, and using Fall Restraint Systems where possible.

Fall Arrest

Due to feasibility issues, cost and/or time restraints, fall prevention systems cannot always be used. For these situations, a fall arrest system can be used and can limit injury to a worker by stopping the fall prior to the worker hitting the level below.

Personal fall arrest systems are, at times, much more complex and require more detailed and comprehensive training to be effective and ensure safety. Further, the fall arrest system must limit the forces on the worker to less than 1,800 lbs.

Fall Protection Basics

All personal fall protection systems will incorporate some form of anchorage, body support, and connector(s), and should incorporate a plan for descent/rescue. In addition, there are a number of other factors that must also be considered including freefall and available clearance, anchor location and strength, shock absorption and potential for swing fall.

Body Support

The two most common types of body support used in the construction industry include the waist belt and full body harness. Both of these types of body support may be used for work restraint and positioning applications. However, if there is potential to fall (fall arrest) then only a full body harness should be used. A waist belt is banned for fall arrest and must not be used as it can cause serious injuries, has the potential to slip off, and limits suspension time.

Full Body Harnesses

The full body harness has significant advantages over waist belts including: prolonged suspension, distribution of impact forces, decreased potential for serious injury, upright suspension, and easier rescue. All American National Standards Institute (ANSI) approved full body harnesses must have an attachment point (D-ring) located between the shoulder blades (dorsal location) for use with other fall arrest equipment.

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Harness Types

Some harnesses have multiple attachment points for differing applications. Workers and supervisors should be aware that the harness of choice is one that is relatively simple, easy to adjust, and causes no confusion regarding the attachment point. The categories of harnesses are as follows:

- Fall Arrest
 - Back dorsal D ring
- Controlled Descent
 - Front D ring
- Confined Entry/Evacuation
 - Two D rings on shoulder
- Ladder Climbing
 - Front D ring
- Work Positioning
 - Two D rings at waist

Harness Do's and Don'ts

DO:

- Adjust the harness to fit snugly. A harness that does not fit snugly can cause serious injury and limit the tolerable suspension time following fall arrest.
- Wear the chest strap. If the chest strap is not done up you may fall out of the harness in a headfirst fall.
- Inspect the harness prior to use. A harness that does not pass the pre-use inspection should not be used.
- Use the keepers to prevent the webbing from sliding through the buckles and to tuck back excess webbing.

DON'T

- Leave straps dangling or leave the harness partially done up. If the unattached straps are forgotten about, they may be caught in machinery or the harness may fall off during fall arrest.
- Use a harness that has been previously used to arrest a fall. It must be discarded following fall arrest.

Donning a Full Body Harness

Lay the harness out on a clean, flat surface to ensure there are no tangles in the webbing and for ease in inspection. Place the shoulder straps on and secure all corresponding buckles. Adjust all straps and buckles so that the harness fits snugly, but still allows free movement. Ensure the sub-pelvic strap is just below the buttock and the chest strap is across the chest at nipple height. Slide all keepers to their correct locations. Attach all other fall arrest equipment to the dorsal D-ring on the harness.

It is important to follow the manufacturer's direction for donning your particular harness, as donning procedure may change.

Connectors

Connectors include equipment that is used to couple the body support to the anchorage. They include hardware, such as snaphooks and carabiners, as well as software, such as lanyards and shock absorbers.

Snaphooks

A snaphook is a connector with a hook-shaped body that has an opening for attachment to a fall protection component and a self-closing gate to retain the component within the opening. Non-locking snaphooks must not be used in fall protection as they may unintentionally disengage (**rollout**) during operation.

The autolocking snaphook is the only type that should be used for fall arrest applications because it limits the hazard of rollout when used with a large D-ring. Other disengagement hazards include forced rollout, false connection, resting over a sharp steel edge and attaching two snaphooks together.

Carabiners

Carabiners have an oval shaped body with a gate on one side that may be opened to attach to a fall protection or rescue component. Steel carabiners are recommended because of their durability and strength characteristics. All carabiners should be of the auto locking variety to prevent rollout. Some carabiners come with a split pin or captive

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eye to prevent side or cross-gate loading. They should be rated for 5,000 lbs.

Lanyards

Lanyards are used to connect the anchorage to the body support of a fall protection system. The three lanyard types are rope, webbing, and cable. **Note:** Cable lanyards are very static in nature and must be used with shock absorbers when used for fall arrest. Maximum lanyard length for fall arrest is six feet including the shock absorber. Lanyards should be long enough to ensure usability, while remaining as short as possible to minimize free-fall distance. Some lanyards are made to be adjustable allowing widespread use.

Double tethered lanyards (two lanyards that are integrally connected at one end) are also available to provide 100% tie-off protection.

Lanyard Do's and Don'ts

DO

- Attach the lanyard directly overhead to minimize swing fall hazard
- Use the shortest possible lanyard for the job.
- Inspect the lanyard prior to use.

DON'T

- Use a lanyard if has been used to arrest a fall.
- Attach two lanyards together to make them longer, as it could cause rollout, and the freefall is unacceptable.
- Tie knots in lanyards; it reduces the strength by 50%.
- Girth hitch lanyards, it can cut the lanyard.

Shock Absorbers

A shock absorber is used to dissipate the energy of a falling worker and minimize the resulting forces on the worker and the rest of the fall arrest system. Shock absorbers are designed to tear or extend, to reduce the forces of a fall. To meet ANSI standards, they must keep the forces below 900 lbs. and not extend the fall to more

than 42". This potential elongation must be added to calculations of total fall distance to ensure the worker does not hit the ground. Even if a shock absorber is only partially deployed, it must be retired. If a lanyard is used for fall arrest, a shock absorber should always be incorporated.

Anchorage

Anchorage can be defined as secure points to attach a lifeline, lanyard, or any other fall protection or rescue system. Some examples include structural steel members, pre-cast concrete beams, and davit arms.

There are two classes of anchorages, certified and non-certified. Certified anchorages have either been designed or engineered specifically for fall protection, or are existing structures that have been tested, evaluated and/or approved for use. Certified anchorages should be identified with paint or special markings to ensure that they are only used for their intended purpose. Once certified, an anchorage should be added to a plant or site location list.

Non-certified anchorages (temporary or improvised) include existing beams, trusses and other suitably strong structures throughout a job site that are not practically certified. As a result, workers using non-certified anchorages must be thoroughly trained in their use and proper identification. A quick check would be to visually assess if the anchorage would be able to support a ¾ ton truck and, if not, don't use it! Inappropriate anchorages include fluid carrying pipes, electrical conduits, and handrails.

Strength Requirements and Freefall

Anchorage used for fall protection should be capable of supporting a load of **5000 lbs.** per worker, unless certified by a professional engineer who maintains a safety factor of 2. The impact force or maximum arrest force (MAF) is the peak dynamic load that results from a falling worker being stopped by the system. This force is dependent upon the workers weight, free fall distance and energy dissipation by the system, i.e., use of a shock absorber. The MAF allowable is 1,800 lbs. However, it can be upwards of 3000-4000 lbs. when a shock absorber is not used.

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The free fall distance is the vertical distance from the location the worker started to fall from, to where the fall arrest system begins to slow the worker down. The maximum allowable free fall distance is six feet. To limit free-fall, the anchorage should be located as high as possible above the worker.

Anchorage Connectors

An anchorage connector is attached or connected around the anchorage to aid in attaching the rest of the fall protection system. The most common types include slings which can be made of webbing or cable.

All slings must be rated for 5000 lbs. and should be long enough to entirely encircle the anchorage with room to spare.

There are many other types of anchorage connectors, including roof anchors, beam clamps, eyebolts, and shepherd's hooks. It is most important to follow all manufacturers' directions prior to using any anchorage connector.

Specialized Systems

Self-Retracting Lifelines (SRLs)

A self-retracting lifeline contains a drum wound line under tension that is anchored vertically above the worker. When attached to the dorsal D-ring of a harness, the worker may climb up and down unimpeded. In the event of a fall, the device will lock the drum and prevent the lifeline from paying out, thus arresting the fall. The lifeline of the SRL can be composed of cable, webbing or synthetic rope, and may range in length from 7 to 250 feet. Most units have a load indicator to show if the device was previously loaded or fallen into. If this indicator is deployed, the SRL must be returned for servicing. Some of the guidelines that must be followed when using SRLs include keeping the lifeline away from sharp edges, never clamping or knotting the line and not using this device on flat roofs or while on granular surfaces.

Vertical Lifelines

ANSI defines a Vertical Lifeline as a vertically suspended

flexible line with a connector at the upper end for fastening it to an overhead anchorage, thus providing a path along which a fall arrester (rope grab) can travel. Vertical lifelines are typically composed of nylon or polyester due to their high strength and wear characteristics. Some things to understand when using vertical lifelines include watching for potential swing falls, keeping the rope away from sharp edges and heat sources, using the shortest possible lanyard to minimize freefall when climbing and mating the lifeline with the rope grab.

Static Versus Mobile Fall Arresters

Static fall arrester, also referred to as manual rope grabs, are designed to remain locked onto the lifeline until the worker manually disengaged the locking mechanism (squeezes the device). Static arresters are used widely for protection while on powered swing stages, as the worker does not require his hands to climb, thus limiting freefall. They are also used in roofing applications for fall restraint scenarios as they stay in place when locked, but provide movement when required.

Mobile Fall Arresters (also referred to as automatic rope grabs) are best used when hands free use is required, i.e., climbing communication towers. These rope grabs will follow the worker up and down along the lifeline, but arrest the sudden fall of a worker. To minimize fall distances, the fall arrester should be positioned above the worker when arriving at the desired elevation. Additional clearance should be factored to include line stretch and arrester lock off.

Ladder Safety Systems

Ladder safety systems incorporate either a flexible cable or rail assembly permanently installed up the center of a ladder. A fall arrester or safety sleeve is connected to the cable or rail and provides free movement up and down the ladder when attached to the workers full body harness. In the event of a slip or fall, the sleeve will lock-off and arrest the falling worker in a relatively short distance, minimizing injury, as opposed to the use of a ladder cage.

Note: These systems represent the only instance where workers will attach to the frontal attachment of the harness for fall arrest, since the means of connection is kept very short or less than 9 inches.

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Horizontal Lifelines

A horizontal lifeline consists of a cable or rope that is connected between two fixed anchorages at the same level and provides a location to connect other fall arrest equipment such as lanyards, SRLs. It is designed to allow horizontal movement and protection of workers, i.e., along the length of a railcar. Industry standards dictate that they should be designed by a qualified person (professional engineer). The resulting forces exposed to the two anchorages of a horizontal lifeline during fall arrest can be many times greater than those expected from a single anchorage. Furthermore, the fall distance will also be greater because of the additional sag in the line during fall arrest.

Equipment Care and Maintenance

Inspection

All fall protection equipment should be inspected by the user prior to each use. A detailed annual inspection should also be performed by a competent person. All other inspections should be performed as detailed by the manufacturer. If there is ever any sign of an unsafe condition or if the equipment shows signs that it has been used to arrest a fall, it should be immediately retired or sent to an authorized service center for recertification.

Software, such as lanyards and harnesses, should be inspected for cuts, burns, discoloration, excess dirt or wear, knots or other damage, and must have all labels present. Hardware such as D-rings and snap hooks should be free of cracks, corrosion, deformation, burrs, missing parts, or other damage and/or wear.

Care and Maintenance

All manufacturers' directions should be followed for proper care and maintenance. Most soft and hardware can be washed with mild soap detergent, water, and a rag. The equipment should be dried with a rag and left to hang, out of direct sunlight. Equipment should not be taken apart, modified or repaired in-house. Additional servicing should only be performed by factory authorized centers.

Logging, Identification and Storage

Records of all equipment should be maintained in a centralized logbook including serial number, date of purchase or recertification, and inspection dates. Each worker should also be issued a personal logbook for daily inspections. All equipment should be tagged or marked as recommended by the manufacturer for identification. The storage location should be a cool, dry, and clean environment, out of direct sunlight; a locker or tool crib is recommended.

Rescue and Escape

Rescue is the one component of many comprehensive fall protection programs that is most often overlooked. Workers who have fallen and are suspended in a full body harness may or may not be able to perform a self-rescue. Rescues do not have to be complicated and risky. For example, if a fallen worker can be accessed with a ladder or manlift, then this procedure should be used prior to using rope rescue techniques. Technical rope rescue operations can be quite effective and safe but require a great deal of training for personnel to acquire and maintain an acceptable degree of proficiency. Most important is that a plan and procedures are developed. Rescues should be as simple as possible while putting the fewest workers at risk. A site rescue team is often recommended.

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Job Site Foreman-Safety



Introduction

The key to success in any construction loss prevention program is its actual implementation on the job site. Field supervision is the main mechanism by which the loss prevention policy and procedures are implemented. The attitude of individual workers toward the company loss prevention program is dependent upon the attitude of their supervisor. The foreman's actions in directing the work are the critical link in delivering success. If foremen are given clear responsibilities for job site safety, and are held accountable through a performance review and reward system, the likelihood of accidents will be reduced helping to achieve greater construction quality, productivity, and worker safety.

Safe operations are practiced on the job site, not in the home office. Effective loss prevention programs are a result of the involvement and commitment of all members of the construction team, from the chief executive officer to the worker on the job site. However, in accomplishing the desired objectives, foremen play the most critical role. As the principal representative of management seen daily by the workers performing the actual construction work, a foreman has direct control of the activities of the workers.

The foreman must be thoroughly familiar with the duties and responsibilities of all parties involved in the loss prevention program.

Foremen must understand the economic impact of accidents and incidents. The foreman who understands the mechanics of direct and indirect accident costs, as well as overhead implications for workers' compensation and other insurance coverages is in a better position to make intelligent decisions in directing the work activities. Increasing the awareness of the individual workers on the impact of their actions can greatly affect the business results.

In addition, it is also essential that the superintendent who has overall responsibility for the production, quality, cost,

and scheduling of a project also be held principally accountable for job site safety.

Foreman Responsibilities

The foreman is the primary project leader and must be held accountable for the project's safety performance. They must also be the principal implementers of the company loss prevention policy and procedures. The key roles and related responsibilities are outlined below:

- **Knowledge** – Have the knowledge to carry out all the training, site inspections, accident investigation, and recordkeeping roles defined below. Understand the principles of loss prevention as well as the company policies and procedures. Have a thorough understanding of the operations and hazards expected, controls to be used, company policies, and legal safety standards, which apply to the hazard.
- **Site Safety Compliance** – Must be given full authority to require workers of all levels on the job site to comply with the established work rules and other applicable loss prevention procedures. They must also follow proper pre-job and pre-task planning procedures and establish specific elements of the loss prevention program.
- **Site Inspections** – Continually check the job site to determine the level of implementation of loss prevention procedures and to assess the practices and site conditions. Any unsatisfactory conditions should be promptly reported and corrected. Check the job frequently to determine if the proper procedures are being followed. Be sure that potential hazards are being safeguarded against and that no new hazards have developed. This includes verifying that personal protective equipment is being worn and used properly and that all other equipment is being properly used.

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- **Communication** – Hold periodic group meetings and weekly toolbox talks and promote other means of communications with workers to ensure awareness of site safety. Reward outstanding performance and promote feedback and involvement of the workers in the loss prevention program. Communication must flow back to senior management to advise of areas where help is needed and areas where there was superior performance.
- **Recordkeeping** – Maintain job site performance records, training, inspections, investigations, statistics, and other means to assess the level of implementation. Take corrective action for potential problem areas. Report and record the performance of the crew and any problems with the implementation of any element of the loss prevention program.
- **Worker training** – Determine the level of knowledge and job requirements of each individual worker. If there is a gap, it is up to the foreman to assure the proper training or support is provided and maintained. Give special attention to new or inexperienced workers since they are most "at risk" on the job site. Conduct periodic safety training sessions (e.g., toolbox meetings) to familiarize crew members with safety performance indicators, lessons learned from previous accidents, and other pertinent information which will promote work safety.
- **Accident Investigation** – Require that all injuries and incidents be promptly reported and fully investigated to prevent future accidents. As the most knowledgeable individual working with the crew, the foreman is in the best position to determine what went wrong, why it happened, and how future occurrences can be prevented. This information must be shared with management so that recordkeeping requirements can be met, as well as benefits derived from the insight gained through the investigation.
- **Goal Setting** – Participate with upper management in the development of foreman safety goals. Some measurable goals include experience modification reduction, incidence rates or days away from work reduction, training goals, inspection goals, and budgeting goals.

Accountability and Performance Measurement

Safety programs and safety success require an active, motivated and knowledgeable foreman. In order to measure the level of performance periodic reviews should be undertaken to identify weaknesses and strengths of each foreman in carrying out his or her safety roles and responsibilities. An action plan to address areas for improvement should be outlined during the review and then monitored throughout the year. Feedback consistent with the level of achievement towards reaching the action plan expectations should be provided.

The following is a suggested review process to evaluate and hold the foreman accountable for safety at the job site. This should be tailored to comply with your company or site specific safety program. Each foreman should be given this score card when hired so that they understand what is expected.

If the bargaining agreement disallows a formal performance review, the form could be used as a management guide to evaluate the individual followed by an informal meeting with the foreman to address strengths and weakness.

Additional Sources of Information

CNA Risk Control or CNA agent
 JJ Keller – 800-327-6868
 National Safety Council – 800-621-7619
 Construction Safety Council – 708-544-2082
 Safety Meeting Outlines, Inc. – 815-464-0200
 ABIH/BCSP Joint Committee (American Board of Industrial Hygiene, the Board of Certified Safety Professionals) – 217-359-2686

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SCORING

Poor – For the most part the foreman is not performing up to expectations. Remedial action is required.

Below Average – Foreman occasionally takes responsibility and performs effectively but overall expectations are not being met. Retrain and instruct the employee on improvements needed to achieve at least an Average rating.

Average – Meets expectations consistently. Additional training and expectations needed to achieve at an Above Average level should be discussed.

Above Average – Exceeds expectations occasionally. With additional training and motivation could achieve excellent rating within one year.

Excellent – Exceeds expectations consistently. Role model and training example for all other Supervisory personnel.

SAFETY SCORE CARD

Rate the foreman in each category below based on the above scoring. Offer constructive comments as warranted.

1.	Completes accident/incident reports on a timely, factual basis. Provides workable effective recommendations to prevent recurrence.	1 2 3 4 5	Comments:
2.	Takes the initiative by communicating with management about status of job site safety and ideas for improvement.	1 2 3 4 5	Comments:
3.	Knows the most significant exposures at the job site (i.e. material handling, falls, work zone safety, theft, alcohol/drug, housekeeping, safe driving) and keeps focused on controlling these.	1 2 3 4 5	Comments:
4.	Takes charge of operations that are not routine to make certain good safety practices are followed.	1 2 3 4 5	Comments:
5.	Performs regular inspections of job site exposures and program compliance. Informs employees and shop personnel of defects ensuring corrective action is taken.	1 2 3 4 5	Comments:
6.	Takes the initiative in notifying management of persistent deficiencies.	1 2 3 4 5	Comments:
7.	Makes no assumptions concerning employees' skills and performs new employee orientation and follows up with the new employee to ensure safe practices are adhered to.	1 2 3 4 5	Comments:
8.	Takes corrective action when necessary to re-enforce safe job practices.	1 2 3 4 5	Comments:
9.	Sets a good safety example for all employees.	1 2 3 4 5	Comments:
10.	Consistently enforces company safety rules and if necessary uses the company disciplinary procedures to correct unsafe behavior. Works with each employee without favoritism.	1 2 3 4 5	Comments:
11.	Conducts appropriate meaningful toolbox talks encouraging the employees to participate and offer suggestions.	1 2 3 4 5	Comments:
12.	Is knowledgeable in OSHA compliance and continues to demonstrate a willingness to stay abreast of OSHA issues.	1 2 3 4 5	Comments:
13.	Accident Experience	1 2 3 4 5	Comments:
	Frequency – # of accidents _____		
	Severity – # of lost work days _____		
	Frequency – # of first aid cases _____		
	Property losses – # _____ /\$ _____		
14.	Experience modification reduction	1 2 3 4 5	Comments:
ACTION PLAN:			

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Lifting - From Start to Finish



Learning how to lift and carry loads the right way may be the best thing you can do to keep from being injured on the job or at home. No matter what your size or strength, knowing how to lift things right makes your job easier and safer.

Plan Ahead

- Check your load. Is it heavy? Awkward to carry? Can you see around it? Is its weight evenly distributed and stable? Are there sharp edges or protruding nails?
- Check your route. Choose a flat, straight path that's clear of items that could make you trip or slip. Make sure the unloading area is clear.

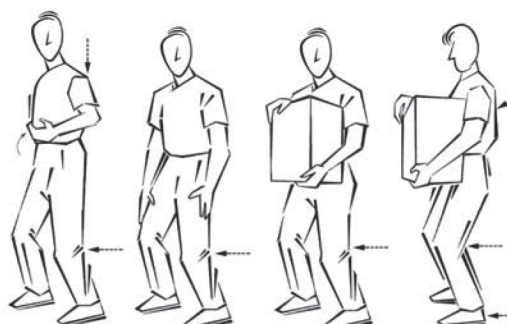
How To Lift

- Stand close to the load with your feet apart for balance. If the load is small enough, keep it between your legs.
- Bend your knees and lower yourself into a squatting position while keeping your back upright.
- Grip the load firmly with your whole hand, not just your fingers.
- Tighten your stomach muscles and, keeping your back upright, straighten your legs. Pivot around your hip joint. Move slowly. Jerky motions strain muscles.
- Keep the load close to your body. Keep your elbows tucked in close to your body.
- Move slowly and carefully. If you have to turn, move with your feet, not your torso. Avoid twisting; keep your shoulders and feet facing forward at all times.
- Face the unloading area and bend your knees to bring the load down.
- Keep your fingers clear of the bottom of the object.

- Place the load down near your feet and push or slide it into place. How you put down the load is as important as how you pick it up.

Helpful Hints

- Split large loads into smaller, easier-to-manage loads.
- Carry long loads on your shoulder with the front end high.
- When transferring objects, try to use a pallet or table so you are lifting at waist-height.
- Use a forklift, cart or hand truck or get someone to help you move a large or awkward load.



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Material Handling on Construction Sites



Manual material handling is the largest single cause of lost workday injuries in construction. One out of every four work injuries happens because someone lifted, carried, pushed, or pulled something the wrong way, or lifted beyond his or her capacity.

Workers should be trained on proper and safe material handling techniques either manually or by using mechanical means. The use of correct handling techniques is one of the ways to help reduce injuries.

Injuries

The most useful part of your body in handling materials safely is not your back or legs, but your head. Untrained workers often do the job the hard way and soon get tired which leads to possible injury. The following are some key potential injury areas that can occur when material is improperly handled.

Back Pain

Back pain, especially low back pain, is second only to colds and other respiratory problems as the leading cause of lost time on the job. Many workers suffer from low back pain, much of which results from improper handling of materials.

Fatigue is the most common cause of back pain, resulting from doing heavy, repetitive jobs for an extended period of time with the body in an unnatural position. It also can result from light jobs where the body is not in a normal position, such as bending over a low bench or desk. A short warm-up session before beginning a heavy task, and occasional stretch breaks can help avoid fatigue.

Sudden, acute pain from a muscular strain may often be easily treated. Don't ignore any form of back pain. Seek medical advice and treatment as soon as possible.

Hernia

A hernia is caused by a weakness in the abdominal wall which ruptures, pushing a part of the abdominal contents through the wall, causing a bulge or lump. While most common in males, women too, may suffer hernias. Hernias do not only affect workers in heavy industry, as most think. Any weakness in the abdominal wall is susceptible to a hernia when unsafe lifting habits cause overstretching of the abdominal muscles.

Strains

Improper material handling techniques can cause strains in other areas than the back. Strains to hands, wrists, arms, neck, shoulders, and legs are also common. They too can be prevented by using proper material handling methods. Continuous straining to any of these areas can lead to more serious problems.

Protecting Yourself

When you must manually lift an object, consider the following general lifting suggestions:

- Size up the load. Seek assistance if you think you need it.
- Get close to the load, with one foot alongside the load, and one foot behind it for balance. Get a firm grip on the object, with your palms, not your fingers.
- If possible, squat to the load, keeping your back straight, not necessarily vertical, just straight.
- Draw the load close to you, with the weight centered over your feet. Test to see that it's not too heavy.
- Lift by straightening your legs, avoiding quick, jerking motions. Your legs should provide most of the power to lift, not your back.
- Avoid twisting with a load, instead use your feet or shift to change direction with a load.

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- When lifting above waist height, set the load down on a table or bench, shift your grip, and then lift again.
- Lifting comfortably is most important. Judge the most comfortable position for yourself.

Preparing For The Lift

- Stand comfortably as close as you can to the load, with feet apart for balance.
- If the load becomes too heavy or clumsy to lift on your first try, don't attempt the lift again without additional assistance.
- If possible, squat to the load, keeping your back straight. Try to avoid bending.
- Wear gloves that provide a good grip. Grasp the load firmly with your hands, with your fingers beneath the load if possible. Test it first to see that it's not too heavy.

Carrying The Material

Carrying objects not only exposes you to possible injury, but also to other workers on the job site. Consider the following:

- Use two people, if needed, and agree in advance how a load will be moved.
- Don't let the object obstruct your vision, be sure of where you're going.
- Don't twist your body to change directions; use your feet instead. Twisting with a load puts enormous stress on the spine.
- Check the corridors, floors or stairs over your planned route. Check to see the surface is clean and in good condition.
- Carry any pipe, bar stock or other long objects on your shoulder with the front end high.
- Never change your grip during a lift unless you can support the weight during the grip change.
- If you can't make it as far as you thought you could, stop, put the load down and rest.

Carrying Material Up And Down Stairs

Workers carry items up and down stairs many times a day. Some points to consider are as follows:

- Be sure handrails, even temporary ones, are in place.
- Check to see how adequate the lighting is even if the job is still under construction. Take extra time on stairways. Make sure there's no loose nails, cans of paint, misplaced claw hammers, or similar objects on the stairs to trip over.
- Walk with your knees and feet pointing outward at an angle while descending stairs, instead of walking with feet and knees pointing straight ahead. Going straight ahead with feet and legs puts unnecessary strain on the knees.

Placing The Material

Placing and storing the material properly is important. Consider these points:

- When possible place the material on tables, saw-horses, or pipe racks that are approximately waist height, thus not having to lower the material to the ground.
- Face the final resting spot for the load you're carrying with your whole body. Do not twist the load into its final place.
- Don't forget where your fingers and toes are. Allow enough room to place the load so you can move all of you out of the way. Put one corner of a box or similar item down first, so your fingers can be removed from beneath the load.
- Reverse the lifting motion by bending your knees and squatting down with the load, keeping it close to your body, again, without bending your back.
- Before leaving the item(s), test the item(s) for stability where placed.

Pushing And Pulling

While pushing and pulling objects is preferable to lifting and carrying, there is still potential for an injury. Consider the following:

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- Push whenever possible instead of pulling.
- Push or pull at waist height and try to avoid bending.
- Be sure you can see over and around the material being moved.
- Avoid steep ramps whenever possible. On all ramps, back down.

Other Lifting Situations

Don't stretch from the ground.

- When lowering an item from shoulder height, push against it first to test its weight and stability. Slide it as close to your body as you can, and hold the item close while lowering it.
- When lifting items from or to high places, use a safe ladder. Do not stand on boxes or other stacked material.
- Rounded objects, such as gas cylinders, drums, and small tanks, can shift suddenly, as their contents may slosh back and forth or the rounded surfaces may begin to roll. Be extra careful.
- Partner lifts can best be accomplished when two individuals who are about the same size pair up. Have lifting signals so you can both move in unison. Good communications is extremely important.

Storing Materials

Where and how material is stored affects both safety and the efficiency on a job site. Size things up first and plan ahead when finally storing the material. Instead of just putting material "here and there" on the job site, try to use logic as to where materials, tools, equipment, and other items should be unloaded and stored for safety and convenience.

Especially watch the storage of materials in tiers; secure various layers to prevent falling. That includes wood and bricks, and skid loads of materials such as tiles, shingles, and plumbing supplies.

The unloading of building supplies can be one of the most dangerous tasks at the work site. Never allow new workers to do the unloading alone. Instead, someone with rigging and mobile equipment experience should supervise

unloading and loading activities to assure materials are stored properly. Key suggestions are as follows:

- Store materials, equipment, and tools out of the way, in the most convenient location possible.
- Keep aisles and passageways-outside and inside-from being blocked by supplies. Stored materials must not block exits and emergency equipment.
- Used lumber, when stacked, should have nails removed first.
- Combustible/flammable materials should be stored in a manner that will minimize any fire potential. They shouldn't be in the way of mobile equipment, or in a place where workers might perform any hot work. All smoking should be prohibited. These materials should not be stored where they could possibly impede the exit of any workers in the event of fire. A fire extinguisher must be readily available.
- Scaffolds and work platforms must not be used to store or accumulate piles of material or debris. There should only be as much material stored as can be used by the immediate operations.
- Plan difficult storage moves well in advance. Always arrange stored material in a secure manner

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Negligent Entrustment



Introduction

Negligent entrustment can stem from employees driving a company owned vehicle, or their personal vehicle, on company business. Employers have a responsibility to know if a person has something in their driving background that creates a risk or harm to others. Negligent entrustment implies a company knew, or should have known, that it put an unsafe driver behind the wheel of a company vehicle.

A party injured by the company driver must generally prove five elements to establish liability in a lawsuit for negligent entrustment:

1. The owner company entrusted the vehicle to the driver or knew the person was driving on behalf of the company.
2. The driver was unlicensed, incompetent, or reckless.
3. The owner company knew or should have known that the driver was unlicensed, incompetent, or reckless.
4. The driver was negligent in the operation of the vehicle.
5. The driver's negligence resulted in damages.

A driver may be judged incompetent if he/she is intoxicated, unlicensed, inexperienced or has a record of reckless driving. Examples include:

- Not possessing a drivers' license or driving with a suspended license.
- Not possessing a Commercial Driver's License (CDL) when it is required for the type of vehicle being operated.
- No experience or lack of training in operating a specific type of vehicle.

- The driver's motor vehicle record (MVR) has several at-fault accidents or moving violations in the past few years.

Some jurisdictions use the Federal Motor Carrier Safety Regulations (FMCSR) to establish minimum competency for drivers. FMCSR is increasingly being referenced as a benchmark to measure the qualifications of an individual when driving is a regular part of his/her job duties. The FMCSR standards are also utilized by companies that are not under the authority of the Department of Transportation (DOT). In simple terms, FMCSR requires that a driver:

- Holds a valid driver's license.
- Be physically qualified to operate the vehicle.
- Be able to read and speak English.
- By reason of experience or training, be able to safely operate a vehicle.
- By reason of experience or training, be able to determine whether the cargo is securely loaded.

Examples of possible negligent entrustment:

On his way to work, an employee was driving a vehicle owned by ABC Inc. when he passed out from a medical condition. His vehicle struck several other vehicles and killed one of the passengers. ABC Inc. knew this employee's license had been revoked because of his medical condition but still allowed him to drive a company vehicle to and from work.

Driving his own vehicle on company business, an employee of XYZ Inc. pulled out into the path of a motorcycle. The rider of the motorcycle was killed. The employee had been driving on business for XYZ about five years and did not have a driver's license. XYZ never requested a copy of the employee's license and never reviewed the employee's MVR.

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What you can do to reduce your exposure to negligent entrustment?

While the driver's negligence in causing an accident is usually the primary issue, the investigation of negligent entrustment charges must focus upon two main issues: the company's policies and the company's actual practices. Were policies in place and were the policies followed?

Your fleet management program must be followed and documented. Management must be held accountable for implementing the fleet management program. The following list includes areas that your company's program should include:

- Driver selection procedures that include review of employee motor vehicle records
- New employee orientation and training
- Ongoing driver training
- Post-incident/accident review and training
- An enforced policy limiting driver distractions such as cell phone usage and texting
- A drug and alcohol testing program
- Adherence to local, state and federal laws
- A strictly enforced, with no exceptions, disciplinary procedure for violations which includes revocation of driving privileges.

To help avoid negligent retention, your fleet management program needs to include:

- Reviewing the MVRs for all drivers, at least on an annual basis
- Removing the employee from driving positions if they develop an unacceptable driving record
- Ongoing training of drivers on safe driving behaviors

Resources

"Negligent Entrustment." *TheFreeDictionary*. Farlex, Inc.
<http://legal-dictionary.thefreedictionary.com/Negligent+Entrustment>

RSI Insurance Brokers. Transport Times.
http://www.rsiinsurancebrokers.com/10_07-negligent-entrustment/

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Non-Owned Automobile Exposure



Many companies know that there are risks associated with managing a fleet of vehicles for company use. However, did you know that you may also be liable for accidents that occur in vehicles that your company doesn't own? This CNA Risk Control bulletin explains non-owned vehicle exposures and how you can protect your company from these risks.

Ask yourself the following questions:

Do any of my employees use their personal vehicle to run errands for the company?

Do my salespeople use their own vehicles for company business?

Do volunteers use their own vehicle when working for the organization?

Are any employees reimbursed to drive their vehicles to attend business meetings, visit customers, pick up supplies or parts?

If you answered yes to any of these questions, you have a non-owned automobile exposure. Businesses have a non-owned auto exposure anytime someone uses their personal vehicle on behalf of the company.

Possible cost to your company:

If an employee causes an accident in their own vehicle, the liability insurance policy on the vehicle is the first line for liability coverage. After the limits of liability on the employee's personal automobile are exhausted, the injured party may look to the company to pay damages. Your company could be put in this situation under the theories of negligence or vicarious liability.

Luckily, there are steps you can take to protect your company from non-owned automobile exposure as follows:

- If possible, don't allow employees to drive their own vehicles for company business. Require that they use company vehicles instead.
- Allow only designated employees to conduct business with personal vehicles.

- Review your employees' Motor Vehicle Record (MVR) before they start driving and again each year. (See suggested MVR criteria on page 2.)
- Require that people driving their personal vehicle for business provide proof of insurance.
- CNA suggests a minimum of \$300,000 combined single limits.
- For employees who regularly drive on company business, require that the company be named as an additional insured on their personal auto policy.
- Regularly inspect the vehicle to assure it is properly maintained and safe to operate.
- Investigate all accidents and provide training to prevent future accidents.
- Establish safety rules for drivers of non-owned vehicles.
- Provide training for non-owned vehicle drivers.
- Keep written records of everything you do to control the non-owned auto exposure.

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CNA Suggested Criteria for reviewing Motor Vehicle Records (MVR)

- Do not allow anyone to drive for your company if they have received a class 'A' violation within the past 5 years.
- Drivers with three or more type 'B' violations in the past three years should not be allowed to drive.
- Drivers with two or more at-fault accidents in the past three years should not be allowed to drive for the company.
- Drivers with two 'B' violations or one at-fault accident in the past three years should be put on warning. Their MVR should be reviewed at least once every six months.

Class "A" Violations	Class "B" Violations
<ul style="list-style-type: none"> • DUI (alcohol or drugs) • Refusing to take a substance test • Open container (alcohol) • Reckless or careless driving • Hit and run • Fleeing or evading police • Racing / speed contest • Driving on suspended or revoked license • Vehicular assault 	<p>Moving violations that include:</p> <ul style="list-style-type: none"> • Speeding • Improper lane change • Failure to yield • Failure to obey traffic signal or sign • Suspended license related to moving violations • Accidents

Sources

CNA Underwriting Motor Vehicle Record Criteria.

Dickie, David. 2005. "The Real Story About Non-Owned Auto Insurance, Driving Risks and Which Insurance Fixes Your Employee's Car."

Shepherd, Ron. January/February 2007 Vol.16(1). "Non-Owned Automobile Liability A Blind Sport for Business Owners." The Acorn: Menlo Park Chamber of Commerce.

Snow, Natasha. 2008. "Hired and Non-Owned Auto Liability Coverage. Why Businesses Need It."

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Policy on Personal Use of Company Vehicles



Introduction

A company's primary reason for a written policy on personal use of a company vehicle is to set company rules on how employees may or may not use the company vehicle for non-business purposes. Company vehicles are given to employees to take home for a variety of reasons. In most cases, however, employees' use of company vehicles is not intended to exist without limitations. A company vehicle should be restricted to the employee assigned to the vehicle, and non-employees, such as spouses or children, should not be allowed to drive company vehicles.

Therefore, policies covering personal use of company vehicles should be in writing and signed by the employee to verify their comprehension of, and agreement to comply with those policies.

What is the cost for a company that provides personal use of its vehicles?

Allowing employees personal use of company vehicles is costly. Every mile a company vehicle is operated for personal use shortens the number of business miles a company will get from that vehicle. For example, if your company vehicle averages 25,000 business miles a year and you replace it at 75,000 miles, you expect to keep the vehicle for 36 months. If your employee's personal use is equal to 15% of the total miles every year (~312 personal miles a month), your vehicle will reach the replacement mileage in 30.6 months. Your company will have lost almost half a year's use of that vehicle. A company may also have more cost for fuel, tires, brakes and other items on that vehicle.

In addition, allowing personal use of company vehicles has administrative costs. The IRS requires businesses to report personal use of company vehicles as compensation or income for the employee.

These are only a few of the costs associated with personal use of your company vehicles. As the owner of the

company, you need to understand the true cost of allowing personal use of company vehicles.

Sample Personal Use Policy

(Company Name) will permit personal use of the company vehicle assigned to (Employee Name) under the following conditions:

Only the employee is allowed to drive the company vehicle. Spouses, children, other relatives or friends are not authorized to drive the company vehicle.

1. Personal use will be within _____ miles of the employee's home, unless the employee has written consent from the company at least one week in advance.
2. The driver must not operate the company vehicle if they have:
 - Consumed any alcoholic beverages
 - Taken any prescription, over the counter or illegal drug or substance that may impair driving ability
 - Become intoxicated or are under the influence of any prescription, over the counter or illegal drug or substance
3. The driver and all passengers in the company vehicle must use passenger restraints at all times when the vehicle is in motion.
4. The driver must not talk or text on a cell phone, operate a computer or other equipment while vehicle is in motion.
5. The following uses are not allowed with company vehicles:
 - Towing of trailers, campers or boats
 - Transporting of hazardous materials

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- Traveling into any foreign country (Canada or Mexico)
 - Attaching equipment such as luggage carriers, winches, or plows
 - For hiring to others or transporting others to generate income
 - Giving rides to hitchhikers
 - Using for any other purpose not approved by the company
6. Any accidents during personal use must be reported to the company immediately.
 7. The company will consider unauthorized use of the vehicle by someone other than the employee as the equivalent of theft, and the driver may be held responsible for the consequences.
 8. The company may restrict or withdraw this personal use policy at any time.

I understand and agree to comply with this policy.

Employee Signature _____

Employee's Drivers License Number _____

Vehicle Description _____

Date _____

Unassigned Vehicle Personal Use

Personal use of a company vehicle may occur when an employee asks to borrow or use a company vehicle. For example, the employee is moving something and wants to use the company pickup or van.

Should you let them use the company vehicle? **No.** If they need to use a truck for moving, the employee should go to a car or truck rental company.

If you allow an employee to borrow a vehicle for special use, here are some suggested steps you should take.

1. Review the employee's Motor Vehicle Record (MVR) to assure it is acceptable.

2. Complete a documented road test of the driver in the company vehicle if it is different from what they will be driving to ensure they can operate it safely.
3. Conduct and document a safety inspection of the vehicle before the employee takes it.
4. Have the employee review and sign a copy of the company fleet safety rules.

Have the employee complete a written request stating:

- The employee will be the only person to drive the vehicle.
- How and where the vehicle will be used.
- The number of miles they expect to drive the vehicle.
- The cargo being transported and how it will be secured in the vehicle.
- How many passenger they expect and that everyone will use the vehicle restraints when the vehicle is in motion.
- The driver shall not talk or text on a cell phone, operate computer or other such equipment while vehicle is in motion.
- All accidents will be reported to the company immediately.

Source

Market Trends. The Hidden Cost of Personal Use. September 22, 2009.

<http://www.fleetfinancials.com/Blog/Market-Trends/Story/2009/09/The-Hidden-Cost-of-Personal-Use.aspx>

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Power Tools Safety Tips



Famous Last Words

"It's only 110 – it can't really hurt you."

"Let me just stretch a little and drill this one hole."

"I emptied this nail gun..."

"Let me pull this saw blade guard back just to finish this one cut."

Portable power tools are one of the greatest time and energy savers around. Since they're so readily available and useful, we tend to forget that they're powered, and have the potential to amputate, break bones, electrocute, and kill. Some of the serious accidents using power tools have involved situations like the following:

"A sheet metal man was installing flashing on a church roof. Using a power drill on the roof edge, he lost his balance when the drill cut through the material. Failing to use a safety belt, he toppled 30 feet to his death."

"A carpenter amputated three fingers using a portable circular saw incorrectly. He tried to adjust the blade depth with one hand, with the other on the grip handle. He accidentally hit the trigger."

Problems

- Inadequate instructions
- Use of improperly grounded, non-double insulated tools
- Protective guards were defective, or removed
- Dull, cutting edges of blades and bits
- Hang-up of power cord twist plugs on ladder rungs
- Non-secure operator position

Solutions

- Proper training in power tool use
- Preventive maintenance on power tools
- Inspections and defective tool reports
- Shorten power cord to prevent hang-ups
- If you are performing elevated work, use safety belts

Questions for Discussion

1. Have you noticed any tools which appear to be defective? Did you report it?
2. Have you had any close calls recently while using power tools? Can you share it with us?

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Preparing for an OSHA Inspection



Introduction

OSHA inspections can be stressful for manufacturers. They are usually conducted without advance notice. There are, however, special circumstances under which OSHA may give advance warning to the employer, although it will usually be less than 24 hours' notice. Examples of cases where advance warning may be given include:

- Imminent danger situations
- Investigation of a fatality
- Incidences where select persons must be present

Employers who receive advance notice of an inspection must inform their employees' labor representative or arrange for OSHA to do so. If an employer refuses to admit an OSHA compliance officer, or if an employer attempts to interfere with the inspection, the OSHA Act provides for legal action, such as obtaining a Warrant to Inspect.

How the Inspection Happens

OSHA inspectors/officers should come to your facility prepared. They should understand relevant facts about your wood-working shop, such as its inspection history, its known potential hazards and the specific standards that might apply. Inspectors should show appropriate credentials. Likewise, as an owner, you can call the federal or local OSHA office to verify their credentials.

An opening conference including involved parties and the OSHA team and individuals begins the inspection process. The conference covers the purpose of the visit, the scope of the inspection and the applicable standards. A copy of any employee complaint can be given to you at this time. The Act does not require that an employee representative be present for an inspection. However, when no employees are in attendance, the compliance officer must consult with a reasonable number of employees concerning safety and health matters in the workplace.

The compliance officer determines the length of the inspection and the areas to be covered. Safety and health conditions and practices are observed. Employee discussions are private. If necessary, the inspector:

- Takes photos
- Records video
- Measures instrument readings
- Examines records
- Collects air samples
- Measures noise levels
- Surveys engineering controls
- Monitors employee exposure to toxic fumes, gases and dusts.

During the inspection, OSHA pays special attention to posting and recordkeeping requirements, such as totals from the last page of the OSHA Form Number 300 and the OSHA workplace poster (OSHA 3165), which explains employees' safety and health rights. Records of toxic substances and harmful agents are also requested. Remember, under OSHA's Hazard Communication Program, employers must establish a written, comprehensive communication program that includes provisions for container labeling, material safety data sheets and an employee training program.

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A closing conference completes the onsite inspection. The employer and all other persons involved then receive a copy of Employer Rights and Responsibilities, (OSHA 3000). The inspector will discuss all unsafe or unhealthy conditions observed.

The inspector will not indicate any specific proposed penalties, but will inform the employer of his or her appeal rights. During this time, the woodworking shop owner may produce records of compliance efforts and information to help the inspector determine abatement time frames. If laboratory results are required, or when the hazard affects employees, OSHA may request one more closing conference.

Preparing for an OSHA Inspection

The woodworking industry is often found on OSHA's target inspection list for hazards associated with machinery, chemicals and dust. **Understanding your woodworking hazards** and controls for injury prevention is key. If you have had any incidents and/or accidents, make sure you have conducted a root cause analysis. Even if the causes are unrelated to your wood shop, make sure you have addressed them, as OSHA may decide to investigate.

Have a clear documented history of all incidents and accidents. Maintain all appropriate recordkeeping, including training programs and training records. If you have a health and safety manual, make sure it is updated with current OSHA standards.

Ensure that your woodworking shop is organized and clean. Hazardous, flammable and combustible materials and products should be properly stored. Have your emergency evacuation plan current. First aid kits and fire extinguishers should also meet current OSHA standards. Worker stress should be avoided, so take care to use ergonomics in your woodworking shop.

An OSHA inspection is not desirable, but it can be completed efficiently if your woodworking shop is prepared.

Resource - www.osha.gov

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Protecting Workers in Hot Environments



Many workers spend some part of their working day in a hot environment. Workers in foundries, laundries, construction projects, and bakeries – to name a few industries – often face hot conditions which pose special hazards to safety and health.

Heat Stress Causes Body Reactions

Four environmental factors – temperature, humidity, radiant heat (such as from the sun or a furnace) and air velocity – affect the amount of stress a worker faces in a hot work area. Perhaps most important to the level of stress an individual faces are personal characteristics, such as age, weight, fitness, medical condition and acclimatization of the heat.

The body reacts to high external temperature by circulating blood to the skin which increases skin temperature and allows the body to give off its excess heat through the skin. However, if the muscles are being used for physical labor, less blood is available to flow to the skin and release the heat.

Sweating is another means the body uses to maintain a stable internal body temperature in the face of heat. However, sweating is effective only if the humidity level is low enough to permit evaporation and if the fluids and salts lost are adequately replaced.

Of course, there are many steps a person might choose to take to reduce the risk of heat stress, such as moving to a cooler place, reducing the work pace or load or removing or loosening some clothing.

If the body cannot dispose of excess heat, it will store it. When this happens, the body's core temperature rises and the heart rate increases. As the body continues to store heat, the individual begins to lose concentration and has difficulty focusing on a task, may become irritable or sick and often loses the desire to drink. The next stage is most often fainting and then possible death if the person

is not removed from the hot environment.

Heat Disorders

Heat stroke, the most serious health problem for workers in hot environments is caused by the failure of the body's internal mechanism to regulate its core temperature. Sweating stops and the body can no longer rid itself of excess heat. Signs include (1) mental confusion, delirium, loss of consciousness, convulsions or coma; (2) a body temperature of 106 degrees F or higher; and (3) hot dry skin which may be red, mottled or bluish. Victims of heat stroke will die unless treated promptly. While medical help should be called, the victim must be removed immediately to a cool area and his or her clothing soaked with cool water. He or she should be fanned vigorously to increase cooling. Prompt first aid can prevent permanent injury to the brain and other vital organs.

Heat exhaustion develops as a result of loss of fluid through sweating when a worker has failed to drink enough fluids or take in enough salt or both. The worker with heat exhaustion still sweats, but experiences extreme weakness or fatigue, giddiness, nausea or headache. The skin is clammy and moist, the complexion pale or flushed and the body temperature normal or slightly higher. Treatment is usually simple: the victim should rest in a cool place and drink salted liquids. Severe cases involving victims who vomit or lose consciousness may require longer treatment under medical supervision.

Heat cramps, painful spasms of the bone muscles, are caused when workers drink large quantities of water but fail to replace their bodies' salt loss. Tired muscles – those used for performing the work – are usually the ones most susceptible to cramps. Cramps may occur during or after working hours and may be relieved by taking salted liquids by mouth or saline solutions intravenously for quicker relief, if medically determined to be required.

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Fainting may be a problem for the worker un-acclimatized to a hot environment who simply stands still in the heat. Victims usually recover quickly after a brief period of lying down. Moving around, rather than standing still, will usually reduce the possibility of fainting.

Heat rash, also known as prickly heat, may occur in hot and humid environments where sweat is not easily removed from the surface of the skin by evaporation. When extensive or complicated by infection, heat rash can be so uncomfortable that it inhibits sleep and impairs a workers' performance or even results in temporary total disability. It can be prevented by resting in a cool place and allowing the skin to dry.

Preventing Heat Stress

Most heat-related health problems can be prevented or the risk of developing them reduced. Following a few basic precautions should lessen heat stress.

1. **Acclimatization** to the heat through short exposures followed by longer periods of work in the hot environment can reduce heat stress. New employees and workers returning from an absence of two weeks or more should have a 5-day period of acclimatization. This period should begin with 50 percent of the normal workload and normal work time the first day and gradually build up to 100 percent on the fifth day.
2. A variety of **engineering controls** including general ventilation and spot cooling by local exhaust ventilation at points of high heat production may be helpful. Shielding is required as protection from radiant heat sources. Evaporative cooling and mechanical refrigeration are other ways to reduce heat. Cooling fans can also reduce heat in hot conditions. Eliminating steam leaks will also help. Equipment modifications, the use of power tools to reduce manual labor and using personal cooling devices or protective clothing, are other ways to reduce heat exposure for workers.
3. **Work practices** such as providing a period of acclimatization for new workers and those returning from two week absences and making plenty of drinking water-as much as a quart per worker per hour-available at the workplace can help re-

duce the risk of heat disorders. Training first aid workers to recognize and treat heat stress disorders and making the names of trained staff known to all workers is essential. Employers should also consider individual workers' physical conditions when determining their fitness for working in hot environments. Older workers, obese workers and personnel on some types of medication are at greater risk.

4. Alternating **work and rest** periods with longer rest periods in a cool area can help workers avoid heat stress. If possible, heavy work should be scheduled during the cooler parts of the day and appropriate protective clothing provided. Supervisors should be trained to detect early signs of heat strain and should permit workers to interrupt their work if they are extremely uncomfortable.
5. **Employee education** is vital so that workers are aware of the need to replace fluids and salt lost through sweat and can recognize dehydration, exhaustion, fainting, heat cramps, salt deficiency, heat exhaustion and heat stroke as heat disorders. Workers should also be informed of the importance of daily weighing before and after work to avoid dehydration.

More Information

A 15-page booklet "Working in Hot Environments" and a detailed scientific analysis "Occupational Exposure to Hot Environments" are available free from National Institute for Occupational Safety and Health Publications, 4676 Columbia Parkway, Cincinnati, Ohio 45226.

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Risk Transfer Mechanics for Contractors



Many firms frequently contract with other firms to provide services or perform some type of construction work. Examples range from contracting of janitorial services to installation of plumbing or better yet, complex construction of roads, bridges and buildings.

During the course of these operations, accidents may arise that cause bodily injury and/or property damage to the contracting firms, their employees, contracted workers, or the public. Ideally, the liability for any accidents should be transferred to the party who has the most control over the exposures that could cause a loss. Owners usually try to transfer liabilities to general contractors. General contractors try to transfer liabilities to subcontractors. Subcontractors try to transfer them to sub-subcontractors, and so on.

Everyone knows that selecting a qualified contractor is the key to maintaining a safe job site, but accidents can happen. And in the event of such a mishap, risk transfer mechanisms can prove invaluable by reducing your chances of unknowingly taking on someone else's liability or being exposed to additional risks due to the actions or in-actions of others. These mechanisms can also allow a firm to shift its liability to another party.

This bulletin discusses the following risk transfer mechanisms:

- Certificates of Insurance
- Hold Harmless Agreements
- Additional Insured Endorsements
- Owner's and Contractor's Protective Policies (OCP)
- Waivers of Subrogation

Since individual state laws and circumstances vary, it is important that you contact your legal counsel to discuss how these risk transfer mechanisms will apply to you in specific situations.

Certificates of Insurance

Contracts can include provisions that require subcontractors to obtain and maintain various types of insurance coverage, including Workers' Compensation, General Liability, Automobile Liability and others.

A certificate of insurance is a form issued by the subcontractor's insurer (or its agent) which lists the coverage(s), expiration date(s), and limits of the subcontractor's coverage(s). The certificate may also describe special endorsements that have been added to the policy e.g., additional insured endorsements, waiver of subrogation endorsements, special notice of cancellation endorsements, etc. Certificates of insurance do not alter the terms or conditions of the policies described. The policies' actual terms are the ones that will apply.

Prior to the commencement of the subcontractor's work, you can require proof of insurance via certificates of insurance from all subcontractors. Requesting a certificate of insurance does not, in itself, transfer any risk, but does indicate the other party's types and limits of coverage. You should consult your insurance advisor and legal counsel to determine, based on your specific circumstances, what insurance requirements are appropriate for the parties with which you contract.

After reviewing the certificates, you should file them chronologically according to the soonest expiration date shown on the certificate. Then, you can request a renewal certificate before the old coverage expires. You can also require subcontractors to give 30 days notice prior to cancellation, non-renewal or material change of coverage.

Hold Harmless Agreements

Hold Harmless Agreements (sometimes referred to as indemnity agreements) are used to transfer risk of loss, damage, or liability from one party to another. They are often incorporated into construction contracts, service job contracts, purchase order agreements, lease agreements, and consulting agreements.

Depending on the way that they are drafted, interpreted, and enforced, there can be great variety in the extent to which indemnity agreements transfer risk (i.e. wholly or proportionally, or not at all), what actions or inactions will trigger a transfer (i.e. your own or another party's negligent or intentional acts or omissions, or both), and the types of risk that are transferred (i.e. bodily injury, prop-

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erty damage, defense of claims, damages, etc.). As a result, it is important to consult your legal counsel whenever you contemplate entering into an indemnification agreement.

Additional Insured Endorsements

There are many ways that owners and contractors can end up in litigation arising out of the acts or omissions of subcontractors. Therefore, owners and general contractors should consider requiring subcontractors to name them as an "additional insured on a primary, non-contributory basis" on the other party's primary commercial general liability (CGL), or any other appropriate, policy. This information should be listed as such in the comments section on the certificate of insurance.

Insurance policies can be endorsed to add companies that do business with a named insured (policyholder). A company that is added to a policyholder's insurance policy is considered an additional insured. The endorsement that adds the company is known as an additional insured endorsement. This endorsement can complement an existing construction contract and can help protect a party from liability arising out of another party's negligence. In this way, the party named as an additional insured does not have to rely solely on the validity, effectiveness, and enforcement of the hold harmless agreement for protection. Additional insured endorsements can cover the additional insured for accidents that arise out of the named insured's involvement with a job.

Additional insureds are only covered for operations that involve the named insured (policyholder) in some way. In this respect, additional insureds receive narrower coverage than named insureds, since named insureds are automatically covered for any business activity that isn't specifically excluded by the policy. Policy exclusions apply equally to named insureds and additional insureds unless specifically noted otherwise in a CGL policy or on the additional insured endorsement.

You should consult your insurance advisor and legal counsel regarding the effect of any additional insured endorsements which apply to you.

Owner's and Contractor's Protective Policies (OCP)

OCP policies protect the interests of someone hiring a contractor. They are purchased by the hired contractor,

but actually insure the party hiring the contractor. OCP policies show the hiring entity as the policy's named insured. General Contractors may be required to buy these policies for owners. Subcontractors may be required to buy these policies for general contractors. The hiring party is generally covered for liability arising out of acts or omissions of the contractor. In addition, the hiring party is generally covered for its general supervision of the contractor.

The coverage provided by OCP policies can be broader or narrower than some additional insured endorsements.

Even if OCP coverage is narrower, OCP policies have two advantages that might make them attractive over additional insured endorsements:

- OCP policies have a separate limit of liability that doesn't have to be shared with the purchasing contractor. Additional insureds have to share policy limits with the named insured.
- OCP policies are written in the name of the hiring entity, so the hiring entity will be notified if the coverage is cancelled. Additional insureds often aren't notified when the policy covering them is canceled.

Waivers of Subrogation

Owners and general contractors often include waivers of subrogation in construction job contracts. The waiver gives up a contractor's right to sue the owner or general contractor in defined circumstances.

If a contractor waives its right to sue, it also affects the contractor's insurer, which might have prohibited such a waiver in the insurance policy. The insurer would have used that right to seek recovery from the responsible party for insurance claims paid to or for the contractor. Usually insurers have no independent right of their own to sue responsible parties for reimbursement of claims the insurers have paid to or for their policyholders. Insurers have to "subrogate" (take over) their policyholders' rights against wrongdoers. The process of using an insured's rights to sue a responsible party is called "subrogation."

To avoid litigation expenses down the road, beneficiaries of waivers sometimes require that the waiver-giver endorse its policy with a Waiver of Subrogation endorsement. Such endorsements verify that the waiver-giver's insurer is aware of the waiver, and won't initiate subrogation actions that, while deemed waived, are expensive to

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- If you name someone or request someone name you as an "additional insured" on a liability policy, determine which coverage is primary or excess. Consult your insurance agent and legal counsel for help on this issue.
- Get a signed agreement. "Gentlemen's Agreements" or handshakes are difficult, if not impossible, to enforce. In many cases, participants to unwritten agreements may have different recollections of the facts.
- KEEP RECORDS. No matter what strategy you develop in regard to risk transfer, it is vitally important that you keep records. Documentation of contracts and agreements will be crucial to your case in the event of a lawsuit.

If you are to be an indemnitor:

- Evaluate the risk you are taking on in light of the value of the contract as a whole. Can you do business with the other party without signing this agreement? Can you negotiate with the other party for more favorable terms? Did you make your bid conditional based on any specific contract terms? Is the business you receive worth the potential liability you may assume?
- Get familiar with the operations of businesses you are planning to protect, and find out what controls they have in place to prevent accidents. You need to be aware of the potential risks that may arise from their operations.
- Be clear as to your intent. Do you intend to assume liability for the sole negligence of the other party, or only for their liability as it results from your own negligent acts or omissions? Are you seeking indemnity for your own negligence, or only concurrent negligence, from liability arising out of the negligent actions of subcontractors or vendors? Are you assuming liability for the willful and wanton acts of other parties? Consult your legal counsel.
- Once you've decided that you're willing to take the risk, an important question you need to answer is: Do you have insurance coverage for the liability you've assumed? Check with your insurance agent.

If you are to be the indemnitee:

- Consider having the agreement require that defense costs be paid up front on your behalf. Otherwise, you could find yourself paying out defense dollars, with no guarantee that you'll be reimbursed once the case is adjudicated.
- Verify that the indemnitor is insured and that the insurance is in force.

Contact your CNA Risk Control Representative for further assistance with your safety and risk control program.

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Save Time and Increase Productivity by Monitoring Road Construction



Imagine if all of your managers, supervisors, staff, employees and delivery personnel could save 30 minutes a day in their travel time. That would be equal to 10 hours a month or 120 hours a year, per employee. Would a simple system that could save that much of your valuable production time interest you (and your company's bottom line)?

Every business has deadlines, work contract limits, mandatory delivery times, etc., that effect efficiency, company effectiveness, customer relations and ultimately, company profitability. Every year, businesses spend hundreds of thousands of dollars on time studies, attempting to find better ways to make more efficient use of the employees' work day.

Most businesses have employees who travel, for one reason or another. They travel to visit customers on sales calls, they make deliveries, they travel to and from job sites, they transport cargo between major cities and yes, they even sell and service insurance. Wouldn't it be nice if these employees and staff had more time to do what they do best and with less aggravation? Here's a tip that can save you as much as three weeks of time per traveling employee every year.

By regularly checking your state's Department of Transportation (DOT) Web site, you can find out beforehand where all those aggravating road construction delays are or where major accidents have occurred. To access this free information online, follow these simple instructions:

1. Start at the Federal DOT Web site, <http://www.dot.gov>.
2. Find the heading on DOT's homepage titled "Individuals and Businesses".
3. Under that heading, find the link entitled "Find Information on a Local Issue (find your State Transportation Department)" and click on it.
4. You now have a listing of all of the states and their respective DOT links. Click on your state's link.

5. You will now get a base page with the state Web site you chose. Click on the state's link.
6. When you get to your states DOT site, find the section on the page dealing with "Interstate Construction and Accidents", "Construction Project Information" or "Traveler Information". Click on the appropriate link.
7. On most states' DOT Web sites, you will be shown a map of the state with every major highway where construction is occurring or major accidents have occurred. Just click on the applicable route and get the information you need.

From there, it's simple to plan your route in order to avoid the traffic problems and save your employees the aggravation of waiting in stalled traffic.

In addition to the time that can be saved, there is yet another benefit to regularly monitoring road conditions and reduced vehicle accidents. Because your drivers can avoid the traffic and hazards associated with road construction, the potential for "rear-end" and "sideswipe" types of vehicle accidents is reduced. Fewer vehicle accidents mean fewer employee injuries, which translates to savings on Workers' Compensation costs. Make it easy on your traveling personnel. Get them to their destinations in the quickest and safest manner and reap immediate and long term benefits, including:

- Reduced potential for vehicle accidents.
- Reduced potential for "road rage" incidents.
- More time for the employee to do the job.
- Increased productivity and profits.

Want more information on how CNA Risk Control can assist in improving your "bottom line"? Call your insurance agent or your local CNA office for more information.

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Safety In & Out of the Manhole



Manholes can be dangerous places. The hazards associated with entering and exiting a manhole are capable of causing bodily injury, illness and death to a worker. Innocent looking manholes may contain:

- Oxygen deficient atmospheres.
- Hazardous gases:
 - Methane and hydrogen sulfide gas, H₂S, – naturally occurring gases formed by the decay of debris like weeds, leaves, and grass.
- Other hazardous materials generated from intentional and unintended acts, spills and leaks, of surface and underground sources.

Fatal Flaws

- After a pump was installed, an apprentice plumber entered a manhole to open a valve and was overcome by hydrogen sulfide. Four other contractors entered the manhole to attempt a rescue and were all overcome. The fire department, equipped with Self-Contained Breathing Apparatus (SCBA) entered the manhole and completed the rescue. The result was one worker died and the others were hospitalized. The workers had been overcome by hydrogen sulfide.



- A maintenance man entered a manhole without informing his co-worker or foreman. When his co-worker and foreman found him, he had been overcome by H₂S. Three other workers completed the rescue, and the foreman and co-worker recovered. However, the maintenance man, who had entered the manhole to do routine work, died. The H₂S levels in the manhole were found to exceed OSHA's allowable limit.

Confined spaces historically considered to be safe can develop deadly atmospheres without warning!

- Two men, standing above a manhole, were killed from septic sewer material that had been disturbed or aerated releasing a "cloud" of H₂S gas. OSHA regulations require testing and monitoring **in** confined space. OSHA does not address the exposure **outside** the manhole.
- During a sewer repair project, natural gas leaked into a manhole causing an explosion. The ignition source was found to be the battery connection of a laser being used in the manhole.

Batteries and other electrical connections need to be kept outside and away from manholes.

Controls

Confined space entry mistakes can kill. You should be aware of and follow OSHA standards and requirements.

Some of these requirements include:

- Training for entry personnel with annual updates.
- Training for standby personnel with annual updates.
- Training and equipping rescuers with SCBA.
- First aid and CPR training for rescuers.

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- Selection and training of a qualified person to authorize all worker entries.
- Continual atmosphere testing as long as workers are in the confined space.
- Ensuring hoist, harness and retrieval lines are attached to workers and ready for rescue.
- Mandating personnel, not immediately needed, be kept away from the manhole.
- Erecting barricades to control vehicular and pedestrian traffic.
- If the company is depending on other rescuers, those rescuers should be notified of the potential hazards present, and advised of services that might be needed.

References

- CNA Risk Control Bulletin, "A Guide to Safety in Confined Spaces"
- OSHA 29 CFR 1910.146(c)(2)
- Ontario Ministry of Labor
- *Complete Confined Spaces Handbook* by John F. Rekus.

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Sample Fleet Safety Program



Suggested Model Program for Our Customers

Driver Selection

Pre-Hire Requirements

All applicants for employment ("Applicants") are required to complete a written application that will include listing references and previous employers. Applicants also are required to pass a pre-hire drug test. Anything less than a clean report is not acceptable by

(Your Company Name) _____

Applicants are required to sign a consent form and his or her Motor Vehicle Record (MVR) will be pulled before he or she is hired. MVRs will be kept in the applicant's/employee's file. Each applicant's driving record is required to meet the following criteria:

- a. Any applicant with a Type A driving violation in the last five years is unacceptable.
- b. Any applicant with three or more Type B driving violations or two or more at-fault accidents in a three-year period are unacceptable.
- c. Any applicant with two moving Type B driving violations or one driving accident in a three-year period will be put on warning from a company monitoring standpoint. MVRs are required to be ordered more frequently on these applicants, if hired.

Type A Violations

- Driving under influence of alcohol or drugs
- Refusing to take a substance test
- Driving with an open container (alcohol)
- Reckless driving or careless driving
- Hit and run
- Fleeing or evading police or roadblock
- Racing/speed contest
- Driving on suspended or revoked license
- Vehicular assault

Type B Violations

- Moving violations that include:
 - Speeding
 - Improper lane change
 - Failure to yield
 - Failure to obey traffic signal or sign
- Accidents
- Having a license suspended in past related to moving violations

A new driver may be required to complete a road test with a company experienced driver. The experienced driver will evaluate the new driver's performance and document the road test. These tests will be kept in the new driver's employee file.

Post-Hire Requirements

During an employee's trial period, he or she will ride with a current company experienced driver, who will observe acceptable driving behaviors, routes, and loading/unloading procedures of the new employee (the "new driver").

Motor Vehicle Record Checks

Annual record evaluations will be performed on every driver including the following:

- company truck drivers
- company car drivers
- salespeople or anyone driving their personal car for company business
- spouses with access to company vehicles
- anyone who may be required to drive a company car or personal car for company business MVRs will be reviewed in accordance with the aforementioned criteria.

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Non-Owned Vehicle Requirements

Employees driving personal cars for company business must meet the following requirements:

- MVR checked pre-hire and annually
- Classify the employee's personal policies as 'Business Use' policies
- Name (Your Company Name)_____ as an 'Additional Insured' on personal auto insurance policy
- Have minimum limits of \$300,000
- Provide Certificates of Insurance to management on an annual basis

Personal Use of Company Vehicle Policy

Company vehicles taken home at night or used for non-business activities must be given extra consideration when defining the personal use restrictions. A personal use policy will include, at a minimum, the following sections:

- Driver eligibility requirements (authorized driver, appropriate age, acceptable MVR, etc.)
- Management approval of personal use
- Requirement to follow company substance abuse policy and accident reporting policy
- Restricted use of company vehicles no (towing, overloading, giving rides to hitchhikers, for loan or hire to others, travel to other countries, attaching equipment, etc.)
- Accountability for not adhering to (Your Company's Name)_____ personal use policy

Transportation Safety Rules

(Your Company Name)_____ requires all drivers comply with state and national transportation safety rules. In addition, all employees are required to adhere to the following rules as set by management while driving:

- Mandatory seatbelt use
- Appropriate in-vehicle behaviors
- Absolutely *no* alcohol or controlled substances allowed
- Always look out for pedestrians
- Never attempt to exercise the right-of-way
- Emergency cell phone use only
- Include additional rules

Maintenance Inspections

All drivers of regulated vehicles (greater than 10,000 lbs. GVW) are required to complete a documented pre/post-trip maintenance inspection that will be filed. All drivers of personal passenger vehicles or non-regulated vehicles are required to submit their vehicles for a maintenance inspection at least quarterly. These maintenance inspections will be filed.

Accident Reporting and Investigation

Every accident is required to be reported, investigated and reviewed.

- Each vehicle should be equipped with a Vehicle Accident Report Kit. The kit should include an accident report, disposable camera, and emergency contact numbers. Drivers are required to submit the written accident report to management immediately following their involvement in a vehicle accident.
- A police report should be obtained.

The primary purpose of investigating an accident is to find out its cause and initiate action to eliminate or control similar vehicle accidents. Another purpose is to determine whether the accident is preventable. A preventable accident is one in which the driver fails to exercise reasonable precautions to prevent the accident from occurring. Each driver's supervisor is required to investigate all vehicle accidents.

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Commercial Drivers License (CDL) Required Vehicles

Driver Qualification Files following the Federal Motor Carrier Regulations will be maintained on all drivers with their CDL. A file will be maintained on each driver operating a vehicle in excess of 26,000 pounds. GVW engaged in interstate commerce and/or drivers of vehicles in intra-state commerce if the registered gross weight of the vehicle or combination of vehicles exceeds 26,000 pounds. (Your Company Name)_____ will maintain records for the following requirements:

- Application Form (FMCSR Part 391.21)
- Inquiry To Previous Employers – 3 years (FMCSR Part 391.23)
- Motor Vehicle Records (MVR) Check - 3 years (FMCSR Part 391.23)
- Motor Vehicle Records (MVR) annually (FMCSA Part 391.25)
- Annual Driver's Certificate of Violations (FMCSR Part 391.27)
- Annual Review of Driving Record (FMCSR Part 391.25)
- Driver's Road Test and Certificate or Equivalent (FMCSR Part 391.31) (FMCSR Part 391.33)
- Medical Examiner's Certificate (FMCSR Part 391.43)
- Alcohol and Controlled Substances Testing Information and Results (FMCSR Part 382 & Part 40)

Depending on the type of commercial vehicle and its intended use, additional requirements may be necessary.

Information is also available at the FMCSA web site:

<http://www.fmcsa.dot.gov/>

Non-Commercial Drivers License (CDL) Required Vehicles

DOT states that drivers of vehicles 10,001 pounds. GVW to 26,000 pounds. GVW do not need a Commercial Drivers License (CDL) or to be in a substance testing program. However, DOT requires the employer maintain the following file for each driver of the vehicle:

- Application Form (FMCSR Part 391.21)
- Inquiry To Previous Employers – 3 years (FMCSR Part 391.23)
- Motor Vehicle Records (MVR) Check - 3 years (FMCSR Part 391.23)
- Motor Vehicle Records (MVR) annually (FMCSA Part 391.25)
- Annual Driver's Certificate of Violations (FMCSR Part 391.27)
- Annual Review of Driving Record (FMCSR Part 391.25)
- Driver's Road Test and Certificate or Equivalent (FMCSR Part 391.31) (FMCSR Part 391.33)
- Medical Examiner's Certificate (FMCSR Part 391.43)

Depending on the type of commercial vehicle and its intended use, additional requirements may be necessary.

Information is also available at the FMCSA web site:

<http://www.fmcsa.dot.gov/>

For more information please call us toll-free at (866) 262-0540 or visit us online at www.cna.com/riskcontrol



This policy is mandated and supported by the management of:

Company Name

President/CEO/Management Signature

Date

Sample Acknowledgement Form

To be kept in employee personnel file.

I have read and understand my obligations as listed above concerning the possession and use of a company vehicle. Further, I understand that failure to abide by this agreement shall result in suspension/revocation of my company vehicle privileges and/or disciplinary action.

Employee Signature

Date

For more information please call us toll-free at (866) 262-0540 or visit us online at www.cna.com/riskcontrol

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Stress-Free Shoveling



A shovelful of dirt may not seem like much of a load, but you can strain your back if you lift it the wrong way, especially if your back has not been getting much exercise lately. When you follow these guidelines, you transfer the work of lifting and turning from your back to your legs.

- Plant your feet firmly apart.
- Bend your knees slightly.
- Use your legs to help lift the load.
- Bring your arms in close to your body.
- Pivot and step toward the spot where you're going to deposit the load, rather than twisting your back.
- Stand with your back straight and aligned so your body weight does not add to the load.
- Get regular exercise to further protect your back from injury.
- Do not lift shovel higher than 40 inches.
- Use a D-Handle on the shovel as much as possible.
- The handle length of 48 inches is preferable to minimize bending.



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Wintertime Driving



Fair or foul weather driving always presents hazards. But winter months curse drivers with conditions that are far different than those they face during the summer.

Tips for Winter Driving

1. Make sure that you are able to see and be seen. Clean all the snow and ice off of your windshield, other windows, outside mirrors, lights and reflectors. Make sure your vehicle is equipped with good wiper blades, and that wiper arms are exerting enough pressure on the blades to ensure a clean sweep. If moisture or ice builds up on the inside or outside of your windshield, stop and clean it off.
2. Tires with good deep treads are essential for good cornering and handling on slippery roads. Check the air pressure frequently to maintain the manufacturer's recommended pressure.
3. Get the feel of the road. Occasionally try your brakes or gently depress your accelerator while driving. When you have found out just how slippery the road is, adjust your speed accordingly. Rising temperatures greatly increase the slipperiness of ice and snow.
4. Stretch your "following" distance. Knowing that winter surfaces increase stopping distance 3 to 12 times, the smart driver increases his normal dry road following distance. Heavy trucks require a longer stopping distance on slippery roads than passenger cars. And don't tailgate.
5. Brake before curves. All vehicles are particularly sensitive to over-powering, over-steering, and over-braking on curves. Unseen hazards around the bend may require an evasive action, so turn your steering wheel slowly and smoothly, keep a constant speed in the turn, and tap your brakes carefully if it's necessary to slow down or stop.
6. When you must stop suddenly on wet or slippery roads, do one of the following:
 - a. If your vehicle is equipped with an Anti-lock Braking System (ABS), put your foot firmly on the brake pedal and allow the ABS to pump your
 - b. brakes for you. This allows you to concentrate on steering.
 - b. If your vehicle does not have ABS - pump your brakes. The key to stopping under control on slippery surfaces is to avoid locking the wheels. A rapid pumping of brakes will provide short intervals of braking and of rolling wheels alternately, and will enable you to maintain steering control while stopping.
7. Use proper lights. Never drive with parking lights instead of headlights in winter's early dusk and poor visibility. Parking lights can cause an on-coming driver to think you are farther away than you are.. Keep headlights clean; dirty ones can greatly reduce your own seeing distance at night.
8. Be prepared in case your vehicle breaks down or slides off the road. Have the following items on hand: A charged cell phone, a working flashlight, a shovel, an ice scraper, blankets, any critical medications and water/food.

Stay with your vehicle, make sure the exhaust pipe is clear and only run the vehicle as much as necessary, and place a bright marker on the antenna.

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